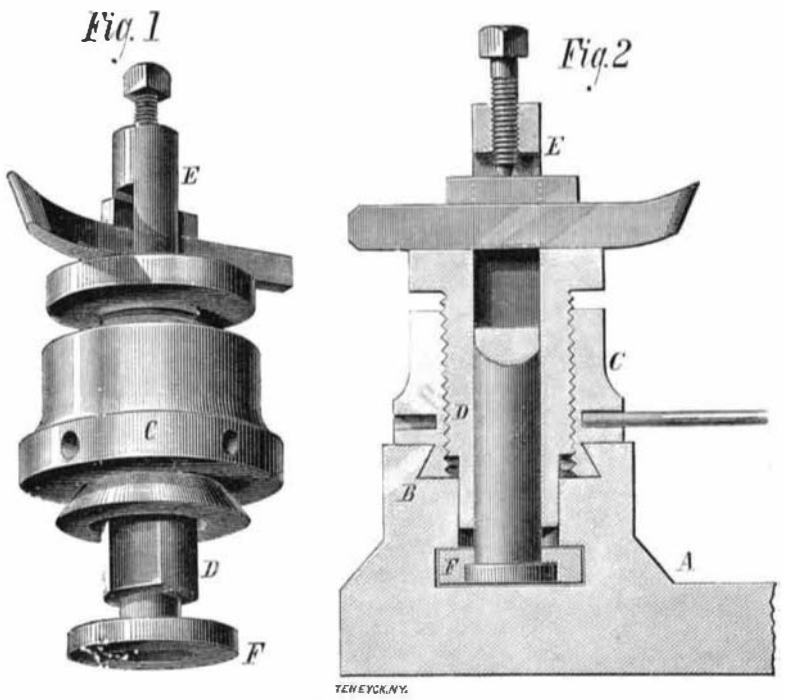
IMPROVED TOOL POST FOR LATHES.

We illustrate herewith a new tool post for engine lathes and similar tools in which the support is made in two parts, the upper part being screwed into the lower one and capable of being raised or depressed by turning said lower portion. The lathe tool is clamped by a set screw in the post in the usual way. Fig. 1 is a perspective and Fig. 2 a sectional view of the device.

A is a portion of the tool carriage of a lathe which is provided with the usual T-shaped slot, and with a V-shaped grooves, B, at the sides of the slot. C is a nut having a V-shaped flange to fit in said grooves, and turning therein. To the nut, C, an external sleeve, D, is fitted, which is flattened at its lower end and inserted in the T-shaped slot. It also has a flange at its upper end for supporting the tool. The post, E, has the usual mortise to receive the tool and set screw for binding the same. At its lower end a plate, F, is fitted and enters in the wider part of the T-shaped slot. By turning the nut, C, by means of a lever inserted in one of the holes made in the nut for the purpose. The sleeve, D, is raised or lowered as may be required, and the tool is clamped upon the top of the sleeve by the set screw in the post.

The device is of strong construction and the tool is rigidly held, while at the same time being easy of adjustment.

Patented through the Scientific American Patent Agency, October 2, 1877. For further particulars address the inventor, Mr. Robert Neasham, Mount Washington, Pittsburgh, Alleghany county, Pa.



NEASHAM'S TOOL POST FOR LATHES.

To Transfer Engravings on Glass.

