

We give practical instructions in the various branches of bookbinding under our Mr. Kinder's personal directions. Let us know in what branch or branches you wish to perfect yourself and we will advise you as to our terms and length of the course required.

T H E R O Y C R O F T E R S
East Aurora, Erie County, New York

We compound Kinder's special preparations with the utmost care and always under Mr. Kinder's personal supervision, which enables us to guarantee absolute accuracy. We also deal in pure technical drugs and bookbinders' technical supplies in general, and we most cordially invite your correspondence.

D. J. BUNCE & COMPANY
482 Grant Street, Buffalo, New York

Why use inferior Finishing Tools when "Klement" tools, the best made, cost but a trifle more. For further particulars address

L O U I S H. K I N D E R
East Aurora, Erie County, New York

For particulars about the Halfer Colors, acknowledged by experts to be the best Prepared Marbling Colors in the world, address

The Halfer Marblers' Supply Co.
BUFFALO, NEW YORK, U. S. A.

PART FOUR

MISCELLANEOUS FORMULAS

HERE THEN ENDS *FORMULAS FOR BOOKBINDERS*,
CONSCIENTIOUSLY WRITTEN BY ME, LOUIS H. KINDER,
AND PRINTED BY THE ROYCROFTERS AT THEIR SHOP
IN EAST AURORA, N. Y., IN JANUARY OF THE YEAR
TEN FROM THE FOUNDING OF THE ROYCROFT SHOP

MISCELLANEOUS FORMULAS

N I VENTURE to say that not one of the many patent pastes now on the market are equal in quality to the old-fashioned home-made kind. In most of the patent pastes, when used on leather, the flour seems to separate from the water, leaving an almost dry deposit on the leather, thus the paste loses most of its adhesiveness. The following formula has always given me very satisfactory results: [No. 84.] *Flour Paste*. Place in an enameled or agate-ware wash-basin, holding about a gallon, one pound of good white, (wheat) flour. Add to it one heaping teaspoonful of powdered alum, preferably alum potassium, and one-half teaspoonful of salicylic acid. Now mix this with one pint of lukewarm water to a nice, smooth paste, add two teaspoonfuls of carbolic acid (commercial strength) and one teaspoonful of oil of winter-green. Gradually add three pints of cold water, stirring the mixture well with a wooden paddle to prevent the formation of lumps, and place on hot fire. Right here, in the boiling, lies the secret of good paste making. Have a hot fire, the hotter the better; if a gas stove, turn the gas on full force. Brisk stirring is not necessary during the process of cooking; simply keep working the thickened mass from the sides of the basin to the center, till every particle of the liquid has been thickened. Do not be alarmed at the lumpy appearance of the

How to make
Flour Paste.

FORMULAS FOR BOOKBINDERS

mass, but pay strict attention to the thickening process. As soon as the last of the liquid has disappeared and the mass has assumed a slightly darker color, take the basin off the fire and very briskly stir with wooden paddle until the paste is smooth. If the flour was mixed well, and sufficient heat used in cooking, the paste will be absolutely smooth and free from lumps, in spite of its lumpy appearance on the fire. You will find this paste very satisfactory in all respects, but for the sake of variety I will give another good formula.

[No. 85.] *Flour Paste with Dextrine.* Put into a one-gallon enameled kettle three pounds of the best white flour, two ounces of yellow dextrine and half an ounce of powdered borax. Add gradually three pints of water, forming a nice, smooth paste, after which add two teaspoonfuls of carbolic acid, one teaspoonful of oil of wintergreen, half a teaspoonful of oil of cloves, and gradually four quarts and one pint of cold water. Now mix it all well, place on fire and proceed as in No. 84. For cooking, live steam of about sixty pounds boiler pressure can of course be used in place of fire. In this case, wooden receptacles may be used for the cooking.

[No. 86.] *Removing Iron Stains from Red Russia Leather.* "Accidents will sometimes happen, although they never should." In covering blank books, iron spots are apt to appear on the Russia leather. This is usually caused by the use of old, worn-out tins for pressing. These spots can be entirely removed by an application of a little muriatic acid to the dark spot, gentle rubbing with the tip of the finger and the immediate washing with clean water. When the discoloration is

Flour Paste.

Flour Paste
with Dextrine.

To take Iron
Stains out of
Red Russia
Leather.

