

(No Model.)

W. RUNDQUIST & L. N. JACKMAN.
MACHINE FOR SHARPENING PENCILS.

No. 438,569.

Patented Oct. 14, 1890.

Fig. I.

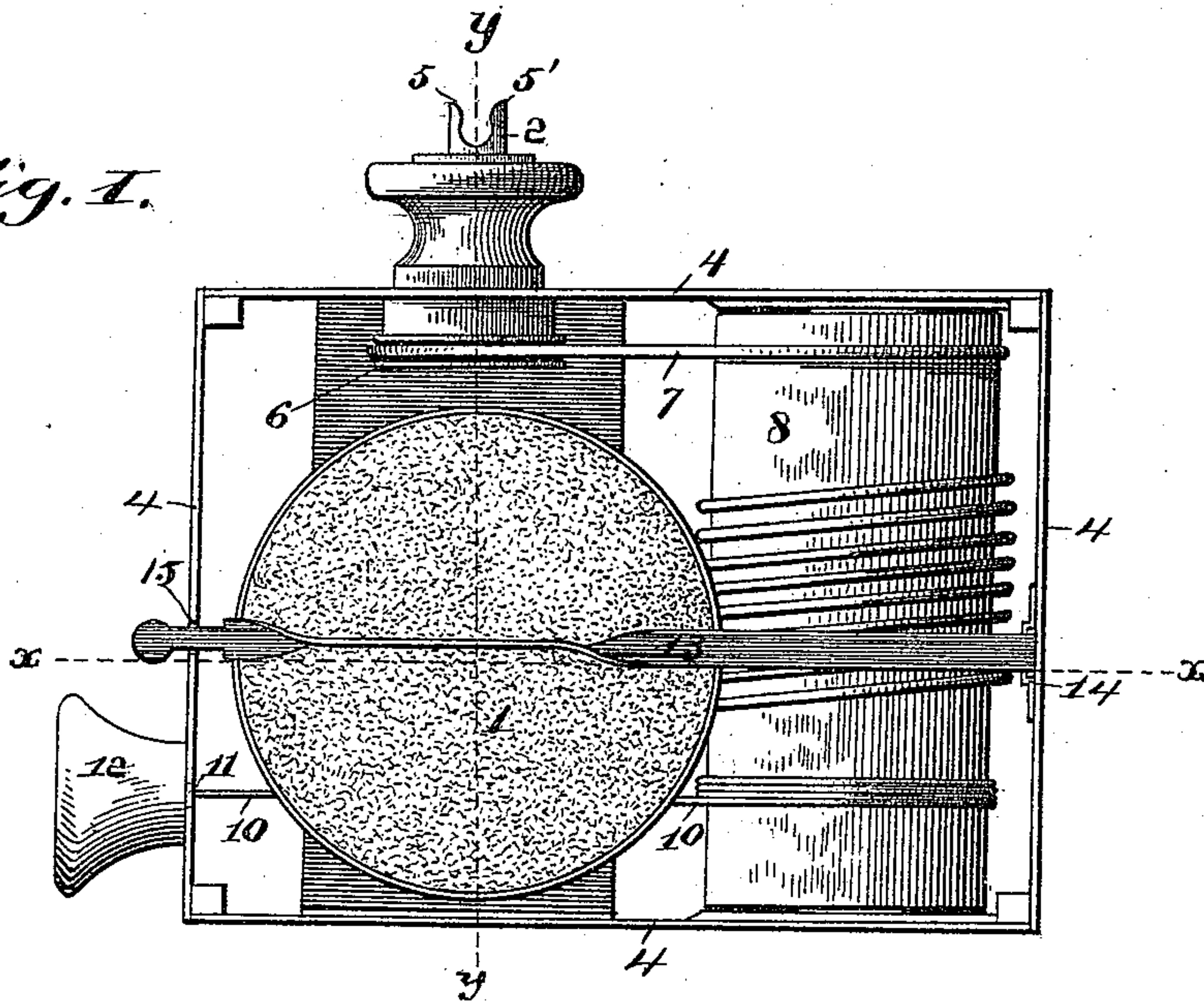


Fig. II.

