
FORMULAS FOR BOOKBINDERS

OILS AND GREASES FOR LAYING-ON

WITH few exceptions, in stamping (press work), it matters very little what kind of oil is used for laying-on. In many cases the stamper could do better work without the use of oil or grease. Still, he must, at any rate, use enough of it to cause the gold leaf to adhere to the work sufficiently to prevent its shifting or getting off entirely, for we all know that it requires but a breath of air to scatter it. By the use of a little oil or grease this trouble is prevented, and the work of handling the cases, after the gold has been laid on, rendered comparatively easy, making rapid feeding of the covers into the press possible.

There are, however, some oils which will positively retard the fixing of the gold; therefore, the use of such for these purposes should be avoided. One of these is chemically pure oil of sweet almonds. It is a limpid, entirely colorless fluid. There are many other oils with the same properties, but it is unnecessary to name them, as they are not serviceable for our purposes. The oils and greases specified in the following list meet every requirement.

From what I have said in regard to laying-on, it will be seen that so far as press work is concerned, very little, if any, importance attaches to this operation. It must not be inferred, however, that the same is true of finishing, although most finishers hold that it is. I emphasize the fact that success in finishing and tooling, whenever laying-on of gold is required, depends solely upon this seemingly unimportant operation—

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sist upon using this size for stamping, principally cloth, in white or yellow metal; it is for this reason, as well as a desire to render this selection of formulas as effective as possible, that the recipe is here included.

Dry fish glue may be bought at almost any retail drug-store, but the liquid article is not so easily procured. Unless you happen to reside in a large city, you will generally find it necessary to order a supply of that useful article sent along by express. But express charges are high and the unavoidable delay is not only expensive but is often the cause of considerable dissatisfaction on the part of the customer, whose patience is being severely tried by the apparently slipshod way of the bookbinder. But even if it can be had conveniently, it is not altogether advisable to use the commercial article for sizing. Probably no two manufacturers use the same preservative in preparing the liquid glue, and this variation, together with the difference in the quality of the dry glue used, often is the cause of more or less trouble in stamping. These difficulties and drawbacks may be easily avoided by simply preparing the glue yourself, and by so doing you will have a liquid glue which you can always depend upon. After having used it a few months, you will know with certainty the quantity of water to be added for cloth, leather or paper, and these rules you will know to be safe, just so long as you prepare the liquid glue yourself. For years I have prepared my own fish glue, and find it both profitable and advantageous. There are numerous preservatives which may be used, but some of them are altogether too high-priced. Experience has taught me that

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simple, inexpensive preservatives like gum camphor, carbolic acid, oil of wintergreen, salicylic acid, etc., are not only sufficiently effective, but their presence in the finishing size has no harmful influence whatever on the finishing.

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As already stated, dry fish glue can be bought at almost any retail drug-store. It usually comes in long, narrow pieces, with pointed ends; it is about three-sixteenths of an inch thick, and of all sizes and irregular shapes; it is of a yellowish brown color and decidedly opaque.

Formula: Place one pound of dry fish glue in a two- or three-quart earthen crock; add to it two even teaspoonfuls each of salicylic acid, oil of wintergreen and carbolic acid, and one and three-fourths quarts of hot water. Dissolve in bath (see page 1). In a cool place this preparation will keep a long time. For metal stamping it should be diluted with from two hundred to four hundred per cent of water, according to the material to be stamped. Leather will naturally require a much stronger size than cloth. Vinegar may be used for diluting, in place of water. The addition of a little aqua ammonia will prevent "filling in," to some extent. You will find that this preparation will make a much cleaner size than most of the varieties of liquid fish glue kept in drug-stores. Besides this, you have a preparation which is always uniform. This is certain to be so, for you prepare it yourself.

Fish Glue.

Excepting as a filler (see No. 18) or in combination (see Nos. 24 and 28) it cannot be used in finishing.

[No. 24.] *Combination "B." Egg Albumen Glair and Fish Glue.* For this combination an inferior grade of commercial

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When this has been accomplished, it is only necessary to add three spoonfuls of aqua ammonia to "cut" it, and it is ready for use. As a size for metal stamping it has many fine qualities.

