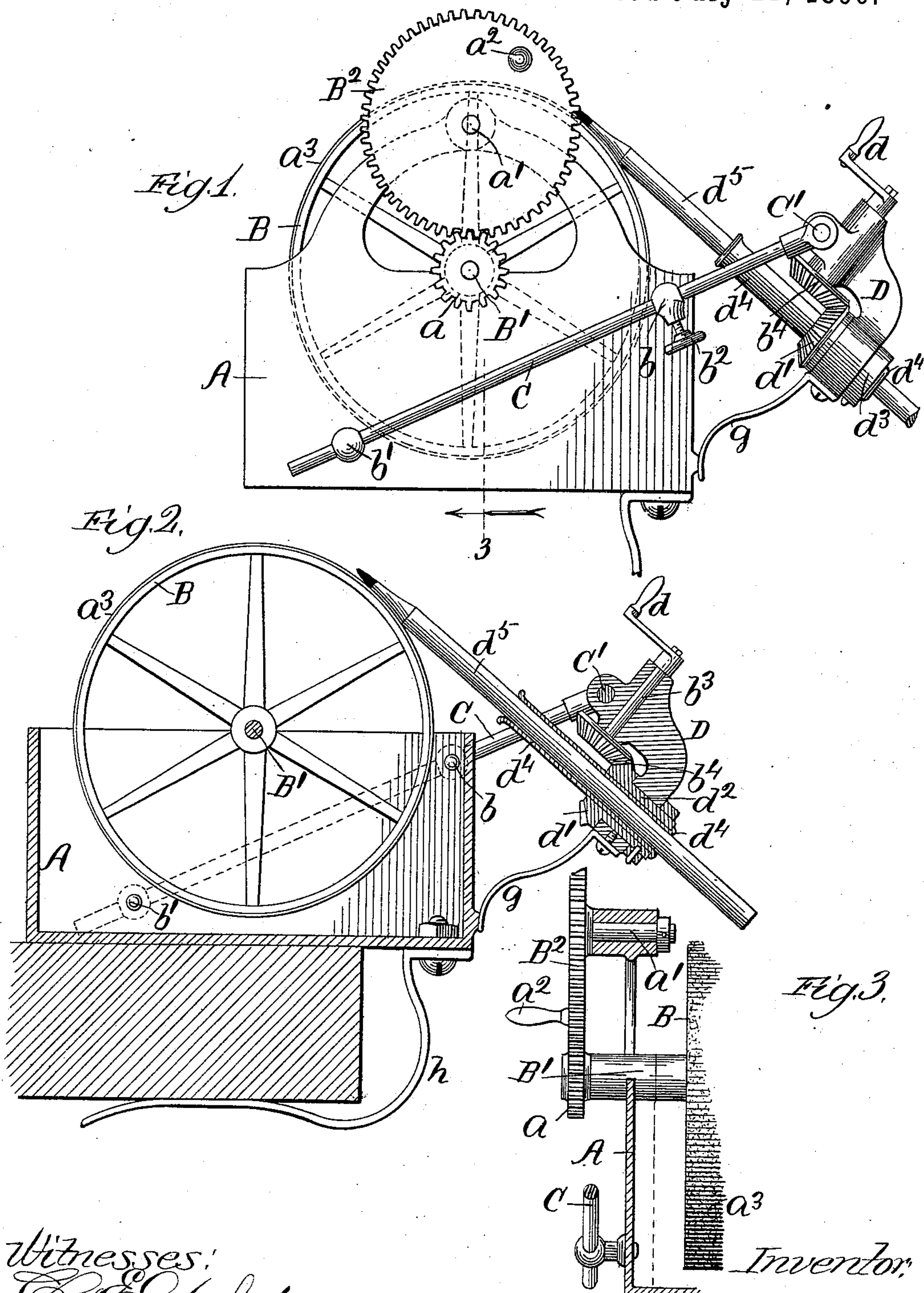


(No Model.)

J. W. JOHNSON.  
PENCIL SHARPENING MACHINE.

No. 564,202.

Patented July 21, 1896.



Witnesses:  
Charles Gaylord,  
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Attys



# UNITED STATES PATENT OFFICE.

JAMES W. JOHNSON, OF CHICAGO, ILLINOIS.

## PENCIL-SHARPENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 564,202, dated July 21, 1896.

Application filed May 21, 1895. Serial No. 550,046. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES W. JOHNSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pencil-Sharpening Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of devices used in sharpening pencils; and it has for its object to provide an improvement of this character that will greatly facilitate the operation, and also do the work in a better and more satisfactory manner than has been possible heretofore.

This invention is more especially intended to meet the demand for a device of this kind in the schools, where hundreds and thousands of pencils must be sharpened every day for the use of the scholars.

The operation of sharpening must be done neatly as well as expeditiously, as the character of the work done by the teachers and scholars in using the pencils requires it.