INDEX (Continued)

Finishing, leathers, which should be filled	9-11	Metal Edging in white and yellow metal	79, 80
Fish Glue, how to prepare it	24-26	Metal goods, how to cover with leather, &c	5, 6
Gall, its preparation for marbling	96-97	Mounting of Embossing Dies	5, 6
Gilding of book edges, the process briefly described	59-66	Oils and greases, their importance	40-43
Gilding of book edges, surface-coated paper	61	Oils and greases for laying on in finishing	44-50
Gilding of book edges, memorandums and thin books generally	66	Oose Leather, flexible covers, how to stamp with label effect	30-33
Gilding of book edges, supplementary remarks	66-69	Oose Leather, half bound case work, how to stamp	35
Gilding of books when partly made up of Bristol board	68	Oose Leather, new method for stamping same in gold directly on the nap of the leather	36-37
Gilding of books with round corners	69	Oxalic Acid as a cleaner	5
Gilding, the fillers	69-72	Paste, home-made flour paste	105-106
Gilding, laying-on sizes	76-78	Prepared Marbling Colors, Halfer's	89
Gilding with imitation gold	79-80	Red-under-Gold Edges	81, 82
Gilding, red under gold	81-82	Round Corners, how to gild them	69
Glair for finishing, its properties critically considered	17-18	Shellac size not satisfactory for finishing	17
Glair, should it be slow-drying?	3	Silk, how to stamp badges, etc.	53-55
Glair and sizes for finishing and stamping	19-39	Sizes and glairs for finishing & stamping	19-39
Gold, special for gilding art bindings	67	Sizes for laying on in gilt-edging	76-78
Gold-tooled edges	101	Sizes for marbling	88-92
Gold, laying on in finishing	44-47	Sizes and glairs, a condensed list	39
Greases for finishing	44-50	Soft rubber, preparation of same	106-109
Grease Removers, as applied to finishing	51	Spirits of Soap for marbling	96, 97
Halfer Marbling Colors	89	Sprinkling of leather	110-112
Hand-tooling, the laying on of gold	46, 47	Stamping large surfaces in gold	51-52
How to finish moist	4	Stamping, the mounting of the dies	5, 6
Imitation leather, stamping of same	107	Stamping of oose leather, see Oose Leathers	
Keratol, stamping of same	107	Stamping Sises, a condensed list	39
Law-books, how to clean	5	Stamping with electrotypes	52
Laying on of gold in hand-tooling	46, 47	Stamping of imitation leather, see Keratol	
Laying-on sizes for gilt edging	76-78	Steam, at what boiler-pressure for embossing	28, 29
Leather, how to sprinkle	110-112	Sticking of leaves in marbling or coloring	110
Marbling, real pointers not generally known	87	Washes, as used in finishing	4-5
Marbling size	88-92	Wax, prepared for colors	93-95
Marbling colors, a binding medium	83-85	Which leathers should be filled and what filler should be used?	9-11
Marbling colors, expanding mediums	96, 97	Why should books be finished dry or moist?	2
Marbling of books printed on surface-coated paper	110	Why filling is necessary in finishing	7-8
Marbling colors, Halfer's prepared	89		
Memorandums, gilding of same	66		

Zinsser & Co., 197 William St., New York, N. Y.

INDEX (Continued)

Formula No.	Page	Formula No.	Page
65 Blood Albumen Size for laying on Bookbinders' or Banana Varnish to prevent tarnishing	79	COLORED EDGES	
RED-UNDER-GOLD EDGES		76a Coal-Tar Dyes (aniline)	98
COLORING MEDIUMS		77 Fletcher Ink Extracts	98
66 Eosine in Water	81	78 Chinese Vermillion	99
67 Eosine in Oil of Spike	82	79 Tin Solution for Colors	99
68 Eosine dissolved in No. 57	82	80 English and American Vermillion	100
EDGE MARBLING		81 French Carmine	100
SIZES		82 Indigo and Picric Acid for Yellow	100
69 Carrageen (Irish moss)	88	83 Gold-tooled Colored Edges	101
70 Gum Tragacanth	89	MISCELLANEOUS	
71 Gum Hogg	90	84 Flour Paste	105
72 Tragacanth and Gum Hogg	91	85 Flour Paste with Dextrine	105
73 Tragacanth and Carrageen	91	86 To take Iron Stains out of red Russia	106
THE PREPARATION OF THE COLOR		87 The Stamping of Keratol (Imitation Leather)	107
74 The Binding Medium	93	88 The Preparation of Soft Rubber	108
EXPANDING MEDIUMS		89 To prevent the sticking of leaves in marbling	110
75 Beef-Gall	96	THE SPRINKLING OF LEATHER	
76 Spirits of Soap	96	90 Iron, Copperas and Gall-Nut	110
		91 Iron alone	111
		92 Bi-chromate of Potash	111
		93 Chromic Acid	112
		94 Blank-rolling Fleshes	112

