

(No Model.)

4 Sheets—Sheet 1.

F. HOLLAND.
MACHINE FOR DRIVING GLAZIERS' POINTS.

No. 403,886.

Patented May 21 1889.

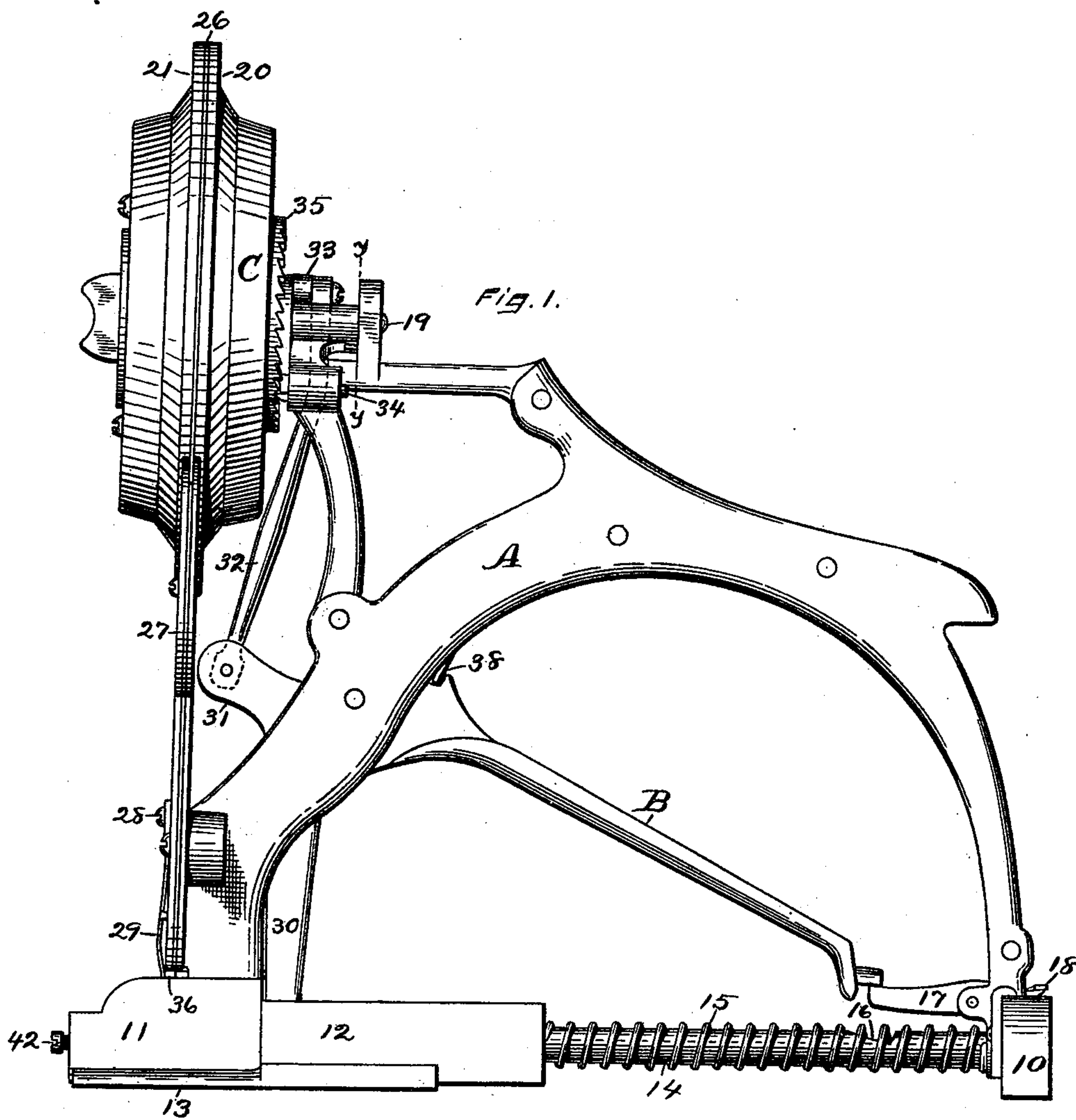
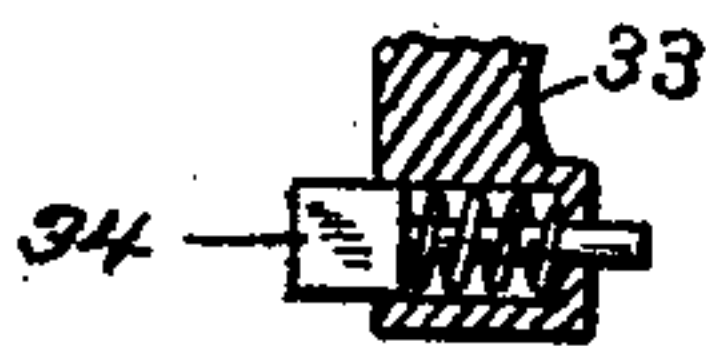


Fig. 12.



