

**A text book of stationery binding; a treatise on the whole art of forwarding & finishing stationery books, including chapters on ruling, marbling, leathers & papers, by J. Leonard Monk ... & W.F. Lawrence.**

Monk, J Leonard

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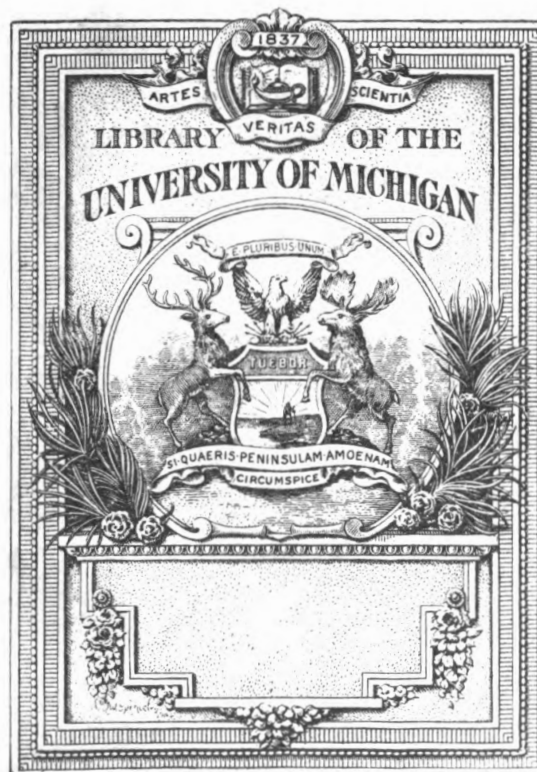
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# A TEXT BOOK OF STATIONERY BINDING

J. LEONARD MONK

W. F. LAWRENCE





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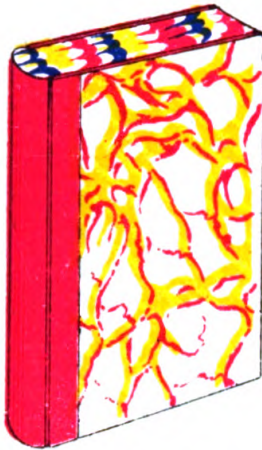


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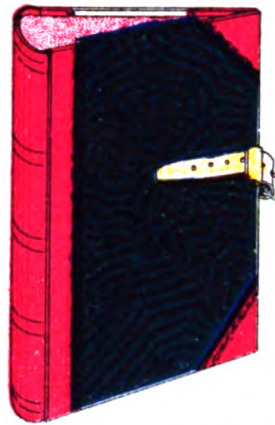


EXAMPLES OF  
ACCOUNT BOOK  
BINDING. —————





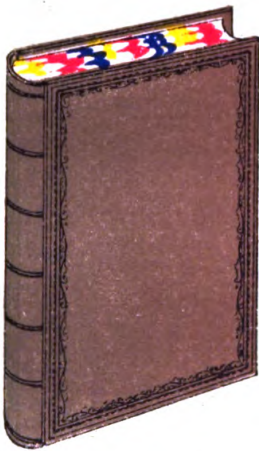
QUARTER BASIL,  
FLUSH MARBLE SIDES.



GUARD BOOK, HALF BASIL,  
CLOTH SIDES, STRAP & BUCKLE.



HALF BOUND RED  
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WHOLE BOUND  
MOLE SKIN.



WHOLE BOUND BUCKRAM.



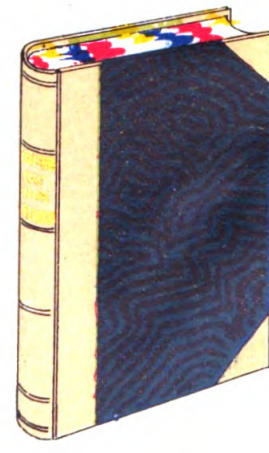
GREEN VELLUM.



HALF BOUND ROUGH CALF,  
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RED BASIL.  
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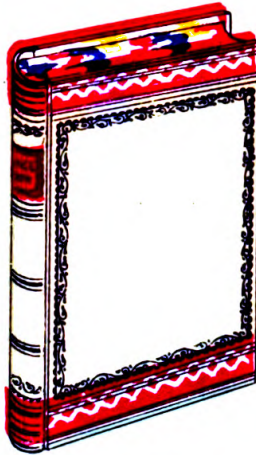


HALF ROLLER BASIL.





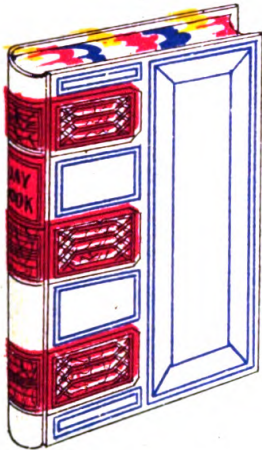
ROUGH CALF  
RUSSIA CORNERS.



ROUGH CALF  
PIGSKIN ENDS.



FULL PIGSKIN.



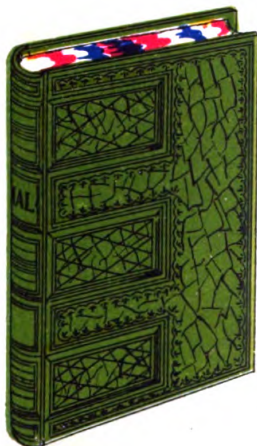
WHITE VELLUM.  
SINGLE RUSSIA BANDS



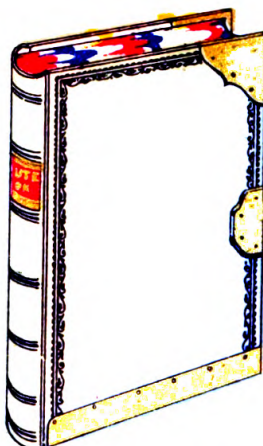
WHITE VELLUM.  
RUSSIA BANDS, BRASS BOTTOMS.



ROUGH CALF.  
DOUBLE RUSSIA BANDS.



PIGSKIN  
SINGLE UNDERBANDS



ROUGH CALF, WITH LOCK & KEY.  
BRASS BOTTOMS & CORNERS



HALF SHEEP LETTER BOOK.



1700

# A TEXT BOOK OF STATIONERY BINDING

A TREATISE ON THE WHOLE ART OF FORWARDING  
AND FINISHING STATIONERY BOOKS, INCLUDING CHAP-  
TERS ON RULING, MARBLING, LEATHERS, AND PAPERS

BY

J. LEONARD MONK

Author of Guide to Handling and Pricing  
of Account and Letterpress Books

AND

W. F. LAWRENCE

1912

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## P R E F A C E

During the course of the sale of the first edition of the "Guide to Handling and Pricing of Account and Letterpress Books" it was unmistakably revealed by numerous enquiries that technical information on the stationery branch of the binding trade was being eagerly sought after. While it gave us pleasure to be of some small assistance to our fellow craftsmen, we were perforce bound to admit that little or no literature could be obtained dealing with the subject, a matter which came with as much a surprise to ourselves as doubtless it did to our correspondents.

On these *a priori* grounds, and the generally recognised fact that knowledge in any form is devoured with an ever-increasing avidity, we decided to endeavour to fill the gap on the bookshelf of our trade literature.

The difficulties we encountered during the progress of its compilation have been overcome a great deal by the response for help from several quarters, and we would take this oppor-



tunity of giving ourselves the pleasure of acknowledging the authoritative assistance of Mr. M. C. Lamb in correcting and revising the chapter on leathers ; of Mr. J. R. Jones of handmade paper fame, for coaching us in the technicalities of its manufacture ; of Mr. W. A. Guest for reading through the proofs ; to our friend Mr. Arthur Renaud for the trouble he has taken in the preparation of the drawings ; and to the several workpeople we have referred to for the information which was given to us in such an ungrudging spirit. It is possible that our articles on the subjects of ruling, paper, and leather may be open to the criticism that they are too divergent ; this was our first impression, yet we came to see that they were so correlated as to be inseparable for a proper understanding of the main subject. We claim the indulgence of our readers on this account.

# BOOKBINDING

## CHAPTER I

### INTRODUCTION

Stationery or Vellum binding, as it is Introduction  
variously called in different parts of the country, is the sister art to the much more ostentatious branch of letterpress binding, the profession of the cultured in the Middle Ages, and to-day ranking high in the realms of those professions which require the true appreciation of the beautiful in design and a skill for carrying it out which excites the admiration of man for all time.

The branch of bookbinding with which we have to deal holds out far less hope of the recognition of skill for the simple fact that in the one case it is the external finishing which is dealt with principally, in order to appeal to the artistic sense, while in the other case it is the internal and unseen processes which are of ultimate importance and are carried out purely to satisfy the demand for usefulness.

The whole art of Stationery binding, therefore, reposes in that part of the operation known in the trade as "forwarding," which can be compared to the foundations of an edifice or its first principles of structure. These may not be all apparent in detail to the eye, but the consummation of the whole pro-



Introduction duces a result which is unmistakable. So it is with the finished account book—the solidity of the cover boards, the appearance of appropriate strength as they lie on the book, the perfect outline of the hard millboard edges, the pleasing proportion of leather on the back and covers, the firm, symmetrical curve of the back which throws with a decisive spring the pages into position, the even spacing and alignment of the lettering, the quality of the leather employed, and the paper of which it is composed, all these details collectively making the perfect book, and which instinctively calls forth words of approval. Too often, through the senseless system of price cutting which prevails in commercial commodities, are some of these vital details omitted or scamped in order to effect the saving of a few shillings. The temptation is the greater to resort to cheaper work as the secret is not divulged to the guileless customer by the book till after it has been in use perhaps for some considerable time.

When retribution overtakes the guilty binder, as assuredly it ultimately will, it is through causes such as these : the use of cheap leathers, thin stuff which cracks and tears on the slightest provocation or which discolours and rots away into dust, rough sheep has been used for rough calf, imitation pigskin for real pigskin, the use of strawboard for the cover instead of millboard, showing itself in its inability to keep the cover perfectly flat, and the hopeless result if by chance the corners receive any ill-usage, cloth joints are used when leather joints should be employed, the

section joints are omitted altogether, the sewing is scamped, too few tapes are used, and they are turned out in a fraction of the time which is required for good work.

If there is one thing that account book binders should insist on, it is that adequate time should be given them for carrying out the multitudinous details involved in the manufacture of these goods. The various processes each have an allotted time for their due performance; if this is curtailed something is sacrificed. Under pressure he will endeavour to produce in one day what should properly take a week; his reputation subsequently suffers, and he has made a dissatisfied customer.

We have not set out to describe *all* the processes which are employed in Stationery binding. Our aim has rather been to indicate as far as our experience permits the method which has seemed to us the best; neither is it written for those houses who are able to employ that quantity of machinery which undoubtedly robs the workman of his soul and legitimate pride in his handiwork.

In the sister branch of Letterpress binding we have specifications for solid binding which are likely to become standardised. If by the aid of the information contained in this work we shall have helped the cause of establishing an equal condition for good Account Book work, we shall consider that we have achieved some part of our object and have reaped a reward for our labours.

To the young men in the trade we would advocate the cultivation of methods of delib-

**Introduction** eration, precision, and orderliness. Before proceeding with work convince yourself of the right method, know the cause as well as the effect of methods and processes. Always look ahead of the work, making sure that the materials for the building you are undertaking are available and ready. Do not run out of paste or glue, keep a supply of cover boards made up, be careful with the gold leaf, have a place for every tool and preparation, and to ensure clean work keep everything else clean. Attention to details such as these will eventually guarantee to you a responsible position, and the satisfactory working arrangements of the shop.

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## CHAPTER II

Pen Machine—Disc Machine—Work compared—  
Rules for Ruler

### RULING

Although the process of ruling is no part of a binder's work, the authors have felt that without some information on a subject so intimately associated with Stationery Binding the book would be incomplete. It is proposed, therefore, to give a short outline of the capabilities of the machines, with the view of helping those binders intending to add the auxiliary of a ruling plant to their other departments.

Technical book-keeping in its infancy had to rely totally on the accurate penmanship of men who did this work by the aid of no other instruments than their rule and pens, and so late as the year 1871 we find a work in which this is described in detail.

To-day we have machines which more accurately and neatly will rule 8 reams of paper both sides per hour, a speed equal to that of a fast rotary printing machine. We believe, in fact, that a disc ruling attachment has actually been fitted to a printing press which rules and prints the sheet with one feeding; a valuable contrivance for long runs of simple feint or down-line work.

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Ruling machines to-day are divided sharply into two distinct patterns—the Pen machine, built principally of wood, the pattern of which has varied very little for the last forty years, and the newer Disc machine, constructed wholly of metal, of French origin.

Both of these machines fulfil their particular object in the economy of the works, and a comparison of their merits and capabilities deserves some attention.

#### THE PEN MACHINE

Pen Machine

A fully equipped modern pen machine is provided with two pen brackets, into which slides containing one, two, three, or even four rows of pens can be fixed. These pens can be bought ready made, or, as some prefer, made by the rulers themselves from a special thin lateen brass in a simple machine. The pens in each of these slides can be fixed to cover the depth of about two inches, and are “struck” or lifted and dropped automatically by fixing cams of varied lengths in an iron cylinder fitted with thumb screws: this cylinder is fixed at end of a roller which revolves when the machine is in motion.

The sheet of paper is governed by the “gate” which retains it while the previous sheet is being ruled and releases it at the moment the pens are again ready to strike. The speed of these machines is 3 reams per hour run-through work, or 2 reams per hour for “struck” work. This most complete battery of pens will cover all requirements for intricate downlining in one operation, provided

the pattern does not pick up before leaving the Ruling sheet. Two or more colours of ink may be fed from the same slide by means of Berlin wool wound round the respective pens and supplied from a brush by hand in the necessary quantity on to a piece of flannel which is laid across the wool, great care being necessary to keep the colours separate.

It is extremely important in running a pen machine that the motive power be perfectly regular and even; if this is absent struck work will vary to a most aggravating extent, and the time that would have to be spent in mending the lines becomes a serious item of expense.

Taken on the whole, there is more mending to be done in pen machine than in disc machine work, which is an important consideration. But a point worthy of note is that the pen machine will strike within a smaller space than a disc machine, a contingency that is often likely to be faced.

#### THE DISC MACHINE

The *Disc Machine*, as its name implies, rules by means of metal discs (spaced at the required distances on spindles), the thin edges of which revolve in contact with an inked rubber feed roller.

The ink is supplied to this roller from a trough by means of flannel, one edge of which dips into the ink while the other is laid over that portion of the roller which the discs are not in contact with. The ink is thence transmitted by the discs to the paper. The machine is fitted with three spindles for each

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side of the paper, but unlike the pen machine each spindle of discs can only rule one colour at a time and drop from one horizontal position. They can, however, pick up and drop independently in three different positions. A pattern, therefore, with three stops necessitates the handling of three spindles and three sets of cams.

These machines will run quicker with a full spindle of discs than if there are only a few. The quicker running also brings the advantage of cleaner work and less liability of variation.

To determine the question of whether the disc or pen machine should be used for any job, the time for setting discs against the time for setting pens, as well as the different running powers of each machine, have to be considered. Experienced operators, however, are decided that disc machines are suitable for (1) Long runs. (2) Long or short runs where the stops do not drop and pick up in the same horizontal position. But the quality of the paper to be used has some bearing on the question. Many disc rulers experience great difficulty in ruling hand-made paper on account of the necessary absence of means for regulating the supply of ink on the edge of the disc as it passes over the irregular and heavily sized surface.

This is not an insurmountable difficulty, however, and experienced operators are able to rule both hand and machine-made equally satisfactorily; the art of inkmaking, its colour, consistency, and fluidity enters much into the working of both classes of machines.



Curiously, while the disc machine handles Ruling manifold paper with an ease far in advance of the pen machine, certain classes of bank paper offer some difficulty in the accuracy of feeding.

The lines ruled by a disc machine can generally be recognised, as they are finer and have generally a characteristic dotted effect at regular intervals, but by using care that the discs are clean and that they do not injure the rubber rollers by too heavy an impression good rulers are able to obviate this spotty effect.

These machines are incontrovertibly pre-eminent for long runs on account of the superior speed at which they can be worked, for as many as 8 reams of run-through can be turned out per hour, or 5 reams of struck work, with an automatic feeder. A reasonable quantity for which a disc machine should be brought into use would be about 5 reams of paper ruled both sides. Contrary to what is generally imagined, a disc machine, even on short, intricate jobs can be worked as advantageously as regards speed as on the pen machine, but in the same way as a principle of economy would be violated by putting a platen job on a Wharfedale, so would it be by using this much more expensive machine when the simpler and cheaper machine would answer the same purpose.

An example of this class of work would be a 10-quire book, hand-made paper, three stop from headlines, some red, some blue, as illustrated in pattern No. 1.

This undoubtedly is a pen machine job.

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raise the difficulty before mentioned if the Ruling operator is not fully qualified.

*Secondly.*—The blue double line would necessitate a separate spindle being used, making four in all, while the three stops and two colours could be stopped together from one slide in the pen machine.

This also means two workings on the disc against one on the pen.

On the other hand, pattern No. 2 would be put on to the disc machine without hesitation. Ten reams of Double Cap ruled for Foolscap folio books.

Whether this job were 10 reams or 10 quires the decision to put on the disc would not be affected.

Down lines all rule in one operation, cross lines, shorts, head lines, and foot in two operations.

On a pen machine this pattern would have to go through three times for down lines and three for cross lines.

The conclusion to be drawn from these illustrations is that a well-equipped office should be provided with both patterns of machines to economically undertake the varied nature of the work that falls to the lot of an ordinary jobbing office.

There seems to be every probability that in course of time this principle of machine and its modifications will become universally adopted as it is better understood.

As so much of the work that comes to the ruler's hands has to be passed on to the printer and binder, a spirit of close co-operation should exist between these departments and

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the ruler in order to ensure economical and correct results.

It will be found advisable wherever possible that the ruler should have the paper first; very often he is able to arrange binding margins and the proper margins for trimming. The printer then has only to conform to straight-forward stock. Often the ruler has to make use of *three* lay edges; care should, therefore, be taken that paper is properly trimmed, while in duplicate work both manifold and duplicate papers should be cut at the same time, the manifold preferably cut between the stouter paper. Equally important is it that the paper should not be touched by the guillotine from the time the printer has it until the ruler has finished with it—in other words, consult the binder's wishes as to the size most convenient to him before starting, always, of course, considering your own working economy.

It should always be taken for granted, unless ordered to the contrary, that flush work has to be sewn and not wired or stabbed, but the registration of triplicate or quadruplicate books often renders it necessary that they should be wired or stabbed.

In making up duplicate or triplicate books for sewing, the following rules should be observed. When both leaves of a duplicate book are of the same paper, one ruled and the other plain, the whole of the paper should be ruled for first page only, instead of ruling half the paper first and third pages, and leaving the other half of the paper blank.



By facing the ruled sheets in the first Ruling method the duplicate comes in position right through the book, but in the last method, after the sheets have been interleaved, a leaf has to be tipped in the centre of each section.

Difficulty is often experienced by rulers and printers in imposing for triplicate work that has to be sewn, but providing two of the leaves are of the same paper, it is always possible by using the first and third pages for two pages out of the three, and reversing each of them when interleaving.

If each sheet, however, is on a different quality paper there is no option in the matter, and the sheets have to be cut up for wiring or stabbing.

In long runs of bookwork it is often possible for the ruler or printer to supply ready-made end papers for the binder. For instance, suppose the order was for 1,000 Foolscap folio books, 50 leaves each, bound quarter flush. Allowing two Foolscap sheets to each book for end papers, we should have to order  $28\frac{1}{2}$  reams double cap for the job. Instead, we order  $27\frac{1}{2}$  reams, and for the last two thousand runs leave a first and second page blank; this provides sufficient blank pages for the binder to sew up with the first and last section of each book ready for pasting down on to the cover boards. It will be noticed that this saves the binder much time in not having to make ends, saves some paper, and so justifies the little extra trouble involved.

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## FORWARDING

### CHAPTER III

Overlooking—Making up—Pressing—Taping—  
End papers

#### OVERLOOKING

Overlooking All ruled work is overlooked by the ruler before leaving that department, but as the binding department is responsible for the perfect condition of the finished book, overlooking becomes an operation to be performed with great care before being passed into the hands of the maker up.

Broken lines, blind lines, blots, and flaws in the paper should be looked for, especially if "retree" or "broke" paper has been used, for then torn, spotty, and imperfect sheets are much more numerous.

Hand-made paper is darker on the right side than on the other; therefore, to ensure each opening of the book being a uniform shade the dark and light sides of the sheets should be faced. If this is not attended to the natural consequence will be a light and dark page facing each other, which in some papers would be very pronounced.

When manifold work is being dealt with particular attention must be given for badly printed or ruled sheets which would destroy register.

## MAKING UP

Account book sheets are now received by the maker up, whose first duty after overlooking is to fold them into sections of the required thickness. Before proceeding with this, however, in books with printed headings it is ascertained if the work is thoroughly dry; this can be discovered by placing a piece of clean white paper over the printing and rubbing severely with a folder or the thumb nail. If the result leaves any suspicion of "set off" it should not be proceeded with, many books having been spoilt on arriving at the press when this important point has been overlooked.

The number of leaves in a section of a book is governed by the size and weight of the paper. If too many are employed the leaves will "start," that is, project at the fore-edge on the book being rounded; if too few, the back will be swollen too much by the thread after sewing.

The different sizes of account book papers are made in standard weights by all makers, and as the size increases the paper becomes not only proportionately heavier, but so much heavier as to withstand the extra strain it is called upon to resist. The standard weights are as follows:—

Foolscap	... 16lb.	Medium	... 34lb.
F'cap sheet & $\frac{1}{4}$	22lb.	Royal	... 44lb.
F'cap sheet & $\frac{1}{2}$	24lb.	Super Royal	54lb.
Demy	... 25lb	Imperial	... 72lb.

The first four sizes, Foolscap to Demy, are folded in sixes, Medium and Royal in fives, Imperial and above in fours. Sheets should

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Forwarding not be folded separately, but in their respective sections. Each section of the paper to be folded is well knocked up to lay edge, which in all account book work is the head. The number of sheets to form the section is firmly grasped and folded over level to the head and fore-edge, the paper being already trimmed before ruling, the left hand meantime holding the paper quite firm, while the back is well creased with the folder.

