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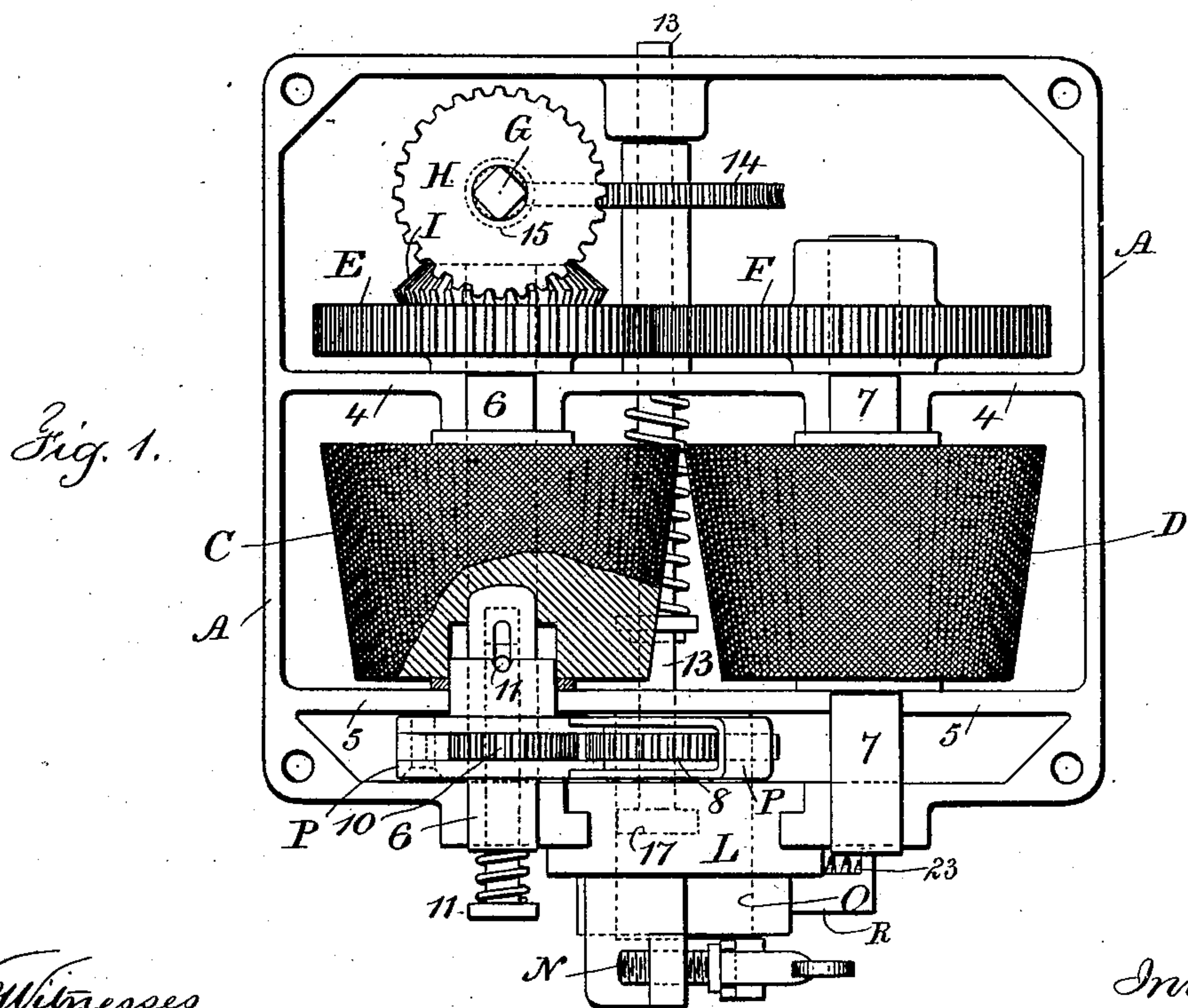