This completes the list of glairs and sizes for tooling, finishing and stamping. It is needless to say that a great many more combinations can be produced with the ingredients enumerated, but those specified will be found sufficient. In my practice I find it entirely safe to confine myself to the use of the following: For finishing, the Nos. 21, 22 and 28; for stamping, the Nos. 21, 28, 29 and 30.

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A condensed
list of Sizes and
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of leather, my principal aim is to fully preserve both the finish and color of the leather without sacrificing that all-important feature, the fixing of the gold or metal. A fair trial of my formulas will convince any intelligent finisher that I have been eminently successful in this direction.

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No. 28 and
Glair
combined.

[No. 31.] *Combination "F."* Nos. 28 and 19. This combination in various proportions can be successfully used for stamping and finishing. In proportions of one part of No. 28 to six parts or more of No. 19, it makes a very effective gloss size, while a decrease in the quantity of No. 19 gives a dull size. ¶ This size can be used in connection with any wash and filler.

[No. 31a.] *Combination "G."* To two spoonfuls of powdered white (bleached) shellac add a like quantity of Venetian turpentine and ten spoonfuls of pure grain-alcohol; mix thoroughly and let stand till dissolved, from two to five hours. Owing to the volatile nature of the alcohol, this mixture should be kept in a tightly-corked bottle. When dissolved, take half a spoonful of this mixture and add three spoonfuls of Dennison's glue; mix thoroughly, and stir into it about ten spoonfuls of hot water, or, should a slow-drying size be desired, vinegar and water in equal parts and well heated, instead. It is a good metal size. Powdered, bleached shellac can be had of druggists and painters' supply stores.

Powdered
Shellac, Venice
Turpentine
and Fish Glue
combined.

[No. 31b.] *Combination Size "H."* To two spoonfuls of No. 21a add one spoonful of Dennison's glue (No. 18a) and from twelve to sixteen spoonfuls of water; mix thoroughly till it resembles soft rubber, which will require a few minutes' time.

Orange Shellac
and Fish Glue
combined.

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liquid fish glue is best suited. However, the No. 23 may be used as well as the No. 14. Whichever is used, put two even teaspoonfuls of it into a cup, add, in the order given, ten drops of formaldehyde and ten drops of carbolic acid. Now stir well until the mixture presents an even color; then add to it three teaspoonfuls of common white vinegar. Mix again thoroughly, using a folder or stick of wood. Add seven more teaspoonfuls of white vinegar; if the No. 23 was used, four or five teaspoonfuls of vinegar the second time will be sufficient. ¶ To every five teaspoonfuls of glair No. 20, add three teaspoonfuls of the above-mentioned mixture and two teaspoonfuls of aqua ammonia. This size will produce an almost dull finish on most any kind of material. For maroon and wine-colored morocco you may add as many as thirty drops of formaldehyde; it will prevent the darkening of these colors, but will, on the other hand, cause the size to froth a little more. The addition of too much formaldehyde, however, is detrimental to the finishing; it will prevent the sticking or holding of the gold to some extent; so, be cautious. The extra twenty drops of formaldehyde may be added after the size is prepared.

Leaving out the formaldehyde and carbolic acid entirely will produce a more gloss-giving size, suitable for polished work. For Turkey, gros-grain and levant morocco, use one teaspoonful of fish glue instead of two in the preparation of the glue mixture. Lastly, allow me to caution you against finishing too moist when vinegar has been liberally used in washing. ¶ This combination is especially suitable for leathers of Class

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Glair and Fish
Glue combined.

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II; for stamping half-bound seal grain cowhide or buffing cases it has no equal. In this case it is only necessary to give the leather one coat of the size, and when dry lay on gold, using plenty of oil, especially if very condensed type is used. For cloth, dilute with the necessary amount of water. This size cannot be used for metal stamping.

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Le Page's Glue.

[No. 25.] *Le Page's Glue*. This glue, diluted with either vinegar or water and the addition of a few drops of glycerine (or without it), can be used for stamping leather or cloth in gold or metal. It can be used alone or in combination with ordinary fish glue.

Dextrine.

[No. 26.] *Yellow Dextrine*. This substance, too, makes a more or less successful size for stamping in gold or metal. Dissolved in bath, it makes a good mucilage by the addition of acetic acid, and this, diluted with water, renders it suitable for stamping.