The required number of sections for each book is now counted off, and before passing to the press a soiled sheet is folded round the first and last sections, the soiled portion making the first and last pages to form paste ups for end papers, care being taken, however, that no other portion of the sheet has any defect.

In making up duplicate work the instructions already given to the ruler on page 12 should be consulted.

#### PRESSING

Pressing Pressing boards are sold in standard sizes in hard wood, and are so made that warping is prevented. A book is carefully placed on one of the right size, that is, a little larger than the book, another board placed on top, then the next book in reversed position, and so on, back and fore-edge showing alternately between the boards to keep the pile in a level position. These are put in the nipping press when the books are few, or in the standing or hydraulic press when larger quantities. The length of time required for effectual pressing depends largely on the nature of the paper



being used. Where an hour or two will suffice Pressing for cheap or thin papers, a harder or better quality should be left in overnight if possible.

Flush work is not generally pressed, but if the books should be composed of a paper sufficiently heavy to cause a swell in the back, they should be nipped in the press.

#### TAPING

In the processes we now have to consider Taping one object has to be achieved above all others; the adequate fulfilment of the demand for the necessary strength which a book calls for. So important is this that keen and intelligent judgment is the only rule that can be laid down in many instances, and it is undoubtedly the carrying out of this which marks the workman and in a hundred ways the finished book. Taping, or Strengthening, is the first of these, and how it should be done depends entirely on the size and quality of the book.

For ordinary Foolscap or Demy folio half-bound books a one inch linen tape is pasted round the outside of the first and last sections, leaving only a quarter of an inch to appear on the inside of the book, with the remaining three-quarters of an inch facing the cover.

Larger half-bound or full-bound Foolscap books should also be taped down the inside of the second and last but one sections. Larger full-bound books should have tapes *inside* both first and second and last two sections as well as those *outside* the first and last. For extra books the first four and last four sections

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Taping      taped outside and first two and last two taped inside.

It should be noticed that two sections with outside linen strengtheners should not come together, as in gluing up they do not adhere so readily together as the linen and paper do. In order to avoid this the second outside tape should really be placed inside the outer sheet of the section.

For heavy books destined for much hard wear the number of tapes is simply a matter of judgment for the binder. Tapes in all cases should be of good quality linen, free from loading material. The tapes are about half an inch in width, except those used for the outside of the first and last sections, which should be a little wider, as stated above, the extra width appearing nearest the boards.

No quarter-bound books need this strengthening process.

#### END PAPERS

End Papers      To make an End Paper neatly, strongly, and in conformity with the style and strength of binding is work requiring a sense of book-binding propriety. The object of end papers is to give strength to that portion of a book which before all others has the greatest amount of strain put upon it—the first few and last few sections. As in letterpress work we judge the finish of a book by its end paper, so are we instinctively able to judge the finish of an account book on turning over the cover and exposing the end papers to view.

The stationery binder, however, has by no means the same variety of materials to choose

from as the letterpress binder. The selection of the one beginning and ending with one or two designs of marble paper, except in fancy note book work, while in the other case not only variety in design is permissible but variety in materials.

For the cheaper class of work, flush books, &c., there are several methods adopted. A common way is to tip on with paste to the first and last section a fly sheet of plain paper, the first and last leaf of which is pasted to the cover. Another and superior method is to paste a strip of linen down the edge of a single sheet of strong paper, the paper being half an inch wider than the book, cartridge preferably, or whatever the job justifies. Fold over inwards for half an inch the edge on to which the linen has been pasted; this forms a guard into which the first and last sections are inserted, the latter method is by far the more satisfactory, the end paper in this case becoming actually a section of the book through which the sewing would have to pull to release the cover from the body. In fancy full-cloth exercise book and similar work usually a fly sheet of marble or fancy end paper is either pasted on to the first and last page, or for extra strength pasted down inside the first and last *opening*, and then in both cases to the cover boards.

*Made Ends.*—The end papers already mentioned are entirely different structures to those known as “Made Ends” necessary for account books, and the making of these calls for more experience.

What has already been said on the relative

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**Made Ends** question of strength and binding must here be repeated with emphasis. As the book becomes more bulky and the quality of binding improves, so the strength of the end papers must increase.

End papers are always made in distinct pairs, and the following principles are applicable to whatever quality is necessary.

Four sheets are required per book; two of these are plain and should have been allowed for in giving out the paper and counted off by the ruler for this purpose, the other two are spoilt sheets turned out when overlooking. First make up the front end paper by folding one sheet of plain and one of spoilt, well paste the material for the joint and lay them on this accurately, fold to fold, the right hand side being the waste, the left hand the plain; leave slightly more of the joint for the waste sheet, and allow a space between the two sheets just

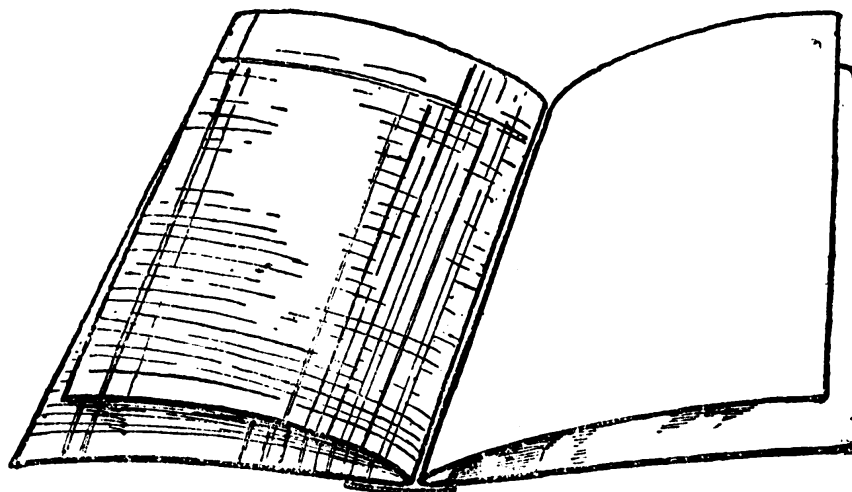


FIG. 1.

The back End Paper; the waste sheet on left,  
plain sheet on right.

sufficient to allow them being easily folded; Made Ends lay the joint and sheets evenly up to head. Now lift up the two sheets and fold backwards; this will bring the joint inside.

In the back end paper the position of the plain and waste sheet is reversed, the plain sheet being on the right and the waste on the left. Having cut the marble paper in single pieces, that is, size of folded sheet, less the width of joint, paste well and then lay the true edge just over the margin of the joint.

For additional strength a linen strip is pasted round the back, allowing one inch for the waste sheet and about half inch for the plain sheets. The variations which can be made in the strength other than the paper of which they are composed are as follows :—

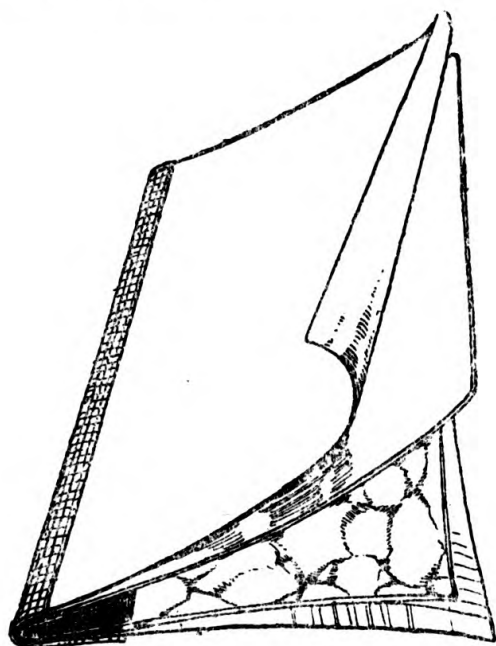


FIG. 2.  
The completed End Paper, shewing linen strengthener up back.





Made Ends     *Common Binding*.—Cloth joints, cheap Storment or Dutch marble.

*Better Half Binding and ordinary Full Binding*.—Holland joint, Storment or Dutch marble.

*Extra Full Bound or Banded Work*.—Calf joints, good Gloster or Antique marble.

      End papers for loose indexes which are made up in single sections are constructed as follows:—A cloth joint is put round the back fold of a sheet of its own *ruled* paper, then lined outside with marble paper in the usual way. A sheet of waste paper has a cloth joint pasted *inside* the back fold and lined inside with marble paper. The first sheet is inserted into this and the index again into the two, the whole being stitched through the back.

## CHAPTER IV

Hand Sewing—Machine Sewing—Tackerting—Stabbing  
and Wiring—Whip Stitching

## HAND SEWING

Of all the branches of bookbinding there is none, perhaps, so suited to the employment of female labour as that of hand sewing, for in the execution of this a considerable development of the sense of touch is necessary as well as an amount of fine and careful judgment gained only by experience in the application of the use of the needle.

The sewing of stationery books differs from that of letterpress books except, perhaps, in the method used in the latter when sewing for "flexible" binding. This resembles stationery sewing in so far as the back is not "sawn in" for sinking the cords, the usually adopted but less durable method.

The considerations to be studied in sewing stationery work are (1) the greatest possible strength, (2) the proper and even tension of the thread throughout, upon which is contingent : (a) the swell in the back for rounding, (b) the ease with which the book opens, and the way each sheet is presented for writing upon.

As already stated, stationery books are not "sawn in," and no sewing frame is necessary. The sewer sits somewhat obliquely at the

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table, which should be at such a height that the elbow when pressed to the side should rest comfortably on the book in order to hold each section in position. As a guide to the position of the stitches, pencil marks are made *inside* the front end paper, which is commenced with in order still to work to head. The kettle stitches are made about an inch from head and tail, and the tapes are spaced evenly between them. The tapes should be cut so that about one and a half inches extend each side beyond the actual width of the back. The needle is first pushed from the outside through the fold, at the head kettle stitch, which, of course, is furthest away from the sewer, brought out again at edge of first tape, which has been folded at right angles, the folded foot of one and a half inches being pushed under the book. The thread is now pulled through, leaving a loose end of an inch or so, and is now carried round the tape, pushed back close up to the edge, brought out again at second tape, and the process repeated as many times as there are tapes until the bottom kettle stitch is reached. The first section is now picked up and laid carefully to head of end paper. The sewing is continued from the bottom kettle stitch until the needle comes out at the head kettle stitch. The first actual kettle stitch is now made by picking up the loose end and drawing through a half hitch formed round the finger and drawn into a tight knot. The next kettle stitch is formed by passing the needle round the stitch underneath and drawing it through the loop thus formed. Subsequent stitches are formed

twice until as the sewing proceeds the first stitch is carried down four sections and repeated again round the second section down, as illustrated in Fig. 3.

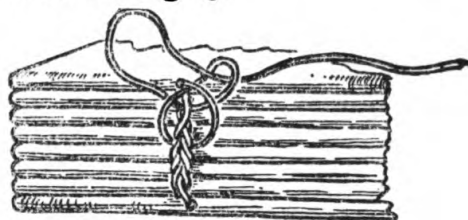


FIG. 3. The Kettle Stitch.

To further strengthen, the thread, when making the first stitch, is left as a loop round which the kettle stitch is formed throughout.

It is on this stitch that the security of the sewing, and therefore the book, depends, its function being to permanently secure the section in the position in which it is to remain. If the kettle stitch gives way in hand-sewn work nothing can save the section from parting from the book. If the stitch is formed too loosely ugly gaps sooner or later appear between the sections on opening the book, and are the forerunners of other mischief. If the stitches are pulled too tight the bulge caused in the centre makes regularity of rounding impossible, and the results are equally disastrous. Sufficient has been said, therefore, to prove the importance of this detail of the process. Care also should be taken that the slips are sewn on in a perfectly upright position, and that as the sewing proceeds the sections are tapped down into position by a folder or similar instrument.

If the book is an "extra" and heavy one, the sewing can be strengthened either by re-

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## Hand Sewing

peating the kettle stitch two or three times or by passing the thread round the tapes a second time sometimes in every other section, or in the first and last three or four sections, varied according to the demands of the book, but the end papers in better class books should always be treated thus. The sewing is eventually finished at the last kettle stitch, and the sewer takes the precaution of rubbing the back with a folder in order to smooth down the irregularities and burr caused by the outward thrust of the needle and through which the glue might run during the next process.

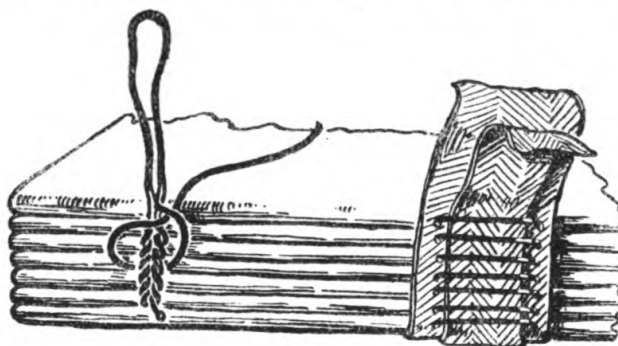


FIG. 4.  
Two methods of strengthening the Stitching.

## MACHINE SEWING

## Machine Sewing

Machines for sewing account books have been modified comparatively recently from machines invented for the production of long runs of publishers' letterpress work. This has been made possible by the really remarkable improvements which have taken place in their construction in regard to the wide application for dealing with the several varieties of stitches called for in handling letterpress and account book work.



This fact not only adds considerably to the value of a machine, but simplifies the question as to whether an office can afford on economical grounds to install one. An office may not have sufficient account books to keep a machine fully employed, but if this work is supplemented with the product of the printing office in the shape of occasional editions of letterpress books or manufacturers' catalogues the hesitation of introducing a machine should disappear, the advantages being so tremendous that so surely as "trade follows the flag," so will it follow a machine of such incontestable value.

Needless to say, it would not pay to put on less than, say, one dozen account books of a size or a gross of check books; it can be arranged, however, in most offices to accumulate a sufficient number of such books to work together in the more usual sizes. These machines, moreover, are not designed for undertaking the larger and heavier books, as it is impossible to supply the additional and necessary strength which the hand sewer is able to and always imparts. This additional strength is always given to the kettle stitch, and the whole case and only one against machine sewing is the fact that the chain stitch which it substitutes for the kettle stitch is not capable of being strengthened on demand—the stitch on which, as we have emphasised elsewhere, the life of the book depends. On the other hand, in machine sewing each stitch along one section would have to be severed before one section can be separated from another, while in hand sewing it is only neces-



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sary for the thread to go at one point for the whole of the sewing to gradually give way, but we do not consider this is a contingency to be feared so much as the probability of the kettle stitch succumbing to the strain that it undergoes at all times. From our own experience we have no hesitation in advocating machine sewing for all work in the nature of check books, manifold books, exercise books, note books, manufacturers' catalogues, and ordinary account books up to Foolscap or Demy.

There are several machines on the market varying in details which require careful attention before installation. Chief among these we consider an efficient machine should (1) Finish off the end section with a stitch of double thread. (2) It should automatically and correctly adjust the tension of the sewing to any thickness of section, avoiding any possibility of slackness, a point the importance of which we have dwelt on when dealing with hand sewing. (3) It should be possible to change from one size to another by an easy and quick method, a feature which varies greatly in the different machines. The speed at which the machine works we do not consider of primary importance, except in those houses dealing with large editions.

## SEWING TABLE

Small books	2 tapes	..	$\frac{1}{2}$ in. wide	..	No. 2, cord 16
Foolscap	..	3 tapes	..	$\frac{1}{4}$ to $\frac{3}{4}$ in. wide	No. 3, cord 16
Demy	..	3 or 4 tapes	$\frac{3}{4}$ to 1 in.	..	No. 4, cord 16
Medium	..	4 tapes	..	1 to $1\frac{1}{8}$ in.	..
Royal	..	5 tapes	..	$1\frac{1}{8}$ in.	..
Super Royal	..				
Imperial	..				



Extra books Demy and upwards should be strengthened by vellum under each tape, or by pasting a narrow tape on a broader one and sewing through the broad one over the narrow one, Fig. 4.

Machine  
Sewing

### TACKERTING

In exceptional cases extra strength may be imparted to the sewing by what is known as tackerting. This is performed after the book has been lined up, tackerted books being lined up all over the back instead of between the tapes only, as explained later on. For this

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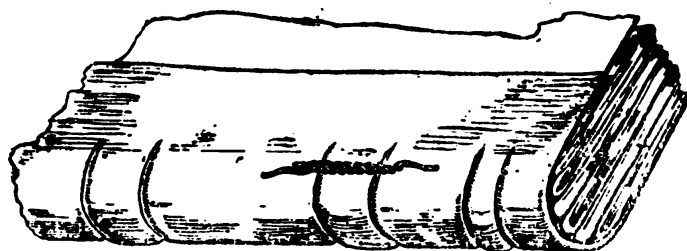


FIG. 5.

A Tackerted Book, shewing a single Tackerting.

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process catgut is used to secure the tapes to the sections. A hole is pierced each side of the tape *from the inside*, and the gut pulled through, showing both ends on the back; these are fastened by being turned round each other as though the first process of tying a knot was being repeated until the space is evenly filled and pulled tight, when each end is fastened by a knot.

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The stitch inside the section equals the width of the tapes, which are the only portions of the length where the stitching cord is not visible. It must be noted that each end of the gut should be used alternately from the centre,

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Tackerting that is, one end only should not be used for turning round the others to effect the strongest stitch. Each stitch is entirely separate from the others, and is repeated round each tape perhaps in every other section or in the first and last few sections only.

#### STABBING AND WIRE STITCHING

Stabbing  
and Wire  
Stitching

Often, on account of cost or the necessity of making up with single leaves, Flush books have to be stabbed or wired instead of being sewn. For stabbing, the leaves are knocked up level to the head and back, a reasonable pile to handle is placed on the edge of the table with a weight on top. The backs are then glued, but before doing so the end papers, which are made single with a strip of linen pasted along the back, are placed at both ends of each book. This is a stronger method than first stitching the book and tipping on fly end papers afterwards. When the glue has dried, each book can be separated in a block and is so held together while the holes are being made with the bodkin. Three holes are sufficient for any

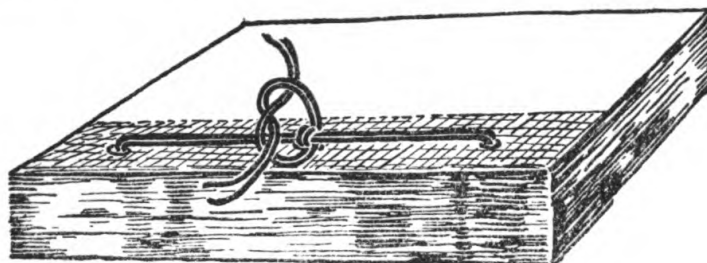


FIG. 6.  
A Stabbed Book.

small book up to 4to size and five holes for the larger sizes. A double thread is carried through these with a needle, commencing and

finishing at the centre hole, tying the ends with a firm knot. Binders who possess a heavy wire stitching machine would utilise it as far as possible as a more expeditious method.

#### WHIP STITCHING

It also occasionally happens that books which are required to be bound in a more flexible method than by wiring or stabbing unavoidably have to be dealt with in the single sheets instead of in sections. In these cases the method of sewing known as whip stitching is employed. The backs of the loose sheets are glued up in blocks, separated when dry into sections of, say, six sheets, according to thickness of paper, each of which is sewn by overcasting, that is, the thread is taken round and round the back not too far into the section, yet far enough for it not to break when the leaves are opened. When all the sections

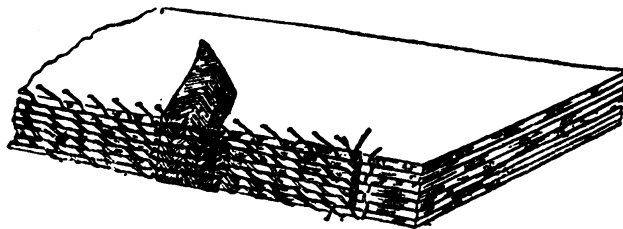


FIG. 7.  
A Whip Stitched Book.

have been treated thus the book is sewn on slips in just the same manner as an ordinary section book, the back edge of each section as it is picked up being pasted so that it adheres to the last.

A letterpress style of dealing with this is to glue up, saw in, whip stitch, and sew on frame with cords.

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## CHAPTER V

Gluings up—Glue—The Fore Edge—Rounding the Back—  
Pasting up—Paste—Making Boards—Trimming Ends—  
Fixing Stiffeners—Lining up.

### GLUING UP

Gluings up

Before gluing up the first and last sections should be thrown back and for about an eighth of an inch pasted in the back. To do this neatly lay a piece of clean paper to within that distance and apply the paste with the finger. On closing the book these sections will adhere firmly to the next ones and add further strength to this portion of the book which requires so much careful and minute attention. The reason is evident, now, why the linen joints on the first and second sections were not arranged to be in contact with each other.

The book should now be knocked up square from head and back, laid back outwards on the edge of bench, and thin glue well brushed in. The consistency of the glue for this purpose is very important, and should be quite thin enough to work well in between the sections, and not so thick that it will crack when dry, on the book being opened. Many firms use a special flexible glue bought ready prepared for this purpose.

After the glue is well brushed in, it is

worked in further with the fingers, and should be so thoroughly performed that the sections are permanently held together during the life of the book.

The danger of applying too much glue is not so real as that of not applying sufficient. If the book has been properly sewn the sections are naturally held together tight enough to resist the glue entering the book. This is also aided by the binder resting one hand on the book while he glues with the other.

Many binders prefer to fix the book in the laying press to glue up, and claim that the proper amount of glue can be more readily adjusted.