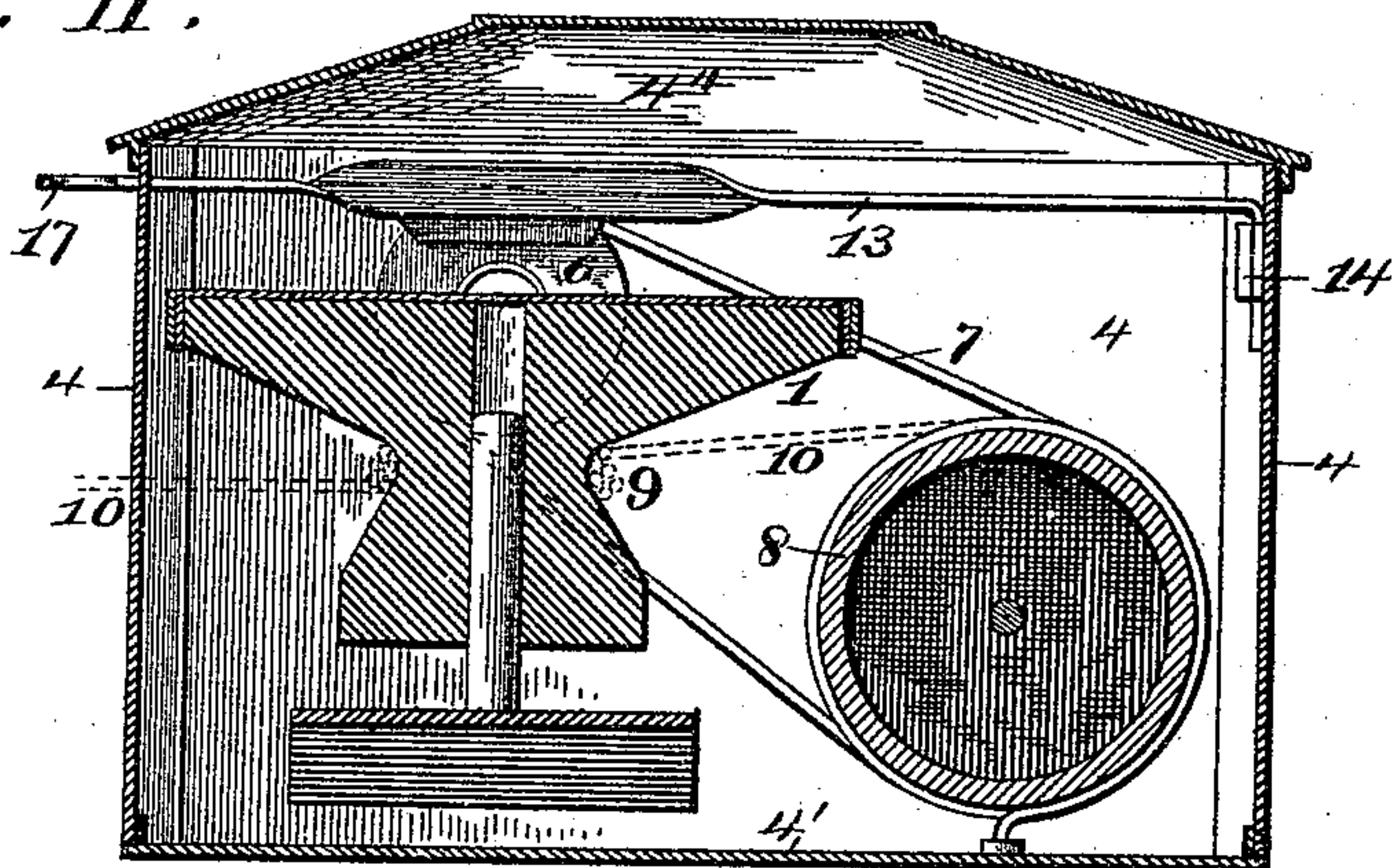