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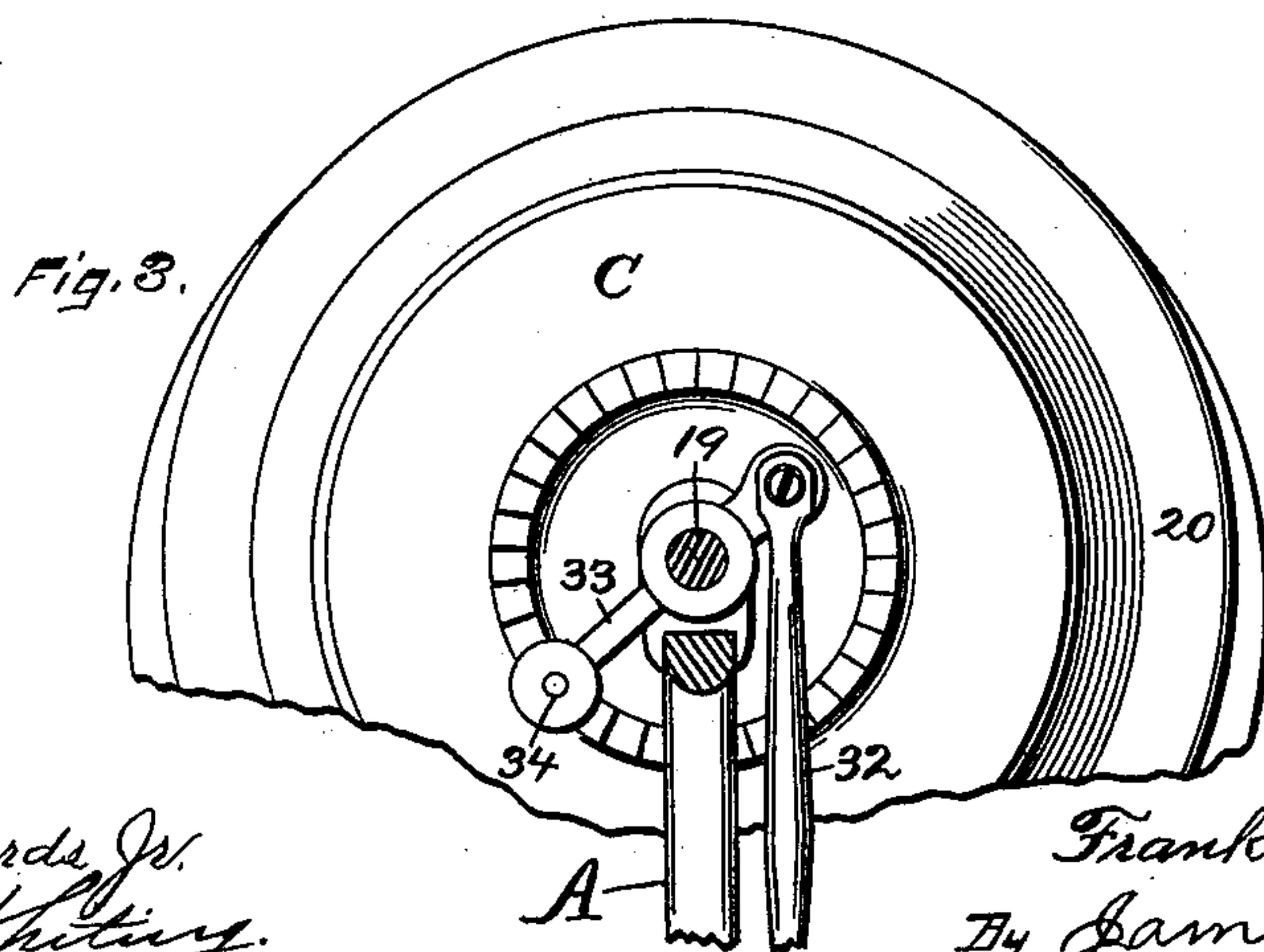
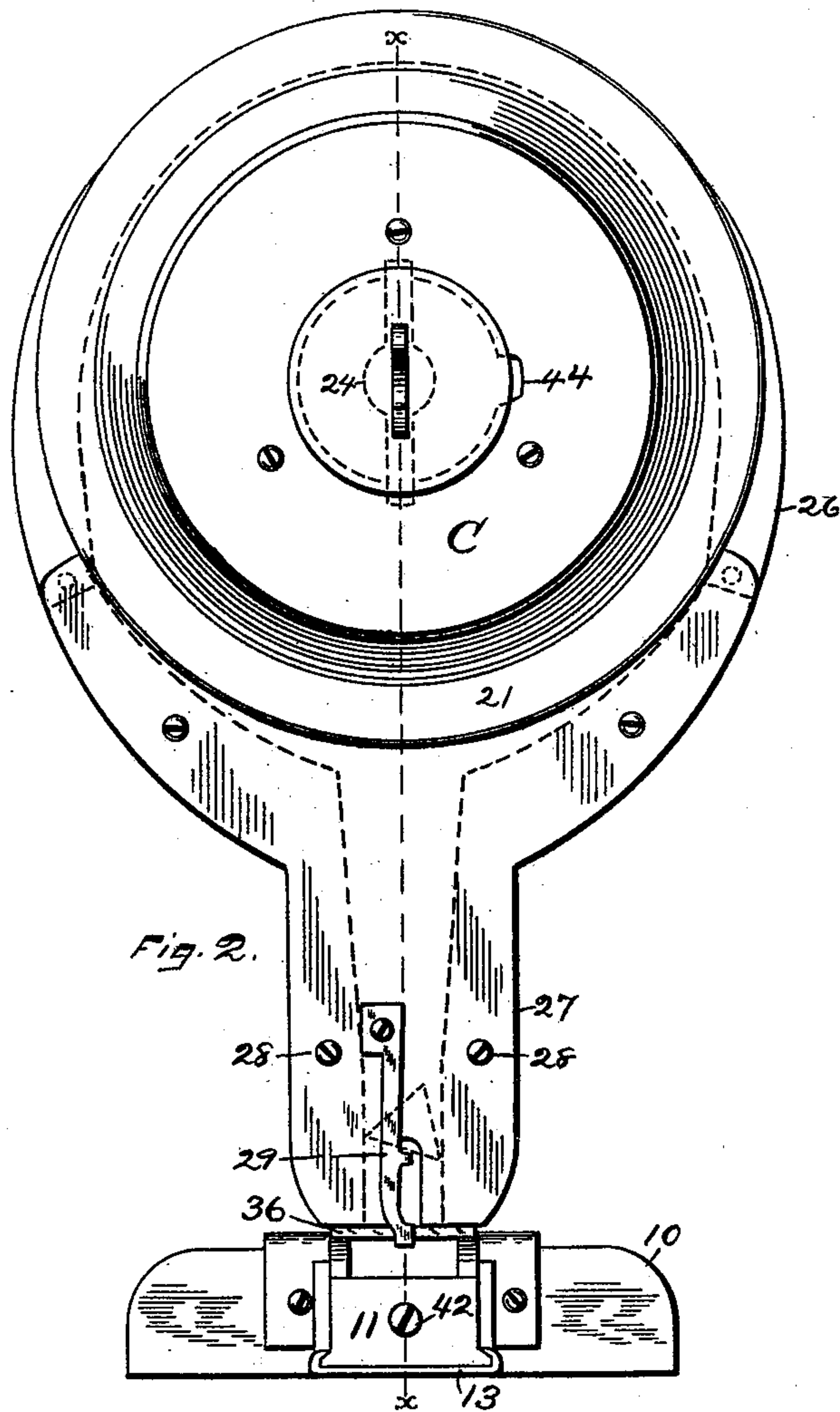