#### GLUE

We would express a word of caution to the uninitiated on the subject of glue. Use only the best Scotch; to experiment with the numerous cheap and attractive articles is "not worth the candle." Some have not the elasticity which the binder requires, others have been bleached clear with acids which act detrimentally on its strength and tenacity, as well as eventually affecting the leather; others are loaded up with adulterants which, whatever they may be, cannot advance the natural strength of best glue; while other glues go frothy under the action of heat, and more so from the friction of the brush—a very objectionable feature. The following note is extracted from Chambers' "Encyclopædia":—"Glue is merely an impure gelatine. . . . It is a recognised fact that Scottish glue ranks in the front of the glues of all countries. A

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Glue

light-coloured glue is not necessarily good, nor dark-coloured glue necessarily bad; a bright, clear claret colour is the natural colour of hide glue, which is the best and most economical." To secure the best results glue requires to be treated in a particular way. It should always be allowed to take up water previous to the application of heat, and when moderately cooked should be emptied into receptacles, laid aside for a day in its gelatinous state, and cut out as required. A fresh supply, therefore, should be taken in hand a day before using.

Flexible glue is rapidly finding favour with bookbinders, especially for gluing up the backs, its properties being so eminently suitable for this operation that every binder should adopt it if for no other purpose. We have used "Arabol" flexible glue for some time with great advantage.

#### THE FORE-EDGE

Fore-edge

Before "rounding the back," another process contingent upon this has to be dealt with—the treatment of the fore-edge while it is flat.

This is the first edge to be trimmed, and perhaps the most important, for the binder, before putting it under the machine, should ascertain by opening the book what amount has been allowed for trimming; generally the ruler and printer have left ample margin to cut at. The head and tail are left untrimmed until the fore-edge has been marbled, of which process a description will be found in another chapter.

#### ROUNDING THE BACK

Rounding  
the Back

This is an operation seemingly very simple

but yet one which requires a degree of experience in order to produce an even and adequate curve. When the object for which the book is rounded is grasped, the operation becomes simplified. This is to give the book a definite, permanent, and useful form by evenly distributing the extra width in the back caused by the sewing cord.

If the back was not made permanently round, sooner or later it would assume the reverse shape and become hollow. Although rounding machines are used by the big wholesale houses, the everyday binder still rounds his book by hand. It is this operation which will eventually show any defect in the gluing up, and must be done before the glue has set hard, or the sections will have a tendency to split apart when being hammered. The time for gluing up, therefore, should be arranged with this object in view.

If by chance the glue has been allowed to set hard, a sponge squeezed out in hot water should be applied to it. This is an effectual remedy.

The book is laid on a firm portion of the bench with its back nearest the worker; he grips the back and gradually pushes it over with his thumb, while with the other hand it is hammered lightly from the head to tail, first on the top edge, and working gradually to half way down the back. Then, to complete, the book is turned over and the hammering repeated from tail to head.

The back should now display an even segment of a circle, showing no starts of sections

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on the fore-edge and no uneven ridge on the back.

#### PASTING UP

Pasting up

“Pasting up” is quite distinct from “pasting down,” which will be described later. What has now to be done is to paste the fly leaves of the end papers to the first and last pages of the book; another detail in the welding of the book to the covers. A piece of clean, stout paper must be inserted underneath each pasted endpaper, that is, between the first and last opening of the book. This is to prevent the damp striking through, cockling the paper and making the ruling ink run, and are known as “safes.” The tapes are now turned back, a wood pressing board placed between the books, which are turned alternately back and front, as described when “making up,” and again put in the press, where they should remain four or five hours, or preferably overnight if it can be arranged. This is considered to be a favourable time for making up the boards if they are not kept in stock already made up.

When the books are taken out of the press the “safes” are removed and the tapes turned back into their proper position and slightly hammered down. It will be noticed that the pasted sheets have slightly stretched. The projection should be trimmed off with the shears.

#### PASTE

Paste

Those firms using any considerable quantity of paste will find it more useful to buy the kegs of ready-made paste supplied by one or two

houses. For smaller users the following recipe **Paste** is satisfactory. :—Use the best plain wheaten flour, not “self-raising,” add water gradually, carefully stirring until of the consistency of thinnish cream; put in a saucepan over a clear fire, keeping it constantly stirred that it may not get lumpy; bring to boiling point and allow to simmer for about a quarter of an hour, until of such a consistency that the stirring stick will stand upright in it. Add alum or oil of cloves to preserve from decomposition.

#### MAKING BOARDS

The covers of account books are always **Making Boards** built up of two or three thicknesses of boards, the object being to counteract warping and at the same time to provide a method of fixing the book securely to the covers.

This is achieved so far as the board is concerned by pasting the thin or “split” board as it is called only half its width, which leaves one side so as to be readily opened for inserting the “stiffeners.” The thickness and quality of the board is regulated by the size of the book and quality of the binding, the thickness varying less than the quality for the various sizes.

As the covers of a book are designed to protect the contents, and as they obviously have to withstand the brunt of any ill-usage, they should be composed of a material and in such a manner as to be thoroughly capable of its function; to attempt to economise by using an inferior article for the sake of an almost problematical saving is analogous to spoiling the ship for a ha’porth of tar.

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The material which answers our requirements is undoubtedly millboard, the present price of which is 18s. 6d. cwt. This is made of waste paper with a proportion of rags, is very tough, and, equally important, is flexible.

The strawboard is an admirable subsidiary to the millboard, and in making up account book covers is generally used between two stronger outside millboards; it is less flexible, is brittle, and therefore easily broken, and should only be used by itself on very light work.

The "split" should always be put next to the book, for, being the thinnest, when pasted it has the greater pulling power; the tendency is then, if any, to pull the board inwards.

The boards should be made up square to two edges for laying into the guillotine, with which they must be cut in order to procure clean, sharp edges. A Rotary millboard cutter is a valuable acquisition for this purpose. The combinations shown in the following table make a good board for half-bound and ordinary full-bound work.

For cheaper work, instead of making up with three boards, the split is omitted and the middle strawboard increased in weight; a double board, however, is more liable to warp.

A single strawboard of the necessary thickness is often used and always in the case of quarter-bound books.

For "extra" work the strawboard would give place to millboard.

TABLE FOR MAKING UP ACCOUNT BOOK COVER BOARDS.

Size of Book, thickness up to 6 qrs.	Size of Square Head and Tail	Size of Square Fore-edge.	Composition of Boards.			Width of Joint Groove.
			Outside.	Middle.	Split.	
Foolscap ..	$\frac{1}{4}$ inch	$\frac{1}{8}$ inch	Grey Boards	Strawboards		$\frac{1}{8}$ inch
Demy ..	$\frac{1}{8}$ "	$\frac{3}{8}$ "	Eightpenny	2lb. Straw	8oz. Straw	$\frac{7}{16}$ "
Medium ..	$\frac{3}{8}$ "	$\frac{1}{4}$ "	"	2 $\frac{1}{2}$ lb. "	"	$\frac{1}{4}$ "
Royal ..	$\frac{3}{8}$ "	$\frac{1}{4}$ "	"	3lb. "	Sixpenny Grey	$\frac{1}{4}$ "
Super Royal ..	$\frac{7}{16}$ "	$\frac{1}{4}$ "	8 x	"	"	"
Imperial ..	$\frac{7}{16}$ "	$\frac{1}{4}$ "	8 x	"	"	"

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The width of the board is measured from the space allowed for the joint to the edge of the book plus the measurements for squares as given above.

#### TRIMMING ENDS

Trimming  
Ends

We can now proceed to trim the head and tail, in order to complete the marbling.

As we have been working to head throughout, so we must now place the book in the cutting machine head first, observing several precautions. These are : (1) See that head is well up to gauge. (2) Push back the top edge of the fore-edge so that no portion overhangs the rest. This will now offer a firm resistance to the descending knife, and will not be liable to tear the leaves as if left overhanging and free. In pushing over care must be taken that it is done uniformly all along the book from head to tail. (3) For a similar reason the curve of the back must be supported by being packed up underneath with some waste paper fanned out to fit the curve of the back.

The process is completed by reversing the book in the machine and again adopting the same precautions when cutting the head.

#### FIXING STIFFENERS

Fixing  
Stiffeners

It has now become necessary to prepare for the solid welding together of the book to the covers. In flush books paste end paper all over, pull down tapes, and lay board in position. It is obvious that for heavy books a safer and stronger method than this must be adopted, and is accomplished as follows :



One, two, or (rarely) three lengths of six-penny millboard are cut about half an inch longer each way than the measurement between the first and last tapes; that is, an inch shorter than the book. The width will vary from two inches to three inches, according to the size of the book.

If composed of more than one thickness the succeeding board or boards should each be slightly smaller than the previous one to assist in forming a bevel, each piece having been already pared three edges—the two short and one long edge.

Having prepared these, raise the tapes of the book out of the way, glue the back half of the waste end paper, on to which lay the stiffener, the unbevelled edge not quite flush with the back, a space not more than the thickness of the stiffener intervening, which will ensure it riding open freely. It will, of course, be placed centrally between the top and bottom. Now glue the stiffener, pull the tapes back on to it, glue these also, then fold the unglued half of the waste end paper over to the back and rub well down. After the other side has been treated the same we proceed to "line up."

#### LINING UP

Tabbing or Lining up is a part of the same strengthening process, and is accomplished by cutting strips of waste leather to cover the whole of back except the tapes and sufficiently long to reach to about the edge of the stiffener.

If rough calf is not used between the tapes, it undoubtedly should be at the head and tail,

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Lining up the positions which require nursing with much tender care.

These tabs should extend from the edge of first and last tape to slightly beyond the edge of book, and are presently trimmed off flush with the scissors. The folded end paper must now be reduced to a suitable width for inserting between the cover board. This will usually be found to be about an inch beyond the stiffener. Instead of using the shears for this purpose, we consider it preferable to tear the paper, as in so doing a tapered edge is obtained, which is more adaptable than the sharp edge obtained by cutting. Now to complete this operation trim each corner off at a slight angle from the head and tail, and form this into a tongue by cutting it away from the stiffener just before the first tapes, so that on each side of the book we have three independent tongues.

## CHAPTER VI

Making the Back—Fixing Back—Fixing Boards

### MAKING THE BACK

If any of the other processes of stationery binding are analogous to those of letterpress binding, that relating to the back and the office it has to perform is entirely different. Besides having to allow the book to open easily yet firmly, the back of the stationery book is designed to throw the surface of the leaves into a certain position, that is, a position suitable for writing upon, retaining them in that position, and returning them again into their original position. Much ingenuity has been exercised from time to time on the structure of the backs, yet to-day the principle is the same as it has always been. At a very early period, as account book making goes, a steel back was invented, and on rare occasions even now a similar contrivance is resorted to for a particularly big book.

A well-made back can be recognised on the book by its solidity, and by the symmetry of its curve, which in its widest part should be the diameter of its own circle. This, again, should be slightly wider than the measurement of the back, to which the inward grip is added afterwards. Too small a curve or too

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complete a one are equally as unpleasant to the eye as ineffective. Added to these points must be the even finish of the head and tail.

The making of the spring back must be considered the *chef d'œuvre* of account book work. It can be as readily made too firm as not firm enough. In the first case the book requires much gradual coaxing by long wear to rectify the error; in the other case the bad workmanship soon begins to reveal itself by the want of life evidenced in the manner in which it brings, or rather in which it does not bring, the opening completely to view. To give effect to these details the *modus operandum* is as follows:—In books of the very cheapest nature the only material used is a strawboard, which is damped till pliable and rolled into shape. This is accomplished by means of wood rollers, an assortment of which in various diameters must be kept in stock. The correct diameter of roller for books in hand should be about an eighth of an inch less than the thickness of the books, the width being taken by measuring over the tapes. In length they should be not less than half an inch more than the length of the board.

To these rollers are pasted by the edge, lengths of strong brown paper the full length of the roller, that quality known as Kraft paper being the most suitable on account of its excellent strength. The damped board is laid on the paper close up to the roller, which is rolled forward so forcibly that the strawboard is carried tightly round, wrapped in the extra folds of brown paper which securely retain it in position. To make the rolling more

effective place a board over the roller and repeatedly roll forward, bearing on with both hands while doing so. The back is now left in this position till dry. Making  
the Back

In order that the back should grip the book it is necessary to slightly turn the edges inwards. This is usually done by placing a backing board against the bench, and holding in position by the chest while each edge of the back is laid over and rubbed down to the required angle with a folder.

With the stronger backs which we are about to describe considerably more force would

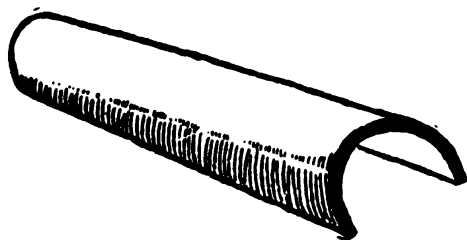


FIG. 8. The back on leaving roller.

have to be used in this operation, and in these cases a hammer and any available iron edge should be brought into requisition.

For books other than the cheapest class of stock books, for which the strawboard back is only intended, a sixpenny millboard is employed, which, before being rounded, should be laid in the centre of a piece of good brown paper already glued, the edges of which, when folded over, lap about half an inch.

To render this pliant pass quickly backwards and forwards through a gas flame, or lay on a heated iron box, care being taken in both cases that the glue is not baked hard.

A back of this description is suitable for anything up to a six-quire Foolscap or four-

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quire Demy. For books of this thickness in any other size substitute an eightpenny mill-board. For thicker and heavier books the solidity is increased by glueing another mill-board, about half an inch narrower, on the top and in the centre of the other board before wrapping with the brown paper. An extra quarter of an inch must be necessarily added to the width of the first board to allow for the decreased diameter.

For extra heavy books a third and still smaller piece is superimposed, which would again increase the width of the first board. The same process for rounding is adopted as already described, except that to secure the inside pieces in position and from moving over to one side half the back is gradually rounded from one edge and the other half from the other edge by reversing it in the roller.

FIXING THE BACK TO BOOK

Fixing the  
Back

We have now to find some method of securing the back in position to the book. The first of these processes is accomplished by

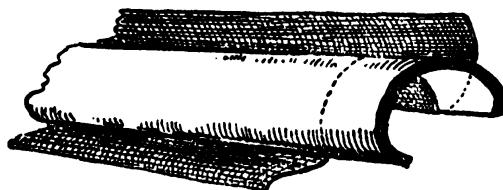


FIG. 9.

The completed Back, shewing accentuated curve and strengthener.

gluing pieces of canvas, holland, or cloth, generally scrap pieces, to the inside of the back, leaving an extension of about two inches

of material each side. This is a strong enough connection for ordinary half-bound work, but for full-bound books after this has been attached to book a piece of good brown paper (rope brown for preference, being strong as well as pliable) is glued right round the back and on to the stiffener for about two inches each side, the paper being well glued and rubbed down all over.

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#### FIXING THE BOARDS

This is rather an important operation even in small volumes of letterpress works. In this case the cords which take the place of the

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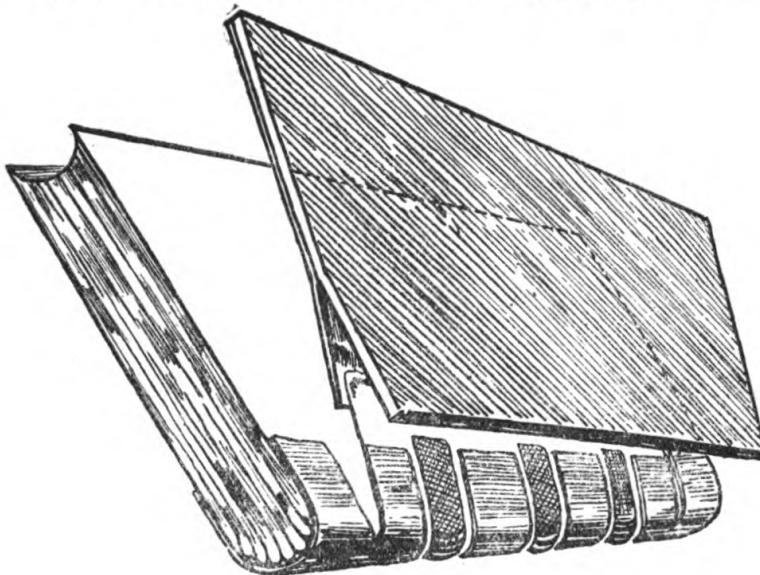


FIG. 10.

A book well forwarded.

The split board about to be fixed to stiffener.

(In the illustration the back is removed to show Lining up.)

tapes of stationery work are utilised as a ready means for making a secure fastening to the boards. The heavier stationery books, however, require a more rigid welding of the two.

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The crude method of simply gluing the tapes and laying the cover boards on is often resorted to for cheap account book work. Another plan is to glue the stiffener and lay the board over it, which is adopted only when single boards are used. Neither of these methods should be resorted to for better-class books.

In these books which always have split boards the split is opened, thoroughly glued as far as possible inside, the stiffener inserted between, leaving the space between the back and board for groove, as shown on page 39, and then nipped in the nipping press till the glue is dry, making a firm and solid side to the book.

The tongues which have been cut away from the stiffener are not inserted in the splits, but left free; this allows the leather to be turned in.

The only detail now remaining before covering is to trim off almost flush to the length of the boards the top and bottom of the back, the little additional length being required for setting the head, which it will be more convenient to describe later.



## CHAPTER VII

Cutting Leather—Paring—Pasting—Preparing Vellums,  
Forils and Pastegrains

### CUTTING LEATHER

In cutting up a skin of leather a good work-  
man will exercise sufficient care to procure  
the maximum number of pieces without undue  
waste. All skins contain a certain amount of  
imperfect material, principally in that part  
corresponding to the extremities of the animal,  
the flanks, and belly. If the skin is measured,  
turned round, and well considered before cut-  
ting, this waste can be minimised, and the  
waste pieces which result can be put away into  
a drawer and used for lining up, etc.

All binding shops should possess a series of  
cardboard patterns of the various sizes of backs  
and corners, the proper dimensions of which  
govern the ultimate appearance of the book  
to a great degree.

A skimpy proportion of leather on the back  
or corners denounces the book at once as an  
inferior one. These should both show a  
liberal quantity without at the same time un-  
duly overdoing it, which affects the angular  
appearance of the cloth side detrimentally.

As a rough guide to what we consider the

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proper proportion, the leather on the corners should occupy in the folio sizes about one-fifth the length of the fore-edge after the book is sided up, and the back should advance about one-sixth over the side of the board.

For turning in purposes the length of the back piece should have an additional inch for Foolscap to  $1\frac{1}{2}$  inches for Imperial, both top and bottom, the heavier leathers requiring rather more.

The corner pieces are not cut triangular, but as a triangle with the apex cut away, the meaning of this being apparent when turning them over.

PARING

Paring

Paring the edges is necessary for all leathers except skivers, vellums, and forils. To describe the process, however, is as difficult as its performance, simple as it seems. The apprentice should take opportunities of practicing this on odd pieces of leather to gain proficiency. An extremely efficient machine is now sold which should be in the possession of every house which can find sufficient employment for it. Not only will it accurately pare the edges, but will shave whole pieces, or to make a joint work easily will run a straight groove where required.

Most houses still have to pare by hand, and for this purpose a paring knife is used; these are recognised by the feature that one edge, that not in contact with the leather, is sharpened on the bevel. Paring should commence about  $\frac{1}{4}$  inch from the edge and should

*gradually* taper to the thinnest possible extent **Paring** at the edge without injuring the outline of the leather. To do this the leather is held firmly with the left hand, standing towards it somewhat obliquely, while the blade of the knife is laid almost flat at the commencing line of the pare, raising it gradually and imperceptibly as the edge is reached, increasing the force at the same time with a steady and sharp movement.

It is particularly necessary when paring the backs that the commencing line should be perfectly straight and even all down, so that no irregularities will show against the line of the cloth side.

#### PASTING LEATHER

The adhesive used for fixing the leather to the boards is always paste, never glue; and a degree of experience is required to know the proper amount necessary for the various qualities of leather, some requiring more than others. **Pasting Leather**

The consistency of the paste should be such that it will not run or move when in paste box, and in pasting the leather the object should be to apply by repeated applications of the brush sufficient to work well in without it eventually showing through on the surface; the roughed leathers especially will suffer from this if too much is used.

As soon as two pieces are ready the two pasted surfaces are laid together if they are of the same size, or folded over on to their own pasted surfaces if they are different sizes, and put aside till ready for use, which should not

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be for too long an interval. If they have been pasted correctly the paste, on separating, should be still adhesive enough to apply to the book, and should now be pliable and easy to work.

#### PREPARING VELLUMS, FORILS, AND PASTEGRAINS

Preparing  
Vellums,  
Forils, and  
Pastegrains

*Vellums and Forils.*—The preparation of Vellum and Foril differs from the other varieties of cover materials. Vellums vary considerably in flexibility, and although all are of a hard, tough nature some are particularly hard, brittle, and "horny." These skins, and, in fact, all Vellums, are much improved for working by well sponging with clean, cold water the rough side before pasting.

In order to preserve and accentuate the colour of the skin, vellums and forils are always lined with white printing paper. This, as well as the vellum, is pasted before applying to each other, but it is customary to paste only the paper, omitting the pasting of the skin when dealing with forils.

The paper and skin are now rubbed well together. The vellums are laid aside to soak for an hour or so, but the forils should be used as soon as they are lined.

In treating these skins the primary consideration is to reduce them to a pliant and supple condition for working. A great amount of trouble is often experienced when dealing with vellum, but if water is used freely and without fear it will be found to work as easily as any other material.

*Pastegrain Skivers.*—As the process of

manufacturing these leathers involves the use of glue for making the grain, it is obvious that if paste is used at all freely it is likely to injure the grain of the leather, therefore some binders work with glue instead of paste in order to preserve the original beauty of the grain and finish. This is the only exception where the use of glue is not detrimental to the leather.

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## CHAPTER VIII

Covering—Quarter-bound Books—Guard Books—Half-bound Books—Full-bound Books—Setting the Head—  
Pasting down

### COVERING

Covering

On the completion of the operations already described we now have something at last resembling a covered book, in which all the essential details in regard to strength have now been attended to.

It only remains to suitably cover its nakedness, and to clothe the exterior in a manner which the workmanship underneath deserves. The liberty which can be taken with the covering of stationery books is restricted and arbitrarily fixed by obvious circumstances which do not permit the exercise of that extreme skill which places letterpress binding in the front rank of artistic handicrafts. There are three distinct forms of placing the material, known as quarter-bound, half-bound, and full-bound. Quarter-bound work is used for that class of book the existence of which is short, and whose dimensions merit nothing stronger. The details of this binding can be somewhat varied. The back may be of cloth, buckram, leather substitute, or leather, the sides may be lined with marble paper or cloth, the boards flush or with squares, and in the

case of the flush book the siding material may be turned in or cut flush with the boards and book.