INDEX OF FORMULAS

ALPHABETICALLY ARRANGED

Aluminum Edges	79-80	Edges tooled in gold	101
Art Leathers, see Oose Leathers		Electrotypes, how to mount them	5-8
Badges, the stamping of the same	53-55	Electrotypes, how to preserve in stamping	23
Beef-gall for Marbling	96-97	Embossing Dies, how to mount them	5-6
Blank-rolling of Fleshes	112	Embossing presses heated by steam	98-99
Bole Preparations for Gilding	73-75	Expanding mediums for marbling colors	96-97
Books printed on surface-coated paper; how to treat edges in marbling and coloring	110	Fillers as used in finishing	11-16
Breaking of the color in Marbling	93	Fillers for gilt-edging	69-79
Cleaning up of tooled work, see Grease Removers		Fleshes, blank-rolling of same	112
Colored edges, plain effects	98-101	Flour Paste, how to make	105-106
Colored edges, gold-tooled	101	Finishers' Soft Rubber	108-109
Condensed list of finishing and stamping sizes	39	Finishing Sizes, a condensed list	39
Covering of metal goods with leather	6	Finishing books moist	4
Edge Gilding	59-69	Finishing, laying on of gold	46-47
Edge Gilding, filler for same	69-72	Finishing, the importance of laying on	40-43
Edge Gilding, laying-on sizes	76-78	Finishing, oils and greases for laying on	44-50
Edges, single color effects	98-101	Finishing, is shellac size satisfactory?	17
		Finishing, glair and sizes	19-39
		Finishing, should books be finished dry or moist?	9
		Finishing, the washes	4-5
		Finishing, is filling necessary?	7-8

FORMULAS FOR BOOKBINDERS

very slight, the acid may be diluted by adding a little water. No. 87. *The Stamping of "Keratol."* We are living in an age of imitations. No sooner do we see a worthy originality, embodying the best of everything, honest labor and good raw material, than some one gets up a cheap imitation. In leather, all of the popular grainings, such as seal, lizard, alligator, levant, monkey, etc., are to be had in cowhides and skiver. More, the very substance—the leather itself—has been imitated, and paper and cloth are being manufactured in large quantities in such a way as to resemble leather. I say "resemble," because it can never amount to more than a mere semblance of the real, genuine article. To this class of imitations belongs "Keratol," a woven fabric, one side of which is coated with a very peculiar and very nasty waterproof concoction. We find this imitation of leather used on all sorts of cheap work, even blank books, much to the finisher's displeasure, for neither gold nor metal will hold. However, this difficulty may be overcome to a certain extent. Wash the material with alcohol, benzine, ether, diluted muriatic acid, aqua ammonia or turpentine, and when dry apply one coat of any of the finishing sizes or glairs as specified under the heading "Glair and Size." For a glossy surface use, for instance, No. 21; or, if a dull surface is desired, use No. 28. For laying on use oil very sparingly. A coat of paste-wash before sizing, using the No. 8, is also beneficial. When properly treated in this way it will offer no perceptible difficulties. Most finishers would rather stamp it than the ingrain wall-paper, which of late has found its way into some binderies as a probable

The Stamping of
Imitations of
Leather.

FORMULAS FOR BOOKBINDERS

covering material, because of its cheapness. ¶ I wish to emphasize the fact that gold- or metal-leaf may be successfully applied by means of heated metal dies or tools to any material offering some resistance when brought under pressure and permitting of a surface application of size. In case these favorable conditions exist and yet the gold- or metal-leaf fails to adhere, the difficulty can without doubt be traced to some peculiar surface coating which the material received in its manufacture. That coating may be oil, gum, wax, or a combination of several of these, and render an application of an even coat of size impossible. In all such cases it is only necessary to wash the material with some chemical which will, technically speaking, "cut" the obnoxious coating, before applying the size. With this accomplished, it will surely offer no further difficulties. The only exception being materials of a very porous nature, which, however, only require to be filled before sizing.

[No. 88.] *How to Prepare Soft Rubber.* Pure gum rubber, either in its natural state or softened, is admirably adapted for removing the surplus gold from finished books or stamped cases. By its use we are enabled to remove every speck of loose gold from grained or smooth material without injury to the latter. There is nothing original about this method, as we all know it, but few of us know how to properly soften the gum rubber, so as not to have it sticky, notwithstanding that it is the simplest thing in the world to accomplish. Here is the way to go about it: Take half an ordinary cupful of pure gum rubber cut into very small pieces, fill the cup with

Almost any kind of material may be stamped in gold or metal.

The Preparation of Soft Rubber.

