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## FORMULAS FOR BOOKBINDERS

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alumina (in powdered form). Mix all these well with a wooden stick, stir into it gradually three cupfuls of pure grain-alcohol, and lastly, one cupful of boiling water. Now put into an agate-ware dish three cupfuls of No. 21, add to it two whole tablets of No. 13 (see page 14), put on stove and bring very gradually to the boiling point. Stir this liquid with a stick until the No. 13 is dissolved, and add it very slowly to the mixture in the crock, stirring the latter briskly while adding the former, to prevent curdling. To this preparation add four cupfuls of best bookbinders' alcohol varnish, cut with aqua ammonia, prepared as follows: Fill a large cup two-thirds full of varnish (Zinsser's bookbinders' Copal Varnish preferable) and fill the cup with commercial aqua ammonia. Repeat this dose four times and the mixture will be ready. Do not use the household ammonia—it is too weak—nor the concentrated, which is too strong. This finishes the preparation of the filler. It must be kept well corked to prevent evaporation. Shake it well before using, as the whiting settles readily. It is advisable to stir the filler well when bottling, to avoid getting most of the whiting and chalk into the last bottle, since these two articles precipitate very quickly.

To use this filler, give the paper all it will possibly absorb. Be sure to hold the books very tightly, to prevent "running in" too far. You will find this filler a real boon in gilding; used on surface-coated paper, it will entirely prevent sticking of the leaves, but do not put the "filled" books in the press when the filler on them is not dry and hard. The acetate of alumina may be omitted.

[ 70 ]

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## FORMULAS FOR BOOKBINDERS

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of No. 39 with one part of orange shellac varnish (parts by measure, not weight). To be applied the same as No. 54.

[No. 56.] *Orange Shellac Varnish with No. 51.* To one part of orange shellac varnish add from four to ten parts of No. 51. Keep in a tightly-corked bottle and shake well before using. Apply it with a sponge or cotton-batting and then lay aside the ribbons to dry. Let them lay over night if convenient. Lay on without using any medium, and stamp with moderate heat. Remove surplus metal with a tooth-brush, and the work is finished. If desired, you may lay on with No. 39 or 46. But if you do this, it will be necessary to remove the grease stain with either 47 or 49 after stamping.

This formula works pretty well, but the right proportions of varnish and No. 51 are essential to success, especially in this instance. The proportions must be varied according to the color and the weight of the silk. The fact as to whether metal or gold is to be used must also be considered, the latter requiring much less varnish than the former. Finally, the press must be used just lukewarm.

I am confident that with a little practice you will obtain better results in silk stamping by the use of these formulas than you have ever experienced by using the numerous sizings sold by the regular dealers, generally warranted to give satisfaction, but ——?

[ 55 ]

Edge Gilding  
and Metal Edges.

Varnish Filler.

Finishing and  
Stamping.

Stamping of Silk  
(Badges, etc.)

The Dry  
Processes.

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## FORMULAS FOR BOOKBINDERS

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You understand what is meant by rubbing down, namely, to burnish the edge with the flat agate, keeping a piece of smooth bond paper between the latter and the edge, as already explained elsewhere. In rubbing down apply considerable pressure on the agate. When this has been properly done, let the edge stand till dry enough for the bloodstone, then finish up as any ordinary edge.

Edge Gilding  
and Metal Edges.

To treat round corners in gilding, is very simple, but when applied to job work it means a waste of gilding boards. The process: Gild the front edge first, including one half of each of the two corners, then gild top and bottom, and include the other halves of the corners. The gilding boards must be cut out to conform to the shape of the round corners. This is easily accomplished by means of a carpenters' gouge or a sharp-pointed knife, after the books are in the press.

Remarks on Edge  
Gilding.

In gilding the top and bottom edges of books that have been backed, the gold is apt to break along the edge of the back, especially if the book is thick and was backed rather loosely. To keep the gold whole, it is only necessary to apply a little bookbinders' varnish to that part of the edge which is affected by the backing. It may be done before or after the book has been placed in the press. The varnish should not cover a strip any more than an eighth of an inch in width.

### FORMULAS

[No. 57.] *Varnish Filler*. Put into a one-gallon crock or china bowl two and a half cupfuls of gilders' whiting, half a cupful of powdered French chalk and half a cupful of acetate of

Varnish Filler.

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## FORMULAS FOR BOOKBINDERS

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The silk crepe for laying-on tips must be of the stiff variety, used for trimming ladies' hats. You can purchase it in any millinery store.

Edge Gilding  
and Metal Edges.

