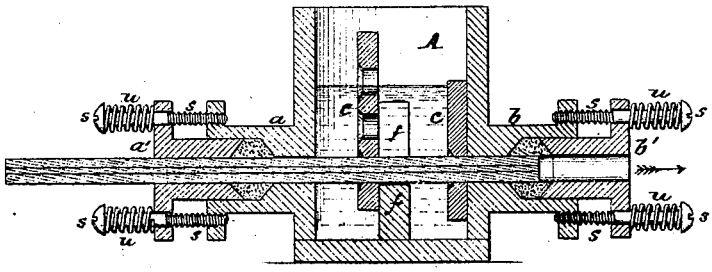
Müller & Benson,

Varnishing Lead Pencils.

NO. 109,750. Patented Nov. 29. 1870



Witnesses. Inventors.

WITNESSES.

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United States Patent Office.

TEILE H. MÜLLER AND HENRY C. BENSON, OF NEW YORK, N. Y., ASSIGNORS TO JOSEPH RECKENDORFER, OF SAME PLACE.

Letters Patent No. 109,750, dated November 29, 1870.

IMPROVEMENT IN MACHINES FOR VARNISHING PENCILS.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern:

Be it known that we, TEILE H. MÜLLER and HENRY C. BENSON, both of the city, county, and State of New York, have invented certain new and useful Improvements in Machinery for Varnishing Pencils and other articles, of which the following is a specification.

In varnishing lead-pencils it has heretofore been usual to pass the pencils, one after the other, through a vessel filled with varnish, each pencil, after leaving the varnish-vessel, passing between or through revolving brushes, which were used in order to cause the thin film or coat of varnish on the outer surface of the pencil to enter and be incorporated, as far as possible, with the wood.

As these brushes require, however, a great deal of labor and machinery in order to be kept in proper operation, we propose to substitute for them other devices, which, while operating upon the pencils as well as or even better than the brushes, do not require any labor or machinery to be kept in operation.

To this end we place in the varnish-vessel one or more dies, the hole in each die being of such a diameter that, when the pencil is passed through it, the exterior surface of the wood will be compressed, thereby closing the pores of the wood, and partially pressing the varnish into them.

After the pencil has passed through the die the pores again open, but, as this takes place in the varnish, the opening of the pores draws into them the varnish, which thus becomes intimately incorporated with the wood.

At each end of the varnish-vessel there is a stuffing-box surrounding the aperture, though which the pencil enters or passes out.

Heretofore these boxes, owing to defects in their construction, have demanded constant attention and adjustment in order to obtain the requisite even pressure upon all sides of the pencil, and even then have very imperfectly performed their work.

We remedy the difficulties heretofore experienced in this direction by combining with the box and the gland, springs interposed between the gland and the bolts or screws, which hold it to the box, the said springs causing the gland to follow the wear of the packing, compressing the packing as it wears out, and causing it to exert an even pressure upon the pencil, thereby insuring more even coloring of the pencil and effecting a saving of varnish.

To enable those skilled in the art to understand and use our invention, we will proceed to describe the manner in which the same is or may be carried into effect by reference to the accompanying drawing, which represents a longitudinal vertical central section of a varnishing apparatus made in accordance with our invention.

A is the varnish-vessel or box, made of any suitable size and shape.

The stuffing-boxes for the entrance and exit of the pencils are shown at *a b*, and the feed of the pencils through the box is obtained in the usual way by putting the pencils in a line, end to end, and then pressing them forward through the box, either by hand or by feed-rollers.

Within the box, and below the level of the varnish therein contained, we place one or more dies, *c*, of steel or other suitable material, the hole in each die being, as above stated, of such diameter relatively to the pencil that the latter in passing through will be compressed more or less.

Each die is arranged so that the hole in it shall be upon the prolongation of the holes in the stuffing-boxes, through which the pencil also passes.

In the drawing two dies are shown, one supported against lugs or a frame, *f*, near the center of the vessel, the other resting against the end of the vessel. Either of these positions may be selected for the die, or it may occupy any other suitable position in the vessel as the action of the varnish demands, or both dies may be used.

These dies are designed to take the place of the brushes heretofore employed for the purpose of incorporating the varnish with the wood, and they are readily applied to the box, while they require no machinery to operate them, and do their work equally as well as, if not better than, the brushes.

By passage through the dies, the pores of the wood are brought into condition to take the varnish, and the incorporation of the varnish is complete before the pencil passes out from the apparatus.

The movement of the pencil through the box is in the direction indicated by the arrow, and, therefore, the first stuffing-box *a* serves only to keep the varnish in the vessel. But the other stuffing-box *b* is not only used for this purpose, but at the same time acts as a wiper to remove the superfluous varnish from the pencil, thereby determining the thickness of the coat of varnish put on during each passage of the pencil through the apparatus.

As the color of the outside of the pencil depends in great measure upon the thickness of these coats of varnish, and as it is very desirable that pencils of the same class should be of the same color, it is, therefore, important that an even pressure should be exerted upon the exterior of the pencil, and that this pressure may be graduated and made to compensate for the wear in the packing of felt or other elastic material with which these boxes are usually packed.

To this end we unite the glands *a' b'*, which are used to bear upon the packing, with their boxes, by means of screws *s s*, which pass loosely through the flanges on the glands and screw into the boxes in the

usual way; and between the heads of these screws and the glands we interpose springs *u*, as shown plainly in the drawing.

Under this arrangement, when the adjusting screws are screwed up so as to cause the gland to bear upon the packing in the box with the requisite pressure, they act on the gland through the medium of the springs *u*, which, by the operation of screwing up the screws *s*, have been compressed. Therefore, any subsequent wear of the packing will be at once compensated for by the springs, which will expand so as to move the gland farther in, thus causing the even pressure of the packing upon the pencil to be preserved for a very long period.

Under the old arrangement the boxes required constant attention and adjustment, but when made as above described, they become self-compensating, and perform better work, and require much less looking after than has heretofore been the case.

Having now described our invention, and the manner in which the same is or may be carried into effect,

What we claim, and desire to secure by Letters Patent, is—

1. The pencil-compressing die or dies, placed in the varnish-vessel and below the level of the varnish, through which the pencil passes, substantially as and for the purposes set forth.

2. In a varnishing apparatus, substantially as described, the combination, with the stuffing-box at either or both ends of the varnish-vessel, of a gland or cover, held to the box and upon the packing contained therein by means of screws or equivalent holding devices, and springs interposed between said holding devices and the gland, for the purpose of compressing the packing as it wears, and thus maintaining an even pressure upon the pencil, substantially as shown and set forth.

In testimony whereof, we have signed our names to this specification before two subscribing witnesses.

TEILE H. MÜLLER.
HENRY C. BENSON.

Witnesses:
J. F. WILLIAMS,
GEORGE SLOAN.