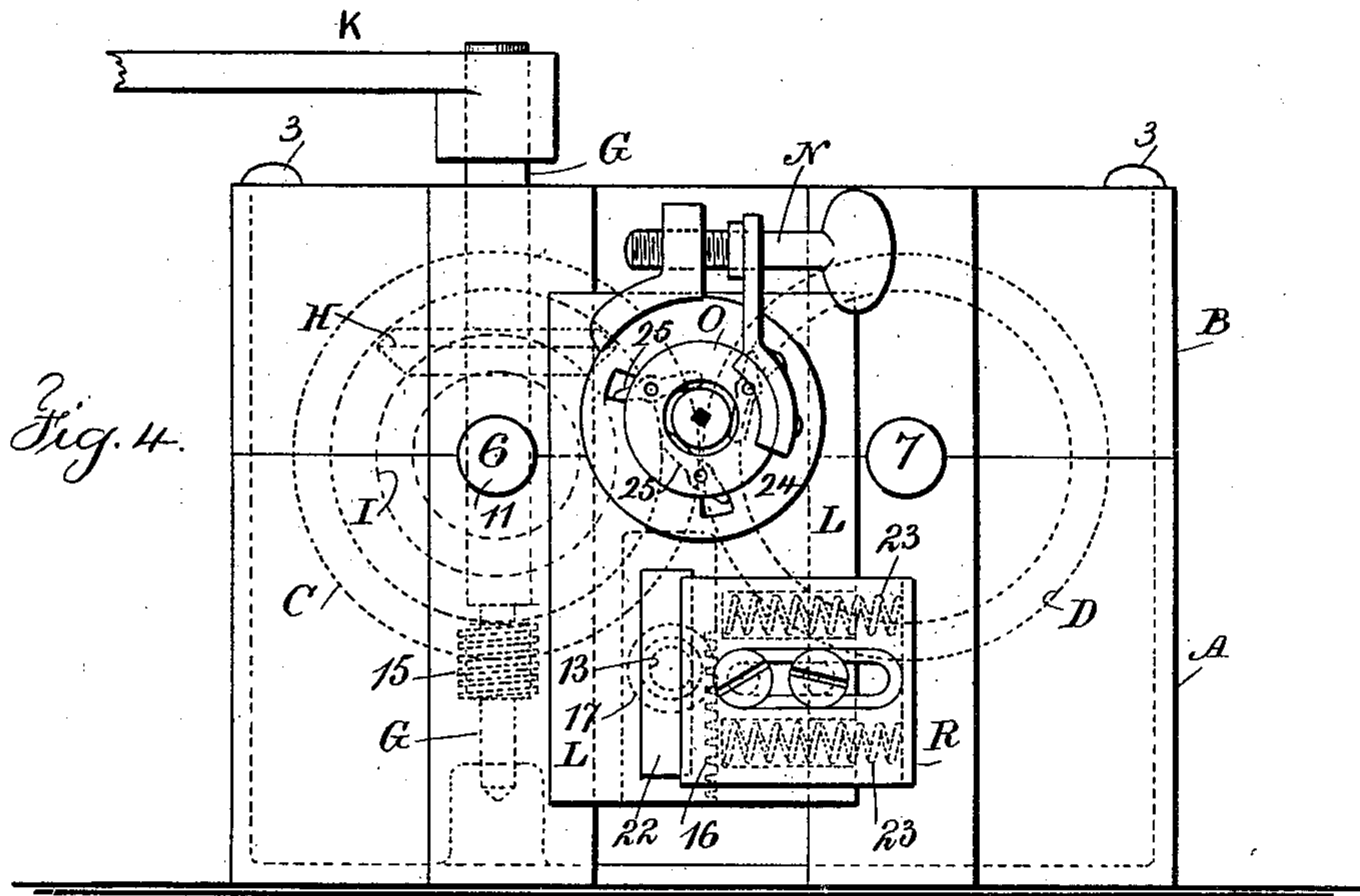
Patented Oct. 31, 1899.