INDEX OF FORMULAS

NUMERICALLY ARRANGED

	Formula No.	Page
FINISHING AND STAMPING		
WASHES		
Formula No.		Page
1	Vinegar	4
2	Aqua Ammonia	4
3	Juice of Lemon	5
4	Muriatic Acid	5
5	Nitric Acid	5
6	Urine	5
7	Glycerine and Rose-Water	5
7a	Oxalic Acid	5
FILLERS		
8	Flour Paste	11
9	Flour Paste with Vinegar	12
10	Starch Paste	12
11	Vinegar Starch Paste	12
12	Iainglass	13
13	Gelatine	14
14	Le Page's Glue	14
15	Ordinary Glue	14
16	Glutino	15
17	Parchment Glue	15
18	Fish Glue	15
18a	Dennison's Glue	16
GLAIR AND SIZES		
19	White of Egg Glair	19
20	Commercial Egg Albumen Glair	20
21	Bleached Shellac Size	21
21a	Orange Shellac Size	23
22	Egg Albumen and Bleached Shellac	24
23	Liquid Fish Glue	24
24	Egg Albumen and Fish Glue	26
25	Le Page's Glue	28
26	Yellow Dextrine	28
27	White Shellac in Alcohol	28
28	Bleached Shellac, Fish Glue and Vinegar	29
29	Bleached Shellac, Fish Glue and Vinegar, heavy	34
30	White of Egg Glair, Le Page's Glue and Wax	36
31	Shellac, Fish Glue, Vinegar and Glair	38
31a	White Shellac, Venice Turpentine and Dennison's Glue	38
31b	Orange Shellac, Dennison's Glue and Aqua Ammonia	38
OILS AND GREASES		
32	Oil of Sweet Almonds	44
33	Engine Oil	44
34	Oil of Olives	44
Formula No.		Page
35	Neatsfoot Oil	44
35a	Lard Oil	44
36	Oil of Lemon	44
37	Oil of Sweet Almonds with Oil of Lemon	45
38	Amber Vaseline	45
39	Camphorated Vaseline	45
40	Lard, Tallow, Stearine and Varnish	45
41	Gilding Powder Varnish	47
42	Lard, Tallow, Stearine and White of Egg with Lemon Juice	47
43	No. 40 and 42 combined	49
44	No. 42 and 38 combined	49
45	No. 42 and Palm Oil	49
46	No. 42 with Palm Oil and Vaseline	50
GREASE REMOVERS		
47	Gasoline	51
48	Benzine	51
49	Benzole	51
50	Petroleum Ether	51
51	Cumole	51
THE STAMPING OF SILK (Badges, Etc.)		
THE WET PROCESS		
52	White of Egg Glair	53
THE DRY PROCESSES		
53	White of Egg Glair	54
54	No. 40 with Orange Shellac Varnish	54
55	No. 39 with Orange Shellac Varnish	54
56	Orange Shellac Varnish with Cumole	55
EDGE GILDING		
FILLERS		
57	Bookbinders' Varnish, Gilders' Whiting and No. 31 with Gelatine	70
57a	Bookbinders' Varnish alone	71
58	Soap and Glue	71
BOLE PREPARATIONS		
59	Bole with Paste and Creosote	73
60	Bole, Black Lead and Gelatine	74
60a	Bole with Paste and Carbolic Acid	75
LAYING-ON SIZES		
61	White of Egg Glair	76
62	Egg Albumen Size	76
63	Egg Albumen with Oxalic Acid	77
63a	White of Egg, Vinegar and Brandy	78
METAL-EDGING		
64	Casein Glue for rubbing-down	79
	No. 37 for laying-on	79

FORMULAS FOR BOOKBINDERS

careful, too strong a solution will impart an undesirable reddish brown hue to the leather. After sprinkling, fill with paste, either flour or starch, and when dry apply either size or glair. It is optional as neither vinegar nor acids will destroy the sprinkling.

Chromic Acid for
sprinkling
leather.

[No. 93.] *Chromic Acid.* Like bi-chromate of potash, chromic acid produces a brown color. However, the color produced by the latter is considerably more intense—deeper—than that produced by the former. The mode of application is exactly the same in both cases, so that the directions given for bi-chromate of potash should also be followed in the use of chromic acid.

BLANK-ROLLING OF FLESHES

[No. 94.] *Blank-rolling of Fleashes.* Nice, clean, white stock is certain to produce an even brown-black color in blank-rolling. However, much dark stock of inferior quality finds its way into many binderies, rendering good blank-rolling very difficult. A good remedy for this defect consists of washing the books with No. 74 diluted with considerable water. The nap of the leather is easily restored by brushing with a shoe-brush when the blank-rolling is done.