Few novices are careful to observe two important particulars: the right age of the size, and the proper amount of acid to be added, and then they wonder why the gold did not adhere all over, or, if it did, why it looks porous (full of very small holes) and shows the bole so plainly. Sometimes the gold will refuse to stick at the joint line, *i. e.*, where the sheets have been joined, and a narrow streak is apparent, a sixty-fourth of an inch, or broader, across the edge, without gold. Such defects are caused by using the laying-on size too fresh. The size should be at least from three to six days old before it is used. Whatever acid is mixed with the size, add just a sufficient quantity to impart to the size a slightly sour taste. Only in cases of extreme necessity should size be used as early as the second day after it has been made. Nos. 63 and 63a are the only exceptions to this rule.

Remarks on  
Edge Gilding.

Another difficulty often encountered, but easily averted, is the rubbing off of some of the gold on books which contain photogravures printed on heavy bristol or card-board. As these inserts are of softer paper than the rest of the book, they will absorb considerably more size and swell, forming a series of ridges along the surface of the edge, raising the gold, so to speak, between these ridges, and preventing it from adhering to those parts of the edge forming the grooves. It is here that the gold rubs off. To prevent this, it is only necessary to rub the edge down while there is still considerable moisture in it.

[ 68 ]

## PART TWO

### EDGE GILDING AND METAL EDGES

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## FORMULAS FOR BOOKBINDERS

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applied to the edge, after it has been burnished with the bloodstone and just before the last burnishing with the polished agate. For this purpose rub a little plumbago into a soft piece of flannel and with it go lightly over the edge. Care must be taken not to use too much black lead, for in that case a silvery hue will be imparted.

Edge Gilding  
and Metal Edges.

You have undoubtedly noticed the extremely rich effect of French edge-gilding and finishing, which, in my opinion, is largely due to the very effective shade of the gold-leaf used. After numerous experiments, Messrs. T. Swift & Son, of Rochester, N. Y., have produced a leaf which very closely approaches the French leaf in color. They call it the "Roycroft Shade." I use it exclusively for all kinds of work, and find it very satisfactory. It imparts that appearance of solidity for which the French work is noted the world over.

Remarks on Edge  
Gilding.

You need but two burnishers, an agate and a bloodstone, both flat. The latter must be sharpened from time to time, as the stone is rather soft and wears down readily. Let the face of it be perfectly square, and you will have two burnishing surfaces. If you are in possession of a first-class bloodstone burnisher, you are fortunate. For the benefit of those who do not know, let me say that perhaps not one in fifty of these stones are of just the correct hardness and texture. As a rule they are either too soft or too hard and brittle. Sometimes, too, a stone has flaws and breaks at the first grinding. There is no remedy for this defect—you must buy another. The investment of money for bloodstone burnishers is like buying a razor—it is a lottery with odds not in your favor.



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## FORMULAS FOR BOOKBINDERS

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is now practically finished and the edge should possess a fine lustre and high polish.

Should any pin-holes now be visible, they may be mended by applying a drop of alcohol to the defective spot, which must be followed by a piece of gold much larger than seems necessary, as the alcohol will spread considerably; the latter you may apply with a small camel's-hair pencil. This whole operation must be performed very quickly or it will not prove successful, as the alcohol is rapidly absorbed by the paper. You may, of course substitute gilding size for alcohol, but the result will not be so satisfactory. Ether may also be used for this purpose. However, experience has taught me that if a really good, clean edge is desired, it is best, by far, to substitute a second layer of gold for the mending, wherever the latter seems advisable or, rather, unavoidable. The second layer should be applied in exactly the same manner as the first, with gilding size, and burnished in the usual way.

### SUPPLEMENTARY REMARKS ON GILDING

In gilding cheap work, especially where it is thin books, either printed or memorandum, it is not necessary to insert gilding boards between the books, to divide them into layers that correspond to the width of the gold; you may simply place a board at each end of the pile, cover the whole with gold, and in burnishing, simply draw the bloodstone toward you across the edge instead of applying the usual back-and-forward movement, as the stroke would be too long.

To improve the lustre, a little plumbago (black lead) may be

Edge Gilding  
and Metal Edges.

A brief  
description  
of Edge Gilding.

Remarks on  
Edge Gilding.

## EDGE GILDING AND METAL EDGES



**E**WILL give a brief general description of edge gilding before proceeding with the formulas. Books printed on soft paper and job work in general should be "filled," *i. e.*, the edges of the leaves should be hardened (sized) after trimming and allowed to dry before the books are placed in the gilding press. For, to do good gilding, you need a hard foundation to work upon, a foundation as hard as stone; at least, "the harder the better." If this hardness is not already present in the paper to be gilded, it must be supplied, and this is done by filling, as above referred to. Good writing and linen paper, well sized, do not require filling, but all printing paper, including surface-coated stock, should be filled, to insure good results.

