

No. 643,624.

Patented Feb. 20, 1900.

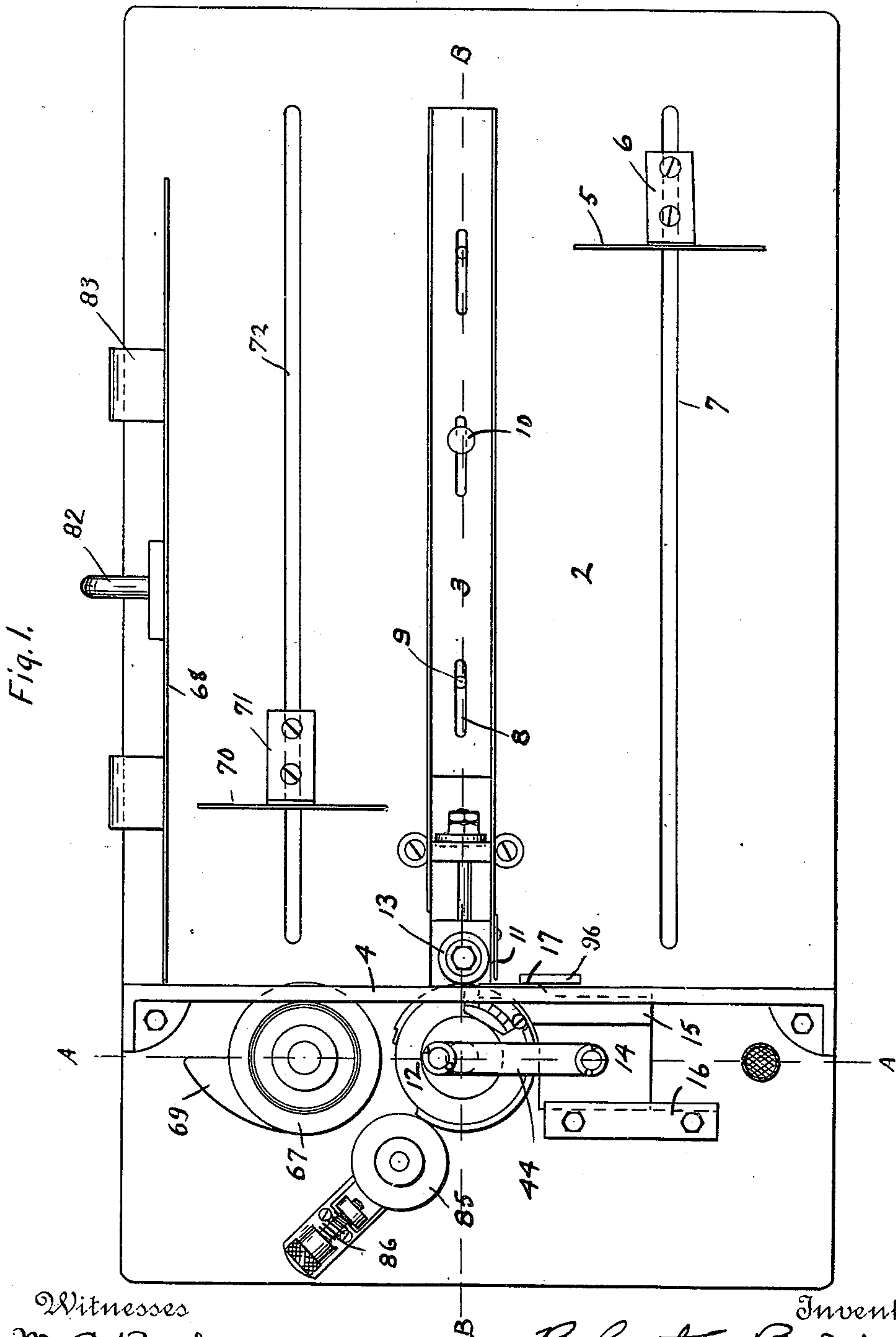
R. C. BERRY.

PRINTING, STAMPING, OR CANCELING MACHINE.

(Application filed Mar. 8, 1899.)

(No Model.)