P. R. BUCKELEW.  
PENCIL SHARPENER.

(Application filed Nov. 21, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses  
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Inventor  
Peter R. Buckelew  
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attys

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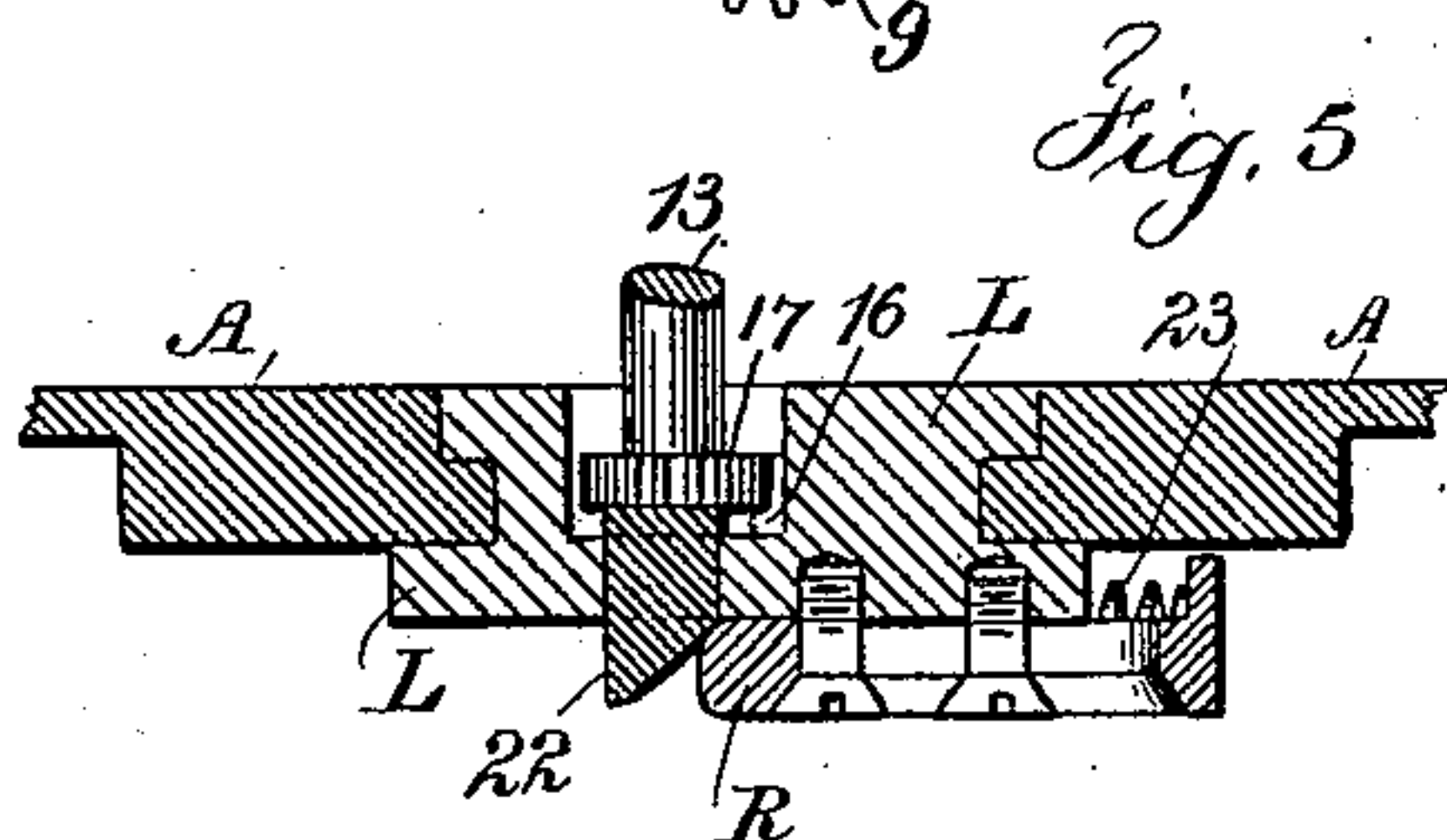
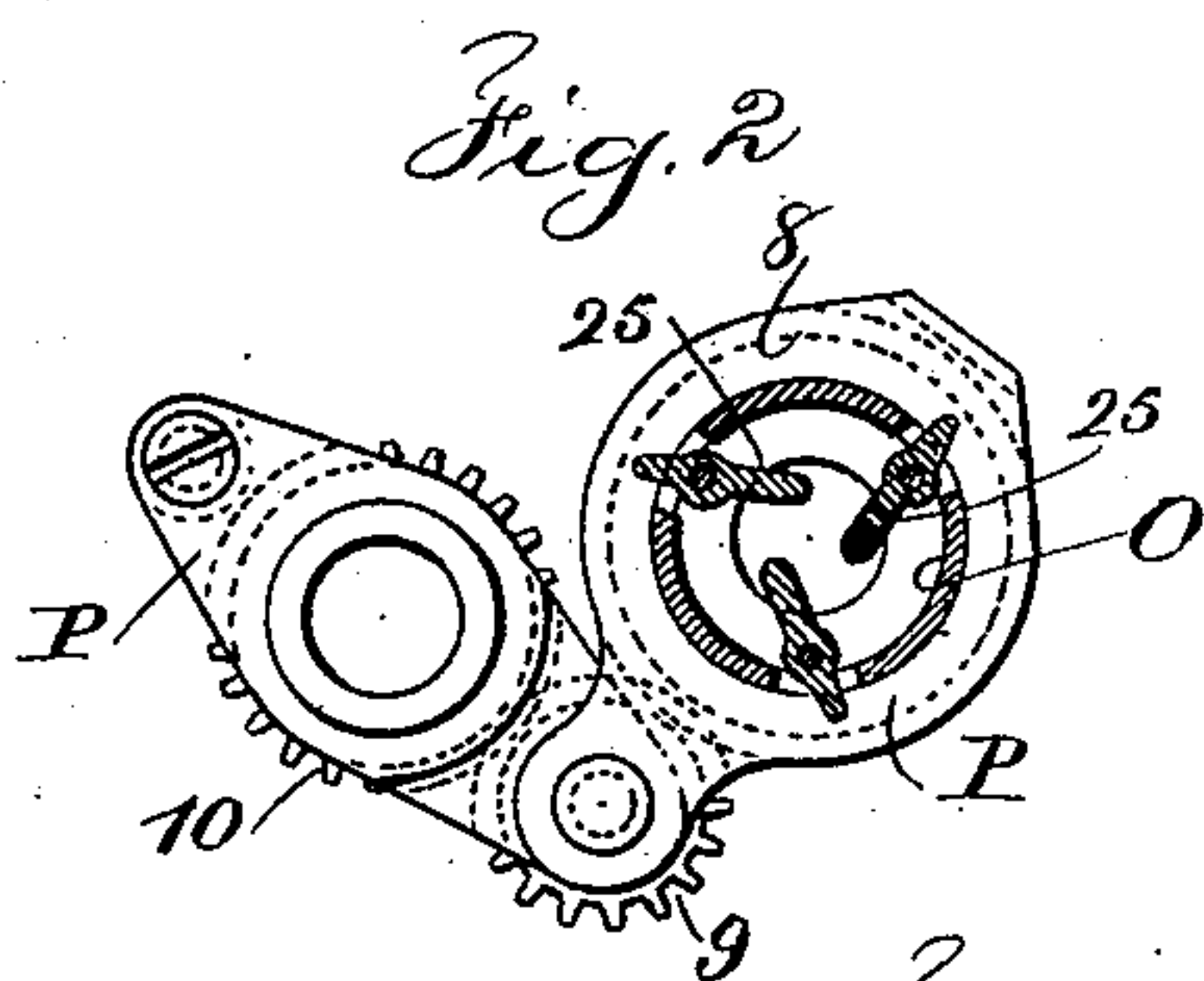
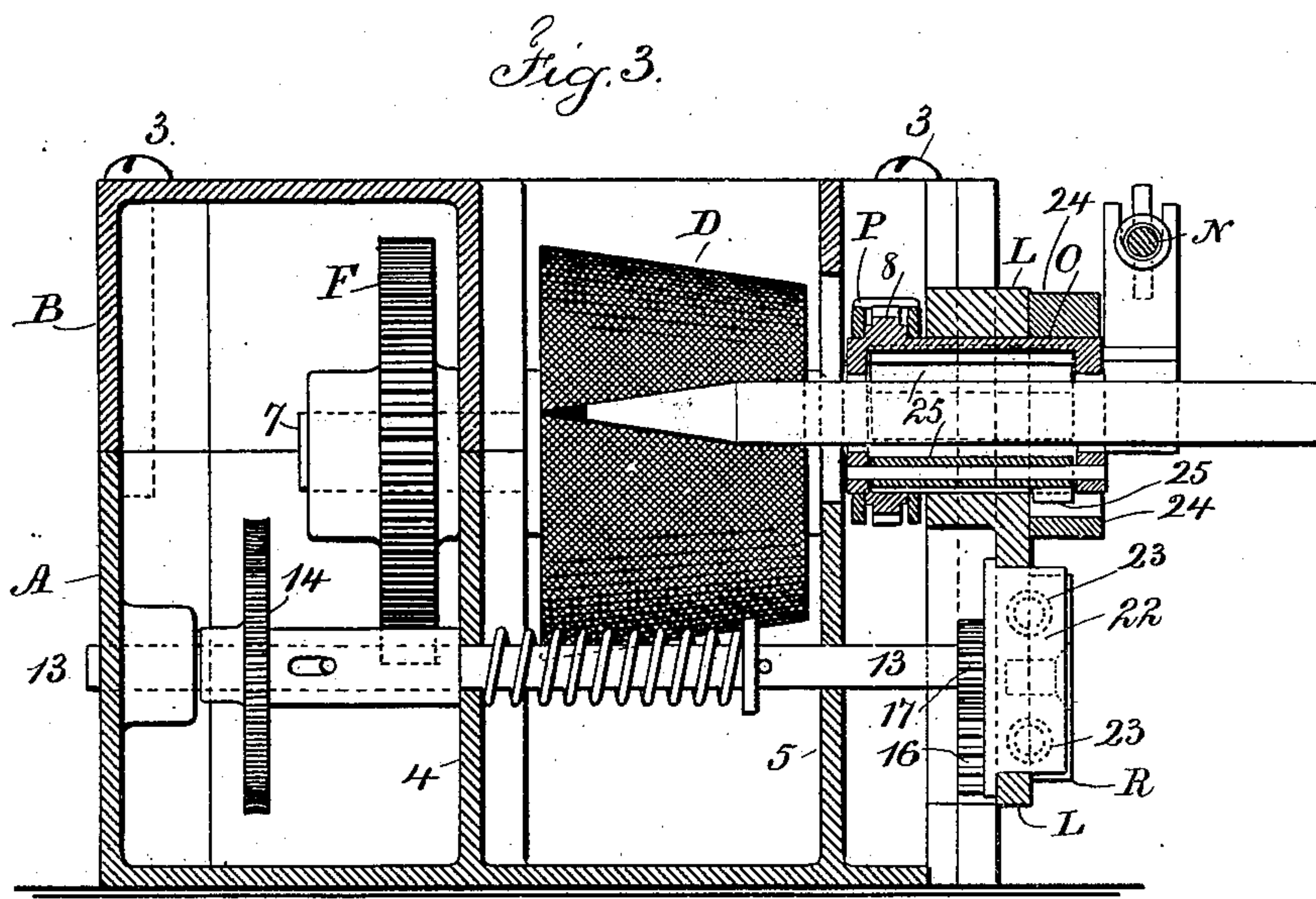
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# UNITED STATES PATENT OFFICE.