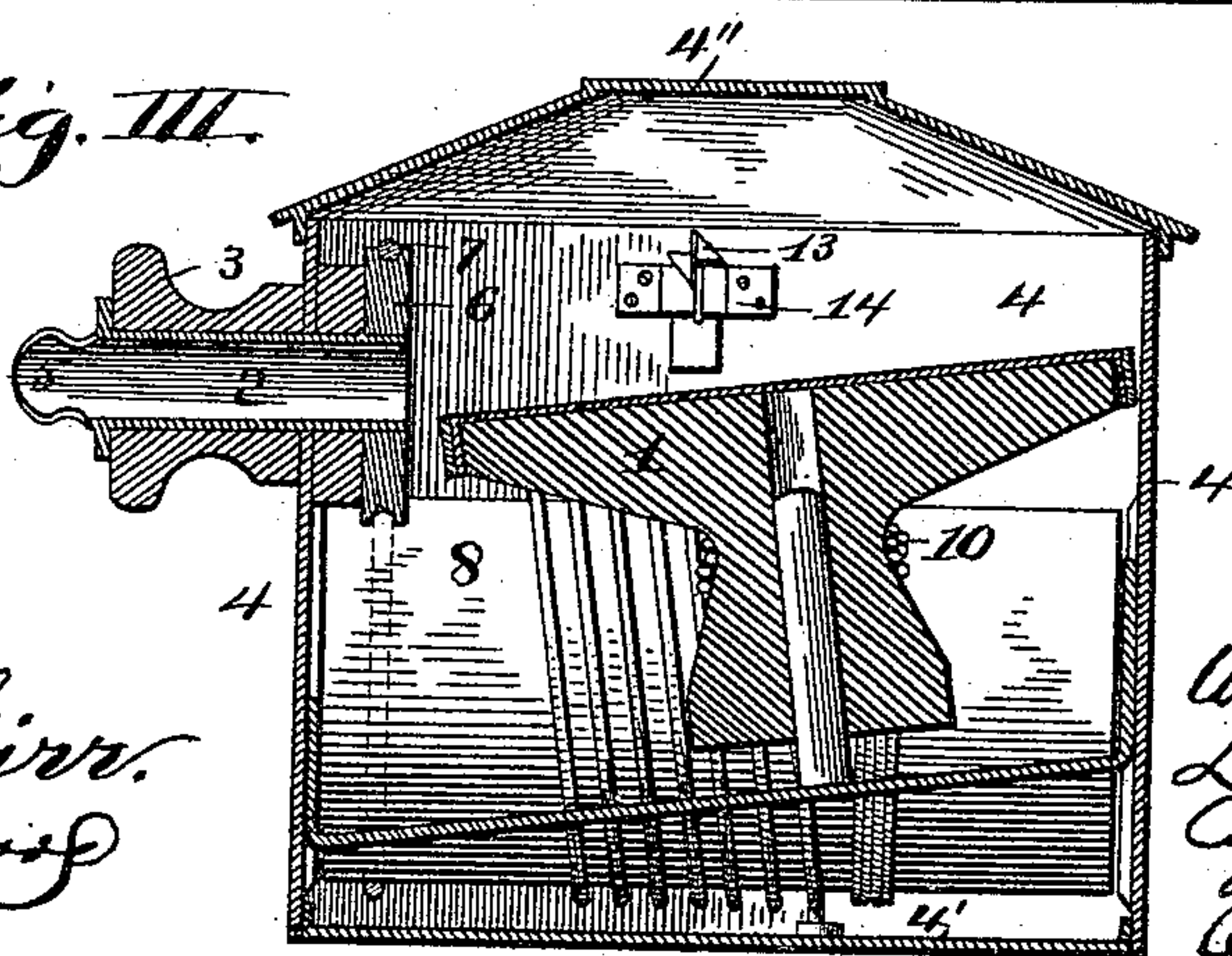


