THE

PAINTER,

GILDER, AND VARNISHER'S

COMPANION

PHILADELPHIA
HENRY C. BAIRD, SUCCESSOR TO E. L. CAREY
1850

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THE

PAINTER,

GILDER, AND VARNISHER'S

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CONTAINING

RULES AND REGULATIONS

IN

EVERYTHING RELATING TO THE ARTS OF PAINTING, GILDING, VARNISHING, AND GLASS-STAINING:

NUMEROUS USEFUL AND VALUABLE RECEIPTS;

TESTS FOR THE DETECTION OF ADULTERATIONS IN OILS, COLOURS, &C.

AND A

STATEMENT OF THE DISEASES AND ACCIDENTS TO WHICH PAINTERS, GILDERS, AND VARNISHERS ARE PECULIARLY LIABLE;

WITH THE SIMPLEST AND BEST METHODS OF PREVENTION AND REMEDY.

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PREFACE.

THE object of the "PAINTER, GILDER, AND VARNISHER'S COMPANION" is to give a clear, concise, and comprehensive view of the principal operations connected with the practice of those trades; and to embody, in as little compass and as simple language as possible, the present state of knowledge in the arts of Painting, Gilding, and Varnishing, including all the information derived from the numerous recent discoveries in Chemistry. It has been the compiler's aim, while he has rejected all that appeared foreign to the subject, to omit nothing of real utility; and he trusts he shall be found to have attained it.

The best authorities have been consulted throughout, and the arrangement has been uniformly made with a view to practical purposes. The names of the different substances mentioned are those in common use; and wherever it has been found necessary to employ a term not generally known, an explanation has been given in a note or otherwise.

In the receipts, accuracy has been carefully attended

to in stating the number and the nature of the ingredients to be employed, and the fullest and plainest instructions given for the proper methods of applying them.

The arts of Polishing, Waxing, Lacquering, Japanning, &c., being intimately connected with the trades of Painting, Gilding, and Varnishing, are properly introduced in the following pages. Receipts are likewise given for the preparation of Sail Cloth, Oil Cloth, Printer's Ink, Court Plaster, and a variety of other substances, the composition of which, depending upon operations rendered familiar to the Painter, Gilder, or Varnisher, by his ordinary occupation, will make these additions both useful and interesting to him.

The reader will also find an account of the principal adulterations practiced upon oils, colours, gums, &c., with the readiest modes of detecting them.

The numerous accidents and peculiar diseases to which Painters, Gilders, and Varnishers are known to be liable in the exercise of their trade, have suggested to me the propriety of introducing a notice of the chief of these, with their general causes, and pointing out the best means of prevention and remedy. For the information contained on this head, I am indebted to the kind assistance of a medical gentleman of extensive acquirements and great experience.

I trust it is needless to observe that I do not profess, in the following pages, to instruct the experienced Painter, Gilder, or Varnisher in his business; but I flatter myself that even he may find in them something that is

either new to him or which he has as yet known but imperfectly or incorrectly. There was a time when persons engaged in mechanical trades distrusted everything in the way of their business, except what they had themselves seen or practiced. But this state of things has gone by, and, together with the ignorance and prejudice that occasioned it, has been banished by the general thirst after knowledge at present so prevalent. Every mechanic is now aware that his experience alone can supply him with no facts beyond the limits of his particular observation and practice; while, in perusing a well-executed treatise on his art, he is enabled to combine the experience and observation of other persons with his own, and to profit by them accordingly.

It is presumed that the "PAINTER, GILDER, AND VARNISHER'S COMPANION" may be useful to others besides professed tradesmen. Persons happening to reside at a distance from any regular tradesmau, or who, possessing confined means or ample leisure, wish to execute light work of this nature themselves, will find the present treatise a material assistance to them. And even to gentlemen differently circumstanced it may be extremely serviceable, by enabling them, when they have workmen engaged in painting and gilding on an extensive scale, to superintend and direct the operations of those they employ, and, in many cases, to judge of their integrity and ability.

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TOOLS AND APPARATUS.

BEFORE proceeding to enter upon any details respecting the nature, use, and composition of the substances employed by the Painter, Gilder, and Varnisher, I shall give a description of the tools and apparatus necessary in these occupations, with directions for their selection and proper use. The first in order and in importance are the *grindstone* and *muller*, employed in grinding colours. The grindstone in common use is a horizontal slab, about eighteen inches square, and sufficiently heavy to enable it to remain fixed and firm, while the colours are ground upon it. The best material is spotted marble or granite; but when that cannot be procured without inconvenience or great expense, white or black marble may be used. Particular care must be taken that the stone is hard and of a close grain, and not full of small pores,

which will be sure to retain part of the colours first ground, and thus prevent the stone from being properly cleaned, and render the colours that are ground afterwards mixed and dingy.