A prevailing idea with reference to the gilding of soft paper must be most severely criticised. It is the idea often held by brothers of the craft not wholly familiar with the fine points involved, that this deficiency can be met by using a much stronger size in the laying-on of the gold. This supposition is absurd and entirely wrong. Surely, the white of an egg diluted with water in any proportion, is not a substance likely to make blotting paper as hard as stone. And even if it were, albumen size stronger in proportion than one egg to a half-pint of water cannot be used for laying-on, as it would make

Edge Gilding  
and Metal Edges.

A brief  
description  
of Edge Gilding.

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## FORMULAS FOR BOOKBINDERS

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good burnishing impossible. Gold-leaf laid on with strong size will not burnish well; so, soft paper, to be properly gilded, requires a filler, and it should be applied before the books are put in press. Stack the books as you would for red-edging. Be sure and give the paper as much filler, using No. 57, as it will possibly absorb and put your books into the press only when the edges are thoroughly dry; otherwise the leaves will stick. Do not scrape the edges any more than is absolutely necessary. Some paper is extremely difficult to scrape; this may be overcome somewhat by simply dampening the edge with a sponge and clean water just before scraping, but while this practice has a rather beneficial effect on the scraping, the edges so treated will generally stick; hence, I cannot recommend it. Still, a great deal depends on the paper. For instance, it may be applied to writing paper with absolute safety. Edge-scrapers can be bought of any dealer in bookbinders' supplies, or you can have them made. Saw-blades make good scrapers. If you are the possessor of an old "Diston" handsaw, and edge-scraping is of more interest to you than sawing wood, let some machinist cut up the blade for you into round scrapers, say two and one-half inches in diameter, and you will have scrapers that will hold their edges better than the ones you buy, and you will have a good supply of them at the same time. Any cabinet-maker can show you how to sharpen and use a scraper.

When the edge has been scraped perfectly smooth, apply a coat of filler No. 58 or thin paste-wash of the consistency of molasses. Whichever you use, and it is really optional, apply

[ 60 ]

Edge Gilding  
and Metal Edges.

A brief  
description  
of Edge Gilding.

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## FORMULAS FOR BOOKBINDERS

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moisture remains in the paper. I consider this theory entirely erroneous, and often responsible for poor work. A satisfactory lustre will be apparent in the press, but when taken out, the edge will be found to stick, and in case of coated paper it will simply be ruined. My theory is this: Rub down a little moist, then burnish when it is nearly dry, and depend on the bloodstone for lustre. The lustre so produced will remain, because the leaves will not stick.

Burnish as follows, when sufficiently dry: Rub with a piece of soft silk cloth (china silk), to which a little beeswax has been applied. For convenience sake the silk may be shaped into a ball stuffed with cotton. Some prefer a piece of soft, bark-tanned sheep or calf, but either will do. The waxing is easily accomplished: Rub a little beeswax (preferably white) on one cheek of the gilding press, then lightly rub over the place with the stuffed ball, until the latter presents a polished surface. Too much wax will ruin the work entirely. When thus carefully waxed and every particle of loose gold removed, burnish once over with a flat and reasonably sharp bloodstone burnisher. Do not apply pressure to the bloodstone, for, if the latter is as sharp as it should be, it would be liable to scrape the gold. With the bloodstone you intend to bring out the full lustre, and when this has been accomplished, wax once more rather lightly, and burnish over with the flat and highly-polished agate. Apply considerable pressure to this burnisher, and with a firm and steady movement, work the stone vigorously back and forth, beginning at either edge, with close strokes, until the whole surface has been traversed. The work

[ 65 ]

Edge Gilding  
and Metal Edges.

A brief  
description  
of Edge Gilding.

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## FORMULAS FOR BOOKBINDERS

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Edge Gilding  
and Metal Edges.

A brief  
description of  
Edge Gilding.

simple advice may serve to guide him safely in this respect, until by long practice and experience he has acquired the ability to know at a glance the conditions of the edge: Breathe heavily on the surface, and if the breath is noticed to disappear rather quickly, in long streaks towards the last, it will be about dry enough to commence rubbing down. The time required for drying may be five minutes, and it may take half an hour or more. The rubbing-down process always precedes the actual burnishing and is accomplished thus: Take either a piece of writing paper, any color, or smooth manila wrapping paper, about five inches square, and wax one side of it slightly; roll the paper, the waxed side in, so that in burnishing, or rather rubbing down, the paper will follow the burnisher, instead of laying flat on the edge. With this paper and a flat, polished agate, slightly rounded on its surface, you do the rubbing down. Proceed as you would in burnishing, except that you keep the paper between the agate and the edge, the waxed side of it being in contact with the agate. Do not neglect to wax the side of the paper to which you apply the burnisher; it will cause the agate to glide over the paper easily and without altering the position of the latter. Do not begin the burnishing at the very end of the edge; the ends being generally somewhat loose, the gold at these points requires more time to dry. It is not advisable to apply much pressure to the burnisher at these points. After the edge has thus been carefully treated, it is ready to burnish.