Fig. III.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM RUNDQUIST AND LEMUEL N. JACKMAN, OF ELGIN, ILLINOIS.

MACHINE FOR SHARPENING PENCILS.

SPECIFICATION forming part of Letters Patent No. 438,569, dated October 14, 1890.

Application filed July 17, 1890. Serial No. 359,026. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM RUNDQUIST and LEMUEL N. JACKMAN, citizens of the United States, residing at Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Machines for Sharpening Pencils; and we 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.

Our invention relates to machines for sharpening pencils; and it has for its object the provision of means for pointing a pencil uniformly without requiring manipulation or adjustment of the work by the operator after it has been placed in the machine.

With this and other ends in view our invention consists in the combination of a rotary work-holding mandrel and a rotatory grinding disk or plate arranged in juxtaposition to the mandrel as to operate on the work therein in such manner as to impart a conical or tapered point or end to such work. The rotatory disk is arranged edgewise with relation to the mandrel and at an angle or obliquely to the longitudinal axis of said mandrel, so that the surface or face of the disk or plate is set to grind the pencil, and as the mandrel rotates it constantly presents new surfaces for the disk or plate to act upon, thus uniformly grinding or removing the work or pencil and imparting the desired point thereto.

Our invention further consists in the combination of a rotatory grinding-disk, a mandrel arranged to rotate in the reverse direction to the rotation of the disk, a drum or pulley geared to both the disk and mandrel to cause said parts to rotate simultaneously, means—as, for instance, a spring—for returning the pulley or drum and the disk and mandrel to their normal positions, and a hand-operated device for manually rotating the drum or pulley and the several connected parts.

Our invention further consists in the peculiar combination of devices and novel construction and arrangement of parts, as will be hereinafter more fully described and claimed.

To enable others to understand our invention, we will now proceed to a detailed de-

scription thereof in the accompanying drawings, in which—

Figure I is a plan view of a machine for sharpening pencils embodying our invention, with the top or cover of the casing removed. Fig. II is a vertical longitudinal sectional view on the plane indicated by the line *xx* of Fig. I. Fig. III is a vertical transverse sectional view on the plane indicated by the line *yy* of Fig. I.

Referring to the drawings, in which like numerals of reference denote corresponding parts in all the figures, 1 designates the rotatory grinding-disk, and 2 the rotary mandrel adapted to hold and carry the work or pencil. The disk or plate is arranged edgewise in relation to the end of the mandrel, and it is situated obliquely or at an angle to the axis of the mandrel, so that the work carried by the mandrel extends over the face of the disk in such relation thereto that the work or pencil will be ground when the disk or mandrel is rotated. As in the preferred embodiment, herein illustrated, the mandrel is arranged in a horizontal position with the edge of the inclined disk very close to the end of the mandrel; but this is not essential, as the mandrel may be arranged vertically, and the disk may be situated farther away from the end of said mandrel.

The mandrel 2 is journaled in a stationary bearing 3, which is suitably fixed to the shell or jacket 4, which incloses the several operative parts of the machine, and which is provided with removable tight-fitting bottom 4' and cover 4".

The mandrel 2 protrudes beyond the ends of the fixed bearing 3, and said mandrel is made tubular or hollow, as shown in Fig. III, to receive the pencil or work. We prefer to employ this hollow or tubular mandrel and to construct the same with spring or elastic fingers 5 5' at the ends thereof, so as to grasp and hold the pencil or work by frictional contact between said mandrel and the work; but it is evident that a work-holder can be provided for the mandrel in order to hold the pencil to the mandrel, so that it (the pencil or work) will rotate with said mandrel. The mandrel is further provided at its inner end with a grooved belt-pulley 6, arranged within

the case or shell 4, and over this pulley passes a belt or cord 7, which runs to and around a drum or pulley 8. This drum or pulley 8 is arranged within the shell 4 at the end thereof, with its axis parallel with the rotary mandrel, and said drum is journaled in suitable bearings within the shell or case 4.

The inclined rotatory disk 1 is provided with a roughened surface formed by a sheet or layer of sand-paper or equivalent material, which layer is removably clamped to the disk by a clamp or ring, so that the sheet can be removed when worn and replaced with ease. The said disk is further provided on the opposite side to the grinding-surface thereof with a pulley 9, which is rigid with said disk, and around this pulley of the disk is coiled a pulling-rope 10, one end of which passes to and is coiled around the drum a suitable number of times, and is attached to said drum, while the other end of the pulling rope or cord passes through an aperture 11 in the case or shell 4 and has attached to it a knob or hand-piece 12, for conveniently manipulating the machine. The rotary drum is thus belted or geared to the disk and mandrel to cause said parts (the mandrel and disk) to rotate simultaneously with the disk and in opposite directions to each other, the drum receiving motion from the disk when the cord 10 is pulled; but it is evident that power can be applied directly to the drum and that the disk and mandrel can be geared to said drum to be rotated simultaneously in opposite directions thereby without departing from the spirit of our invention.