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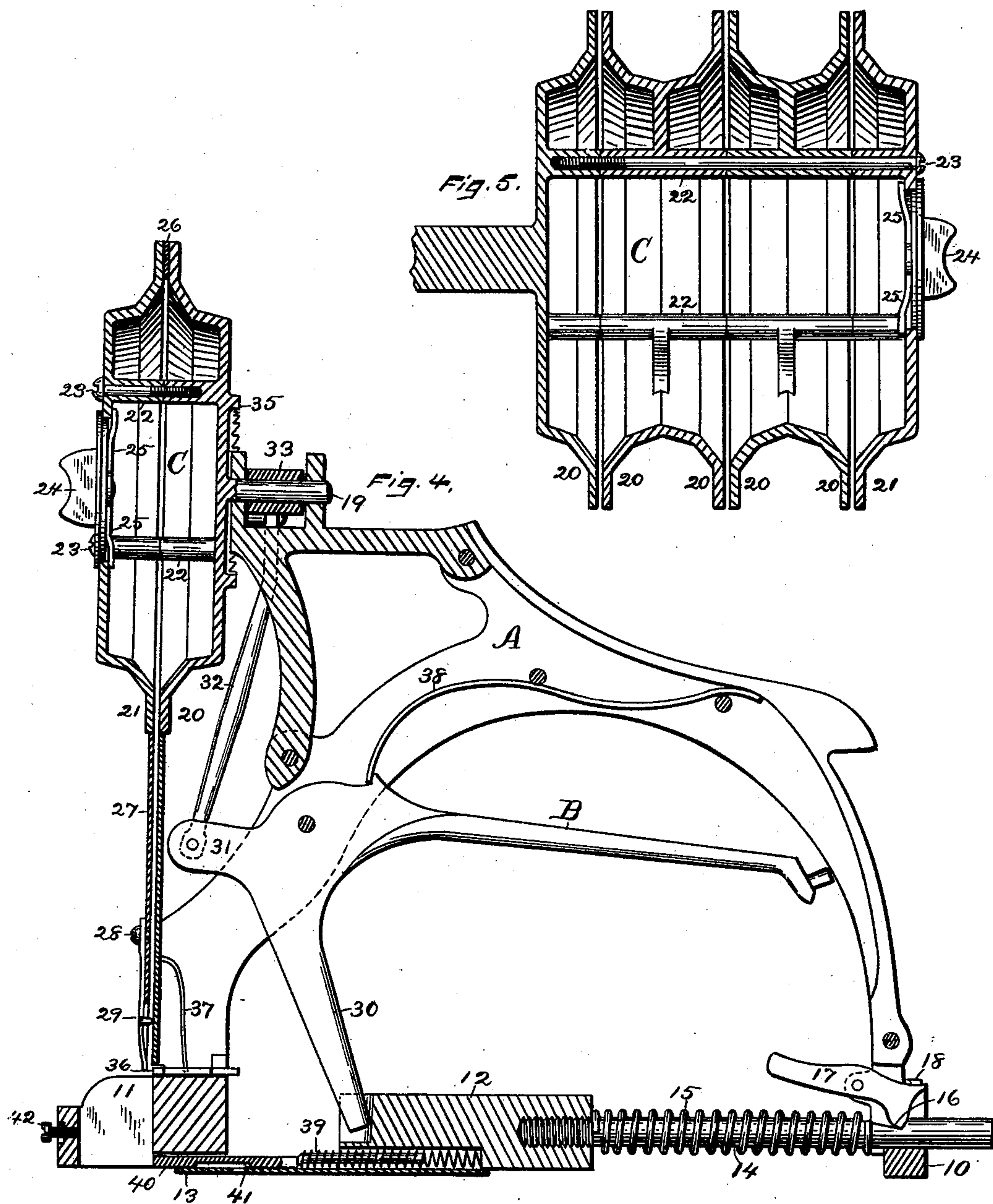
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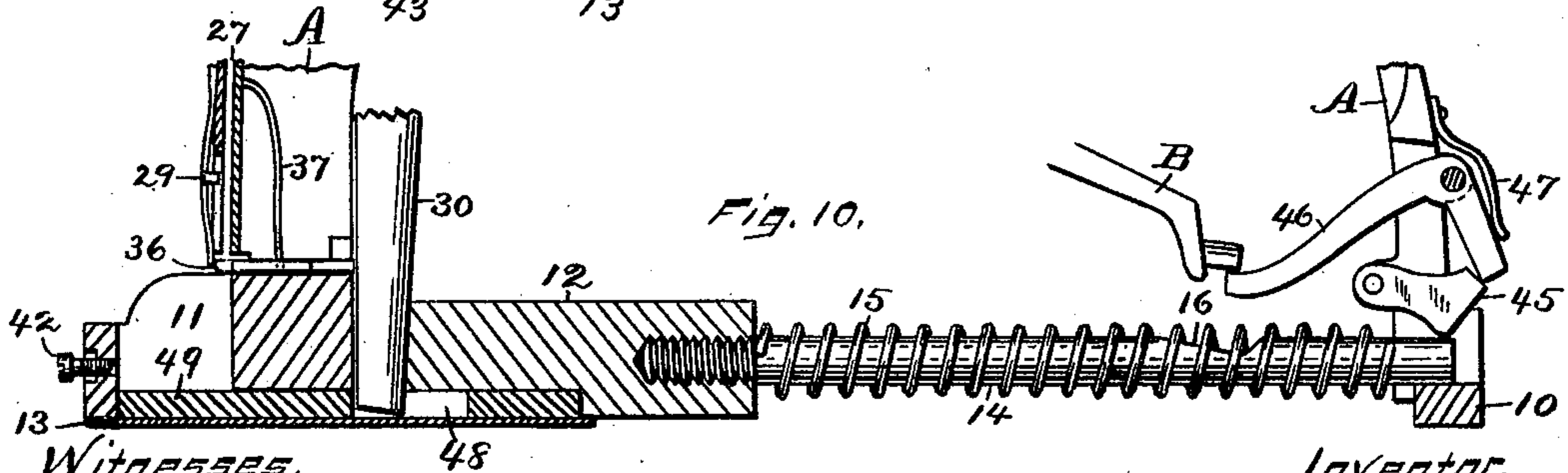