Old treatises on this subject tell us that in order to produce a suitable lustre, it should be burnished while considerable

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## FORMULAS FOR BOOKBINDERS

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Edge Gilding  
and Metal Edges.

A brief  
description  
of Edge Gilding.

it sparingly, and immediately, before the edge has had time to absorb all of the filler or paste-wash, rub down with a ball made of tissue paper, till the edge is perfectly dry and glossy. These directions, as far as they refer to the second filler, apply solely to printing paper, exclusive of the surface-coated variety. Writing papers do not require any filler whatever. Of late years, surface-coated papers have been extensively used in printing, on account of half-tone illustrations; they must be filled after trimming (before putting the books in the gilding press) with No. 57. But they must positively not receive any further filling. To repeat: The second filler, whether No. 58 or paste-wash, must be omitted in gilding surface-coated papers, to prevent the dragging of the gold in burnishing. In the gilding of these papers the bole preparation follows the scraping of the edge, whereas, in case of other kinds of printing paper it follows the application of the second filler, be it No. 58 or paste-wash.

For bole preparation see Nos. 59 and 60. Whichever is used, apply it to the edge with a soft sponge, avoiding, as far as practicable, going over the same place twice. The sponge should be washed in clean water every two or three hours, and always at the end of the day's work or the finishing of the job. In fact, all the brushes and sponges should then be properly cleansed and put away, and not left over night in cups and bowls containing preparations of all kinds. When dry, give the edge a good brisk brushing with a hand-brush, such as can be bought at any drug-store, or, for that matter, a shoe-brush will do.

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## FORMULAS FOR BOOKBINDERS

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The edge is now ready for the gold. Lay on with either No. 61, 62 or 63, as follows: Pour out into a cup only sufficient glair for the day's work, or for the job if less than a day's work (never return to the bowl size that has been used). Apply it with a flat camel's-hair brush from one to two inches wide; avoid air-bubbles in sizing, and do not go over the same place half a dozen times, for if you do, you will soften the bole and soil your size. A practical gilder will use the same cup all day, yet in the evening his size will be nearly as clear as if just taken from the bowl. Here, as in other work, cleanliness is a sure road to success. Immediately after the first coat of size has been given, get your gold ready and lay on with the second coat. A tip made of black silk crepe, just large enough to permit of taking up a whole leaf of gold, will be found a handy contrivance for this purpose. Be quick in laying on, as it is essential to have the whole edge dry out evenly at nearly the same time.

For the benefit of the uninitiated, I will describe the operation as clearly as language will permit. We will say the edge requires a leaf of gold across—in other words, the book or books between the gilding boards equal three inches in thickness. Pick up a sheet of gold with tip and hold it in your left hand, while with your right hand, beginning at the left, size a space of the edge a trifle larger than the sheet of gold. Take care that the size is evenly applied, and remove air-bubbles, if any, by simply working them onto the gilding boards with the size brush. Then quickly lower the tip with the sheet of gold upon it to within about half an inch of the edge; raise

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## FORMULAS FOR BOOKBINDERS

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slightly the end of the tip nearest you, and lower the opposite end till it barely touches the edge. Now quickly give a light breath; the size will then attract and draw the sheet of gold from the tip in much less time than it takes to say it, but it requires some practice to accomplish this trick in such a way that the sheet of gold will be left whole and not torn. It is well for the beginner to have a few strips of gold on his cushion, so that in case a sheet should break in laying on, he can mend it without re-sizing, by quickly applying a strip to the break, with the tip, of course. But you must be quick at it; the patch must be applied before the size has had a chance to dry, otherwise it will rub off. A patch so applied will positively leave no mark of any kind on the edge after burnishing. The first sheet of gold is now on. Proceed with the rest of the gold in exactly the same manner till the whole edge is covered, *i. e.*, pick up gold, size and lay on. In sizing for the second and successive sheets, take care and size exactly from the edge of the last sheet laid on; if you run the size over any of the sheet, you will plainly notice the lapse in the burnished surface, and this will certainly not add to the attractiveness of the job. It is now ready for burnishing.

How soon after laying on may edges be burnished? The drying of the gold is influenced to such an extent by, firstly, the weather; secondly, the temperature of the room where the gilding is done; thirdly, the quality of the paper; and fourthly, by the amount of size used in laying on, that it is well-nigh impossible to fix a scale of time which would satisfactorily meet these ever-varying conditions. To the novice, the following