A large piece of slate is sometimes used for a grindstone; but this is very improper, except where the colours are quite of a common description and the painting requires no nicety.

The *muller* is a pebble-stone, in the shape of an egg, with the larger end broken off, and then ground as smooth and flat as possible. It is generally to be purchased ready-made at the colour shops. The greater its size (if the dimensions are not so large as to make it difficult for the workman, with a moderate exertion of the strength of his arms, to keep it in continual motion) the better. The usual size is from two to three inches in diameter at the flat end, and about five inches high. In choosing it, the principal points to be observed are, that the surface is perfectly smooth and the edges well rounded off.

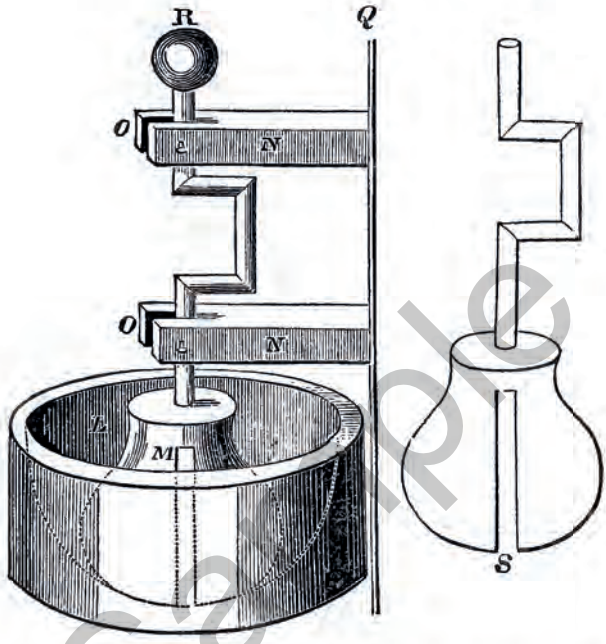
An excellent substitute for the common grindstone and muller, but confined in its application to the grinding of colours in a dry state, has been invented by Mr. Charles Taylor, of Manchester, England, and is represented by Figs. 1 and 2.

Fig. 1 represents a mortar, made of marble or other hard stone. One made in the usual form will answer.

M is a muller or grinder, made nearly in the form of a pear, in the upper part of which an iron axis is firmly fixed; which axis, at the parts marked N, N, turns in grooves or slits, made in two pieces of oak, projecting

TAYLOR'S INDIGO GRINDING-MILL.

Fig. 1. Fig. 2.



horizontally from a wall, &c.; and when the axis is at work, it is secured in the grooves by the iron pins O, O.

P, the handle, which forms a part of the axis, and by turning which the grinder is worked.

Q, the wall, &c., in which the oak pieces, N, N, are fixed.

R, a weight, which may occasionally be added, if more power is wanted.

Fig. 2 shows the muller or grinder with its axis sepa-

rate from the other machinery: its bottom should be made to fit the mortar.

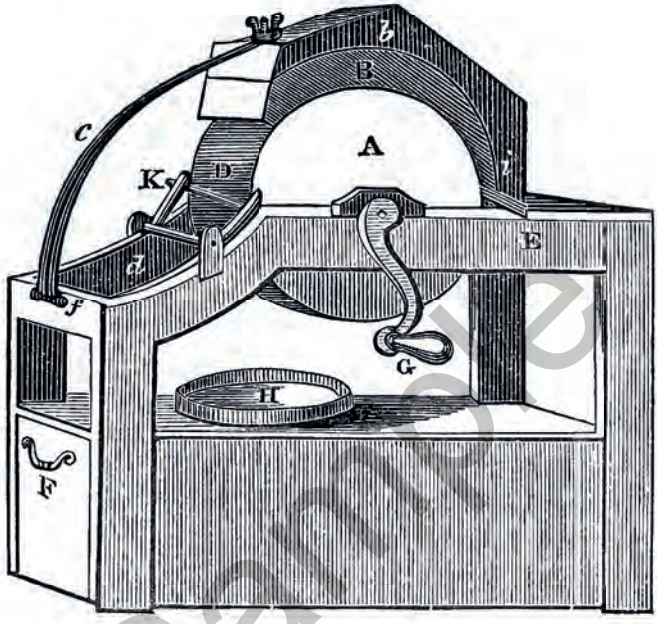
S, a groove cut through the stone muller.

The muller being placed in the mortar, and secured in the oak pieces by means of the pins, the colour to be ground is thrown into the mortar, above the muller; on turning the handle, the colour in lumps falls into the groove cut through the muller; and is from thence drawn in under the action of the muller, and again propelled to its outer edge, within the mortar; from whence the coarser particles again fall into the groove of the muller, and are again ground underneath it; this operation is continued until the whole of the colour is ground to an impalpable powder: the muller is then readily removed and the colour taken out.