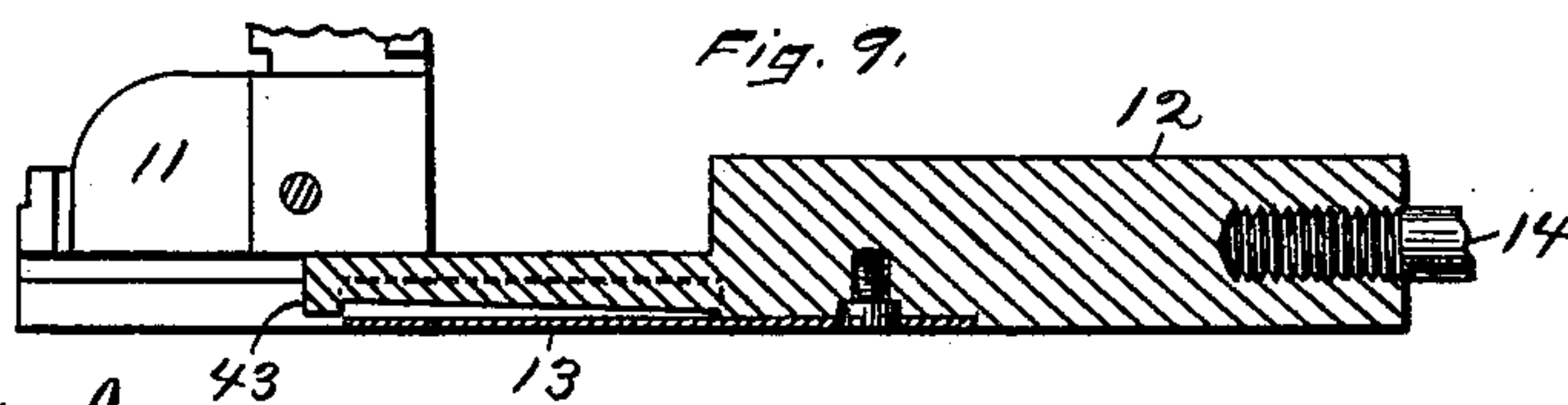
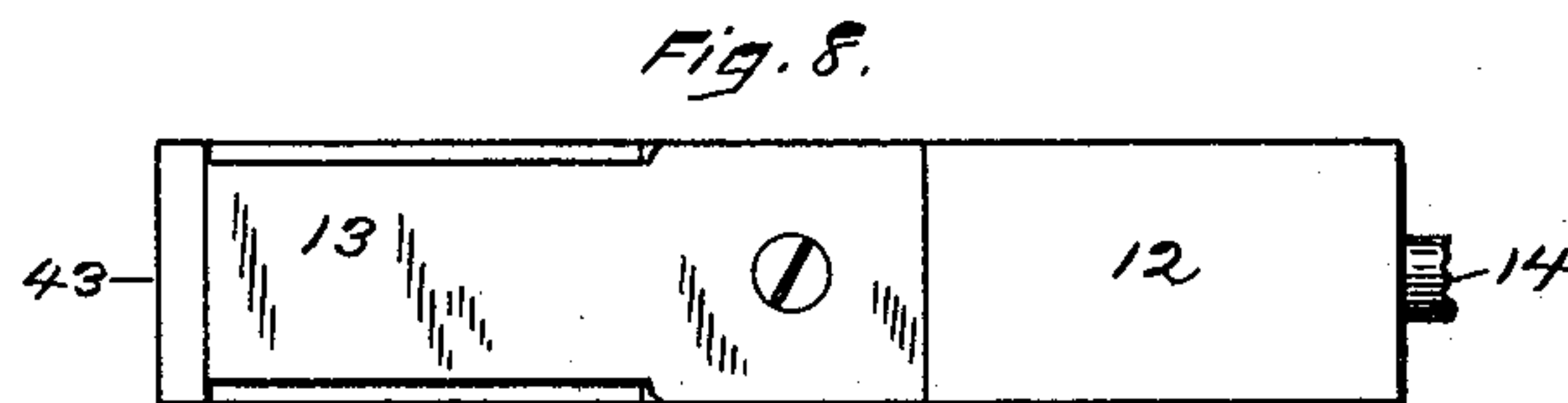
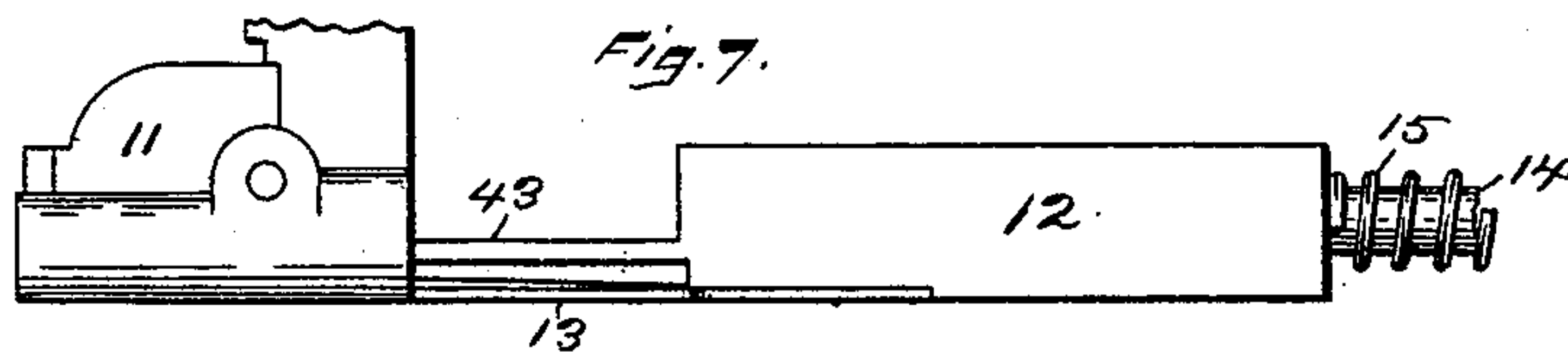