A quarter-bound book always infers a tight back, an open back should be always styled half-bound, no corners. This is more correct than saying quarter-bound—open back.



FIG. 11.  
The Tight Back



FIG. 12.  
The Open Back.

By far the most popular style of account book binding is that known as "half-bound," in which the back and corners may be covered with a leather of a strength suitable to the quality of the book. The varieties of leather used for this purpose are skiver, basil, rough sheep, rough goat, rough calf, pigskin, and morocco, the merits of which will be discussed in a later chapter. Full-bound books are covered in basil, sometimes grained or diced, rough calf or goat, vellum, morocco, pigskin, and Anglo-Russia.

Heavy books are further strengthened by bands of leather, Anglo-Russia, pigskin, or basil. Favourite styles of this class of binding are full rough calf or vellum, double or single bands; a somewhat cheaper but usually

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as effective a method is a band on the top and bottom edges, either laced or unlaced. The practice of placing the bands of single-banded books under the cover instead of outside is very seldom resorted to now. The under bands originally were made of Russia leather, and afforded some real extra strength. At the present day binders have fallen into the temptation, as the bands are out of sight, of substituting a basil raised on strawboard or wrapper for the Russia, and, besides, in order to facilitate workmanship, of cutting out the piece along the groove to overcome the difficulty of keeping the covering from rising there, making a neater appearance but frustrating the original intentions of strength and making this style worse than useless, the covering leather over these bands receiving the brunt of the wear instead of being protected as intended by the outside bands.

#### COVERING QUARTER-BOUND BOOKS

Covering  
Quarter-  
bound  
Books

Of all varieties of bindings, no worse examples of slipshod methods can be found than in ordinary everyday simple quarter-flush work. So long as the paper is held more or less temporarily in covers, anything is generally deemed sufficiently good. Remnants of cloth cut to awkward widths and sizes are used instead of the natural size tapes to sew on, the material for the back is put on uneven and out of proportion to the size of book, displaying its irregularity under the siding material, and the linen joint (when present) is placed *under* the paste up instead of *outside*, with the consequence that the first time the



cover is opened, the paste up splits with the strain. Details such as these, all of which could have been better carried out with a very little more care, imposing hardly any extra time, are the evidence of an unguided 'prentice hand or bad workshop principles.

There are several recognised styles of flush work, known as *Quarter flush*, *Quarter flush turned in*, and *Quarter flush all turned in*. Quarter flush is the cheapest variety, and presuming that we are dealing with sewn books, the boards are cut to the size of book before trimming, the slips are fastened down on to the pasted end paper, and the cover board is placed in position on top, leaving in small books about a quarter of an inch from edge of back for joint, working to head.

After pressing, the back, which may be of cloth or leather, is cut so as to allow about half an inch for cover each side. Both this, as well as the back of book, should be glued to secure that adhesion which is the principal source of strength in this class of binding. After pulling the material well over, the joints are creased in and the whole well rubbed over with a folder.

The siding material, usually in this case marble paper, is pasted and laid neatly along the edge of back, overlapping the material not more than one-eighth of an inch. The books are completed with a trim round.

A better appearance can be given to these flush books by always turning in the fore-edge; in handling the book and turning over the cover this is the edge which comes in contact with the hand, therefore, by covering the raw edge

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of the board, a more pleasing suggestion is conveyed to the touch. This involves a little extra trouble, but by the observance of these details the good reputation of a shop is increased.

As soon as the back is fixed the fore-edge is trimmed, the boards sided up, the fore-edge turned in, and again sent to the cutting machine to be trimmed head and tail. Quarter-bound turned in is a definition indicating that the siding material is turned in all three sides, and the head and tail of back still left flush.

As this is a better type of flush work the siding material may be of cloth or marble paper. In order to hold the boards in position for trimming the back is put on the same time as the boards, sent to the cutting machine to be trimmed all round, then sided up, and the end papers pasted down in the usual way. Quarter flush all turned in means that not only are the sides turned in but also the head and tail of back. The boards in this case are tipped on to the tapes, trimmed all round, the back is then put on and turned in, following with the sides. In these better-class books a double end paper is preferable, and of course in all cases of duplicate work the back end paper should be made up of tinfoil paper.

If squares are wanted on a book the book is trimmed all round first, and the boards cut to allow for the square, then bound in the same way as for "turned in all round."

#### GUARD BOOKS

Guard Books    The function of guards in a book is to re-

serve room for the introduction of further Guard Books material without straining the binding. How much there is to be introduced is responsible for two methods of guarding.

The first method is to insert a given number of guards between each leaf; the other method is described as guarding the back to a given number of inches. In the former case thin sections are interleaved with the guards, in the latter case the guards may be introduced as sections.

The guards, which should be about  $1\frac{1}{4}$  to 2 inches wide before folding, should be trimmed in the same gauge as the book is, to guarantee the length of both being exact, guard books, of course, being cut before sewing. The sewing must be done on a frame either on webbing or cords. If on cords the boards are pierced and threaded on as in letterpress work. If on tapes a flexible stiffener is made by omitting the thin board and fixed into split boards the usual way and finished off as a good quarter-bound flush turned in book. No made end papers are necessary; a joint of holland or buckram is placed round the first and last sections and glued to cover board, which is afterwards lined up.

#### SKELETON GUARDS

A skeleton guard book consists of guards only, arranged alternately narrow and wide, the difference being about half an inch.

The process of binding is the same as just described. Both descriptions of guard books are usually provided with a strap and buckle rivetted to the fore-edge.

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## COVERING HALF-BOUND BOOKS

Covering  
Half-bound  
Books

In cutting up leather for half-bound books it is useful to remember that the four corners take half as much material as the back.

The corners are always put on before the back. The book is laid on its side, the cover board lifted up, and the piece put into the position as shown in Fig. 13. Sufficient of the leather is allowed in turning over to cover the inside squares as well as an additional  $\frac{1}{4}$  of an inch for the paste-down of the end paper to cover. Naturally, an increased allowance must be made for large books.

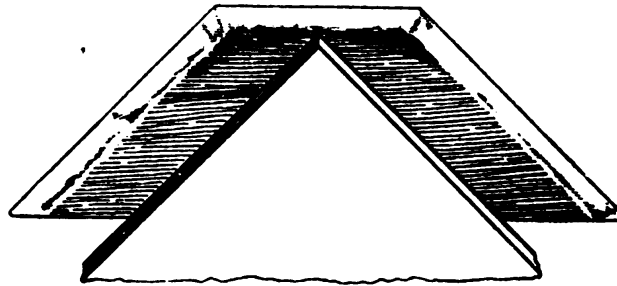


FIG. 13.

The first edge of corner to be turned in is generally the top or bottom, then the fore-edge. The corner must be tucked in neatly with the thumbnail before pulling over the other edge. After pulling over as tightly as possible with the thumb, the edges are squared and laid down with a folder. The back leather is now opened out, the book taken upright between the hands, and the back placed in the centre of the leather; drop the book on to its side, and pull the leather well over. Run a folder down the leather well into the joint groove, which should have previously had rubbed into

it with the brush or fingers a little paste to make the adhesion of the leather in this vital spot doubly sure.

In cutting cloth for book covers it is always better when possible to arrange that the depth of the book should correspond with the lengthways of the cloth. Many varieties of cloth, if cut the other way, will cockle in the working, this, no doubt, being due to the materials used in the warp and weft.

A great deal of attention has been given in America to the production of a durable bookbinding cloth, and it stands to the credit of the United States Government that they have succeeded by means of scientific specifications in procuring a cloth which fills all the requirements of a strong binding material. The name given to this cloth is Legal Buckram, and it can now be obtained in this country.

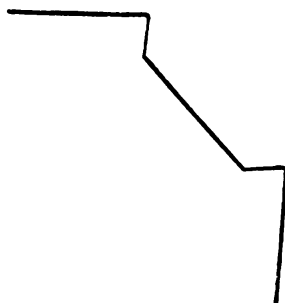


FIG. 14.

Single pieces of the correct size having been obtained, the back edges are trimmed with knife and straight-edge, or in the millboard cutting machine or guillotine for larger quantities.

Lay the straight-edge over the back leather

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just sufficiently to cover the  $\frac{1}{4}$  in. pared edge; turn the corners back to the same position on the leather and cut off with a sharp knife.

A particular workman will always cut his corner out with a square turn in. (Fig. 14)

Cloth must always be glued, the glue being of a medium consistency, and not so thin as to work through the cloth.

#### COVERING FULL-BOUND BOOKS

Calfskins and vellums are sold in the more usual sizes of books—Demys, Mediums, Royals, etc., out of which one only expects to cut a single cover for full-bound books. It is always economical, though, to buy large skins of the leathers in everyday use, as the resulting pieces left are larger and, therefore, more useful subsequently.

The skin should be examined before proceeding to cut it up to see that no serious flaw appears in the portion to be used, and if there should be any variation select the best part for the front cover. The first straight edge is secured by placing the book on the leather and cutting along the fore-edge. Mark off top and bottom cuts, turn book over carefully and mark the other fore-edge, taking care to leave sufficient for turning in. The edges are pared all round for about  $\frac{1}{4}$  of an inch; paste all over carefully, taking off every lump and any bristles from the brush, and allow to soak till pliable.

Basils, Russias, and pigskins require time for the paste to permeate, but rough calf should be used as soon as it is pasted, being much more absorbent.

The book is laid in position, the skin pulled tightly over, the joint creased in, and the sides rubbed down, these operations being carried out as instructed for half-bound work. The corners, however, are treated differently, on account of the leather being usually thicker. If heavy leather is used for corners it should always be treated as follows:—Turn in the tops and bottoms first, then the fore-edge; do not cut the angles off the corners, but lift the fore-edge up, cut the end fold along fore-edge to end of board, then cut a tongue corresponding to the thickness of the board in line with the head. Fold this tongue along fore-edge,

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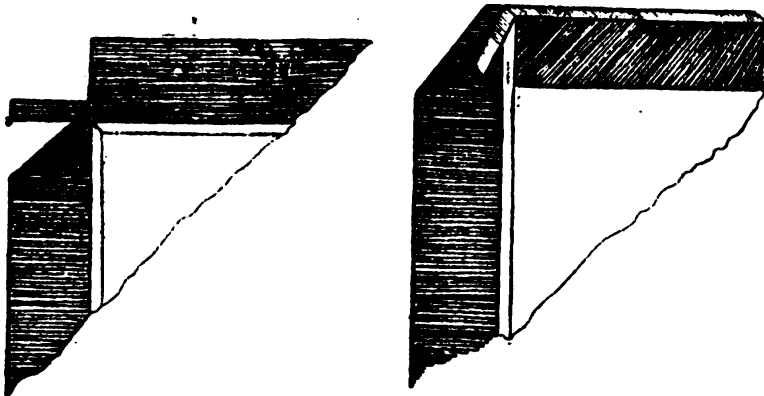


FIG. 15.

FIG. 16.

The formation of a corner in thick material.

replace the other folds, finishing the corner off by cutting the corner of the fore-edge leather at an angle of 45 degrees.

Before pressing, a couple of rods (ordinary round stair-rods are as suitable as anything) are placed along the joints (Fig. 17), and the book is nipped in the press between pressing boards, the covers being protected by sheets of clean paper.

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Having been left here for a short time, it is taken out and some stout cord tied tightly round the joints from which the rods have been removed. It is at this stage that the head is set.

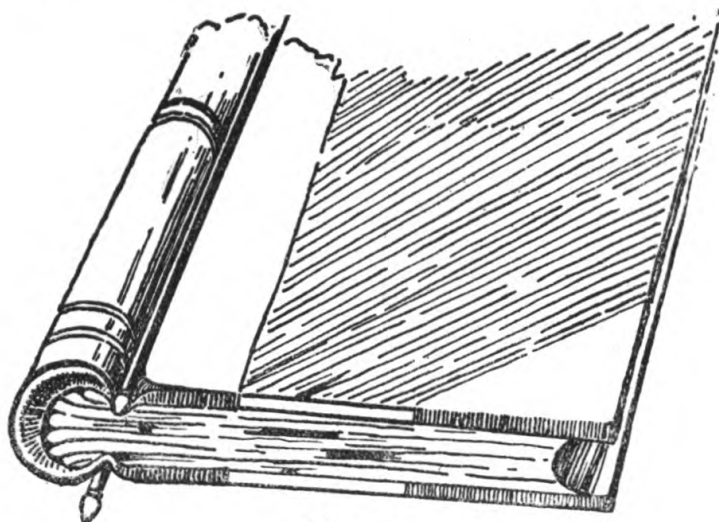


FIG. 17.

#### SETTING THE HEAD AND TAIL

To turn in and set the head and tail there are two methods in use in different parts of the country.

We have already stated that the back should be left slightly longer than length of boards both top and bottom. This portion should have been damped with hot water and allowed to soak in before the leather is put on. It is now soft enough to be hammered right over to the edge of book. To finish the process hold the book on its back, the edge being flush with edge of bench, and with the other hand hammer it with the sharp portion of the backing hammer into a wedge shape, the base of the wedge being up against the edge of book.



The other method is to trim the back level with the boards, lay a piece of cord of suitable thickness round the top and bottom, turn the leather over, and then push cord and leather inside the back, filling up as in the other process the space between the head and edge of book; work into a neat curve with a folder.

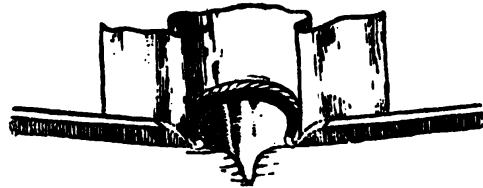


FIG. 18

Setting the Head with cord.

*Pasting Down.*—The book being now covered, the end papers can be pasted down. Lift the cover up, paste the end paper, and close the book, insert the “safes” between ends to prevent the damp striking through. Each book is now put between boards, and if it is an “extra” book rods should again be put into the joints and left in the press till morning.

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## EXTRAS

### CHAPTER IX

Banded Work—Double Bands—Cutting Bands—Lacing—  
Single Bands—Top and Bottom Bands—Fittings—  
Projecting Tabs—Loose Covers—Indexing—  
Paging—Perforating—Easing

#### BANDED WORK

Banded  
Work

*Banded Work.*—In order to strengthen very heavy books, and incidentally to considerably enhance their appearance, a certain number of Russia or pigskin bands are disposed and securely fixed in several recognised orthodox positions. These will be found to be illustrated in the frontispiece, to which the reader can refer during the explanation of the method of procedure.

Double  
Bands

*Double Bands.*—To find how far the middle band should reach over the cover, take the measurement from fore-edge to about a third of the way down the back; half of this gives the correct point.

The width of the other position is gained by dividing the length of the cover into 12 equal parts.

Spaces 1—3 and 10—12 make the complete double bands.

Spaces 6 and 7 the middle band.

Leaving between the bands spaces 4 and 5 and 8 and 9.

There are other methods of measuring off, but we consider this the most simple and satisfactory.

Double  
Bands

*Cutting the Bands.*—Russia bands are cut from Anglo-Russia leather, which is thicker and more durable than real Russia. There is nothing, however, so suitable for this purpose as a good piece of maroon pigskin.

Cutting the  
Bands

In order to economise the leather the three bands are cut all the same length, the additional piece for the top and bottom edges being cut out more easily than if in one large angular piece.

Finish-  
ing.

The bands are cut a shade *longer* than actually required, paring only those edges on the top and bottom pieces which turn in. Pencil out the position of the bands on the cover, place a piece of good clean paper up to the line the bands should reach, paste the bands, place in position, and crease in the joint.

Treat-  
ment of  
Edges

The edges of bands will now be resting on the paper, under which a zinc plate is placed. With a straightedge and sharp knife the edges are now all trimmed to their proper and uniform length.

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Now add the top and bottom pieces, but none of the edges should be turned in yet, as rods are to be placed again in the joints and the book left in the press all night. On taking out, the pared edges can now be well soaked with paste and turned in, although many prefer to lace the bands before turning in. The corners in this better class of heavy work should be rounded off. The leather, instead of being turned in by cutting out, as already advised, is simply bent over the corner, and the creases

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Cutting the Bands      formed on the inner side pasted and pressed down with a folder, exercising care to make it as presentable as possible. Although this occupies a little time to perform satisfactorily, the result is a solid pad of leather protecting the corners.

Lacing      *Lacing.*—Laces are cut about one-eighth of an inch wide from good strong vellum lined with white paper as already described. The design having been decided upon, of which there are several to choose from, or which the binder can evolve himself if possessed of any artistic skill, the holes are driven through the cover board with a bodkin, the laces threaded through, pulled tight, and hammered down on the inside by placing the cover on any available iron surface—the knocking down iron fixed in laying press or the iron surface of the millboard cutting machine.

The lacing must now be fixed down with paste. To do this pick a little up on the finger, lift the lace up with a bodkin, and work the paste underneath. The superfluous paste must be carefully wiped off so as not to loosen the dye in the leather, which would discolour the lacing.

As soon as the lacing is dry enough, and to thoroughly prevent the laces from showing through the end papers, a 6d. millboard should be cut to fit inside the turned-in edges. This is pasted in position on the end paper before pasting down.

The safes are put between end papers, also on the covers, and left in the press till thoroughly dry.

*Single Bands.*—The treatment of single bands is exactly the same as for double bands except that the top and bottom band occupying the first and last twelfth is omitted. In first covering a book which is going to have top and bottom bands or Russia corners, it is not necessary to turn in the corners in the usual way.

*Top and Bottom Bands.*—Top and bottom bands should occupy about an eighth of the length of board; they may be laced or unlaced. The lacing on all top and bottom bands should not occupy the exact centre of the band, but sufficient space left on the outside edges for the extra blind tooling which is shown in the frontispiece.

#### FITTINGS

Locks are sometimes required for books of a private nature, and there are several varieties from which to choose—Lever, Bramah, Nozzle, or Plain.

Lever locks become expensive as the number of levers are increased. Bramah locks are perhaps the most favoured by binders; certainly nothing less effective should be used where security is of importance.

To fit them to the book the fore-edge is cut away sufficiently to allow the lock to sink level with the fore-edge; it can then be rivetted on through the holes already drilled in the lock.

First fix the lock half to the end covers, then lock the catch plate to it; this will naturally find the other position.

In taking measurement for the width of a lock required, measure from the outside edges

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Fittings of the boards, then allow an extra sixteenth of an inch for play.

Brass rims, corners, etc., usually have to be made to order, and the makers require minute particulars of the measurements. It is advisable to make up a thin cardboard pattern for them to work to, or build up a strip of mill-board to thickness of the boards on the book and pencil on the size and shape of the rims or corners.

Full box fittings are those which completely cover the squares. Half box just cover the edge without being turned up inside.

#### PROJECTING TABS

Projecting  
Tabs

It is occasionally necessary to divide off a book into two or more visible sections. A ready method of accomplishing this is by means of a "projecting tab," usually of green vellum. A strip of this, the length of the book, is glued, folded on itself, and rubbed down, then pasted between the two pages where the division occurs, leaving the folded side of the vellum projecting, but never farther than the squares of the book.

If there are two or more partitions each tab should be put on the full length of the book and then be cut away as one would an index.

#### LOOSE COVERS

Loose  
Covers

*Loose Covers* are sometimes used to protect the permanent binding of good account books, and are made more usually of basil, moleskin, or buckram.

There are two patterns, known as Curtain and Flush. The former has a loose edge,

comparable to the Yapp covers of a letterpress book designed to protect the edges from dust. Flush covers are the same with this peculiarity omitted, and are in more general use; we will, therefore, describe these in detail.

The material is cut out with just the same allowance all round, as if cutting out the cover of a full-bound book. Two strips of 16oz. board are cut exactly the same depth as covers of book and about two-fifths as wide. The closed book is laid in position on material, the pocket strip glued, the width of material allowed for turning over placed inside the cover flush with edge, and the material pulled over. Turn the book over carefully for the other side to be treated similarly.

The cover can now be taken off the book by folding the covers of book right back. To complete, snip the material for turning over at the mouth of pocket, turn over all round, side pockets up with marble paper to match end papers of book, turning well over into the inside.

#### INDEXING

For the preliminary operation of dividing the leaves into the necessary equal divisions a graduated scale is required. Two of these are usually kept, one operating from an 8vo to a Foolscap folio, another from a Foolscap to an Imperial. (See Appendix.)

This scale is inserted under the sheets to be indexed till the top and bottom converging lines meet the top and bottom of leaf, then over each dividing line of scale a leaf is snipped with the scissors.

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## Indexing

A zinc strip is inserted in each of these cuts, commencing at the top one, *under* the part which has to be removed and *over* the part which remains. A sharp knife and straight-edge cuts away the unnecessary paper.

In cutting indexes in books with made backs allowance must be made for the fact that the leaves are receding from the front. Therefore, if an equal space for each letter is to be provided for, the straightedge must be slanted away just so much as the quantity of leaves to be cut recede, commencing with the correct width at top.

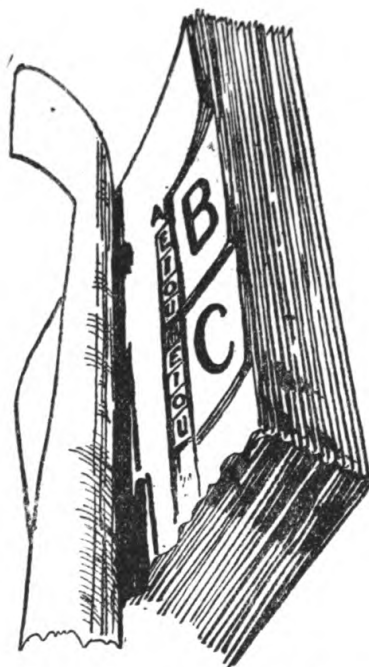


FIG. 19. A vowel Index.

In making up books which have to be cut right through the indexing should be done after marbling the fore-edge and before rounding. If an already bound book has to be cut



right through, four or five leaves should be cut only at a time, and after each cut the correct width should be measured off by dividers for the next cut. Too many leaves should not be cut at once or the variations in the widths will be seen on the edge of the book.