PETER R. BUCKELEW, OF PLAINFIELD, NEW JERSEY, ASSIGNOR TO HIMSELF  
AND CHARLES H. BUCKELEW, OF SAME PLACE.

## PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 636,112, dated October 31, 1899.

Application filed November 21, 1898. Serial No. 696,965. (No model.)

*To all whom it may concern:*

Be it known that I, PETER R. BUCKELEW, a citizen of the United States, residing at Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Pencil-Sharpeners, of which the following is a specification.

Pencil-sharpeners have been made with a holder for the pencil in which it is received and clamped and means for rotating the same and a rotary file or grinder against which the pencil is held while being acted upon for the removal of surplus wood and the sharpening of the lead, and in some instances the grinder has been grooved similar to two truncated cones with the smaller ends set together.

In the present improvement I make use of two conical grinders, preferably of steel, with file-surfaces, and these are upon horizontal shafts with gearing to rotate the same and a box for holding and supporting the gearing and receiving the dust from the sharpening of the pencil, and the pencil itself is received into a holder that is moved vertically and automatically, so that the pencil is carried down between the two grinders, and there is a train of gearing to rotate the holder and pencil and a clutch by which such rotating mechanism can be thrown out of action whereby the pencil can ordinarily be rotated while exposed to the sharpening action, so that the point of the pencil is conical; but when the rotating device is thrown out of action the pencil can be sharpened on opposite sides, so that the same is in the form of a wedge especially adapted to the use of a mechanical draftsman, and when a fresh pencil is to be inserted the holder is liberated from the automatic feeding mechanism, so that it can be raised sufficiently for inserting a pencil entirely above the grinding or sharpening devices.