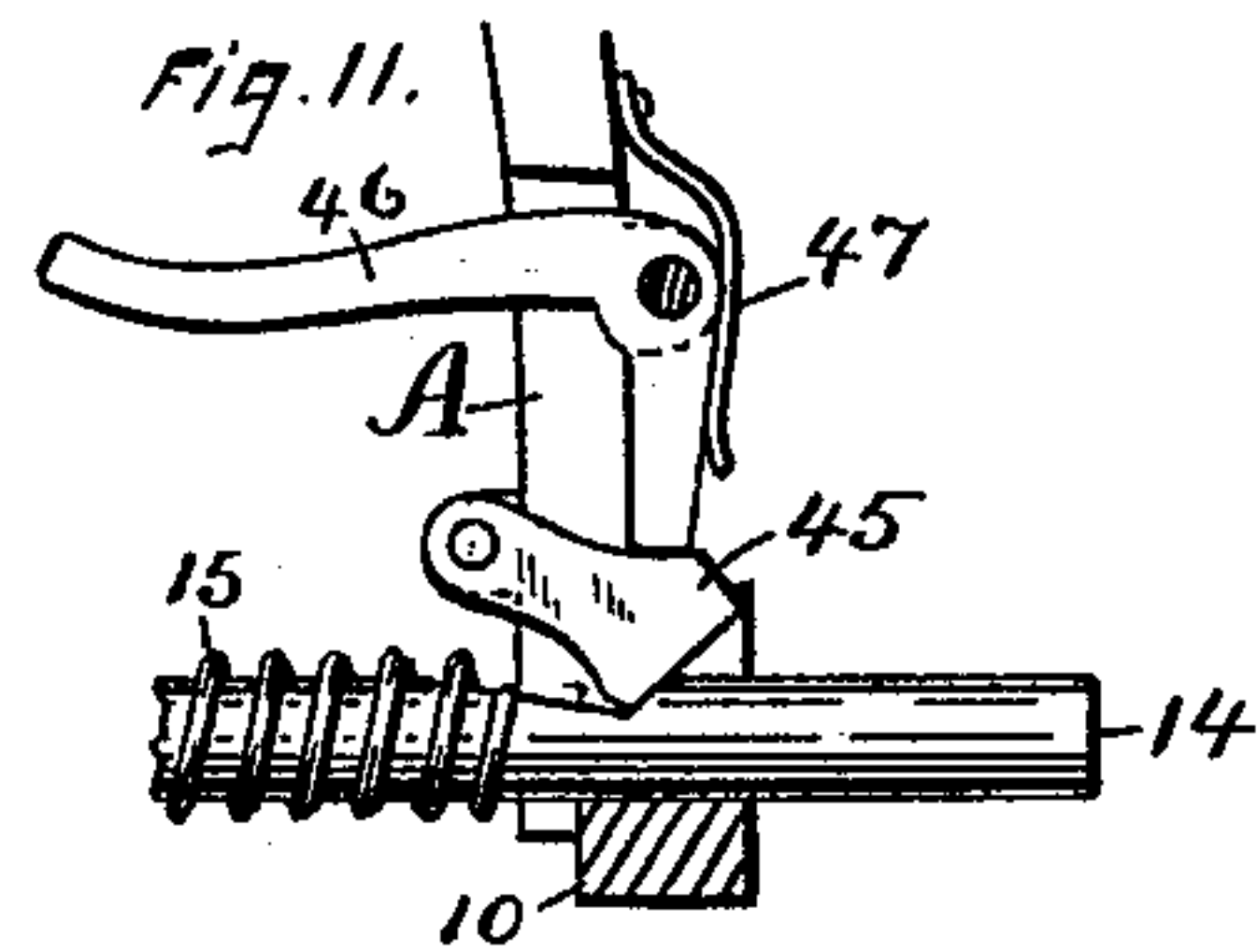
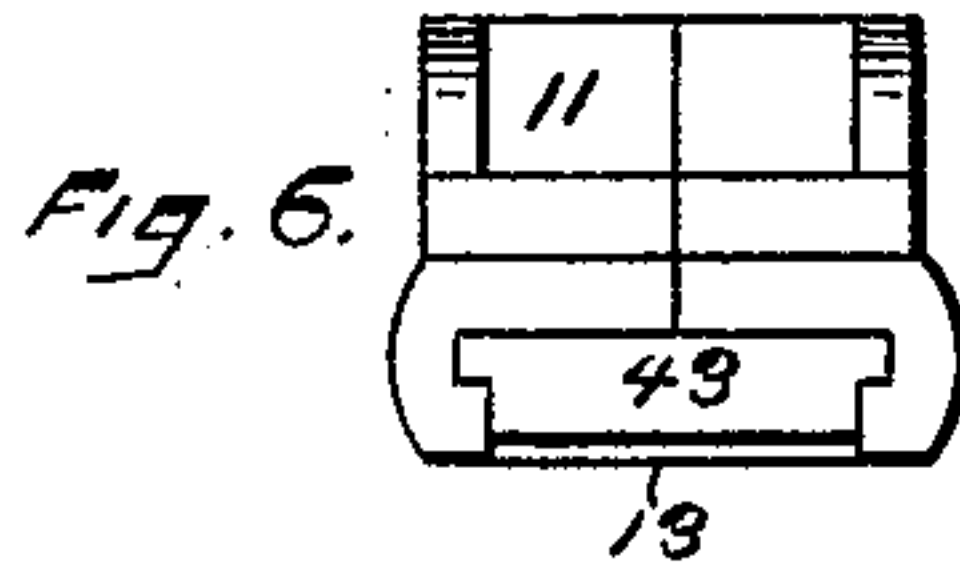
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UNITED STATES PATENT OFFICE.