In cutting vowel indexes the process is the same for cutting the letters, with the addition of a further miniature index on the back edge of each letter for the vowels, the necessary number of leaves for each vowel being allowed for in cutting the alphabetical index.

All better-class books have their indexes backed with a strengthening material, either strong paper or linen. This is pasted at the back of each letter before cutting out, and must be so arranged that the angle of the cut is surrounded and protected on both sides, thus :—



FIG. 20.

Paper indexes can be bought in the sheet ready for cutting out.

Loose indexes of account books should be provided for in the binding by inserting during the making up either a dummy book or a piece of strawboard of the size and thickness of the index, placing it between the end papers, the edge in the back being bevelled. They are usually quarter bound turned in, full

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**Indexing** cloth or full basil. A 16oz. board makes a stiffish cover; for a semi-limp cover an 8oz. board is used.

Throw-out indexes are fixed on the end cover, face downward, so that when thrown out clear of the cover the index is exposed to view.

#### PAGING

**Paging** Paging is effected by two distinct types of machine—the pedestal, operated by means of a treadle, and the small hand numbering machine; both are useful for their particular purpose. As regards speed of operation, there is little to choose between them, but for superior work, such as account books, the treadle machine is unquestionably *facile princeps*, and no stationery office could be called complete without one.

A good type of hand numberer can often be conveniently utilised for the smaller and less particular work, such as flush books, in order to relieve the more expensive machine.

#### PERFORATING

**Perforating** Several types of perforating machines have been introduced within recent years, a notable advance having been made in the rotary principle, which has been applied to the ordinary round hole and the newer slit perforation. In introducing a rotary round hole machine great care should be exercised in the choice or it will be found to be a serious item of expense for upkeep.

A machine built on sound principles is the Tatum, for which the Lanston Monotype Cor-

poration are sole agents. Another useful Perforating machine run by this firm is the Tatum drilling machine, which we have found invaluable for drilling the holes in stabbed books and similar uses.

### EASING

The forwarder now finishes his part of Easing the work by seeing that the book opens easily, without undue strain. To do this he places it on the bench, the back to the right, raising the cover, and consequently throwing the back slightly away from the book. With the other hand he gently taps the back with the backing hammer all the way along. The book is turned over—that is, the position of head and tail reversed—and the other half of the curve of the back treated in the same way. To complete the “easing” the leaves should be turned over, a few at a time, from the beginning to the end and back again.

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## CHAPTER X

### Finisher's Plant—Use of Tools

#### FINISHING

Finishing

On a stationery book leaving the hands of the forwarder we may safely say that nine-tenths of the work is completed, although the remaining tenth is just as full of detail, and certainly requires more actual experience to qualify the workman.

An expert finisher can at once be recognised by the celerity and precision with which he works, especially in spacing out lettering and tooling them in straight. This reminds us of a well-worn tale known to the finishing world, which will also be our apology for dwelling on seemingly simple details. A certain master binder decided that his son on leaving college should learn the art of finishing in his workshops. With this object he was placed in the care of his best man.

The first process of washing up was explained. "That was very easy," quoth the youth. The back was measured off—so; he had seen that done before. The lettering space was glaired in; he knew all about that. The letters were heated, the gold laid on, etc.; he knew this also. "Then," said the craftsman, his patience exhausted, "you simply have to put the d—— things on straight."

HAND LETTERS  
**M M M M M M M M**  
 BRASS TYPE

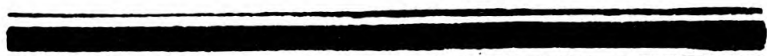
Finisher's  
 Plant

**M M M M M M M M**  
 ROLLS

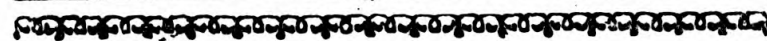
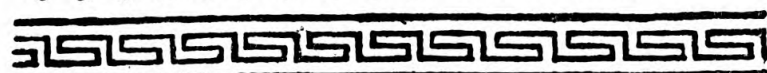
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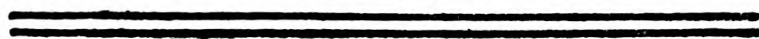


Leather



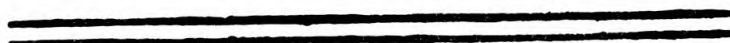
Paper

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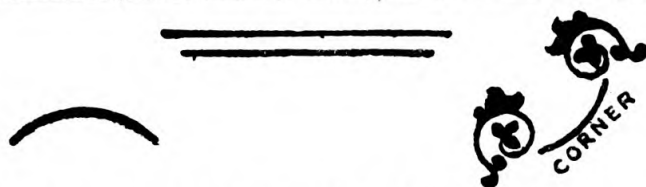


FIG. 21. An Outfit of Finishing Tools.

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Finisher's  
Plant

A finisher's plant consists principally of alphabets of brass letters, tools for helping the artistic effect, and a Bunsen stove on which to heat them.

Every finisher should have at his command several founts of brass letters of the smaller sizes for use in the pallet or blocking press, a series of letters fixed in handles for the larger sizes, fillets and pallets for producing straight lines, and rolls for the continuous fancy borders, and one or two ornaments. The specimens which we show should prove a sufficient outfit for any medium-size shop.

The designs of the fillets and rolls are engraved on the edge of a brass wheel set into a wooden handle, a pallet is a fixed length of engraved lines to be used for the shorter lines on the backs of books.

The use of  
Tools

The small brass letters are used for composing titles, etc., and are screwed up in the hand lettering pallet to be used as one tool.

In using a fillet or roll, the shoulder should be brought down till the handle of the tool rests against it, aiding the advance of the wheel by moving the body forward, the guiding being undertaken by the right hand, which grasps it while the position for starting is found by the left thumb nail, up to which the wheel is placed. A deep impression is gained by progressing over the leather with a backward and forward motion; this also imparts a polish to the blind tooling. In gold work nothing but a straightforward motion should be employed. Tools which are constantly being heated sooner or later work loose in their handles; see, therefore, that they are firmly

fixed before using. This will prevent them falling out at a critical moment, perhaps spoiling the leather and injuring the face of an expensive tool or roll.

The use of  
Tools

Different materials require the tools heated in varying degrees. Roughly, as a general rule, the tool should just be hot enough to fizz or hiss when applied to the tool cooler. This indispensable article is simply a small receptacle containing wet cotton wool or sponge to test the heat of the lettering instruments. Never allow this to become at all dry, as the result of lettering with a tool unduly hot is often disastrous. The actual face of the tool should never touch the cooler, but rather apply the side, not too far away from the face, as this again will prove misleading.

The faces of all tools should be cleaned and brightened up before use by gently rubbing them on a small pad of rough calf kept handy for the purpose; a bright impression cannot be obtained with a dirty tool.

Leathers require a medium for permanently fixing down the gold leaf. This substance is called glaire, and is made up by adding 2 parts of dry albumen, 2 parts of vinegar, with 5 parts of water. Soak over night, beat up well next morning, allow to settle, then strain off the clear part of the resulting liquid and bottle for use as required in smaller quantities.

When glairing in grained leathers such as Morocco a froth has a tendency to form; this can be dissipated by adding a spot or two of milk to an eggcup full of glaire. The raw white of an egg is another form of pure albumen, but the dried article which is sold per

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**The use of  
Tools** pound is more economical and handy for use.

To clean off superfluous gold leaf, rubber reduced to a tacky consistency is used. To make this pure raw Para rubber should be cut into small pieces and left in paraffin all night, working it all together again as one would a piece of putty. In the course of time this becomes loaded with the gold leaf, and can be sold for recovering the gold.



## CHAPTER XI

Finishing Basil Books—Lettering—Rough Calf—Forils and  
Vellums—Moroccos—Pastegrains—Banded Work—  
Imitation Leather Cloths—Cloths—Blocking

### FINISHING BASIL BOOKS

In order to illustrate the necessary details of finishing we propose to adopt a basil book as the general example.

The finisher's first preparation is to apply a little thin paste all over the leather with a damp sponge. This not only washes off any dirty marks, but provides the ground for subsequent glairing and varnishing by filling up the pores in the leather. As soon as this is quite dry the inside squares are bar rolled, and the other blind tooling proceeded with, that is the fillet up the side and across corners.

The back is next measured off, the finisher taking care that the book is right way up. The first two lines are marked off about half-an-inch (according to size of book) from head and tail. The tail is improved by another line an inch further away, forming the name panel or tail space, used by some manufacturers for their imprint, series or quire number.

The five equal spaces are now marked off in the remaining space. A beginner should make the first impression with a piece of thin

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cord for guidance, but an experienced man will dispense with this. The book should now be screwed up in the finishing press not too low down, and the pallet, which may be either a double or treble, heated to the fizz, or, if anything, slightly warmer, is now worked across the back with a jiggling motion. In order to put the lines on straight beginners should stand well over and behind the tool, neither to one side or the other, and should run the pallet straight over, learning gradually to use the more satisfactory jiggling motion.

To finish the extremities of the lines the book is taken out of the press, placed on its side, and the terminals taken well into the joint.

#### LETTERING

With a little experience one is able to decide without much trouble the letter most suitable for a particular line. A word should never be broken, and the line should be kept as far as possible in the centre, so that it may be all seen when standing on the shelf. The second space from the top is always occupied by the lettering, and if further lettering is necessary the fourth space down is utilised.

The lettering is kept rather more to the top of the panel than the bottom. Similarly, if there is lettering on the side it does not occupy the exact centre, but a position about half-an-inch higher. Proceed by giving the panel or required lettering space an even coat of glaire, using a small camel hair brush for small lettering spaces and a piece of sponge for the panels. Too much glaire should not be applied, as it would eventually show through the letter-

ing after varnishing. While this is dry- Lettering  
 ing the lettering tools can be got out and  
 arranged round the stove in their respective  
 order. The gold leaf also can be laid out on  
 the pad. It is said in the binding shops that  
 a finisher has not fully qualified unless he can  
 lay his gold leaf out in half a gale of wind.  
 Only those who have attempted the feat really  
 know the difficulties of getting a leaf out suc-  
 cessfully under ordinary good conditions, yet  
 we know men who can perform the operation  
 in front of a breezy, open window.

Each man can show you a pet way of dealing  
 with gold leaf, but the one we adopt is to care-  
 fully open the book on the pad, fan the leaf  
 of gold with the gold leaf knife till it has half  
 folded on itself, then with the faintest sus-  
 picion of a breath blow it back on to the knife,  
 lift it on to pad, withdraw the knife, and flatten  
 out by again gently blowing in as near the  
 centre as possible. The whole operation  
 depends on the delicacy and position of  
 these breaths which are applied. The pad  
 should have a little rouge or brickdust rubbed  
 into it, in order to wipe the gold knife on if  
 it should become greasy by contact with the  
 fingers. After cutting the gold to the  
 required size the glaire by now will be  
 just dry; the virtue is lost if it has remained  
 long enough to become bone-dry. On the  
 other hand, during the winter months the  
 danger is in laying the gold on when appar-  
 ently dry, yet which proves to be adhesive  
 enough to retain the gold which should be  
 cleaned off after lettering. To avoid this the

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glaired space should be rubbed with a smooth cloth.

In order to temporarily hold the gold leaf in position the panel or other position is rubbed over slightly with a small pad of cotton wool moistened with vaseline. Olive oil is sometimes used, but vaseline is less liable to stain delicate leathers.

With another pad of cotton wool, generally an object of the finisher's affection, he draws over his hair and collects just sufficient natural grease to pick the gold up and lay it down in position and not so much as to prevent it being released again from the wool. The leaf must be pressed down tightly all over without any side to side movement.

To find the position for lettering first blind it all in on a piece of paper, mark on the book with the dividers the position the top and bottom of the letters will occupy, then the middle of the line of lettering. If it is the back draw a thin silk cord across the gold to make the guiding lines, find the centre of the lettering on the paper, measure from this the distance to the starting point, and mark this as the starting point on the book. This is the method when lettering with the pallet. In lettering with single letters the centre of the panel is marked, the letters counted, and half the number placed each side of the centre. If it is the side being lettered the guiding lines are made with the straight edge and point of the dividers.

If the back is being lettered the book will have been screwed in the press before marking up, with the head inclined forward. Test the

heat of the letters, which should be rather Lettering hotter than for the blind tooling; polish the face quickly on the small calf pad, and, guiding the position with the left thumb nail, apply the letter with plenty of force, using a side to side motion to ensure all parts of the letters being thoroughly recorded. To remove the superfluous gold go over lightly with the rubber. If it is found that any letters want repairing glaire these in again with the camel hair brush, apply more gold, and re-letter, being careful not to double the outline.

The book is now finished off with a coat of varnish over the leather. Bookbinders' varnish can either be bought ready prepared or can be made by dissolving 4oz. of shellac in half a pint of methylated spirits. A little is taken up on a tuft of wool, the corners first gone carefully over, remembering the inside squares, then working over the other parts in good long strokes always towards you, taking care that the lettering does not retain any undue quantity.

#### FINISHING ROUGH CALF

Rough calf or its substitutes require the surface well cleaned before tooling. The skin should first be rubbed over with bath brick or powdered pumice, the latter for preference; then go over the powdered surface with a piece of rough calf. After well rubbing remove all superfluous dust with a hard brush. If the leather is very dirty use a fine grade glass paper and eventually a pad of rough calf.

Formerly the black finishing was performed by the rolls or fillets being brought to such a

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Rough Calf

heat that the leather was actually discoloured by burning. Instead of this a colouring matter made by boiling iron filings with vinegar is used, or, simpler still, ruler's black ink powder in strong solution. A sponge fixed to the end of a stick is dipped into this and held in position on the top of the wheel, while this tooling is in progress.



FIG. 22.

The black Fillet.

Nothing looks so neat as a narrow broad and narrow tool for all rough calf work instead of the fancy rolls which our fathers used.

Corners of full-bound books should be neatly mitred by laying a piece of paper at the correct angle and held tight by the straight edge until the wheel works right over it.

The back should be finished with the same roll. The lettering pieces, which are used instead of lettering direct on to the leather, are cut from a special Lettering Roan. This

is a straight-grained leather of a good red colour made for this particular purpose. The grain should always be cut to run across the piece. The size of the lettering piece is first gained by measuring up and cutting out a piece of clean paper. The leather piece is then cut about an eighth of an inch larger than this all round.

For convenience of handling, these small pieces of leather should be temporarily fixed to a foundation. This is supplied by a piece of strawboard being rubbed over with a piece of dry soap; paste this over lightly and lay the pieces down.

The soap will help to prevent the paste penetrating the board, and therefore assist in lifting the piece when ready. Much time can be saved, if there are many pieces to prepare, by putting them down together on one board, but it should be remembered that in summer months the glaire dries quickly, so that too many should not be undertaken at once for this reason. The preparation is the same as for basil, paste washed and glaired. A guiding line for the gilt fillet (usually a broad and two narrows, sometimes supplemented by a small fancy roll) marked out with straightedge and folder. Measure up and proceed with the lettering as before. Trim to correct size, lift off the board, and pare the edges.

#### FINISHING FORILS AND VELLUMS

Forils and vellums should be washed up with plain water. If the book is at all discoloured a little lemon juice might be used with advantage. The use of paste water

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should be avoided; it is not only unnecessary, but adds a slipperiness to an already hard surface, making the handling of tools very uncertain.

As these skins are made from the inner layer of the hide, the oleaginous matter which has been retained is available for the lettering. Glairing, therefore, is not always necessary. For this reason, then, it is more expeditious to dispense with the blinding in and glairing, and proceed to lay the gold straight down after slightly greasing. The tools should be used on the cool side with the fizz just taken off. If any repairs are necessary the letters should be glaired in before applying new gold.

This method requires rather more practice to justify it on economical grounds, but the time saved fully compensates for the little extra gold which is likely to have to be used.

If pieces are applied, as is generally necessary on green vellum, the surface of the skin where the piece is to lie is scarred or roughed with the edge of a knife to help adhesion.

White skins are as often lettered in black as in gold, as, indeed, green skins sometimes are. By far the most satisfactory method to accomplish this, and the one to also use for buff basil or leather bags, etc., requiring initials, is to damp the surface of the skin and letter with a warm tool, the face of which has been held in the flame of a candle to collect the carbon. The moist leather will retain the carbon from the tool, and to fix it securely each letter is pencilled in with bookbinders' varnish. For lettering in black, canvas, loose covers of account books, and other materials of a similar



nature, blind in first, pencil in with thick paste water, then with glaire, and letter as above. Some men also use Aspinall's enamel for this purpose.

Finishing  
Forils and  
Vellums

The decoration of these covers consists of patterns ruled up with a pen which makes a line of suitable thickness, generally a neat Oxford or mitred border. Ordinary writing ink should be used; on no account draw the supply of ink from the rulers' store, these aniline inks coming into contact with the slightest amount of damp will smear.

#### FINISHING MOROCCOS

Moroccos and other similar rough-grained leathers do not require to be pastewashed. They are first spaced out for lettering and blind tooled. In marking off a silk thread drawn across some chalk and transferred to the book will be found the most useful guide. After having blind tooled, washing up is performed with vinegar, which does not impart an unnatural glossy surface as varnish would.

Finishing  
Moroccos

Before the vinegar is hardly dry the book is brushed with a small hard clothes brush. At first the brushing produces a dull appearance, but eventually, after a vigorous effort, a soft polish appears. To produce blind lines on hard leathers of this description something more than mere rolling up with fillets is necessary. A tool, therefore, called the creaser is used which has a fixed instead of a revolving surface. To transform a fillet into a creaser the wheel is wedged tight with a piece of wood. The straightedge is laid in position on the

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cover, which, if of a delicate colour, should have a piece of clean paper intervening, and the creaser, heated to fizzling point, is worked along it with an up and down motion and with as much energy as possible, imparting a well-defined and burnished appearance to the lines.

The common way of lettering Morocco is by blinding in and pencilling with glaire in the usual way.

Another and quicker method for finishing Morocco, but to be attempted only by experienced men, is to wash up first with vinegar, finish any blind work, then *lightly* sponge *all over* with glaire, distributing the glaire evenly by dabbing it with the cushion of the thumb. As soon as the glaire has dried, and without any further preparation, the gold can be laid in position and the lettering proceeded with. If any difficulty is experienced with the glaire add the spot of milk as advised in the beginning of the chapter. This method can be adopted for pigskin also, but an experiment should be made before using it on substitutes for Morocco such as Hard-grained Roan, Persian Morocco, etc.

Any marks, scratches, or other similar injuries received during the course of binding can be repaired by applying a sponge dipped in boiling water to the affected spot and beating immediately after with a hard bristle brush, taking care not to hit the book with the side of the brush. This, of course, should be done before washing up.

A neat finish can be given to the back of a Morocco book by suggesting the bands of a

letterpress book by means of blind pallet lines, that is, instead of dividing off the five spaces with a two or three line, imagine a band is there of about a quarter of an inch in width, and use a thin two line each side of it, finishing the head and tail with a three line.

The side finish can be made up as suggested in the full pigskin specimen in frontispiece.

#### FINISHING PASTEGRAIN SKIVER

Pastegrains should be washed up with rather thick paste water. In the summer months, owing to the heat drying the glue with which the leather has been prepared, the leather becomes somewhat brittle, and the glaire, unless laid on freely, is liable to lift with the gold when lettering. This symptom can be detected by the glaire drying with a whitish appearance. If this happens it should be washed off, reglaired and lettered *immediately* it is dry and then varnished as usual.

#### FINISHING BANDED BOOKS

There is little explanation required for banded work, the ground having been already covered when dealing with rough calf or vellum.

The binder, before lacing, has washed up the bands, and the position of the blind tooling can be ascertained from the frontispiece. To save mitreing the blind lines often a large full point is dropped at the corners.

As already stated, the narrow broad and narrow fillet for rough calf is preferable to the fancy flower roll.

Finishing  
Morocco

Finishing  
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Skiver

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### FINISHING IMITATION LEATHER CLOTHS

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Imitation  
Leather  
Cloths

Pluviusin, and cloths of a similar nature, should be rubbed over with methylated spirits on cotton wool. Before this has evaporated lay the glaire on in long, even strokes until regular in appearance all over, guarding against any streaky effect. As soon as this is dry enough not to be smeared by rubbing with a cloth, apply the gold and letter with the tool hardly on the fizz. The impression should be made quickly, the tool remaining on the material no longer than absolutely necessary.

### FINISHING CLOTH

Finishing  
Cloth

No washing up is required, and the glaire should be somewhat diluted with water, with the addition of milk as advised for Morocco, especially when working heavy grained patterns. In lettering these heavy grained cloths beginners should use a double layer of gold, learning eventually to work with only one without breaking it.

Water stains can be removed by a coating of glaire or paste water brushed up when dry. Buckram should be washed over with a coating of paste water but not rubbed up. If any lettering, glaire all over and varnish.

### BLOCKING

Blocking

Blocking is an expeditious method of lettering when a quantity of any design is required, rarely as satisfactory as hand lettering; nevertheless, it is a necessary adjunct to all stationery binderies. To the artistic letterpress man the name of blocking is anathema, conjuring

up visions of piles of cheap publishers' cases Blocking turned out in cheapest cloth, their appearance aided with the liberal use of imitation gold *ad nauseam*.

It is hardly necessary to state that except on work of a special nature the use of imitation gold leaf should be studiously avoided. There is no satisfactory substitute for the real article, be it on picture frames or books. Its superior adaptiveness to all surfaces renders it pre-eminent for working purposes. Where failure attends the use of metal success will often result on using real gold, while the ultimate appearance of the former on account of its transitory lustre cannot be compared to the brilliant permanence of the latter. So wide, in fact, is the working difference between the two qualities that it is practically impossible to work metal by hand. Aluminium leaf, however, because it does not tarnish, has now superseded the real silver leaf for general use.

*Cloth*.—The differences of the manufacture of two brands of cloth often necessitates some modification of treatment at the hands of the blocker. Some cloths will be found to contain even sufficient medium to dispense with the size which is generally used. Very thin best Scotch glue, just sufficient to colour the water, is generally used for this purpose, but we consider a superior medium is Young's patent size; it is cleaner as well as being more effective under trying conditions. One part of size to about 4 parts of water.