To prevent any of the colour from flying off in dust under the rapid operation of the muller, and to save also the workmen from inhaling any of those pernicious matters which enter into the composition of most paints, a wooden cover, made in two halves, with a hole in it for the axis of the muller to pass through, is usually placed on the mortar while at work. Had Mr. Taylor's mill nothing else to recommend it, the protection which it thus affords to the health of the workmen ought alone to insure its general adoption. The common grindstone and muller are, in this respect, particularly objectionable. For mixing, or rather perfectly incorporating, colours, after they are dry-ground, with oil or water, and still farther refining them, recourse may be had to the mill for which Mr. Rawlinson, artist, in England, received a prize from the Society of Arts.

RAWLINSON'S INDIGO GRINDING-MILL.

Fig. 3.



A is a cylinder, made of any kind of marble; but black marble is esteemed the best, because it is the hardest, and takes the best polish. B is a concave muller, covering one-third of the circumference of the cylinder, and made of the same kind of marble with it: this is fixed in a wooden frame, *b*, which is hung to the frame E at *i*, *i*. *c* is a piece of iron, about an inch broad, to keep the muller steady; and is affixed to the frame by a joint at *f*. The small binding screw (with its nut)

which passes through the centre of the iron plate *c*, is for the purpose of laying more pressure on the muller when required, as well as to keep it steady. D is a taker-off, made of a piece of clock-spring, about half an inch broad; and is fixed, similarly to a frame-saw, in an iron frame, K, in an inclined position to the cylinder; and the frame turns on pivots at *d, d*. G is a sliding-board, made to draw out occasionally in order to clean it, should any particles of paint fall upon it from the cylinder; it also forms a support for the dish H, to catch the colour as it drops from the taker-off D. F is a drawer for the purpose of containing curriers' shavings, which are the best things for cleaning paint-mills. E is the mill frame.

The colour being mixed with oil or water, and, with a spatula or palette-knife, put upon the cylinder near to the top of the concave muller, the cylinder is then turned round towards the muller; which draws the colour beneath the muller without any difficulty; and a very few turns of the cylinder spread it equally over the surface. When it is found to be ground sufficiently fine for the purpose required, it is very readily removed by means of the taker-off before described; which must be held against the cylinder and the cylinder be turned the reverse way, which cleans it very quickly and completely; and the muller will only require to be cleaned when the operation is nearly completed and previous to changing the colour. For this purpose, it is to be turned back, being, as before said, hung upon pivots affixed to the frame at *i, i;* and may then be very conveniently cleaned

with a palette-knife or a spatula. Afterwards, a handful of the curriers' shavings being held upon the cylinder, by two or three revolutions it is cleaned effectually; and there is much less waste of colour with this machine than with any marble slab.

For the purpose of clearing the colour off the common grinding-stone, as well as for keeping it together should it spread too much during the grinding, painters sometimes employ a piece of horn, like that used for lanterns, about three inches by four, or a piece of wood of the same dimensions, very thin and smooth, and made sharp and even at the edge. This is called a *voider*. It is, however, more customary to use for this purpose a *palette-knife*. This instrument is commonly sold in the shops, and is generally made of steel, which ought to be highly tempered, extremely thin, and perfectly flexible. Ivory, however, is a much preferable material for the palette-knife; since some kinds of yellows assume a dingy, dark green hue, and all colours which contain any portion of arsenic in their composition experience a change when touched with iron or steel.

In no particular ought the painter or varnisher, who wishes to insure superiority in the execution of his work, to be more circumspect than in the choice of his *brushes* and *pencils*.

Brushes are either round or flat, and are of various sizes. The round ones vary from a quarter of an inch to two inches and a half in diameter. For some particular purposes they even exceed this latter size. The larger ones are made use of in laying on the first coat of

paint, or *priming*, as it is called, and in painting over large surfaces which require considerable quantities of colour. The smaller brushes are for parts, to which, from their size or situation, the large ones cannot be applied. Brushes of a *flat* form are usually termed varnishing brushes, being chiefly used for that purpose; but they are likewise employed in drawing lines, veining, and imitations of variegated woods.

A correspondent of the *Mechanics' Magazine* (vol. i. p. 279) makes an objection to the use of round brushes, which must be allowed to have considerable weight. "Being made round," he says, "they are by no means well adapted in that shape for laying on a flat surface; the consequence is, that painters invariably use their brushes but one way, for the very purpose of wearing them flat, which goes to prove the necessity of an alteration in their general shape." He then describes one which he made with a flat handle, and found to answer much better, for all common purposes, than the ordinary round brush. The handle was of beech, about an inch and a half wide and three-eighths of an inch thick, and, near the end on which the hairs were tied, was beveled off to a thin edge.