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MACHINE FOR DRIVING GLAZIERS' POINTS.

SPECIFICATION forming part of Letters Patent No. 403,886, dated May 21, 1889.

Application filed November 28, 1888. Serial No. 292,078. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN HOLLAND, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Machines for Driving Glaziers' Points, of which the following is a specification.

My invention relates to improvements in machines for driving glaziers' points; and the objects of my improvement are to improve the efficiency of the machine, to render it more convenient for use, and to render its construction simple and substantial.

In the accompanying drawings, Figure 1 is a side elevation of my machine with the parts in their normal position. Fig. 1^a is a radial section of the pawl-carrying arm, together with a side elevation of the pawl and spring. Fig. 2 is a front elevation of said machine. Fig. 3 is a rear elevation of a portion thereof with some of the parts in vertical section on line *y y* of Fig. 1. Fig. 4 is a vertical section thereof on line *x x* of Fig. 2, the same being illustrated with the operating-lever raised and the hammer drawn back. Fig. 5 is a vertical section of a receptacle provided with three delivery-slots instead of only one. Fig. 6 is a front elevation of the lower portion of the machine, showing an alternative construction. Fig. 7 is a side elevation of the same. Fig. 8 is a reverse plan view of the hammer. Fig. 9 is a central vertical section of the parts shown in Figs. 6 and 7. Fig. 10 is a sectional view corresponding with Fig. 4 of the lower part of the machine, showing a modification of the driver-guard and pawl for holding the hammer-head to the rear, and Fig. 11 is a like view of said pawl and adjacent parts when in their locking position.

A designates the frame of the machine having two feet, of which the foot 10 at the rear is preferably formed of wood, and the foot 11 at the front side is provided with a vertical opening through it, and with suitable guides for the hammer-block 12 and driver 13. In the preferred form the side edges of the driver 13 are rolled over to form grooves, which, in connection with the side ledges on the foot 11, serve to guide the hammer-block and driver in their longitudinal movement. The

rear end of the hammer-block 12 is provided with a guide-rod, 14, around which a spiral spring, 15, is arranged to drive the hammer-block forward. This guide-rod is also provided on its upper side with a recess or notch, 16, one end of which forms an abutting shoulder for engagement with the rear end of the lever-pawl 17 for holding the hammer-block back in the position illustrated in Fig. 4. This lever-pawl is depressed at its rear end to engage the notch in the guide-rod by means of a spring, 18, which is secured to the upper side of the foot 10.

Pivoted upon a horizontal shaft, 19, there is a revolving receptacle, C, having two circular flanges, 20 21, separated from each other on their confronting faces by a space which slightly exceeds the thickness of a glazier-point, and which flanges flare outwardly from each other to form the body of the receptacle, as shown. The space between the confronting faces of the flanges is maintained by the connecting-posts 22 and holding-screws 23, as shown in Fig. 4.

Access is had to the interior of the revolving receptacle by a removable cap, 24, upon the front, the said cap being made to fit the central opening in the front, and provided with spring-arms 25 for holding it in place, said arms being represented by broken lines in Fig. 2. The opening is notched on one side, as shown at 44, Fig. 2, to enable the spring-arm 25 to be inserted in place. Inasmuch as the machine is portable and may sometimes be turned bottom side up, the upper part of the slot or space between the flanges 20 and 21 may be closed by a horse-shoe-shaped piece of metal, 26, the lower ends of which are riveted or otherwise secured to the back side of the chute 27, which chute is secured to the front side of the frame A by means of screws 28. The contour of the interior of the chute and the strip of metal which closes the upper side of the slot in the receptacle is indicated by broken lines in Fig. 2. In the construction shown this horse-shoe-shaped piece of metal by being fastened to the stationary chute also serves as the means for holding the receptacle from working longitudinally on its axis.

The lower part of the chute is but a little

wider than one glazier's point, said points being triangular in shape, as indicated by broken lines, forming a triangle in Fig. 2, the same representing a side view of a glazier's point as caught by the spring 29 within the lower end of the chute. Said spring is provided with an inwardly-projecting arm at a point above its lower end, which point extends into the chute.

10 An indefinite number of glaziers' points are placed within the receptacle promiscuously for supplying the chute with points for driving in the manner hereinafter described.