Shellac in
Alcohol.

[No. 27.] *White Shellac cut in Grain-Alcohol*. This preparation can be bought at almost any painters' supply store and of some druggists. It is often cut in wood alcohol, but for this purpose it should be cut in pure grain-alcohol.

Put seven teaspoonfuls of it into a half-pint cup, add seven teaspoonfuls of aqua ammonia and fill the cup with cold water. You may add a little fish glue diluted with water, if you like, but it is not necessary. It is exclusively a metal size and can be used on leather or cloth. It works well, but requires considerable heat. However, if the die is of brass and the press is heated by gas, there is no cause for complaint. If steam heat is to be used, it should be live steam at a boiler

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wash with gasoline, to take out the grease spot. When the gasoline has evaporated, restore the nap of the leather with a moderately stiff brush. This may be accomplished with a tooth-brush, or hand- or shoe-brush—according to the extent of the sized surface. It may be necessary to help along a little with a knife between letters, etc.; but if the size was of the right consistency, and the sizing properly done, this will be avoided.

It must be borne in mind that sheep, Persian (India sheep) and calf are not of the same texture, and therefore the size must be adjusted accordingly. It is impossible to establish a fixed consistency of size for the different grades of leather, as the colors influence the work more or less. The stamper must adjust these differences, by varying the amount of water which must be added to the size. The size can be relied upon to produce the desired results. It is past the experimental stage, as the process has been extensively applied by me in edition work. A point of considerable importance in connection with the process, is the laying-on. It is absolutely necessary to use plenty of grease. If this is not done, the work will be uncertain and the results unsatisfactory. The gasoline will remove the stain, and even if it does not quite accomplish this, the stain will not be noticeable after the nap of the leather is restored. Further, a very firm impression with a fairly hot press is necessary, as already stated.

These two processes, which deal exclusively with the decoration of ooze leather, are among my latest achievements. You will note that in compounding a size for any particular grade

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Ooze leather
with the nap
wholly
preserved—Size
for same.

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given for limp covers. ¶ The other method, that of applying either a design or lettering in gold directly to the nap of the leather, is much simpler. Fine line effects must be avoided, as they would be partly lost in the nap of the leather.

The principal requisite in connection with this work is the size. This, owing to the nature of the work, must be a special preparation to meet requirements which are essentially rather uncommon. It must be just strong enough to thoroughly fix the gold, preferably at a somewhat high temperature. It must not stain or change the color of the leather, and it must admit the restoring of the nap of the leather after stamping. To render the latter easy, and without injury to the leather, the size must be of the kind that dries out on the surface without penetrating into the fibre of the leather to any great extent. These requirements will be fully met by the following preparation:

[No. 30.] *Combination "E."* One scant, even teaspoonful of the wax solution No. 74, one teaspoonful of Le Page's glue reduced with glycerine and rose-water to the consistency of thick syrup, one generous teaspoonful of Glair No. 19, and fifteen teaspoonfuls of cold water, stirring as the successive ingredients are added.

The process of stamping is, briefly, this: Apply the size with a soft sponge where needed. When dry, lay on gold with a mixture of camphorated vaseline No. 39 and grease No. 40, adding sufficiently of the latter to color the former, and stamp with a fairly hot press, allowing the die or type to rest on the leather a second or so. Clean up with rubber and, if necessary,

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pressure of from seventy to eighty pounds, and that pressure should be maintained as long as the job is on the press. Steam at a lower pressure than specified would make the work of stamping unreliable. If you cannot get the proper heat for your press, or you are working with electros on cloth, you will do better by using either No. 21 or No. 23.

Do not stamp moist; allow the cases to get reasonably dry after sizing, and if cloth, do not use the size stronger than specified; weaken it, rather, by adding more water. You may find the cloth somewhat dull when it dries out, but do not be alarmed. In laying on, simply pass the oil rag over the surface of the cloth and the latter will very nearly assume its original finish. To repeat, it is a metal size for stamping purposes only.