This should be sponged over the cloth thinly and left to thoroughly dry before blocking. Metal requires a stronger size and a warmer

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Blocking

press, aluminium metal, on account of its thickness, even a stronger size and warmer press still.

*Leather-cloths.*—Much trouble is experienced at times in blocking the various varieties of these cloths, and experiment alone will teach the correct thing to do. Blocking powder is by far the most satisfactory all-round medium. Those cloths which appear to be of a greasy nature are improved by a coating of sal-ammoniac, which must not be allowed to get bone-dry.

*Leather.*—For small quantities use the powder, for larger quantities the size. Much depends on the nature of the impression given. Short, sharp impressions should be applied when the press is hot. Longer impressions if the press is cool, or if the lettering is very heavy. A long impression with a hot press causes the gold to adhere where it is not wanted and is called "sweating in."

*Silks and Plushes.*—Materials such as plush should first have the "pile" smashed flat with a blank impression, then sprinkle over with blocking powder through a gauze sieve. Block with two layers of gold for the rougher materials and flick surplus gold and dust off with soft cloth.

*Card and Papers.*—The numerous qualities of surface cards and papers will be found to require experimental treatment, but it will be found in obstinate cases that if only a few are sized up at once and then dusted lightly over with French chalk, or sometimes brown powder, a satisfactory result will be obtained

where the great heat and strong size has been Blocking  
the cause of the gold "sweating in."

*Blocking in white and colours.*—Owing to the introduction of the coloured foils, the process has become so simple that it is work which can be safely left to the apprentices. The various colours are attached to a paper foundation which is cut to the required size, placed faced downwards on the material, and blocked with a warm press. No medium is required as the foil already has a prepared surface for this purpose.

If by chance any difficulty should be encountered lay 2 or 3 dozen pieces of foil of the required size between a quire of damp blotting for a few minutes, just sufficiently to allow the damp to strike through.

*Hints on use of Blocking Machine.*—Keep the bed firm and well adjusted.

To procure even pressure mark the centre of the bed in the corresponding position on plate and see that the forme always falls exactly over this.

The best material for gauges and working bed is millboard.

Uneven stereos, etc., can be made ready by overlaying the millboard.

Use no wood furniture or quoins in preparation of the forme.

To secure bright impressions keep the face of the block or type polished. Continual blocking on some materials picks preparation off the surface, especially when powder is used.

Small stereos are very easily smashed with undue pressure.

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## TREATMENT OF EDGES

### CHAPTER XII

#### Marbling—Sprinkling

##### MARBLING

**Marbling**      The art of Marbling seems to be of Turkish origin, and dates back to the early part of the seventeenth century, the process being first described by a German in the year 1679. For a long time, and, in fact, till comparatively recently, so little was it understood that binders sent this part of their work to men who made it their sole profession.

Marble papers were not intended originally for the use of the covers of books. Possibly what happened was that having been recognised as an artistic material not readily showing signs of usage it was first of all adopted for this purpose, and afterwards for the same reason was extended to the covering of the edges.

Of late years, despite the fact that marble edges have given place to gilt or uncut edges in letterpress work, the process has become much simplified.

In our apprenticeship days the colours had to be laboriously triturated, and the old gum bath was three or four days in preparation. To-day our colours are prepared almost ready



for sprinkling, and the more expeditious Marbling Caragheen Moss has taken the place of the gum dragon.

Irish, Iceland, or Caragheen moss, known to botanists as *Chondrus Crispus*, is really a species of seaweed or algæ which grows on rocks that are periodically uncovered by the sea, and can only be collected at very low tides. The plant contains about 60 per cent. of an important gelatinising principle known as Caragheen or Carragheen, and amongst other uses is employed for leather dressing as well as for laying the marbling colours on for transferring. The nature of the weed has long been known to chemists, and has, indeed, been used for marbling for at least 15 years, but the advance in its use was hindered until recently by the fact that decomposition so soon set in that a fresh bath was necessary after every 24 hours, and also the tendency for a skin to form quickly on the size, so making the bath useless unless used at once. These disadvantages have now been overcome by the introduction of a preservative composed of sodium sulphate, glycerine, and water, which will keep it fit for use for about three weeks, although it is stated that it can be made to keep for as long as eight weeks, but this we have not found possible, while the tendency to gelatinise has also been overcome by the method of preparation.

For Stationery books the marble papers are always bought ready for use; the ordinary patterns—Stormont, Shell, Nonpareil (large and small), Gloster, and Antique—being procurable in several qualities. The patterns em-

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ployed for the edges of Stationery books are usually Dutch, large or small Nonpareil.

The properties of good marbling can be defined as follows :—The colours should be clear, bright, and solid; not speckled, dirty, wanting in body, and running into each other. The colours should be in harmony or good contrast.

The pattern should be decisive and distinct, and the whites, if any, should be pure. The size and style of the pattern should be in conformity with the size of the book.

*The Caragheen Bath.*—It is advisable to make up a strong bath first and reduce with water after if necessary. We find the following proportion suitable for a thick ground : 5½oz. of moss to 5 quarts of water (preferably rain water) and 1¾ pints of preservative stirred until boiling point, taken off the fire at once, adding gradually another 2½ quarts of cold water, the colder the better, stirring well in, leave till cool, and strain through porous linen bag.

It is the addition of the cold water after boiling which prevents the old complaint of gelatinisation. The quality of the moss may vary so that it is always necessary to test the consistency. For Dutch marble the bath must be stronger than for the others. The marbling trough should be placed in a room which varies as little in temperature as possible and is free from vibration. It should always be covered when not in use. The colours are now supplied ready in solution; there is no economy in spending the time necessary to grind colours. Those necessary for Stationery bind-

ing are Indigo Blue, Orange, Green, Black, Marbling Carmine Lake.

Keep a small cup, stick, and brush for each colour, and the ox gall in a bottle provided with a cork and quill through which to sprinkle a drop at a time.

Ox gall is used to make the colours spread. Spirits of soap spreads out in round drops, unlike gall, which spreads out unevenly, and is useful for full vein marbles. A minute quantity of petroleum added to the colour will improve shell marbling. Methylated spirits or gin contract them if too much gall has been added. It is preferable, however, to add further colour as the use of these spirits is likely to leave pits in the colour. If the colours do not spread sufficiently the size bath is too thick or else the colour requires a little more gall. If the colours sink the size is too thick, or the colours have not sufficient gall in them, or if in combing the colours the size follows the comb it is again too thick. Before marbling a book the edges should always be wiped over with alum water, prepared by pouring a quart of boiling water on to half a pint of powdered alum, bottled for use and used with a *clean* sponge.

Always skim the surface of the bath off *immediately* before using, whether the surface is clear of colour or not, lay the colours quickly on without hesitation, take up the book which has been tied up firmly between boards to prevent the colour getting between the edges, and dip it without altering the position when once the size is touched, *not* flat but from one end first, gradually and firmly dropping it all along.

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Marbling

Lift off immediately and rinse under a tap of water.

As the principal edges in Stationery work are confined to Dutch and Nonpareil we propose to give the details for forming these patterns.

The colours for a Dutch edge are laid on the bath, which, as before stated, must be thicker than for the other patterns, with a blunt pointed stick in streaks across the width of the bath.

After well stirring the colours in the cup, lay down quickly in the following order :—

4	5	3	5	2	5	1	5	2	5	3	5	4
---	---	---	---	---	---	---	---	---	---	---	---	---

No. 1, Orange; 2, Blue; 3, Green; 4, Black;  
5, Carmine.

A spot or two of gall extra is added to the orange.


The natural resistance offered by the size will keep the colours from running together. Draw the large pattern comb right up the bath, then run a stylus up and down the colours in good bold curves, omitting the reds all the time. If the colours and size are mixed properly one colour should not be drawn into the other. Now apply the edge of book quickly.


The disposition of the colours can, of course, be altered to taste, another orange introduced or left out altogether. The size of the comb, too, should be relative to that of the book.

*Nonpareil* edges are usually sprinkled with brushes on to a thinner size, but as it is convenient in most jobbing offices to use one bath



without alteration the following method can be adopted and will give an entirely satisfactory result :—With the same colours and same bath the colours should be laid on lengthways of the bath instead of across it as for Dutch. Draw the stylus across the streaks of colour in close

strokes,  then run the fine comb from

end to end. A variation can be imparted by introducing one or two spiral figures with a fine point. 

#### SPRINKLED EDGES

A cheaper and more expeditious method of treating the edges, and the one used on flush work and letter books, is by “sprinkling.” Ordinary red ochre, procurable from any colour merchant (or other colours as preferred), is mixed and ground with paste, diluted with water, adding a little ruler’s red aniline ink and a spot or two of oil to fix the colour. The sprinkling brush should be well freed from superfluous colour and then hit on a heavy stick held over the edge.

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## CHAPTER XIII

### Leather: Its Manufacture—Dressing—Staining and Dyeing—Principal Leathers used in Bookbinding

#### LEATHER

#### Leather

The manufacture of leather, like many other manufacturing processes, has made rapid strides within the last 50 years, and coincident with the demand for something cheap the advances have not all been advantageous to the ultimate consumer. The output may be more rapid, but, alas, in many cases, so is the decay. The colours may be brighter, but their beauty fleeting. The grain may be there, but how often a hollow deception? It therefore behoves binders to acquire something more than a superficial knowledge of a commodity which is of vital importance to the exigencies of their business, especially in view of the fact that these things may not be what they seem, and only to be recognised by men with technical knowledge of the subject.

Basils are made to represent calf, calf is masqueraded in the guise of morocco, skivers simulate everything, and cloth simulates leather.

Much attention has been drawn to the subject of the deterioration and decay of leather by a committee appointed by the Royal Society of Arts, whose findings can be ob-

tained in book form and should be read by Leather all who wish to pursue this subject.

In order to draw attention to the temptations Dressing which are offered to the dressers of leather that they may be able to offer their clients something smart and with a superior looking finish, we propose to give a short account of the process of leather dressing, extracted principally from M. C. Lamb's exhaustive treatise on "Leather Dressing, including Dyeing, Staining, and Finishing."

The art of leather manufacture is, perhaps, as ancient as the advent of the human race; certainly the dressing of it is of the greatest antiquity, reference being made to it in the Old Testament. Even at the present day certain operations in use are the same as carried on 100 years ago.

The skins which arrive in both the raw and also in the tanned state from all parts of the world in bales are subjected to a close and expert scrutiny and sorted out according to the purpose for which they are to be used. Skins which are free from stains, etc., are used for the production of light coloured leathers, those showing imperfections for the darker colours. The condition in which some of these skins arrive in the leather dressers' hands often necessitates a bleaching or whitening process by various chemicals, very often by the use of acid. White and very pale-tinted leathers are usually bleached by the lead process; leather so treated has the serious disadvantage of darkening by exposure to the air, especially the air of towns.

In order to obtain an even thickness

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Dressing

throughout all skins have either to be split or shaved by hand or machine. This is a very important operation, for if indifferently performed, on the skin being glazed the colour will be rendered darker on the thicker parts than on the thinner.

Tanning is effected by the astringent tannins of the bark, wood, fruit, and leaves of various trees. Leathers which are Sumach tanned produce a material which dyes and stains very readily. Different tannages, however, affect dyes in different ways.

In the dressing of bookbinding leathers, to complete the removal of the deposition left by some tanning materials, called the "bloom," which take the form of an incrustation, the skins have to go through the process of *Scouring*, both sides of the leather being brushed and sleeked to remove this.

If bright shades are desired it is often necessary to "*Sour*" the goods after scouring to brighten the colour of the tannage. This is performed by a  $\frac{1}{2}$  to 1 per cent. solution of sulphuric acid, a process which is very injurious to the fibre of the leather. Goods once immersed in even a very dilute solution of the acid will retain a considerable amount of it after prolonged washing in water.

The importance of leathers being not "soured" cannot, therefore, be too strongly advocated when they are intended for book-binding purposes.

#### STAINING AND DYEING

Staining  
and Dyeing

There are two processes of colouring leather



still in use, one known as Staining, the other as Dyeing. Staining  
and Dyeing

*Staining* is performed by means of a brush, which applies the colour on one side of the skin only; it is a hand operation, and used for the larger-sized hides which machines find difficult to manipulate and those skins in which the flesh side is required to be kept clean. It is an expert operation, as two or three coats have to be applied evenly all over.

*Dyeing*.—The oldest and most simple method of dyeing is by dipping the goods in and out of a shallow wooden box or trough containing the dye solution until the required shade is obtained. Other methods are Tray dyeing (another form of dipping), Paddle dyeing (usually employed for skivers, basils, Persians, &c.), and Drum dyeing, in which the skins are placed in the dye solution contained in a revolving drum and dipped and lifted alternately.

*Dyes*.—Leathers are usually dyed with coal tar colours. Of the four available groups of coal tar colours the Basic Dyestuffs and Acid Dyestuffs are the most important to the leather manufacturer.

*Basic colours* are very fugitive to light, with one or two exceptions, and can be often recognised by their slightly bronzy appearance.

*Acid colours*.—The term acid is simply indicative of the method of mixing the colour which requires an acid to the dye bath. Of all the acids Sulphuric is by far the best, although in whatever quantity it is used it is always injurious to the skin, to counteract the injurious action on the leather fibre Sodium

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Staining  
and Dyeing

Bisulphate is sometimes used; the most satisfactory acid, however, is Formic acid; this is quite often non-injurious. Acid colours give a more even and level result and are much faster to light than the basic colours.

Purples and blacks are often produced from logwood, which is practically the only natural dyestuff not entirely superseded by artificial coal tar dyestuffs. The wood comes from British Honduras and Jamaica, and the dye is extracted from the wood by boiling, 1cwt. of logwood chips making about 40 gallons of dye liquor suitable for use in blacking. Other natural dyestuffs are Fustic, Brazil wood, Cutch, Indigo, and Cochineal; the latter is obtained from a dried insect from Mexico, the scarlet colour extracted being more brilliant than any coal tar colour and faster to light, but these natural dyestuffs require the addition of a metallic mordant which is not beneficial to the leather.

#### PRINCIPAL LEATHERS USED IN BOOK-BINDING

Principal  
Leathers  
used in  
Bookbinding

*Basils* are heavy unsplit sheep skins, tanned with any other material of vegetable origin than sumach (see *Roans*), usually chestnut wood, oak wood, oak bark or larch bark; they may be procured either plain or diced, and in various colours. A strong and useful leather.

*Roans* are made from medium-weight sheep skins, sumach tanned, principally supplied in straight grain and hard grain finish to imitate Morocco.

*Skivers* are made from the grain side of a split sheep skin, tanned with sumach. They

are made to imitate other leathers by simulated grains.

Principal  
Leathers  
used in  
Bookbinding

*Pastegrains*, sometimes known as "French Morocco," are sumach-tanned skivers, stiffened in the finishing by pasting over the flesh side with a solution of glue. This helps the production of the artificial grain which is added. The grain when small is termed "pastegrain," and when running in one direction is termed "long-grain."

*Persians* are made from East India sheep skins. They are prepared to imitate smooth calf and Morocco.

*Smooth Calf*, that is calf skin finished plain, is usually sumach tanned, and notwithstanding its comparative thinness, excels in strength and flexibility. May be procured in many colours. Tree calf, marble calf, and sponged calf are made by applying different colours to affect the respective patterns. A beautiful leather is now made by buffing off the grain side of the leather, and is called velvet calf.

Paper

*Rough Calf* is finished on the flesh or rough side of the skin, and is eminently suitable for account books. The more handling a book receives bound in this, the better the leather wears.

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*Rough Goat* is usually made from East Indian tanned goats. In appearance it is somewhat similar to rough calf, but very rarely can the same fine nap surface be produced; neither is it so durable, and discolours more readily.

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*Morocco*.—True Moroccos are always goat skins, and the various qualities are from well-defined regions. For the hard grain the Swiss

skins, amongst others, are especially suitable.

A larger grain, and more expensive skin, called Levant, is prepared from "Cape Goats." The beautifully-finished skins known as *straight-grained* and *cross-grained* Moroccos have been finished by raising the grain by "boarding" the leather in one direction (in the case of straight grains) and in two opposite (in the case of cross grains), in the finishing processes of manufacture.

The Red Niger goat and sheep skins are produced from a breed of Egyptian goats, tanned and prepared by Nigerian natives; they have a peculiar close and tight feel.

*Russia Leather*, which is more an article of luxury than utility, is made from cow or steer hides, and large calf skins, tanned in birch bark and dyed and finished in Russia. A similar leather is made in this country from bark-tanned calf skins, which are scented in the finishing processes with birch-tan oil to give the well-known Russia-leather odour. Hog or pigskin is now displacing Russia, being a much tougher and durable leather, though light and porous.

*Seal Skin*, when properly tanned, is considered to produce a leather of greater strength in proportion to its weight than any other leather. The grain is somewhat similar to a Cape levant morocco, and feels soft to the touch.

*Vellum* is prepared from the skins of calves.

*Foril* is split sheep skin. The appearance of these skins is due to the process of severe stretching; they are then chalked and well pumiced and allowed to dry stretched.

# PAPER

## CHAPTER XIV

Hand made—Machine made—Watermarks

### HAND-MADE PAPER

There is perhaps nothing more interesting in matters relating to paper than the manufacture of "Hand-mades," firstly on account of the romance woven round the industry; secondly, that the process is fundamentally the same as centuries ago; and again, that it differs entirely from the manufacture of all other varieties.

If papers can appeal to the æsthetic sense, surely some of these productions over which the makers devote so much scientific care should touch a responsive note in all who can recognise the beautiful and perfect. Little does the consumer of this quality of paper know of the obstacles and technical details which the manufacturer has to be prepared to face, contingencies over which there is little control; variations of temperature or change in the effects of the water, &c., baffling at times all attempts to produce the sheet of which the maker is so justly proud.

By the practical tradesman the quality of a paper is recognised by a standard known as the "feel" or "handle," which comprehends

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Hand-made  
Paper

such points as the nature of the material of which it is made, its sphere of usefulness, surface, finish, weight, strength, and other details which are not capable of definition, but which are so real that men with intimate knowledge of the manufacture of the goods themselves resort to it as an ultimate test of quality. In order to supplement our information on the manufacture of hand-made papers we recently visited the Afonwen Mills, at Caerwys, Flintshire, which produce those papers bearing the well-known watermark of J. R. Jones. In the various processes examined one could not help being impressed by the minute care and scrupulosity which each individual sheet was subjected to, and it is not too much to say that it is a source of constant personal anxiety to the manufacturer.

The perusal of the broad points of manufacture will force this fact home to every reader. The first consideration of quality in any paper is the nature of the fibre of which it is composed; those most usually employed for writing papers are linen, cotton, chemical wood, and esparto, arranged in order of value as paper-making ingredients. Each of these fibres (except cotton) is the result of a chemical process which isolates them from the other vegetable substances which go to make up the plant.

Treatment  
of Rags

The material used for hand-mades is a judicious mixture of linen and cotton in the form of old and new rags, producing a paper opaque, strong, flexible, and with a pleasing writing surface.

New linen or cotton used by themselves are

not satisfactory, cotton producing a harsh, unpleasant "feel," and linen a bulky and spongy article. The best paper used by water-colour artists, however, is made from pure linen.

Treatment  
of Rags

On delivery of the rags to the works they undergo their first dusting by machine, and are then sorted by females into their respective qualities, old collars and fronts being put aside for special treatment. These are now put into a tearing machine, which tears them into small pieces, and in order to guard against the introduction of specks of impure material, consequently spoiling the ultimate clear appearance of the sheet, they are again subjected to another thorough dusting. Again they are sorted for the discovery of buttons, etc., the larger pieces which have escaped being cut being torn small. These are now conveyed to boilers, each of which holds about one ton of rags, where they are boiled 3 or 4 hours in good soft water at a pressure of 50lb.

Water now begins to play an important part in the production; if the maker possesses any ambition for his paper to be accepted as high grade, the chemical nature of the water he is using becomes his first care. Despite the fact that the natural water supply at Afonwen Mills comes down in pure crystal mountain streams there is an elaborate system of further softening it before use.

For the third time the rags are sorted, the boiling having made the discovery of silks, flannels, etc., more easy. They are now washed in a drum washing machine, and the fibre so drawn out until the rag is reduced to

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the state termed "half stuff." This is afterwards treated in a "beating" engine until the proper fineness of fibre is acquired, the disintegration of the fibres being effected by a roller of blunt brass knives passing over a board on which are a series of brass teeth; this arrangement is designed not to cut but to tear the fibres.

The process can only be conducted by men of much experience, the varieties of hand-made paper alone requiring anything from 6 to 12 hours beating, the thinner papers requiring most. The strength and general quality of the sheet greatly depends on the nature of the beating, the object being to reduce the "half stuff" into long, clean, flexible pulp, retaining its original strength as far as possible. Despite the fact that so much scrupulous care has been exercised in the three sortings out and two dustings, it is found necessary to keep a woman at the beater constantly on the watch for any object which has escaped previous detection. At this stage the older rags are put into a weak bleach, which is pressed out under hydraulic pressure and then washed; the newer rags, however, do not require bleaching.

The azure papers are coloured in the beater by the addition of smalts blue. The pulp is now run into a stuff chest which keeps it constantly revolving round while a certain amount is being allowed to flow down a pipe and "lifted" into the "knotter," a contrivance for preventing all but the properly beaten fibre from entering the maker's vat, and catches knots and other matter likely to injure the sheets. It is at this juncture that the weight of



the sheet is first prepared by the pulp being mixed with just that quantity of water which permits the vatman to collect on his mould by a dexterous dip just sufficient to make the particular weight of paper required. Two men—the vatman and the “coucher”—and two moulds are necessary for each vat, the vatman actually making the sheet, which he slides on the mould, retaining the deckle, to the coucher, who slides back the other mould to his colleague. While the sheet is being turned out on to the felt another sheet is being moulded. By this method 7 or 8 mouldings can be turned out per minute, in the case of the smaller sheets 2 or more sheets being moulded at once.

It is not exaggerating to state that to acquire this single operation of dipping and felting the fibres properly there are few others which are so difficult and which require such long training to attain any degree of efficiency in; often after seven years' apprenticeship the process has not been mastered.