In the drawings, Figure 1 is an end elevation of a machine embodying my improved features; Fig. 2, a vertical transverse section on line 2, Fig. 3, looking in the direction indicated by the arrow; and Fig. 3, a broken-away part elevation and part section on line 3, Fig. 1.

A is a combined frame for the support of the working mechanism, and box-receptacle to receive the cuttings.

A rotatable cylinder or drum B is rigidly mounted on a shaft B', the respective ends of which are provided with suitable journal-bearings in the ends of the box-frame, the cylinder revolving in the box part. On one projecting end of the shaft B' is rigidly mounted a pinion *a*, Figs. 1 and 3, with which a crank gear-wheel B<sup>2</sup>, mounted on a stub-shaft *a'*, engages. This stub-shaft is journaled in the upper part of the framework, as shown in Fig. 3. A handle *a*<sup>2</sup> is inserted in gear-wheel B<sup>2</sup>, which provides means for rotating the same in transmitting the required motion to the sharpening-cylinder B. The exterior cutting and grinding surface of the cylinder

may be of any material or substance that is best adapted for the purpose, such as emery or pulverized glass, prepared on sheets of paper or cloth, and of such a length as to go around the cylinder once, so that a number of sheets may be mounted on the cylinder in such a manner that when the outer one has become so worn from use that it is no longer serviceable it may be removed and a new sharpening-surface presented, and so on until the last sheet has been worn out. A single sheet or cutting-surface *a*<sup>3</sup> is shown in the drawings by way of illustration.

At each end of the box-frame are adjustably-mounted companion rods C C, supported in pins *b b'*, fixed in the respective ends of the frame and provided with apertured heads for the reception of the rods, which are set at an inclined or oblique angle and may be locked in any position to which they are capable of being adjusted by a hand-screw *b*<sup>2</sup>.

The upper ends of rods C C are mounted upon the respective ends of a rod C'. An angular holder-bracket D is loosely mounted on rod C', and is adapted to have a sliding movement thereon. In one end of this bracket is journaled a shaft *b*<sup>3</sup>, on the inner end of which is mounted a beveled pinion *b*<sup>4</sup>, and on the outer end a hand-crank *d*. A companion engaging-pinion *d'*, having a hub-extension *d*<sup>2</sup>, is journaled in the opposite end of angular bracket D. A collar *d*<sup>3</sup>, on the outer end of the hub extension, prevents an endwise movement. A sleeve or tube *d*<sup>4</sup> is inserted in the hub extension *d*<sup>2</sup>, which receives and holds the pencil *d*<sup>5</sup> to be sharpened.

The bracket D is loosely and movably supported by a spring-arm *g*, one end of which is secured to the bracket and the opposite end bearing loosely against the adjacent side of the box-frame. This arrangement permits of the bracket being moved along on the rod C' so as to bring the pencil in contact with and utilize the entire surface of the sharpening-cylinder from end to end. Turning the crank *d* transmits a rotary movement to the pencil so as to bring it uniformly in contact with the sharpening-surface.

The contact position of the pencil with reference to providing the same with a long, short, or medium point is regulated by means of the rods C C, as moving the rods inwardly



or outwardly has the effect of altering the angular position of the holder, so that more or less wood will be cut from the pencil in accordance with the length of point desired.

- 5 The spherical or convex surface of the sharpening-cylinder produces a concave point and allows more of the lead to project from the wood without breaking off the point than is possible with any of the ordinary devices  
10 which produce a conical point.

The machine may be attached to an object in a working position by a clamping-arm *h*, or any other suitable means.

- Having thus described my invention, what  
15 I claim as new, and desire to secure by Letters Patent, is—

1. In a pencil-sharpener, the combination with the supporting-frame, of a holder, comprising companion adjustable rods, set at an  
20 inclined angle, a rod *C'*, mounted on the ends of the adjustable rods, an angular bracket, mounted upon and having a sliding movement on, the rod *C'*, a beveled pinion journaled in one end of said bracket, a companion  
25 engaging-pin, journaled in the other end, means for rotating said pinions, and a sleeve, adapted to receive the object to be sharpened, substantially as described.

2. In a pencil-sharpener, the combination with a box-frame, of a rotatable sharpening-cylinder, journaled therein, companion adjustable rods, set at an inclined angle, a rod  
30 *C'*, mounted on the ends of the adjustable rods, an angular bracket, having a sliding movement on the rod *C'*, a beveled pinion, journaled in one end of said bracket, a companion  
35 engaging-pin, journaled in the other end, means for rotating said pinions, and a sleeve, adapted to receive the object to be sharpened, substantially as described. 40

3. In a pencil-sharpener, the combination with the box-frame, of the companion rods *C*, the rod *C'*, mounted on the ends thereof, the  
45 angular traveling bracket, mounted on the rod *C'* and supporting the pencil holding and rotating mechanism, and a spring having one end secured to said bracket and the other end bearing loosely against the box-frame, substantially as described.

In testimony whereof I affix my signature  
50 in presence of two witnesses.

JAMES W. JOHNSON.

Witnesses:

L. M. FREEMAN,  
L. B. COUPLAND.