Brushes are almost always made of hogs' bristles. Sometimes they are of badger's or goat's hair; especially when required for varnishing fine works with a thin varnish. In choosing them, observe, in the first place, that the hairs are strong; and next, that they are close together, and fast bound with the threads that tie them round in the stocks. If the hairs are weak, the colour

will never lie in a good body; if they are not close together, they will spread and divide unequally when used, and consequently cannot work well. But the worst fault of all is, their not being fast bound in the stocks; for, in that case, some of them will come out while you are working, and the appearance of the work will be strangely disfigured by loose hairs being seen buried in the colouring when dry.

Even when as tightly bound together as possible, the hairs often get loose, from the practice so common with painters of keeping their brushes in water when out of use, by which the strings that bind them, though usually glued over, soon become rotten. To prevent brushes from being damaged in this way, get them bound in the usual way, but not glued over, and then work in rosin and grease, which will resist the water, and keep the brush for a long time tight and sound. When by long use the hairs of a good brush begin to work loosely, drive a few thin wedges of wood inside the thread with which they are bound round, and this will render the whole fast again.

Pencils differ from brushes in the smallness of their size and in being manufactured of a much finer and softer hair. In some cases, the hair of the marten, or of children, and even swansdown, are used for them; but these are generally confined to pencils intended for artists, the mechanical painter being rarely engaged in work of such a delicate nature as to require them. Pencils are invariably of a round form. The smallest are fitted into the barrels of quills, the larger sort into tin

cases, both placed at the ends of sticks; some of a very large size are fastened into stocks in the same manner as brushes.

In choosing pencils, a very simple trial will prove whether they are fit for your purpose. You have only to put them into your mouth, and, after wetting them a little, draw them out between your tongue and upper lip. Then, if they present a sharp point, and the hairs come out full next to the case, and without separating, the pencils are good: if the hairs show ragged, or are thin at the opposite end to the point, they cannot be depended upon. The sharpness of the point is of particular consequence in small pencils. The same attention must be paid to the hairs being fast bound in the stocks or cases, as directed in the choice of brushes.

With regard to the stick, or stock, attached to the pencil, it ought never to be *less* than eight inches; and, indeed, the greater the length, provided the workman can handle it with freedom and certainty, the better; for it is as impossible for a painter to have a good command of his pencil, as a writer of his pen, if he hold it too near the point.

To steady the hand while using the pencil, painters use what they call a *moll-stick*. This is made of a straight piece of wood, generally mahogany, with a nob at one end of it, resembling a printer's puff, but smaller, composed of some soft substance enclosed in leather. This end must be rested lightly on the work and the other end being held in the left hand, will render the stick a support to the right.

When you are engaged upon works which will require the use of pencils or small brushes for a long time together, it is customary, instead of having your colours in pots or pans, to dispose them in such quantities as they are likely to be wanted in, upon a *palette*. This is a small board, generally of an oval form, to be had at any colour-shop. It ought to be made of walnut or apple-tree wood, and, before being used, it should be well rubbed over with drying oil, till it refuses to take up any more. The same kind of palette will serve for the varnisher; but, for painting in distemper, it is necessary to have one made of tin-plate.

Spatulas, resembling in appearance the spreading slices used by apothecaries, are useful for preparing colors, and for many other purposes. They should be had of different materials, horn, bone, iron, steel, or ivory; but there should be at least one of each of the last two kinds, those made of steel being sometimes improper, for the reason mentioned in speaking of the palette-knife.

A *glass mattrass* is usually recommended for digesting varnishes, as its transparency admits of the progress of the solution being readily observed. But it is only the experienced manipulator who can safely employ a vessel of this kind; and for general use one of tin is much better.

A *rubber*, for varnishing or polishing, is usually made by rolling up a strip of thick woollen-cloth, which has been torn off so as to form a soft elastic edge; thick wide list will, however, answer equally well. The coil

may be from one to three inches in diameter, according to the size of the work.

There are other articles which it may be desirable, or even indispensable, for the painter, gilder, or varnisher to have among his apparatus, but which do not require any description of their nature or use, or any directions for their selection—such as putty,* a putty-knife, dusting-cloths and brushes, pots and pans of different sizes, made of tin or earthenware, to hold colours, (when of earthenware they should be glazed), a large pestle and mortar, hair and silk-sieves, square and rule, compasses, and black-lead pencils.

* Putty is made of common whiting, pounded very fine, and mixed up with linseed oil, till it becomes about the thickness of dough.