[No. 28.] *Combination "C."* Shellac Size No. 21, Fish Glue and Vinegar. This combination produces a size of milky appearance, both in color and consistency. It is absolutely an original compound and gives positive results in every instance, whether gold or metal is used, as well as in connection with any wash and filler. It does not stain the most delicate shades of leather or cloth, and is waterproof. It will produce equally good results, whether on paper or leather. White or colored writing and cover paper, cardboard, cloth, buckram or leather (real or artificial) can be stamped in gold or metal and finished or tooled in gold with it. Briefly, this size can be used in all cases where it is desired to produce a dull surface on the material to be stamped or finished, or to preserve it if it already exists. Polishing cannot be done when this size has been used.

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Vinegar
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Its Preparation: You require two agate-ware dishes (wash-basins do very well). Put two cupfuls of shellac size No. 21 in one of them, and stirring briskly with a folder, add to it three-fourths of a cupful of fish glue No. 23. Into the other dish put one cupful of white vinegar (wine vinegar is preferable) and let this one dish, at least, have a perfect lining, to prevent the vinegar from coming in contact with the iron. Now place both dishes, the one containing shellac and fish glue and the other vinegar, on the stove and bring the contents gradually to the boiling point. Let simmer a few seconds, take both dishes from the stove, and stirring the shellac mixture briskly with a folder, add the hot vinegar gradually to it. The preparation is now completed. When cool, remove the scum—a film forms on the surface, similar to that found on boiled milk—strain through cheese-cloth and bottle. The size will be homogeneous, with not the slightest indication of having curdled. After standing for some time, a slight precipitate may be found, but this will not lessen the effectiveness of the size. Although the color of the size is very pronounced, it dries out perfectly transparent. If used in stamping, it can be diluted with water to suit the nature of the material.

Ooze Sheep, Ooze Persian (India Sheep) and Ooze Calf, sometimes called Art Leather—a practical method of decorating (stamping) it in gold, being an original idea of the author: In this material, as you undoubtedly know, the flesh or wrong side of the skin has been carefully dressed and is now actually the right side. It has a nap very similar to that

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cotton-batting when the stamping is finished. ¶ For gilding, the press should be used fairly hot, and the die allowed to rest on the work a second or so. The surplus gold is to be removed with the rubber, and this must be done carefully, with as little friction as possible. With the stamping of the border, which has already been explained in detail, the work is finished. If rightly done, the label should have the appearance of dull-finished German calf, and look as though it had been inlaid.

Altogether, the cover is neat and well adapted for a table book. The appearance can be further improved by turning the edges of the leather over a zinc pattern, and creasing them neatly, as is customary in fancy leather work. In this case, the leather is to be pared on the right side, *i. e.*, the side having the nap, so that when the work is finished, a narrow rim of smooth leather, little more than an eighth of an inch in width, will show on the outside of the cover. Very small round corners will add to the effect. The books should be silk lined.

Ooze leather is sometimes used for the backs of half-bound case work. If it is desired to produce the label effect on these backs, practically the same directions can be followed, with only one exception, that of raising the label for sizing. Owing to the paper lining and the difference in the work in general, this is not practicable.

A brass plate the exact size of the label has to be procured, and the covers blanked in with it in the ordinary way; then sized with the aid of a zinc pattern, and finished in the order

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better to go over the leather twice in the first sizing, if there is any fear of roughing up, for applying the second coat after the first is dry is apt to darken the leather. The roughing up may also be met to some extent by giving the label an extra slight nip in the machine, using the latter nearly cold. If this fails to accomplish the desired results, a stronger size must be prepared, thus:

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[No. 29.] *Combination "D."* Two cupfuls of shellac No. 21, to which add three-fourths of a cupful of fish glue, consisting of equal parts of Nos. 23 and 25, the latter reduced with glycerine and rose-water to the consistency of the No. 23. Mix well with a folder and add one teaspoonful of refined honey to this glue mixture before it is added to the shellac. ¶ Use three-fourths of a cupful of vinegar instead of one cupful, as in No. 28. Otherwise follow No. 28's directions closely. In this work it is not advisable to use a filler, as it would stiffen and darken the leather; it is far better to do without a filler, and force results by varying the strength and quantity of the size.