Not only has the consistency of the stuff for each weight of paper to be judged, the proper amount to be lifted out on to the mould, the fibres felted by a quick double movement into the position which makes hand-mades pre-eminently the strongest of writing papers, but what is just as difficult is to produce a perfectly even sheet all over. The mould, too, has to be always made slightly larger than the actual sheet required to allow for a shrinkage which takes place subsequently.

As soon as there is a sufficient pile of sheets and felts (about 4 quires) they are run under an hydraulic press and subjected to a pressure

varying from about one ton to two tons for the thinner papers, an operation which takes about 5 minutes. The felts are taken from between the sheets, and it is seen that they have imparted to them the surface known as "not" (not rolled) finish in drawing papers. The felts have to be thoroughly washed after about two days use to extract the colouring matter and restore them to the condition they were in before being pressed. The sheets are again pressed after being laid into "packs," more water being extracted; then each sheet is parted by hand, pressed again, now being called "finished packs," and hung up to dry in fours. After two days they are pulled down and are now known as "waterleaf." They are now ready for another vital operation, that of "tub sizing." The sheets are laid on a slowly moving band taking them through a bath of hot gelatine, that is, animal size, generally made from ox skins, at a temperature of 120-130 degrees. On emerging they are passed through and pressed between felts, the superfluous size running back into the bath. Each bath of size must be of a consistency or density suitable for the particular paper being sized. Naturally the size adds to the weight of the paper, and this has to be allowed for by the vatman in the ratio of about 1lb. of size to 15lb. of paper. Each sheet is again hand parted and again hung up to dry singly, for another 2 days, in rooms through which a current of warm air is propelled. This is termed "loft drying." Experts tell us the slow and gradual evaporation of the water from the interior to the surface is of great importance

to the strength and ultimate "feel" of the paper. The sheets are now taken down and the surface of each examined for flaws which will inevitably creep in—iron mould marks, specks, etc. They are also turned all one way, passed on to be plate glazed, each sheet between a zinc plate, in batches of about 20, passed through a heavy rolling machine which glazes them slightly more than is ultimately required, as a certain amount of gloss disappears as the paper matures. It is again overlooked and divided into good, retree xx, and broken xxx reams.

Treatment  
of Rags

#### MACHINE-MADE PAPER

Several other materials, as well as rags, are utilised in the manufacture of machine-made ledger papers. Chief among these are chemical wood and esparto grass, and it is the proportion of these which are introduced with the rags which govern the quality and price. Of the three processes of resolving the fibre from the wood known as soda pulp, sulphate, and sulphite pulp, the latter is the more satisfactory for use in papers such as ledgers and loans, which require to be hard and strong. The pulp comes to this country in the form of thick sheets ready for bleaching.

Machine-  
made Paper  
--Materials

Esparto grass comes principally from Spain and Algeria in its raw state, and undergoes the reducing process here. The resultant fibres, however, are softer and do not possess the same amount of strength as chemical wood.

The rags used may be of cheaper grades, principally old rags which are by no means as strong as new ones, and the same care is not

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Machine-made Paper material

exercised in the sorting except for first-class qualities. The process of manufacture of machine-made papers is in principle that of handmades up to the time the pulp reaches the stuff chest; here, however, is an important parting of the ways.

The Paper Machine

From the stuff chests it is pumped up to the regulating box, then over the sand tables, which retain any foreign particles such as sand, then through the strainers, through which the proper fibres are only allowed to proceed on their way to the endless wire cloth.

The thickness of the sheet is governed by the quantity of stuff which is allowed to pass under the "slice," and by the speed the machine is travelling. The thickness of a sheet of H.M., as will be remembered, is decided entirely by the relative proportion of material and water. As soon as the pulp has fallen on the wire cloth, which has a side to side motion in order to help the felting of the fibres, the water sinks through the meshes, leaving behind what can at once be recognised as paper. After travelling some yards, the water is further extracted by suction boxes, situated underneath the wire. The paper then travels under the dandy roll, the pattern of the wire working of which decides whether the paper is to be "wove" or "laid." The "watermarking," if any, is performed also by a wire design attached to the roll, and makes the sheet thinner in those parts which it has impressed. More suction boxes are passed over, then the couch rolls, which extracts further water. On up-to-date machines there is next a solid granite anti-deflecting roller, from which the paper passes

on to the rollers which give the paper a finish, and numerous heated drums, sometimes as many as 15, in order to dry it. The paper, if required, can be further finished by running it through super-calendering machines.

The Paper Machine

All writing papers must be sized, the cheaper qualities having a resin size added to the pulp in the beater engine. This is known as "*engine-sized*."

Better quality machine-made papers can be run through an animal size bath in a similar manner to handmades. They are then generally run round a series of drums fixed in the roof. This is called "*machine tub-sized air-dried*." A cheap and less efficient method is to simply apply a coat of animal size by brushing.

A sheet of really good machine-made paper compares very favourably with a good H.M. paper. On the other hand, there are some very poor H.M. qualities being sold, but for several reasons the ordinary machine-made is less satisfactory than a H.M. if a strong and durable sheet is required.

Hand-made and Machine-made compared

The fact that a paper is made in one continuous length militates against the strength of it greatly. The majority of the fibres, despite the felting movement of the machine, tend to lay in the direction the machine is running. The tear one way, therefore, is not as strong as the other, and the unequal strain which the sheet is suffering all the time for the same reason aggravates this, especially in the couching. The rapid and unnatural drying is a factor of importance, both as the paper comes off the machine and after having been tubsized.

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Hand-made  
and  
Machine-  
made  
compared

Papers which have been engine-sized are liable to decay more rapidly than those which have been tubsized. In the cheaper azure laid papers, also, ultramarine is used instead of the much more expensive smalts blue. This does not produce such an even colour, is not so permanent to the effects of light, and is affected by the process of tubsizing.

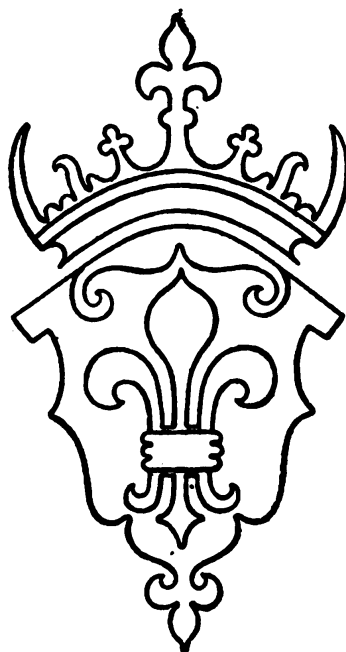
Tests

Besides the test by tearing already mentioned a sheet of H.M. can be distinguished from machine-made (1) by its four *natural* rough edges, (2) by the absence of the marks made by the woven wire cloth which in machine-made laid papers are apparent, as well as the laid marks or watermarks if a woven paper from dandy roll, the marks in a H.M. being derived from contact with the wires of the mould only. (3) If a circular piece is cut from a machine-made and dropped on to some water the opposite edges will curl together; in H.M. this tendency is not nearly so evident. This is really another test for direction of fibre. (4) In azure H.M.'s the right side, that is, the side from which the watermark can be read, is darkest; in machine-mades it is generally the reverse.

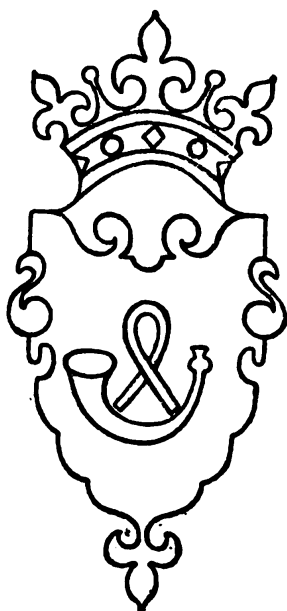
It is not generally known that the standard sizes of paper each possess a distinctive design which is used by all paper makers. This often proves, when present, an invaluable help in deciding the size and weight of an account book paper, especially when taking particulars of an order for a book to be matched. Several of these designs, although resembling each other, will be found to differ in detail; the variations, however, are quite constant.



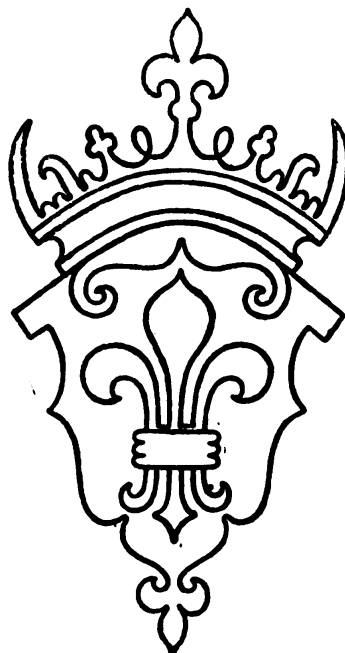
Foolscap



Demy



Large Post



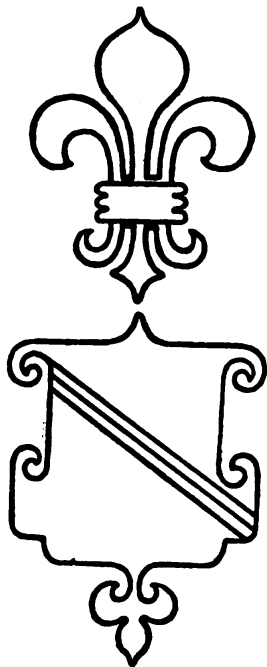
Medium

DIAGRAMS OF STANDARD WATERMARKS IN PAPERS  
(REDUCED HALF-SIZE)

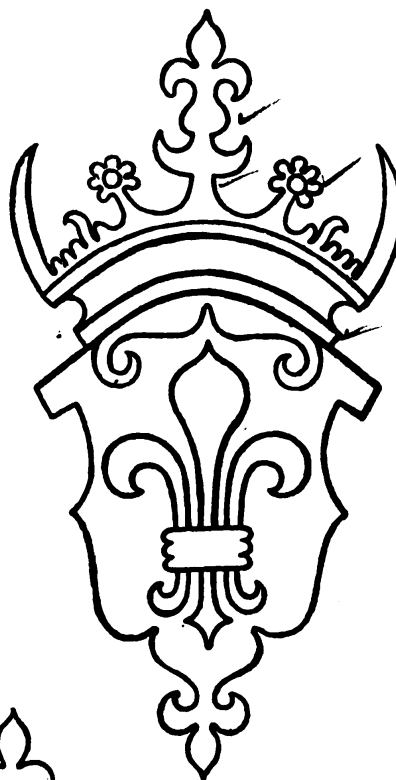
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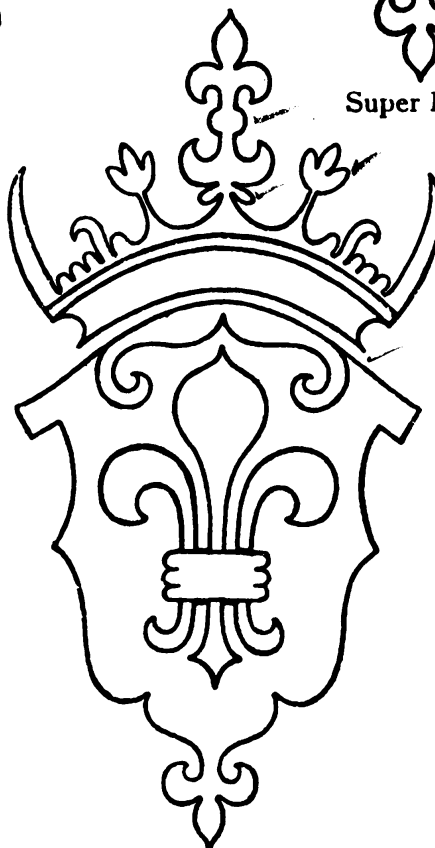
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Royal



Super Royal



Imperial

DIAGRAMS OF STANDARD WATERMARKS IN PAPERS  
(REDUCED HALF-SIZE)



GLOSSARY OF TECHNICAL TERMS USED IN  
STATIONERY BINDING

*Backs*.—The back of a book may either be tight or open. The *tight* (or *fast*) *back* is a cheaper grade of binding, and occurs more commonly on flush work, the leather being fixed to the back of the book.

Glossary of  
Technical  
Terms

*Open or Spring Backs*, of a strength suitable for the various sizes and thicknesses of books, are made in a firm curve, which, when fitted to the books, gives a spring effect on opening, and throws the book flat for writing on.

*Bands*.—Books which are destined for heavy and continuous wear are strengthened by bands, sometimes of Russia leather, but now more often of pigskin. The bands may either be at bottom of book or top and bottom, either plain or laced with vellum, and taken round the back of the book. Three bands continued about a third across the cover are called single bands. The top and bottom bands added to these are double bands. Single and double bands are generally laced. The bands are sometimes bound underneath the covering leather, and are then styled "under-bands."

Glossary

*Bank Paper* is a thin quality used for duplicating work, it may be either glazed or unglazed.

*Binding*.—A book is said to be *Quarter Bound* when the back is of one material and the sides of another. Quarter-bound work may either have the boards cut flush or left with a square. *Half Bound* when the back

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and corners are of one material and sides of another. *Full Bound* when the book is covered entirely with one material.

*Bleed*.—When a book has been cut down into the print it is said to have been bled.

*Blind Tooling* or *Blocking* is an impression made without gold or other colours.

*Blocking* is lettering executed by the aid of a blocking or arming press, and is necessary when a quantity of any one design is required. Blocking may either be done in gold, imitation leaf, in various coloured foils, or in coloured inks. Blind blocking is a plain uncoloured impression.

*Chain, Kettle, or Catch Stitch* are synonymous terms, and refer to the last stitch at head and tail of sewn books.

*Cloth*.—Bookbinders' cloth is manufactured from cotton, dyed and embossed in various designs; others are specially treated to imitate leather. Cloth specially prepared for binding was first used about 1820.

*Combs*.—A marbling tool with wire teeth.

*Cooler*.—A receptacle containing moist sponge on which finisher tests heat of tools.

*Covers*.—Loose covers to protect the binding of books are usually made of buckram, basil, or moleskin. To take these off or on, the book should be stood on end, and the boards bent right back. They are of two kinds: "with flaps," which project over and preserve the edges of the book from dust, and "close" covers, which fit even with the edges of the binding.

*Double Bands*.—See Bands.

*Doubled*.—When lettering or blocking the

second impression does not exactly coincide with the first impression it is said to be doubled.

Glossary of  
Technical  
Terms

*Drawn on Cover.*—A paper cover that is simply fixed to the glued back of a list, pamphlet, etc.

*Easing.*—The process of inducing a freshly-bound book to open easily.

*Ends.*—*Made ends*, that is the inside lining of the covers of a book, may be made from marble paper, fancy papers, or in the case of account books, with the same paper as used in body of book, always lined up with marble paper; the joints may either be of cloth or leather, according to quality of binding. Cobb ends are made from a special self-colour paper peculiar to binders, originally introduced by a person of that name.

*Extra* is a term indicating better finish throughout. Half-extra has a similar meaning.

*Extras.*—Fittings and processes of a special nature on a book.

*Feint.*—The feint or faint blue horizontal lines for writing on. Feint and common means ruled feint and single cash lines; feint and double means feint and double cash; pencil feint lines are lines ruled so faint as to be almost invisible.

*Fillet.*—The tool for making a continuous line or lines in finishing. These are engraved on a brass wheel set in a handle.

*Finishing.*—The ornamentation of the cover of a volume.

*Finishing Press.*—A small press used by the finisher, sometimes called lying or laying press.

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*Finishing Stove.*—A circular stove fitted with Bunsen burner for heating finishing tools on.

*Flush*, or level with the leaves, termed *cut flush*; if the covering material of the sides is turned over the edges of the boards it is termed *flush turned in*.

*Folio.*—A folio is the two pages at view of an open book. One folio is therefore equivalent to one leaf, or two pages. A book is styled *Folioed* when the two pages are numbered the same, 1—1, 2—2, etc., which is distinct from the term paging, when each page is numbered consecutively, 1, 2, 3, 4, etc. If a book is numbered only once each opening, as Letter Books, it is still called paging, but the particular side on which it is paged (the right or left hand) should be stated.

*Fore-edge or Foreedge* is the front edge of a book, the other two are called head and tail.

*Forwarding.*—The binding of sewn books up to the stage of placing them in leather.

*Full Bound.*—See under Binding.

*Gathering* consists of collecting the different sections of a book into their proper order.

*Glaire.*—The medium for holding the gold leaf.

*Gluing Up.*—The process of gluing the backs of sewn books.

*Graining Boards* are sometimes used to impart a diced pattern to the covers of basil books.

*Guard Books* consist of a number of generally plain cartridge paper leaves, interleaved with a certain number of false or shorter leaves of an inch or so wide, for the purpose of allow-

ing for expansion when other documents are inserted.

Glossary of  
Technical  
Terms

A *Skeleton Guard Book* consists only of the short guards without any leaves. In taking orders for Guard Books, note the number of guards between each leaf, or if the number is irregular, say number of leaves guarded to a certain width, 4, 6, or 8 inch back, etc.; the measurement can be gained by the distance between the boards after pressing the back flat. Sometimes the guards are gummed.

*Half Bound*.—See under Binding.

*Handbands* are sometimes attached to the backs of heavy books for the purpose of easy handling.

*Hand-made Paper*.—The better quality of writing papers are still made by hand. The process ensuring equal strength whichever way the paper is torn. Machine-made papers are stronger in one direction than the other, due to the fibre falling on to the machine more or less in one direction. For this reason if a circular piece is cut from a machine-made paper and dropped on to some water, the opposite edges will curl together, whilst this tendency will not be so evident in hand-made. In blue hand-mades the right side is usually the darkest.

*Indexed*.—Indexes can either be *fixed* in front or back of book, or made into separate books, in which case they are termed *loose*. An allowance in the binding of the book can be made to receive them, or they may be entirely separate from the book. A "Throw-out" index is really a loose index fastened on the cover to throw out clear of the book when

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in use. When each letter occupies one leaf it is called a *One-Letter Index*, when two letters appear on each leaf it is called a *Two-Letter Index*. A *Backed Index* has some strengthening material, such as linen, fixed to the back of each letter. When the index is cut right through the book it is called *Indexed through*, and unless otherwise specified the scale in the appendix should be used. A *Vowel Index* has the vowels cut out at edge of leaf for each respective letter, or sometimes the vowels are printed in various positions on the open leaf. For large quantities indexing machines are now used, and are adaptable to any size book. A full index consists of only 24 letters, i and u being omitted.

*Joints*.—The material, leather, buckram, or cloth on to which the end papers are fixed to form a strong back fold, and which act as a hinge between cover and book. The groove between the back and cover board is also known as the joint.

*Knocking Down Iron*.—A flat piece of iron with a projection across the centre, used for screwing into the lying press as a beating surface and for other purposes.

*Lacing*.—The vellum strips for securing and embellishing the bands on banded books.

*Lay Edge*.—The two edges used for laying to gauge of printing and ruling machines, the top and date column side of account book papers, are always lay edges.

*Lettering* can be shown by either a label affixed to the book or by lettering direct on to the side or back of book.

*Lettering Piece*.—Pieces of leather contain-

ing lettering to be fixed to covers of books, principally to rough calf and vellum.

Glossary of  
Technical  
Terms

*Locks* for account books are of various qualities. To be of any material service the best Bramah or Lever locks should be used.

*Loose Covers*.—See *Covers*.

*Lying or Laying Press*.—A wooden hand press used to secure the book in various operations.

*Machine-made Paper*.—A term in contradistinction to hand-made. (See also *Hand-made*.)

*Making Up*.—The process of putting the sections together preparatory to sewing.

*Manifold Paper*.—A thin paper used for the purpose of taking duplicate or triplicate copies with carbon paper intervening.

*Marbled, Sprinkled, and Solid Edges*.—If the colours on the edge of a book form a design they are marbled, and have been transferred from a prepared bath on which the colours were floated. If the colour consists of a number of small dots it is said to be sprinkled, if the edges are entirely solid colour they are termed solid. Edges also may be gilt by applying gold leaf. If this is done on a red colour it is known as "red under gilt."

*Marble Paper* consists of a number of particular designs : Nonpareil, Storment, Gloster, Antique, Shell, etc., and is used for the sides and ends of books.

*Millboard*.—A suitable board for binding purposes made of waste paper and a proportion of rags.

*Millboard Machine*.—Machine for cutting millboards.

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*Mitred.*—The accurate joining of straight lines at right angles without over-running.

*Nipping Press.*—A small iron press for pressing small quantities of work.

*Numbering* “in duplicate” is a number repeated twice, “in triplicate” repeated three times, “in quad-ruplicate” four times. (See also under “Folio.”)

*Offset* or *Set-off.*—When printing matter duplicates itself on the sheet in contact through not being dry.

*Open Back.*—(See Backs.)

*Over casting.*—Another term for whip stitching, the method of sewing single sheets when required to open as flat as possible.

*Overlooking.*—The process of looking through the sheets for imperfections before delivering to binder.

*Oxford Border.*—A simple border of lines distinguished by the lines crossing each other instead of joining.

*Pages.*—A page is one side of a leaf; when a book is open two pages are therefore exposed to view. (See also “Folio.”)

*Pallet.*—A finisher’s tool for making the straight lines or fillets across back of book. A hand instrument for holding type for lettering purposes.

*Panel.*—The space between the bands or fillets on the back of books.

*Paring.*—Reducing the thickness of leather at edges.

*Pasting Down.*—Pasting the fly leaf of end papers to first and last pages of book.

*Pasting Up.*—Pasting the end paper to cover board.



*Perforating* may be performed by perforating machines, round holes of long slit, or perforating rule may be used on the printing machine as necessity demands.

Glossary of  
Technical  
Terms

*Pressing Boards*.—Wooden boards between which books are pressed.

*Pressing Blocks*.—Wooden blocks used to fill up space in standing press.

*Quarter Bound*.—(See Binding.)

*Quire*.—If the thickness of a book is stated in quires, this always means that there are 48 leaves to the quire; a three-quire book, therefore, contains 144 leaves, and would include index and end papers.

