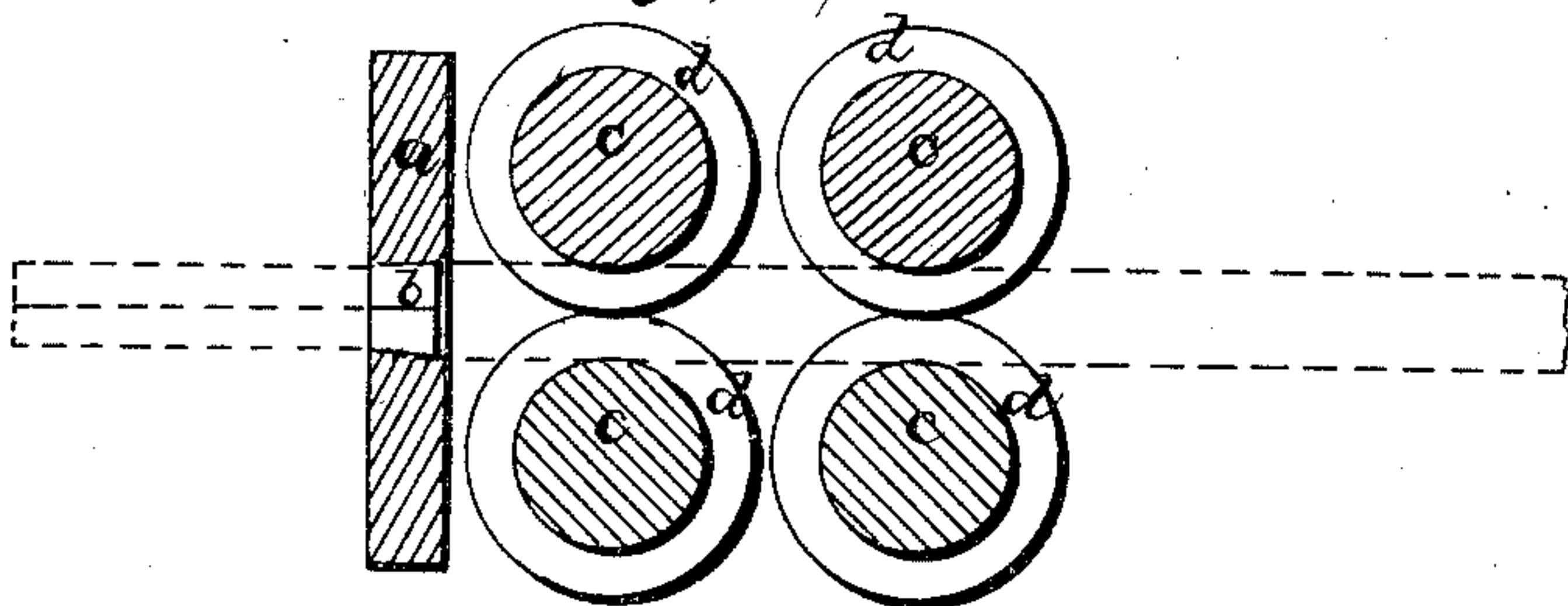


F. G. Jenkins.

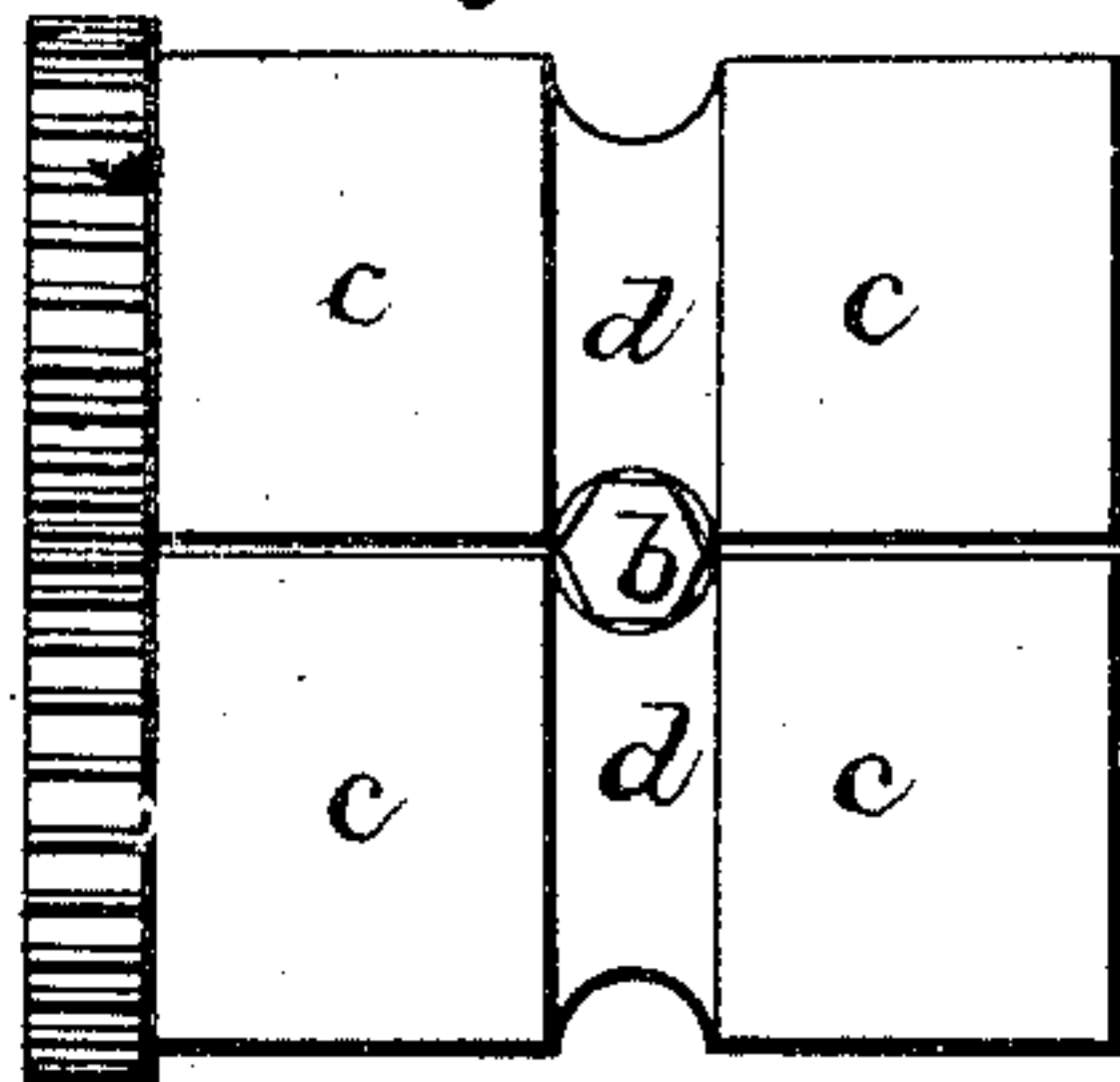
Making Lead Pencils.

Nº 90,269. Patented May 18, 1869.

Fig; 1;



Fig; 2;



Witnesses;

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" " "

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FREDERICK G. JENKINS, OF BROOKLYN, E. D., NEW YORK, ASSIGNOR TO JOSEPH RECKENDORFER, OF NEW YORK CITY.

Letters Patent No. 90,269, dated May 18, 1869.

IMPROVEMENT IN THE MANUFACTURE OF LEAD-PENCILS.

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

To whom it may concern:

Be it known that I, FREDERICK G. JENKINS, of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in the Manufacture of Lead-Pencils; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 represents a longitudinal transverse vertical section through a die and feed-rolls, arranged in accordance with my invention.

Figure 2 is a front elevation of the same.

My invention relates principally to the forming and finishing of polygonal lead-pencils, or those pencils whose wooden sheath has a polygonal cross-section.

Round or cylindrical pencils have been heretofore shaped and finished by means of a rapidly-revolving cylindrical cutter. Such a method is of course inapplicable to the manufacture of polygonal pencils, and the only mode which, up to this time, has been found to produce the desired results in the speediest and cheapest manner, has been to provide a series of cutters, for forming or cutting separately each face of the polygonal pencil, and then, after the application of the proper varnish or size, to polish the pencil by hand.

Two operations are thus required: first, cutting the faces; second, varnishing and polishing them after they have been cut.

The first operation is productive of considerable loss and expense, as the cutting-machinery, with its series of cutters, is costly; and, moreover, the pencil-stock must be considerably larger than required for the finished pencil, in order to allow it to be cut away to the proper size and shape without reducing the pencil below the standard dimensions. Thus there is necessarily a waste of material, and the operation is, moreover, tedious and troublesome.

The second operation is no less objectionable. Hand labor must be employed to polish the pencils, which itself is more expensive, and requires much more time than if the operation were performed by machinery, while, at the same time, the success of the operation depends upon the skill of the workman and his ability to perform the work properly.