When the label has been properly sized, and is dry, the gilding can be done. It matters not whether this work consists of lettering or ornamentation, or both, the process is the same. Proceed as follows: Lay-on with amber (common) vaseline, using it as sparingly as the work will permit. Apply it with a little white cotton-batting, and with the least possible friction. The slight stain left on the sized leather will disappear in a day or so. If too much vaseline has been used, the stain can be removed from the leather with a little gasoline and

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found on blank-book fleshes, only much finer, and is produced in all colors and shades. Ooze calf, being of a much finer texture than ooze sheep, is at the present time extensively used for the binding of books, generally for limp (flexible) covers, but sometimes also for three-quarter bindings, and for half-bound case work. The limp work concerns us mostly in this case, from the fact that it is decorated by machine—stamped. There are two ways of stamping this material in gold, viz.: To stamp directly on the nap of the leather, ordinarily done by the use of gilding powder, but after my improved method, accomplished with size. The other way, a very exhaustive description of which follows herewith, is to press down the nap of the leather in the shape of a label of any size or outline, and to hold the nap down securely by means of a coat of size applied with a camel's-hair brush. Then you would make the gold impression, usually consisting of lettering, and finish up with a border, worked in blind or color foil. This border may consist of a medium fine double line  or a heavy line  about one-sixteenth of an inch thick, and a fine double line  inside of it thus . In the latter case, both lines may be worked in blind, or the outside (heavy) one in color foil and the inside double line in blind. An ornamental border may be substituted for the lines, or a design covering the entire label, except the lettering, may be used—all according to taste and fancy. Zinc etchings, representing bold effects, can be advantageously employed for the blind work. Whichever is used, the outline of it should follow the outline of the sized label, and so cover the size line. Brass dies

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are not required for the raising of the label surface. Simply proceed thus: To render the sizing of the label, which in some instances may have quite a large surface, practical and easy, the surface containing the label should be raised from the leather; in other words, pressed out in relief. This can only be accomplished by means of male and female dies. These can be cut out of a good quality of binders' tar board, or, better still, out of English hand-made rope board, with knife and chisel. However, they must not be cut so that they fit exactly into one another, but you should leave about a sixteenth of an inch play between the outlines of both, to allow for the thickness of the leather. The male die must be glued onto the tray (a piece of pasteboard with gauges of the same material, upon which limp covers are fed into the press). The female die is fastened to the head of the press in the following manner: Procure a square piece of sheet brass, a quarter of an inch thick (this is the thickness from which brass dies are cut), however, a thinner piece will answer as well. It should be somewhat larger than the label. Glue it to a die-block, exactly as you would fasten an engraved die, and glue the female die to this. It can be easily registered by fastening the die-block with the brass plate glued to it to the press first, and then picking the female die from the tray, where it has been placed, glued side up, in exact position over the male die. The tray, of course, must be gauged in the machine before the female die is picked from it. In this way the nap of the leather is brought into direct contact with the polished side of the brass plate, producing an even and smooth surface.

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When all this has been carefully done, and the machine is adjusted, the cover can be fed in and the label surface raised or embossed. The press must be just lukewarm and the impression light. A hot press and a too heavy impression are apt to produce dark spots—discoloration of the leather—and this should be avoided.

The embossed surface (the label) is now to be sized, and here again the No. 28 will give surprising results. For sizing, use a flat camel's-hair brush, which must be large enough to admit the covering of the whole label with size in one stroke. The leather is so absorbent that if a small brush is used, requiring more than one stroke, the result will be plainly visible size streaks. If the label is small, you can easily size free-handed, without danger of getting size where it is not wanted; if large and possibly of fancy shape, it will be advisable to cut a piece of zinc for a sizing pattern; this should be an exact duplicate of the female die. This device should be cut large enough to cover the leather to the extent of about two inches all around the label. Lay on the zinc pattern, charge the brush rather liberally with size and draw it slowly with a fine touch across the surface in order that the leather may receive plenty of the liquid. The pattern should now be carefully lifted from the cover and the latter laid aside to dry, but not in the sun. ¶ Some colors require more size than others; black and brown generally require a great deal, to avoid roughing up in the subsequent gilding; grays require less size than any other color. If in the gilding the leather is found to rough up, another coat of the same size can be given, but it is usually

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