B designates a lever pivoted to the frame 15 A, and provided with a downwardly-projecting arm, 30, the lower end of which comes in front of the hammer-block 12, as shown in Figs. 1 and 4, whereby an upward movement of said lever B will draw the hammer-block 20 backward far enough to allow it to be locked in its rearward position by the lever-pawl 17, as shown in Fig. 4. On the front end of the lever B there is a short arm, 31, to which is pivoted a pitman, 32, the upper end of said 25 pitman being pivoted to the pawl-carrying arm 33, which arm rocks on the shaft 19, and one end of which arm carries a spring-pressed pawl, 34, that engages the ratchet-teeth 35 on the back of the receptacle, whereby a reciprocating movement of the lever B will impart a like movement to the pawl-carrying arm, and thereby, through the ratchet-teeth and 30 spring-pawl, move the receptacle intermittently.

35 At the lower end of the chute there is a slide, 36, which closes the same and is pressed rearwardly to withdraw it by the spring 37, Fig. 4, and is moved forward by the downwardly-projecting arm 30 of the lever B, when said 40 lever is returned to its normal position by means of the spring 38, thereby letting the inwardly-projecting arm of the spring 29 into the chute, to obstruct the passage of points through the lower end thereof, every time the 45 lever B is raised, and by bearing against the lower end of said spring pushing it outwardly to withdraw said arm when the lever B is in its normal position, in which case the slide 36 closes the end of the chute, said arm acting again to stop all of the points, excepting 50 the one lying directly upon said slide, so soon as said slide is again withdrawn.

Within the body of the hammer-block 12 there is a spiral spring, 39, coiled around the 55 shank of the driver-guard 40, said guard being arranged to slide forward and backward in the foot-piece 11 and hammer-block 12, separately from the movement of the driver. This guard is prevented from sliding forwardly, under the influence of the spring 39, beyond a given point by means of the projection 41 on the upper side of the driver 13, which engages a slot in the under side of 60 said guard. An adjusting-screw, 42, is placed 65 in the front side of the foot 11, for the purpose of regulating the distance that a point after being driven shall project from the gag-

ing-face, as, for instance, the inner face of the sash.

The receptacle being supplied with a number of points the machine is operated by lifting the lever B from the position shown in Fig. 1 into that illustrated in Fig. 4. This movement of the lever causes a partial revolution of the receptacle, so as to change the 75 position of the points therein and cause some of them to fall down to the lower end of the chute, where they will be stopped by the inwardly-projecting arm of the spring 29 in case they fall after the lever is lifted, or if one has 80 fallen down before it will be stopped by the slide 36. In case a point is stopped by the slide 36 when the lever is lifted, it will fall downward into the opening in the chute and upon the top of the driver-guard 40. The inwardly-projecting arm of the spring 29 will 85 prevent more than one point from falling at one time either by coming under the edge of the lowest point but one within the chute or by bearing upon its flat face, in either event 90 preventing other points from falling. The driver-guard 40, when the hammer-block is in its most forward position, has its front end stopped by contact with the bar across the front side of the foot 11, thereby forcing said 95 guard into the hammer-block while the driver 13 is allowed to come nearly or quite flush with the front side of said foot. When the hammer-block is first drawn backwardly, the spring 39 holds the driver-guard 40 in a stationary position until the projection 41 reaches 100 the limit of its movement in the under side of the driver-guard, after which said guard, driver, and hammer-block move rearwardly together, and the point which lies upon the 105 top of the driver-guard drops through the opening in the foot 11 and lies upon the face of the glass.

In using the machine the feet 10 and 11 rest upon the glass being set, and the adjusting-screw 42 is pressed firmly against the face of 110 the sash into which the points are to be driven. When the hammer-block 12 and its connected parts have been drawn backwardly into the position shown in Fig. 4, the lever-pawl 17 engages the guide-rod 14 and holds the hammer-block in its rearward position. Upward 115 pressure on the lever B is then released, and the spring 38 throws it into its normal position, when the arm 30 strikes the slide 36, thereby closing the lower end of the chute and pushing the spring 29 forward to withdraw its arm and let another point fall upon said slide. 120 The end of lever B also engages the long end of lever-pawl 17, thereby releasing the hammer-block, which, under the force of the spring 15, moves forward with a rapid stroke. In this forward movement the driver-guard 40 comes over the point which lies upon the glass to hold it down, while the driver 13, acting on 125 the base of the point, drives it into the sash. During the last part of the stroke the driver-guard is stopped from moving forward by contact with the front wall of the opening through 130

the foot 11 when the under side of the foot at said front serves to hold the point down, the driver-guard yielding as the driver 13 continues on to or nearly to the front edge of the foot, as shown in Fig. 1. The distance that the adjusting-screw 42 projects beyond the front of the driver when in this position regulates the length of projection of the base of the driven point. By turning this screw out or in, this projection can be regulated from almost nothing up to any desired extent.

In the alternative form (shown in Figs. 6 to 9, inclusive) the grooves for guiding the hammer-block are formed in the foot 11, instead of in the edge of the driver; but this difference alone is not a substantial one and not the main difference between this alternative device and that first described. The principal difference resides in the fact that the driver and driver-guard have a fixed relation to each other, instead of having separate movements, and therefore the driver cannot well be made to come so closely to the front of the machine. The driver-guard 43 is formed integral with the hammer-block 12 and moves with the driver at all times. Its under side, back of its front end, may, however, be slightly recessed or cut away, so that the driver 13, which is of spring sheet metal, may yield a little under any irregularities in the surface of the glass. In this construction the front wall of the opening through the foot 11 extends downwardly only to the upper face of the driver-guard 43. The operation of this alternative construction will be readily understood from the description hereinbefore given in first describing the machine. An adjusting screw or screws may also be applied to the front of the foot in this alternative construction.