The drum or pulley is held under tension and returned to normal position, so that the pulling-rope is coiled thereon and drawn back within the case by means of a spring 5', which is preferably coiled around said drum and attached at its ends to the drum and the case or to any other suitable fixture within the case. We also provide a presser or regulator bar 13, which is arranged above the grinding-disk and at one side of the mandrel transversely to the axis of the same, so that said bar can be manipulated to depress or hold the work against the disk or to limit the inward movement or adjustment of the work in the mandrel. This bar is preferably made of spring metal, so that it is free from contact with the disk, and one end of the bar is detachably attached to the case or shell 4 by means of a pin-and-socket connection 14, while the opposite end of the bar works in a slot 15 cut in the opposite wall of the case. The presser-bar 13 has a contact piece or surface adapted to impinge or bear against the pencil, and the free end of the bar, which protrudes beyond the case or shell so that the bar can be conveniently manipulated, has a finger-piece 17 thereon.

The operation of our invention is simple and may be briefly described as follows: The work or pencil is thrust endwise into the hollow or tubular mandrel until the end strikes

the contact-piece of the presser-bar, and the work is held or clasped in the mandrel so as to rotate or turn therewith. The pulling-cord is now drawn out to rotate the disk, drum, and mandrel, and the roughened surface of the disk grinds the pencil down to a conical or tapered point. It is only necessary to exert force to draw the pulling-cord outward, as the coiled spring reverses the drum, the disk, and the mandrel, which can be accomplished by one hand, while the other can be used to shove the pencil into the machine or to depress the bar to hold the pencil against the disk or to limit the inward adjustment of the pencil. After the pencil has been adjusted the bar can be released and one hand used to hold the machine in place, while the other hand operates the pull-cord.

Although we have shown and described our invention as especially adapted for sharpening pencils or pointing them, yet we do not strictly confine ourselves to this particular use of the machine, as we have found that it can be advantageously used for sharpening or grinding cutlery, and for other purposes.

The roughened sheet of sand-paper is clamped in any suitable manner to the rotatory disk—as, for instance, by a ring or band—so that the sand-paper can be readily removed when worn and easily replaced by another sheet.

Changes in the form and proportion of parts and details of construction can be made without departing from the spirit or sacrificing the advantages of our invention, and we therefore hold ourselves at liberty to make such alterations and modifications as fairly fall within the scope of our invention.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of a positively-rotated mandrel adapted to carry the pencil or equivalent work, and a grinding-disk arranged edgewise in relation to the mandrel and inclined obliquely to the longitudinal axis thereof, and provided on its lateral face with an abrasive covering, whereby the work carried by the mandrel is rotated or turned simultaneously with the rotations of the grinding-disk, substantially as described.

2. The combination of a rotary mandrel, a rotatory grinding-disk arranged edgewise with relation to the mandrel and inclined obliquely to the longitudinal axis thereof, and means for rotating the disk and mandrel in opposite directions, substantially as described.

3. The combination of a rotary tubular mandrel, a rotatory grinding-disk arranged edgewise in relation to the mandrel and oblique to the axis of the same, and the drum or pulley geared to said mandrel and the grinding-disk to rotate the same in opposite directions simultaneously, substantially as described.

4. The combination of a rotary mandrel, the rotatory grinding-disk arranged obliquely to the axis of said mandrel, means for im-

parting movement to said disk and the mandrel, and a bar arranged above the disk and at one end of the mandrel, for the purpose described, substantially as set forth.

5 5. The combination of a rotary tubular mandrel having means for clasp-
ing the work thereto, a grinding-disk arranged obliquely
to the axis of the mandrel, a spring-controlled
drum geared to the mandrel, and a pulling-
10 rope coiled around the disk and the drum to
actuate the same, substantially as described.

15 6. The combination of a rotary tubular mandrel having the clasp-
ing-fingers, a rotatory grinding-disk arranged obliquely to the man-
drel and having the pulley, the spring-con-
trolled drum geared to the mandrel, the pull-
ing-rope coiled around the pulley of the disk
and the drum, and the spring-bar arranged
20 protruding beyond the machine through a
slot therein, substantially as described.

7. The combination of a rotary mandrel,
the rotatory grinding-disk arranged edgewise
in relation to the end of the mandrel and ob-
liquely to the axis of the same and provided 25
on one of its lateral faces with a sheet of
abrasive material, which is detachably se-
cured to said face of the disk by a clamping
device, and means for imparting movement to
the disk and mandrel to rotate the same in 30
opposite directions simultaneously, substan-
tially as described.

In testimony whereof we affix our signatures
in presence of two witnesses.

WILLIAM RUNDQUIST.
LEMUEL N. JACKMAN.

Witnesses:

W. H. HOAR,
ALFRED LAVORE.