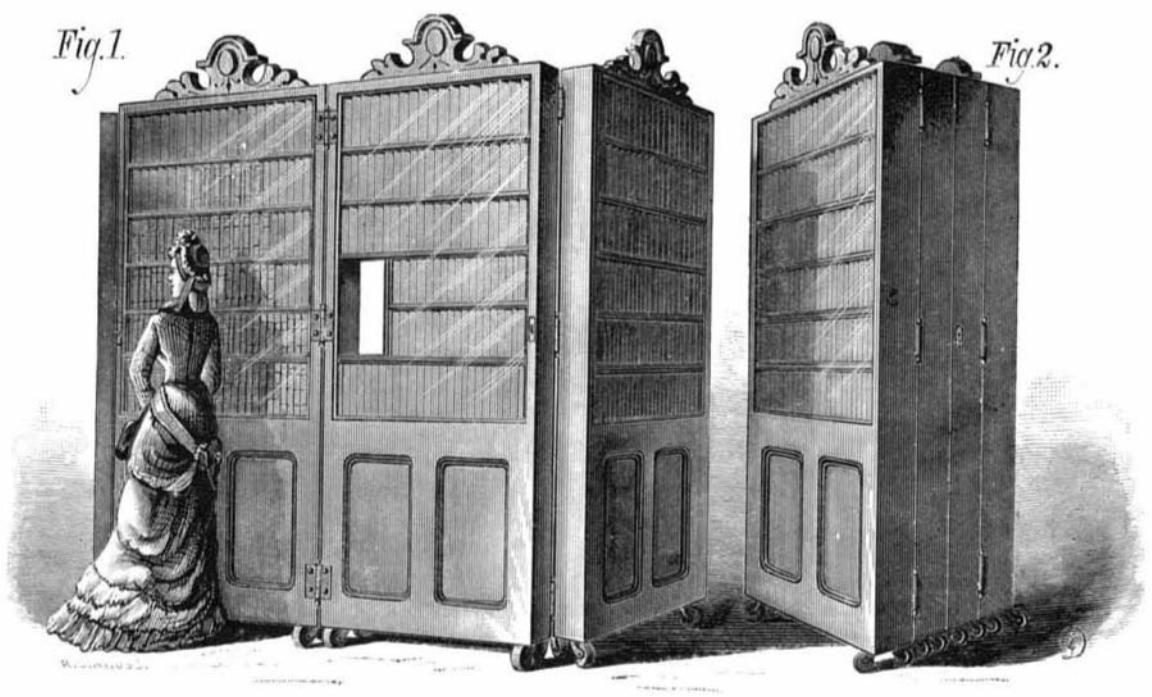
Metallic colors, prepared and mixed with fat oil, are applied to the stamp on the engraved brass or copper. Wipe with the hand in the manner of the printers of colored plates; take a proof on a sheet of silver paper, which is immediately transferred on the tablet of the glass destined to be painted, being careful to turn the colored side against the glass; it adheres to it, and so soon as the copy is dry take off the superflous paper by washing it with a sponge; there will remain only the color transferred to the glass, which will be fixed by passing the glass through the ovens.

HILL'S FOLDING BOOK CASE.

The folding book case, of which we present two views, consists of a central section and two end sections hinged to the former at the rear edge. The upper portion of each section of the case is divided by a series of horizontal and vertical partitions, into small compartments, each intended to receive a book, and each numbered to correspond with the number of the book for which it is the receptacle.

In front of these compartments each section is glazed. The books are arranged within with their backs to the front, so that the titles can be discerned through the glass. In the lower portion of each section are large compartments for books, papers, etc. The library is used by placing the side sections at right angles to the central section. The librarian stands in the inclosed space, removes books from the back and passes them through the aperture indicated in Fig. 1, to the applicant. Fig. 2 shows the book case folded up when not in use. The books are thereby protected from injury by dust, and the case itself is easily stored away, and being provided with strong casters is readily moved.

The invention is especially intended for circulating and Sunday school libraries, but would also be a convenience in private houses. For further particulars apply to the inventor, Charles F. Hill, Hazleton, Pa.



HILL'S FOLDING BOOK CASE.

On Bleaching Shellac.

BY JOSEF MARIA EDER.

The greater part of the colorless shellac which is used is bleached in the alcoholic solution, because these varnishes give a good polish, and warrant that the metallic articles covered with them will remain bright. There are, however, in the market considerable quantities of solid bleached shellac, and its practical preparation is not unimportant.

The method of bleaching with alcohol and chloride of lime, given by Field in the *Polytechnisches Notizblatt* (1852, p. 23), and by Wittstein in *Dingler's Journal* (1857, CXLIII, 467), as well as those of Lunning and Elsner, with alcohol and animal charcoal, are not applicable to solid shellac owing to the high price of alcohol and the difficulty of its recovery. Kressler's method is more practical, in which the shellac is dissolved in aqueous soda solution and bleached with hypochlorite of soda. Sauerwein modified Kressler's process by the addition of sulphite of soda to the above named reagents.

According to my experiments, the following process is practically especially to be recommended, and can also be carried out on a large scale, according to my directions.