The object of this invention is to reduce the time, labor, and expense required to produce a finished polygonal pencil, to avoid the waste of stock, the employment of hand-labor for polishing, and to reduce the number of operations required by the mode heretofore in use. To this end,

My invention consists in compressing the pencil-stock in, and forcing it through one or more stationary dies, of a polygonal shape, corresponding to that which is to be given the finished pencil, in such manner that the wood shall be compressed, in lieu of being cut into the proper form, and shall, at the same time, be polished during its passage through the die or dies.

In carrying out my invention, I set up, in a suitable manner, a stationary die, *a*, which may, for instance, have an octagonal form, for the production of an octagonal pencil.

The octagonal-shaped aperture, or die *b*, is largest at the end which the pencil enters, and thence tapers gradually toward the other end, where it has the shape and proportion which are to be imparted to the finished pencil.

The die should, of course, be made of steel or equivalent material, and its faces should be highly polished and finished.

Just in front of the larger end of the die I place one or more sets of feed-rolls, *c*, in such manner that the point where the two rolls of each set adjoin each other shall lie in the plane of the die-opening.

The rolls of each set should be made capable of being moved toward or away from each other, so as to be adjusted accurately with respect to the die, and to accord with the varying size of the pencil-stock which may be placed between them, and they may be grooved, as shown at *d*, so as to direct the pencil-stock accurately to the die-opening *b*.

The wooden pencil-stock, with enclosed lead, may be of any ordinary or suitable shape, preferably cylindrical, and of no greater size than required for the finished pencil.

It is first varnished, or provided with the usual coating of paint or size, and is then inserted between the feed-rolls, which are in revolution.

These rolls immediately carry it forward toward the die, into the larger end of which it enters, and is gradually carried forward through the die, and out from its smaller end.

When this operation is finished, it will be found that the pencil-stock, during its passage through the die, has been gradually compressed into the octagonal form required, and, moreover, that the frictional contact between the die and the pencil has polished or burnished the sides of the latter, which, by one short operation, is thus simultaneously shaped and finished; or, the pencil-stock, stained in the usual manner, may be first passed through the die, and compressed and burnished, and then a coat or two of varnish can be applied.

The unfinished pencils, or pencil-stocks, as they may be called, are fed along, one after the other, through the rolls, the front end of the following pencil abutting or pressing against the rear end of one in advance, which latter, by this means, is forced completely through and out from the die, even after it has passed from between, and ceases to be directly acted upon by the feed-rolls.

The same pencil may, if desired, be passed once, twice, or oftener, through the same die, or a series of dies may be employed, approximating gradually to the form which is to be given the finished pencil. The

more dies the pencil passes through, the smoother becomes its surface. After which, one or two coats of varnish will give it a fine polish.

The form and arrangement of the apparatus may be varied in many respects, as will be readily perceived without further explanation, all that is needed to carry out this invention being, first, that a die or dies should be provided, in which, as described, the pencil-stock is at once compressed and shaped and polished, or burnished; and, second, that with such die or dies, a feed-apparatus should be combined, so as to carry forward, steadily and surely, the pencil-stock to be operated on.

And it will be seen, that by these means, the method of manufacture heretofore practised, and the objectionable features attending it, as above specified, are dispensed with and removed, and that a great part of the labor, and loss of time, and expense, usually incurred in the manufacture of polygonal pencils is saved.

From a review of the method just described, it will be noticed that the pencil can be compressed into shape, or, if previously shaped by other means, it can be polished or burnished, or the two operations of shaping and burnishing can be effected simultaneously; and it will be understood that this process, while intended by me to be used especially for the manufacture of pencils, can be employed to effect the shaping

or polishing, or both shaping and polishing of other articles, the form of the die or dies being varied, to accord with the shape to be imparted to the article.

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

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

1. The method of shaping and polishing, or both shaping and polishing, polygonal lead-pencils, and like articles, by the employment of one or more stationary dies, having the form required for the finished article, in which the stock is compressed into the desired shape, or polished, after being previously shaped, or both compressed and polished, substantially in the manner and for the purposes set forth.

2. The combination of the stationary compressing and polishing or burnishing-die or dies, and one or more sets of feed-rolls, or their equivalents, for carrying forward and forcing the stock through said die or dies, substantially in the manner and for the purposes set forth.

In testimony whereof, I have signed my name to this specification, before two subscribing witnesses.

FREDERICK G. JENKINS.

Witnesses:

WM. H. TOPHAM,
ISAAC FRIEDMAN.