Still another modification of the driver-guard is shown in Fig. 10, in which said driver-guard 49 slides within the hammer-head and foot 11 with a movement separate from that of the driver, as in the construction first described, but it is operated differently. In all of the constructions shown the driver 13 is rigidly secured to and moves with the hammer-head 12. In Fig. 10 the arm 30 of the lever B is long enough to enter a slot, 48, in the driver-guard 49 and move said guard in both directions. This slot may be long enough, so that the driver-guard may remain stationary during the first part of the stroke of the arm 30, but should always be so short that when the arm 30 reaches the rear limit of its stroke the front end of the guard will be back as far as the rear wall of the opening through the foot 11. If the driver-guard moves back farther than this it will do no harm. As soon as pressure on the lever B is released and the arm 30 is thrown forward it engages the front wall of the slot 48 in the driver-guard and carries it forward into the position shown in Fig. 10, the hammer-block and driver meanwhile being held back by their retaining-pawl until said pawl is re-

leased by the end of lever B. Thus it will be seen that when the driver makes its forward stroke the driver-guard and under side of the foot at the front form a continuous guard over the driver to hold the point down.

If desired, a pawl and dog may be used as an equivalent retaining-pawl in place of the lever-pawl 17. Such a pawl and dog is illustrated in Figs. 10 and 11, and it has the advantage of being very easily tripped and of holding surely, while it is also very durable. 45 is the pawl and 46 the holding-dog, which is pressed upon by the spring 47. Figure 11 shows the pawl locked into engagement with the guide-rod 14, and Fig. 10 shows the same parts unlocked by means of the end of lever B striking the long arm of the dog the same as it strikes the long arm of the pawl 17, first described. In the construction first described the engaging-faces of the notch and pawl 17 were just abrupt enough to have the pawl stay in place, while in Figs. 10 and 11 the faces are more inclined, so that when the dog 46 releases the pawl 45 it will slip up out of the notch 16, under the pressure of the driving-spring 15.

The revolving receptacle formed with a slot or open space at the periphery between two circular flanges which flare outwardly away from each other not only performs the function of delivering the points in an edgewise direction into the chute, but by being so formed as to direct the points through the narrow peripheral slot it not only delivers them edgewise, but will retain within it any bent points, or those of an excessive thickness or imperfection, so that none but flat points of a given thickness are delivered from said receptacle. It may therefore be used independently of the rest of the machine for assorting the points, and when so used it might be enlarged by the addition of like flanges, so as to increase the number of delivery-slots. An illustration of a receptacle provided with three delivery-slots for this purpose is shown in Fig. 5.

I claim as my invention—

1. In a machine for acting on glaziers' points, substantially as described, a revolving receptacle for delivering said points, having circular flanges flaring outwardly from each other and rigidly connected together, with a thin delivery-space at the periphery between the confronting faces of two adjoining flanges, substantially as described, and for the purpose specified.

2. In a machine for driving glaziers' points, the combination of a receptacle having two confronting flanges with a delivery-space between, feeding and driving mechanism, the lever B for operating the same, and mechanism connected therewith for imparting a partial revolution to the receptacle for each reciprocating movement of said lever, substantially as described, and for the purpose specified.

3. In a machine for driving glaziers' points, the combination of the chute 27, spring 29,

having an inwardly-projecting arm, the spring-pressed slide 36, driving mechanism, and the lever B, having an arm, 30, for operating said driving mechanism and slide, substantially as described, and for the purpose specified.

4. In a machine for driving glaziers' points, the combination of the foot 11, having a vertical opening through it, a driver-guard fitted to move across the said opening in said foot, a driver underneath said guard, mechanism for operating said guard and driver, and feeding mechanism—as, for instance, the chute 27, spring 29, and slide 36—for feeding the points edgewise and delivering only one point at a time upon the top of said guard, substantially as described, and for the purpose specified.

5. In a machine for driving glaziers' points, the combination of the foot 11, having a vertical opening through it, a driver-guard fitted to move across the said opening in said foot, a driver underneath said guard, and mechanism for operating said guard and driver, substantially as described, and for the purpose specified.

6. In a machine for driving glaziers' points, the combination of the foot 11, having a vertical opening through it, the reciprocating hammer-block 12, the driver 13, secured thereto, and the sliding and spring-pressed driver-guard, the said foot having the lower face of the front wall of its opening extending downwardly substantially even with the under side of said driver-guard, substantially as described, and for the purpose specified.

7. In a machine for driving glaziers' points, the combination of the hammer-block 12, the driver connected therewith, the guide-rod attached to said hammer-block and having the recess or notch 16, the spring 15, the retaining-pawl 17, pivoted in the frame A, for engaging said recess, and the spring-actuated

lever B, for moving said hammer-block and releasing said pawl, substantially as described, and for the purpose specified.

8. In a machine for driving glaziers' points, the combination of the hammer-block and driver, guide-rod 14, spring 15, a device for holding the hammer-block in its rearward position, the spring-actuated lever B, having an arm, 30, for pressing the hammer-block against its spring, and having the outer end of said lever adapted for engagement with the holding device for disengaging it, substantially as described, and for the purpose specified.

9. In a machine for driving glaziers' points, the combination of the foot 11, the hammer-block and driver and their operating mechanism, with the adjusting-screw 42 in the front of said foot, substantially as described, and for the purpose specified.

10. In a machine for driving glaziers' points, the combination of the chute 27, the spring 29, having an inwardly-projecting arm above its lower end, the reciprocating slide 36, adapted to close the lower end of the chute and also to bear against the lower end of said spring for withdrawing its projecting arm from the chute, and mechanism for operating said slide, substantially as described, and for the purpose specified.

11. In a machine for driving glaziers' points, the combination of the foot 11, having a vertical opening through it, the reciprocating hammer-block, the driver secured thereto, the sliding driver-guard over said driver, and means for moving said guard separately from the movement of the said driver, substantially as described, and for the purpose specified.

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