Ten parts of pulverized shellac is dissolved with four parts of crystallized soda in 120 to 150 parts of hot water in a copper kettle, and the violet solution, the color of which is due, according to Marquart and Nees Von Esenbeck, to a coloring substance similar to carmine, is filtered through linen into a wooden vat. Ten parts of chloride of lime (containing about 30 per cent chlorine) is triturated with a solution of 10 to 20 parts of crystallized soda in 200 of water, and this bleaching solution filtered into the shellac solution. To the mixture when cold, dilute hydrochloric acid is added carefully until some shellac begins to separate in crumbs: in most cases only a very little acid is required. This little dodge, suggested by Sauerwein, in fact, hastens the bleaching in no small degree. After two or three days, whether the solution is kept in the dark or in the light, the bleaching is finished. The shellac is then precipitated by the addition of concentrated hydrochloric acid.

If a comparatively pure natural shellac is to be bleached, this white crumbly precipitate is at once collected upon coarse linen, thoroughly washed with frequent stirring, and then melted together. Impure shellac is left standing for several hours in the liquid, after having been precipitated with hydrochloric acid. The liberated chlorine acts very energetically; yet it is preferable to allow the bleaching to proceed in the alkaline solution. The finely divided shellac, if it remains very long in the acid chlorine solution, becomes brittle, and cannot be drawn out so well. Inferior grades of bleached shellac are obtained by using half the quantity of chloride of lime above prescribed.

The precipitated shellac is put into boiling water, when it becomes soft, and can be moulded in any desired form. At first it is porous and not transparent, but repeated warming, and strong kneading and pulling, impart to it a beautiful silky gloss.

In spite of the greatest cleanliness, which is absolutely necessary, it is scarcely possible to prevent the surface becoming yellowish; if the bleaching did not succeed perfectly the whole mass has a yellowish shade. To improve the appearance of the ware, the drawn and moulded shellac is put for some 24 hours in the acid chlorine liquid, from which the precipitated shellac has been strained out. It is used before being diluted by the wash water; if necessary, some more chloride of lime is added. By this means a chalk white surface is obtained. This white layer also possesses this advantage, that the shellac can be kept a long time without changing its appearance; for it does not change, as all bleached shellac will, and that too throughout the whole mass. Finally, the silky lustre is greatly enhanced by brushing the surface. This silky appearance cannot be obtained by chemical means. According to Berzelius, by a short immersion in strong ammonia, the surface swells, and when dry, has a strong lustre, but instead of being silky it is resinous. The white color of product changes under this treatment to yellowish, and cannot be restored by the above mentioned process of after-bleaching.

The shellac thus prepared dissolves rapidly in alcohol, and the solution is perfectly colorless. Previous swelling of the shellac in ether is superfluous. With freshly bleached shellac, a milky turbid varnish is frequently obtained, which does not clear on standing a long time, as observed by Jacobsen and Peltz. The cause of this is the insolubility in alcohol of a resin which is contaminated in the crude shellac, as shown by Unverdorben (*Pogg. Annalen*, XIV, 119), and by the wax in the shellac (*Ann. Pharm.*, CXXXI, 286). The method proposed by Peltz, of extracting this substance with petroleum ether, I do not consider commendable, for the reason that such varnish dries brittle. Shaking the solution with pulverized chalk, or gypsum, accomplishes the clarification in a few hours, and the clear solution can readily be drawn off.

Polish prepared with such bleached shellac is more brittle than if it is bleached with spodium, and hence the latter is to be preferred for fine cabinet work. On the other hand, if the shellac is only sufficiently washed there is absolutely no rusting of metals varnished with it.—*Dingler's Journal.*

A Brilliant Meteor.

To the Editor of the Scientific American:

Thinking it to be of interest to you, I send you the following description of the fall of a meteor which I observed last evening, November 11, 6.30 P.M. Direction N. N. E. Altitude at commencement of course about 30°. Length of course from 10° to 12°. Time of falling about 8 seconds. It fell towards the west, making an angle in falling to the earth of about 65° with the vertical passing through the body. During the latter three fourths of its course, its length, including the luminous trail, was about one half of a degree. The nucleus was very brilliant; its color at first a yellowish-white, then a light green, and lastly a greenish yellow. Could its color have been due to boron, thallium, etc.? I find no record, in any of the numerous analyses of meteoric stones, of the presence of elements likely to give the green color.

ROBERT C. HINDLEY.

Racine College, Wisconsin, November 12, 1877.

Kangaroo Leather.

Kangaroo hides have already become an important article of export from Australia. They make the most pliable leather that is known, admirably fitted for bootlegs, gloves, and riding whips. The skins are sent to Europe, some tanned, and some simply dried.—*Fortsch. d. Zeit.*

A GOOD waterproof cement may be made by mixing glue 5, rosin 4, red ocher 3 parts, with a little water.