In the drawings, Figure 1 is a plan view with the top of the box removed. Fig. 2 is a detached view of the gearing for driving the holder from the connecting-clutch. Fig. 3 is a vertical section showing the clamping device for securing the pencil within the holder. Fig. 4 is a front elevation, and Fig. 5 is a sectional plan, of the inclines for acting on the pinion that draws down the holder.

The box A is preferably made as a casting

with a cover B, that is removable, and the screws 3 secure the cover to the box, and in the bottom of the box there is preferably a partition 4 and another partition 5 to separate the portion of the box which holds the conical grinders or sharpeners C D from the rest of the box, so as to prevent the dust or sharpenings from reaching the gearing at either side of the grinders, and it is advantageous to divide the box on the line of the axes of the arbors or shafts 6 and 7 of the grinders C and D, so that the edges of the partitions and of the box form the bearings for the shafts or arbors 6 and 7, and the gear-wheels E and F are upon the respective arbors 6 and 7 to connect them together, so that they are rotated simultaneously, and the direction of rotation should cause the adjacent surfaces of the grinders to travel upward, so that the pencil may not be carried down by friction and squeezed between the grinders.

The vertical shaft G and the bevel-gears H and I are employed for driving the gears E and F and the grinders C and D, and the crank K or handle upon the upper end of the vertical shaft G is employed for giving motion to the respective parts.

In the front of the box is a vertical slot receiving the slide-block L, having a hole through it for the reception of the pencil, and the screw N and clamp O are made use of for holding the pencil in the slide-block, and the clamp is tubular, passing through the slide-block and receiving upon its inner end the gear 8, that is driven by the intermediate gears 9 and 10, extending to one of the shafts or arbors 6 or 7, and there are preferably links P or plates with eyes surrounding the tubular clamp and one of the arbors and also united by the arbor of the gear 9, so that these parts can swing as the slide-block L is raised or lowered, and the clamp O receives a rotary movement from the arbor of one of the grinders, and there is a sliding clutch 11 upon the shaft 6, with a spring to cause the clutch to engage the gear 10 and cause the same to rotate with the grinder C; but when this clutch 11 is pressed in against the action of the spring the clutch disconnects from the gear 10 and allows the arbor 6 to rotate without rotating the gear, and this allows the clamp O and



pencil to remain stationary; but of course when the clutch 11 is in operation the clamp and the pencil are rotated.

To carry the slide-block L and the pencil vertically, I make use of a shaft 13, driven by a gear-wheel 14, and a worm-pinion 15 on the vertical shaft G, and a rack 16, set in the slide-block L, is acted upon by the pinion 17 on the shaft 13, so that the rack 16 and slide-block L are drawn down gradually as the sharpening of the pencil progresses. By this means the pencil being rotated is filed or sharpened as the slide-block and pencil are drawn down and the pencil pressed against the rotary grinders, and when the pencil has been properly sharpened the pinion 17 is pressed back to disconnect it from the rack 16 in order that the rack and the slide-block L may be lifted up without having to turn back any of the gearing, and I prefer to have a latch-piece R, slotted and held to the slide-block L by screws, so that by pressing this latch-piece against the action of the springs 23 the beveled end thereof overruns the beveled edge of the block 22 and presses the pinion back and holds it in such position until the latch-piece is pushed in the opposite direction by the springs 23 to disengage it from the block 22. The spring on the shaft 13 returns the pinion 17 to the rack 16.

It will be understood that when the pencil-holding clamp is not rotated the pencil will be simply carried down vertically between the grinders, and the conical surfaces of these grinders will dress off the opposite sides of the pencil at the end to leave the same in the form of a wedge, which mode of sharpening for the pencil is well adapted to use by mechanical draftsmen, and if desired to have the sharpened point of the pencil square the pencil may be inserted a second time in a different position, so that the grinders will act the second time at right angles to the faces produced in the first dressing operation.