*A Ream of Paper*.—A mill ream of machine-made paper contains 480 sheets, and consists of 18 good and two outside quires of 24 sheets each. A mill ream of hand-made contains 472 sheets, and consists of 18 "inside" quires of 24 sheets and two "outsides" of 20 sheets each. An "Insides" Ream contains 480 sheets, all good. Printing papers are made up in 480, 500, 504, and 516 sheets to the ream, the latter being called a "perfect" ream. Imperfect Reams are made up of spotty and otherwise rejected sheets, and are sold as "Retree," indicated XX, at 10 per cent. less than usual price, and "Broke," indicated XXX, at 20 per cent. less.

*Recruiting*.—This is a term used if for any reason it is necessary to add a few leaves to a bound book.

*Rolls*.—A wheel tool used in finishing, the edge of which contains a fancy design.

*Safes*.—Pieces of paper or board used to

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prevent injury to the book during the several processes of pressing.

*Setting the Head.*—The finish to the head or tail of a made back.

*Sewing* consists of attaching a number of sections together by means of stitches through the back of each.

*Shears.*—The heavy scissors used by book-binders.

*Skeleton Guards.*—(See Guard Books.)

*Slips.*—The tapes on which a stationery book is sewn.

*Split Board.*—A cover board of a book made up of two or more boards pasted together, the thin board being only partly glued, leaving the remainder free.

*Squares.*—All books which are not bound flush have the boards projecting slightly beyond the edge of the leaves; these are termed the squares.

*Stabbed.*—A book is stabbed when the stitch is made through the side of a book usually consisting of single leaves; it consequently does not open so flat as a sewn book.

*Start.*—An irregularity on the fore-edge of the book caused through bad sewing.

*Stiffener.*—A thin board, generally mill-board.

*Stitched.*—A stitched book consists of one section, secured through the centre by either a wire or thread stitch. Whipped stitched or overcasting is a peculiar stitch used when a book made up of single unfolded sheets is required to open flat.

*Stops.*—Large fullpoints (full stops) used

for finishing off the corners of lines instead of mitring.

Glossary of  
Technical  
Terms

*Straight Edge*.—A flat metal ruler.

*Straps and Buckles* are often fixed to guard books to give safety to any documents they contain.

*Strawboard*.—A common form of board made of crude pulped straw.

*Sweating In*.—When in finishing gold work the leaf adheres to places it is not intended to.

*Tabbing*.—Fixing the pieces of leather on the back of a sewn account book.

*Tackerting* is a process in which catgut is used to strengthen the sewing of a heavy book.

*Taping*.—A strip of tape put round the last and first sections of ordinary bound books. Heavier and better class bindings have tapes inside and around more sections, according to strength required.

*Tight Back*.—(See "Backs.")

*Title*.—The panel on the back reserved for lettering.

*Type Holder*.—See Pallet.

Vellum tabs, projections, or divisions are used to divide two or more patterns of ruling, or make other divisions in a book, and they are frequently lettered to denote the purpose to which each division is devoted. The term *Vellum Binder* is synonymous with account book binder, and is used in contra-distinction to letterpress binder.

Appendix

# APPENDIX

## MILLBOARDS

Millboards      The thickness of millboard is known as Sixpenny, Sevenpenny, Eightpenny, Eightpenny one cross, two cross, and Tenpenny.

6. \_\_\_\_\_ 8. \_\_\_\_\_ 8xx. \_\_\_\_\_  
7. \_\_\_\_\_ 8x. \_\_\_\_\_ X. \_\_\_\_\_

No. of dozens in bundles.			6	6	6	5	4	3
			Approx. weight of bundles in lbs.					
		SIZE.						
Pott ..	P	17½ × 14½	28	38	48	54	58	56
F'Cap ..	FC	18½ × 14½	31	42	52	59	64	61
Crown ..	C	20 × 16½	37	52	63	72	77	75
S H Royal	SHR	20½ × 13	30	41	52	58	62	60
L H ditto	LRH	21 × 14	33	45	58	64	70	67
Short ..	S	21 × 17	40	55	69	78	84	82
No. of dozens in bundles.			6	6	5	4	3	2
S H Impl.	SHI	22½ × 15	38	52	54	63	60	51
H ditto ..	HI	23½ × 16½	44	60	63	70	69	59
Middle ..	M	22½ × 18½	48	64	68	74	74	62
La. ditto	LM	23½ × 18½	50	68	72	78	78	67
Medium ..	L	24 × 19	52	70	74	80	81	70
S W Royal	SR	25½ × 19½	57	80	81	88	88	76
No. of dozens in bundles.			6	6	4	3	2	2
La.W.Royal	LR	26½ × 20½	63	87	75	73	66	84
Ex. ditto..	ER	28½ × 21½	69	95	80	81	72	93
No. of dozens in bundles.			6	4	3	2	2	2
Impl. ..	I	32 × 22½	82	74	72	63	85	110

## STRAWBOARDS

Basis 22 × 32.

Number of Boards in a Cwt

Weight of Board.	22 × 32	20 × 25	20 × 30	24 × 38	27 × 34	28 × 36	30 × 40	Strawboards
8 oz.	224	315	263	173	172	156	131	
10 "	179	252	210	138	137	125	105	
12 "	149	210	175	115	114	104	87	
14 "	128	180	150	99	98	89	75	
1 lb.	112	158	131	86	86	78	66	
1½ "	75	106	88	58	58	52	44	
2½ "	45	63	53	35	35	31	26	

The thickness of Strawboards varies somewhat by different makers, and following diagrams are therefore approximate :—



## USUAL ACCOUNT BOOK SIZES

If the paper is not hand-made a little extra could be added to these sizes when necessary by trimming the edges less severely.

<i>Imperial.</i>	<i>Demy.</i>
Folio, 20½ × 14½	Folio, 15 × 9½
Octavo, 10 × 7½	Long Folio, 19 × 7½
<i>Super Royal.</i>	<i>Foolscap.</i>
Folio, 18½ × 13½	Folio, 12½ × 8
Octavo, 9 × 6½	Long Folio, 15½ × 6½
<i>Royal.</i>	<i>Foolscap Sheet and Half.</i>
Folio, 18½ × 11½	Folio, 12½ × 11½
Octavo, 8½ × 5½	Long 4to, 12½ × 5½
Long Octavo, 11½ × 4½	
<i>Medium.</i>	<i>Foolscap Sheet and Third</i>
Folio, 16½ × 10½	Folio, 12½ × 10½
Long Folio, 21 × 8½	Long 4to, 12½ × 5½
Quarto, 10½ × 8½	

Appendix

# PAPERS USED FOR ACCOUNT BOOKS, &c.

Size.	Usual Weight.	Broad Fello.	Long Fello.	Quarto.	Long 4to.	Sixmo.
	LBS.					
Imperial, 30 × 22 ..	72	22 × 15	30 × 11	15 × 11	22 × 7½	11 × 10
Sup. Royal, 27 × 19	54	19 × 13½	27 × 9½	13½ × 9½	19 × 6½	9½ × 9
Royal, 24 × 19 ..	44	19 × 12	24 × 9½	12 × 9½	19 × 6	9½ × 8
Medium, 22 × 17½ ..	34	17½ × 11	22 × 8½	11 × 8½	17½ × 5½	8½ × 7½
Lar. Post, 21 × 16½	21, 23, 27	16½ × 10½	21 × 8½	10½ × 8½	16½ × 5½	8½ × 7
Demy, 20 × 15½ ..	25	15½ × 10	20 × 7½	10 × 7½	15½ × 5	7½ × 6½
Foolscap, 16½ × 13½	16, 18	13½ × 8½	16½ × 6½	8½ × 6½	13½ × 4½	6½ × 5½
F'cap & ½, 24½ × 13½	24	13½ × 12½	24½ × 6½	12½ × 6½	13½ × 6½	6½ × 8½
F'cap & ½, 22 × 13½	22	13½ × 11	22 × 6½	11 × 6½	13½ × 5½	6½ × 7½
D'ble Cap, 26½ × 16½	32, 34, 36	16½ × 13½	26½ × 8½	13½ × 8½	16½ × 6½	8½ × 8½

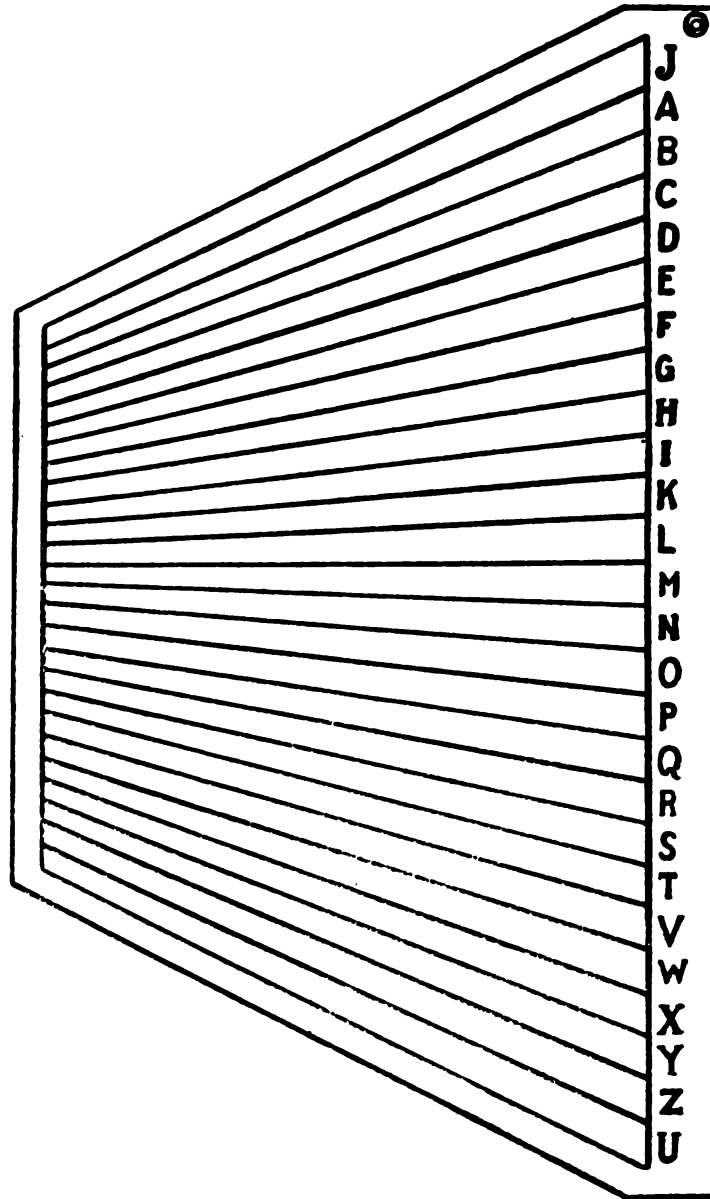
Size.	Usual Weight.	Long 6mo.	Octavo.	Long 8vo.	16mo.
	LBS.				
Imperial, 30 × 22 .. ..	72	7½ × 15	11 × 7½	5½ × 15	7½ × 5½
Super Royal, 27 × 19 ..	54	6½ × 13½	9½ × 6½	4½ × 13½	6½ × 4½
Royal, 24 × 19 .. ..	44	6½ × 12	9½ × 6	4½ × 12	6 × 4½
Medium, 22 × 17½ .. ..	34	5½ × 11	8½ × 5½	4½ × 11	5½ × 4½
Large Post, 21 × 16½ ..	21, 23, 27	5½ × 10½	8½ × 5½	4½ × 10½	5½ × 4½
Demy, 20 × 15½ .. ..	25	5½ × 10	7½ × 5	3½ × 10	5 × 3½
Foolscap, 16½ × 13½ ..	16, 18	4½ × 8½	6½ × 4½	3½ × 8½	4½ × 3½
Foolscap and ½, 24½ × 13½ ..	24	4½ × 12½	6½ × 6½	12½ × 3½	
Foolscap and ½, 22 × 13½ ..	22	4½ × 11	6½ × 5½	11 × 3½	
Double Cap, 26½ × 16½ ..	32, 34, 36	5½ × 13½	8½ × 6½	13½ × 4½	

For sizes of account books, check books, &c., deduct the usual trim.

# SCALE FOR INDEXING.

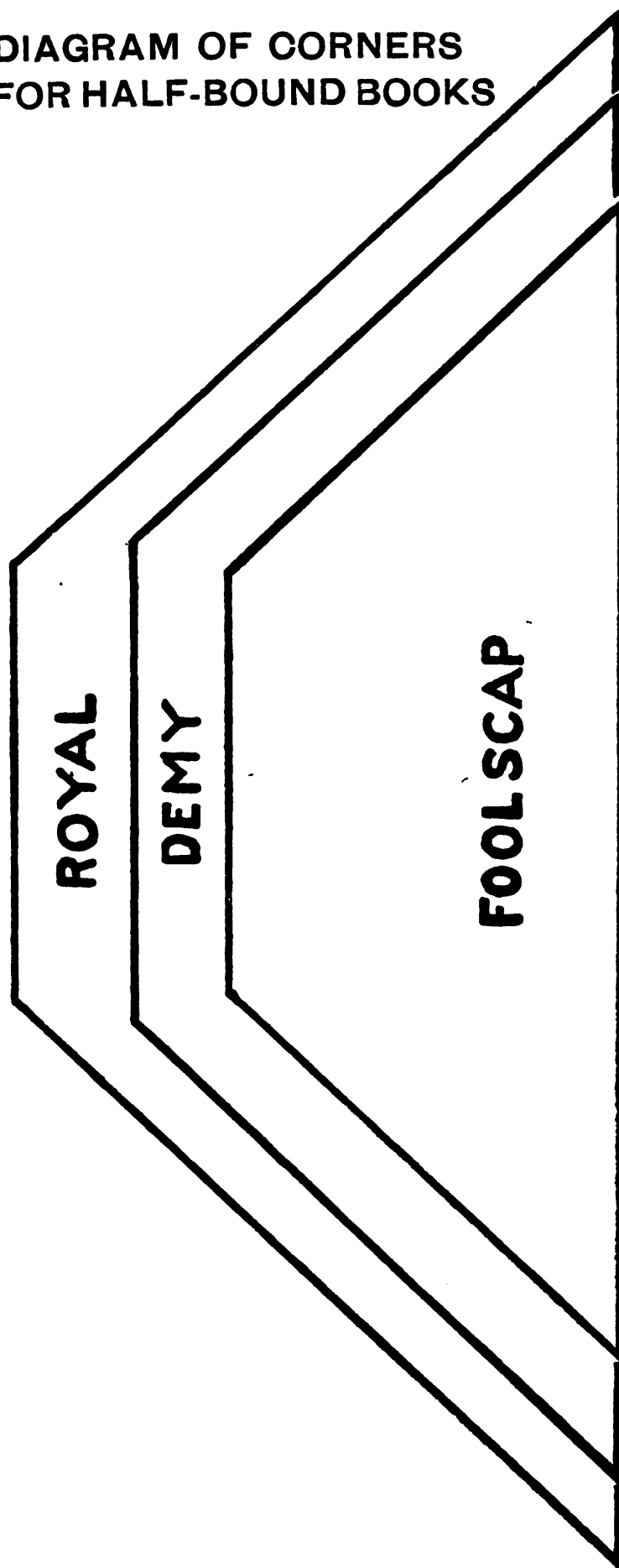
No. of Leaves }	36	60	84	108	132	155	180	204	228	252	276	300	322
<b>A</b>	1	2	3	4	5	6	6	7	8	9	10	11	12
<b>B</b>	3	5	9	11	14	17	20	22	25	27	30	33	36
<b>C</b>	2	4	6	8	10	12	14	16	17	19	21	22	24
<b>D</b>	1	2	3	4	6	7	8	9	10	11	12	13	14
<b>E</b>	1	2	2	2	3	3	4	4	5	5	6	6	7
<b>F</b>	1	2	3	4	5	6	6	7	7	8	9	10	11
<b>G</b>	2	3	4	5	6	7	8	9	10	11	12	13	14
<b>H</b>	2	4	7	9	11	13	15	16	19	21	24	26	28
<b>J</b>	1	2	3	4	5	5	6	7	7	8	9	10	11
<b>K</b>	1	2	2	2	2	3	3	4	4	5	5	6	6
<b>L</b>	2	3	4	5	6	7	8	9	10	11	12	14	15
<b>M</b>	2	4	5	7	8	10	12	14	15	17	18	20	22
<b>N</b>	1	2	2	3	3	3	4	4	5	5	6	6	6
<b>O</b>	1	1	1	2	2	2	2	3	3	3	3	4	4
<b>P</b>	2	3	4	6	7	9	10	12	13	15	16	17	17
<b>Q</b>	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>R</b>	2	3	4	5	6	7	9	11	12	13	14	15	16
<b>S</b>	2	4	7	7	11	13	16	17	21	24	26	28	30
<b>T</b>	2	3	4	5	6	7	9	11	12	13	14	15	16
<b>V</b>	1	1	1	2	2	2	2	3	3	3	3	3	3
<b>W</b>	2	4	5	8	9	11	13	14	17	19	21	23	25
<b>X</b>	1	1	1	1	1	1	1	1	1	1	1	1	1
<b>Y</b>	1	1	2	2	2	2	2	2	2	2	2	2	2
<b>Z</b>	1	1	1	1	1	1	1	1	1	1	1	1	1

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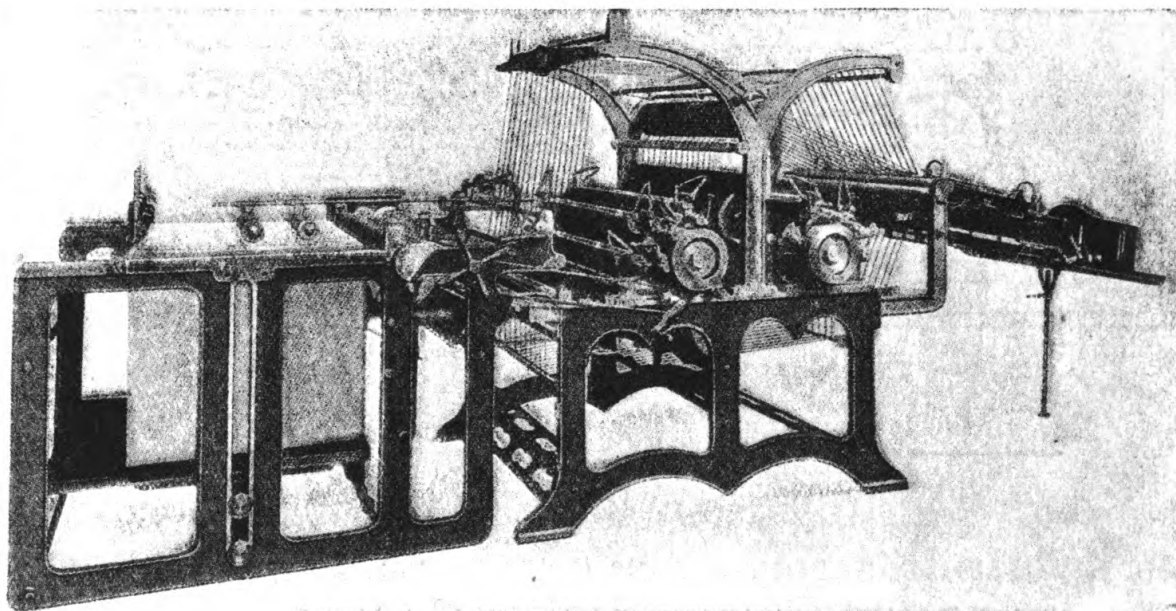
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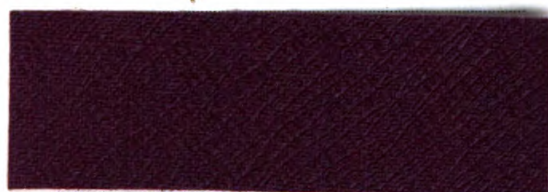
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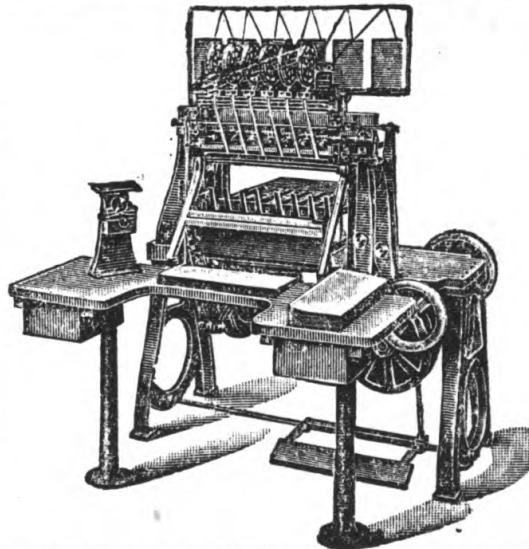
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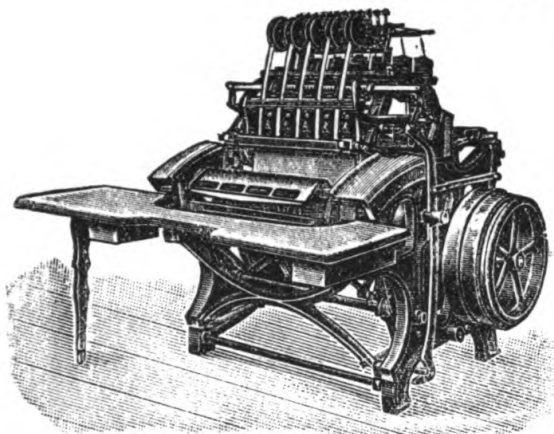
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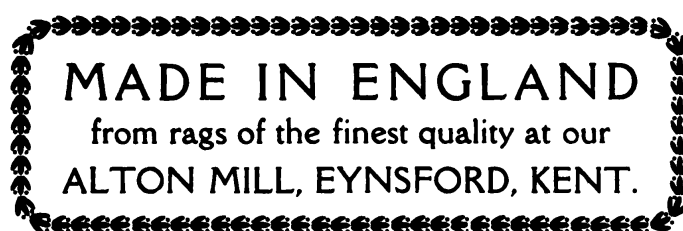
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