Blank-rolling of
Fleashes.

FORMULAS FOR BOOKBINDERS

benzine, cover it and let it stand over night. In the morning you will find that the rubber has absorbed all of the benzine; if not, let it stand another half day. Take the rubber out of the cup, place it on a paring stone and knead it with your hands till it forms a uniform mess. It will stick to your hands enough to be annoying, but as the benzine evaporates and the rubber thickens, it will easily peel off. The rubber should now be moulded into a cake or ball, returned to the cup and covered with benzine. The next day knead it again until it is no longer sticky, lay it aside for a couple of hours and it is ready for use. Of course the benzine will continue to evaporate, leaving the rubber eventually as hard as it was in its natural state, and if you are bent on using the rubber rather soft, you will find it necessary to put it through this process occasionally. By adding a little coal oil, turpentine, or almost any other kind of oil to the benzine, the rubber will remain soft longer, but be careful in adding oil, as too much of it will leave the rubber sticky. In cutting up the gum rubber it is well to cut it as small as possible, as this will facilitate the work of kneading it. Pure gum rubber can be bought at rubber houses or of dealers in rubber belting packing, etc. An ounce of it is sufficient to last a long time. I do not think it is necessary to soften the rubber at all. A piece of pure gum rubber two and one-half inches long, two inches wide and a half inch thick will answer every purpose. If this fails, softened rubber will fail also, and any gilt impression on whatever kind of material, not solid enough to withstand the friction of this piece of rubber, can never be called good work. The only

The Preparation
of Soft Rubber.

FORMULAS FOR BOOKBINDERS

advantage possessed by softened rubber is that every particle of waste gold is saved by its use. Whether or not this is sufficient compensation for the time consumed in preparing it, I will leave to the judgment of my readers.

[No. 89.] *How to prevent the sticking of the leaves in books printed on surface-coated paper, when applying marbled or plain color effects to the edges.* This manipulation, although very simple, is little known. It consists in merely fanning out the leaves in both directions, once each way, just after the edges are moistened, whether in coloring, marbling or gilding. In the latter instance the fanning out is to be done right after the application of the filler No. 57. But the trick must be done before the leaves have had a chance to become fastened to one another or the work will be in vain.

To prevent the sticking of the leaves in marbling, etc.

THE SPRINKLING OF LEATHER

[No. 90.] *Iron Solution.* Into a one- or two-quart iron kettle put a handful of iron filings or shavings, or, if neither is to be had, "cut" nails (not wire nails); add a quarter of an ounce of green copperas (sulphate of iron), a piece of gall-nut about the size of a pea, and one pint of pure vinegar. Place on the fire and after it has boiled a minute or two, take off and pour the solution, iron and all, into a two-gallon earthen crock, where it is kept ready for use. As it grows stronger with age, always try it on a scrap of leather before sprinkling the book. If too strong the color will be heavy and drag when rubbed with the hand. Dilute with water till this defect disappears. When using this solution for sprinkling, do not wash

Iron for sprinkling of leather.

[110]

FORMULAS FOR BOOKBINDERS

the book with oxalic acid, either before or after sprinkling. Proceed as follows: Sprinkle, rub the sprinkled book with the flat of your hand, fill with No. 10; when dry apply a coat of No. 21 diluted with three parts of water; when this is dry, give another coat of No. 21 full strength. The first coat of No. 21 must be applied very sparingly and carefully, in order to prevent the streaking and running of the iron. Use a very fine soft sponge for this purpose.

[No. 91.] *Iron Solution.* A very much simpler solution of iron suitable for sprinkling may be prepared by putting a handful of either iron filings or "cut" nails into a dish and covering the same with pure vinegar. In the course of a week or so the solution will be of sufficient strength for sprinkling.

A simple iron solution for sprinkling.

[No. 92.] *Bi-chromate of Potash.* Place in a small china bowl a piece of this chemical about the size of an English walnut, and add a cupful of hot water. It will dissolve at once and is then ready for use. As in the case of iron, test the strength of the solution on a scrap of leather before applying it to the books. If it is pale and indistinct, the solution is too weak, and you must add more bi-chromate of potash. If it is too strong it will leave a powder on the surface of the leather. This can be easily removed with a clean cloth, but it is best to avoid it by simply adding a little more water. Still, the color may be of correct strength and yet exhibit this same defect. If so, it is due to grease on the leather. In this case wash the book first with oxalic acid and then sprinkle. In fact, when using this sprinkling solution it is always best to wash the leather first with a solution of weak oxalic acid No. 7a, but be

Bi-chromate of Potash for the sprinkling of leather.

[111]