The dust from the sharpened pencil will be received into the bottom of the box and retained there and can be emptied out or removed from time to time as necessary by taking the parts of the pencil-sharpener apart.

It will be observed that the pencil-holding tube has three fingers 25 to act against the sides of the pencil, and the outer ends of these fingers are acted upon by the ring 24, that surrounds the pencil-holding tube, and this ring is acted upon by the screw N between the ring and a projection from the holder-tube to turn the same in one direction or the other in relation to the holder and clamp or release the pencil.

I claim as my invention—

1. In a pencil-sharpener, two grinders and their shafts, the grinders coming close together near one edge and being far enough apart at the other edge for the pencil to pass in, mechanism for rotating the grinders, a pencil-holder in line with the space between the grinders and mechanism for moving the

holder and pencil in a plane passing between the two grinders, substantially as set forth.

2. In a pencil-sharpener, two grinders and their shafts, the grinders coming close together near one edge and being far enough apart at the other edge for the pencil to pass in, mechanism for rotating the grinders, a pencil-holder in line with the space between the grinders and mechanism for moving the holder and pencil in a plane passing between the two grinders, and mechanism for rotating the holder and pencil while being moved in the plane between the grinders, substantially as set forth.

3. The combination in a pencil-sharpener of two conical grinders, shafts for the same and a two-part box into which the shafts and grinders are received, gearing for connecting the shafts of the grinders, a vertical shaft and bevel-gears for giving motion to the grinders, a block supported by and sliding upon the box and having through it an opening, a tubular clamp secured to the block for receiving and holding the pencil and means for moving the same in a vertical plane passing between the two grinders, substantially as set forth.

4. The combination in a pencil-sharpener, of two conical grinders, shafts for the same and a two-part box into which the shafts and grinders are received, gearing for connecting the shafts of the grinders, a vertical shaft and bevel-gears for giving motion to the grinders, a block supported by and sliding upon the box and having through it an opening, a tubular clamp secured to the block for receiving and holding the pencil and means for moving the same in a vertical plane passing between the two grinders, and gearing for rotating the holder and pencil as the sharpening progresses, substantially as set forth.

5. The combination in a pencil-sharpener, of two conical grinders, shafts for the same and a two-part box into which the shafts and grinders are received, gearing for connecting the shafts of the grinders, a vertical shaft and bevel-gears for giving motion to the grinders, a block supported by and sliding upon the box and having through it an opening, a tubular clamp secured to the block for receiving and holding the pencil and means for moving the same in a vertical plane passing between the two grinders, links and gear-wheels for connecting the tubular clamp to the arbor of one of the grinders, whereby the pencil is rotated as it is moved between the grinders, substantially as set forth.

6. The combination in a pencil-sharpener, of two grinders setting close together at one edge and at a sufficient distance apart at the other edge for the pencil to pass in between them, a box into which the shafts and grinders are received, gearing for connecting the shafts and for rotating the grinders, a block and slides for supporting the block on the box, there being an opening through the block and a holder for supporting the pencil in line



with the space between the two grinders, a rack and pinion for moving the block, holder and pencil, and gearing for driving the pinion and drawing down the sliding block as the sharpening of the pencil progresses, a sliding latch-piece acting upon the pinion for disconnecting the same from the rack and allowing the pencil-holder and block to be raised, substantially as set forth.

10 7. The combination in a pencil-sharpener, of two conical grinders, shafts for the same, a box into which the shafts and grinders are received, gearing for connecting the shafts of the grinders, a sliding block having an opening in it and a tubular clamp for receiving and holding the pencil in line with the space between the grinders, and means for moving the block and pencil and means for rotating the pencil, substantially as set forth.

20 8. The combination in a pencil-sharpener,

of two conical grinders, shafts for the same, a box into which the shafts and grinders are received, gearing for connecting the shafts of the grinders, a sliding block having an opening in it and a tubular clamp for receiving and holding the pencil in line with the space between the grinders, and means for moving the block and pencil, and means for rotating the pencil, and a clutch mechanism for disconnecting the rotating mechanism, so that the pencil may be moved between the grinders without being rotated, substantially as set forth.

Signed by me this 8th day of November, 1898.

PETER R. BUCKELEW.

Witnesses:

D. McKELVEY,

H. E. GEISSENHÄINER.