5 Sheets—Sheet 1.



Inventor  
Robert C. Berry  
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His Attorney.

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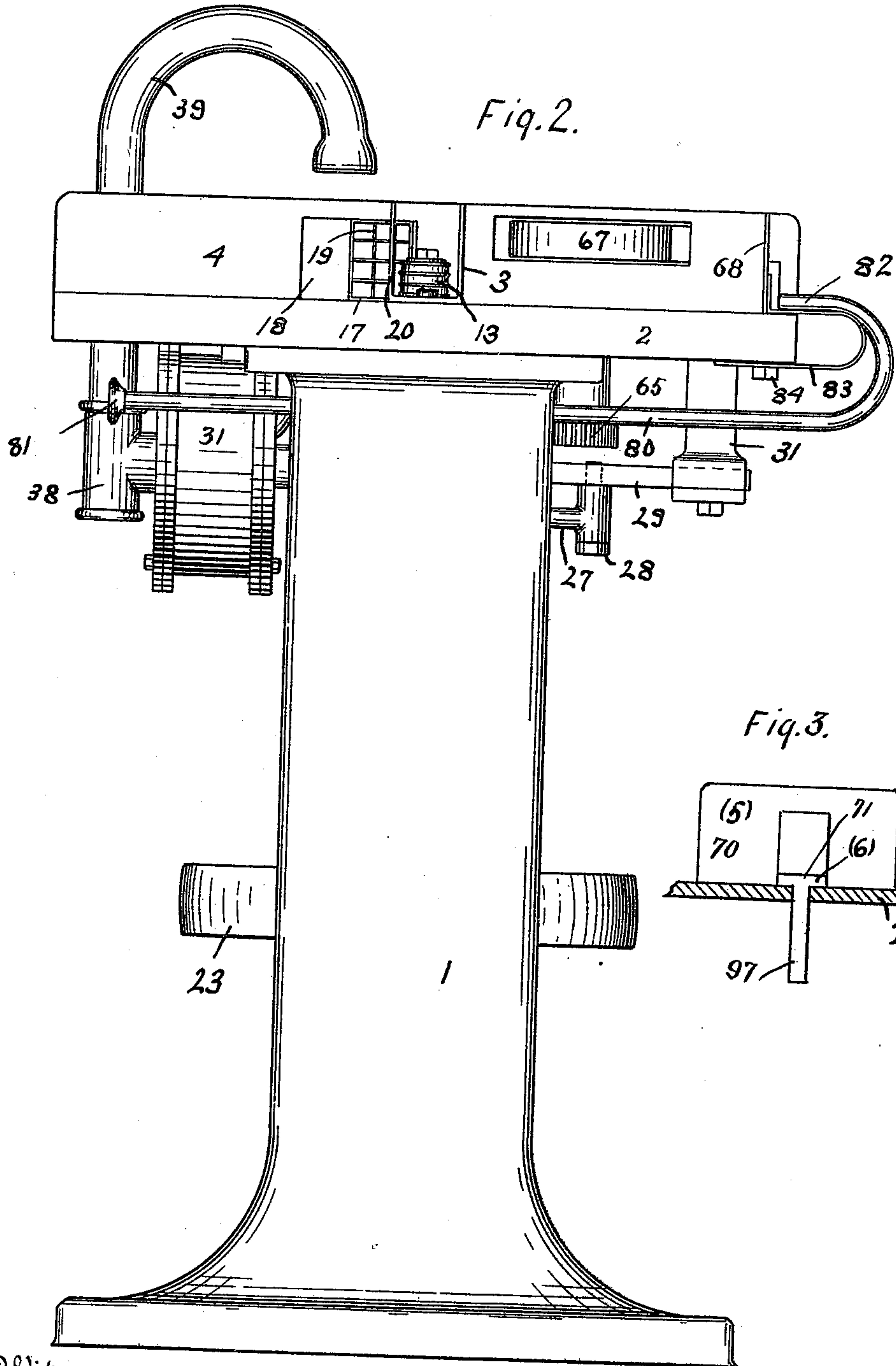
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Witnesses  
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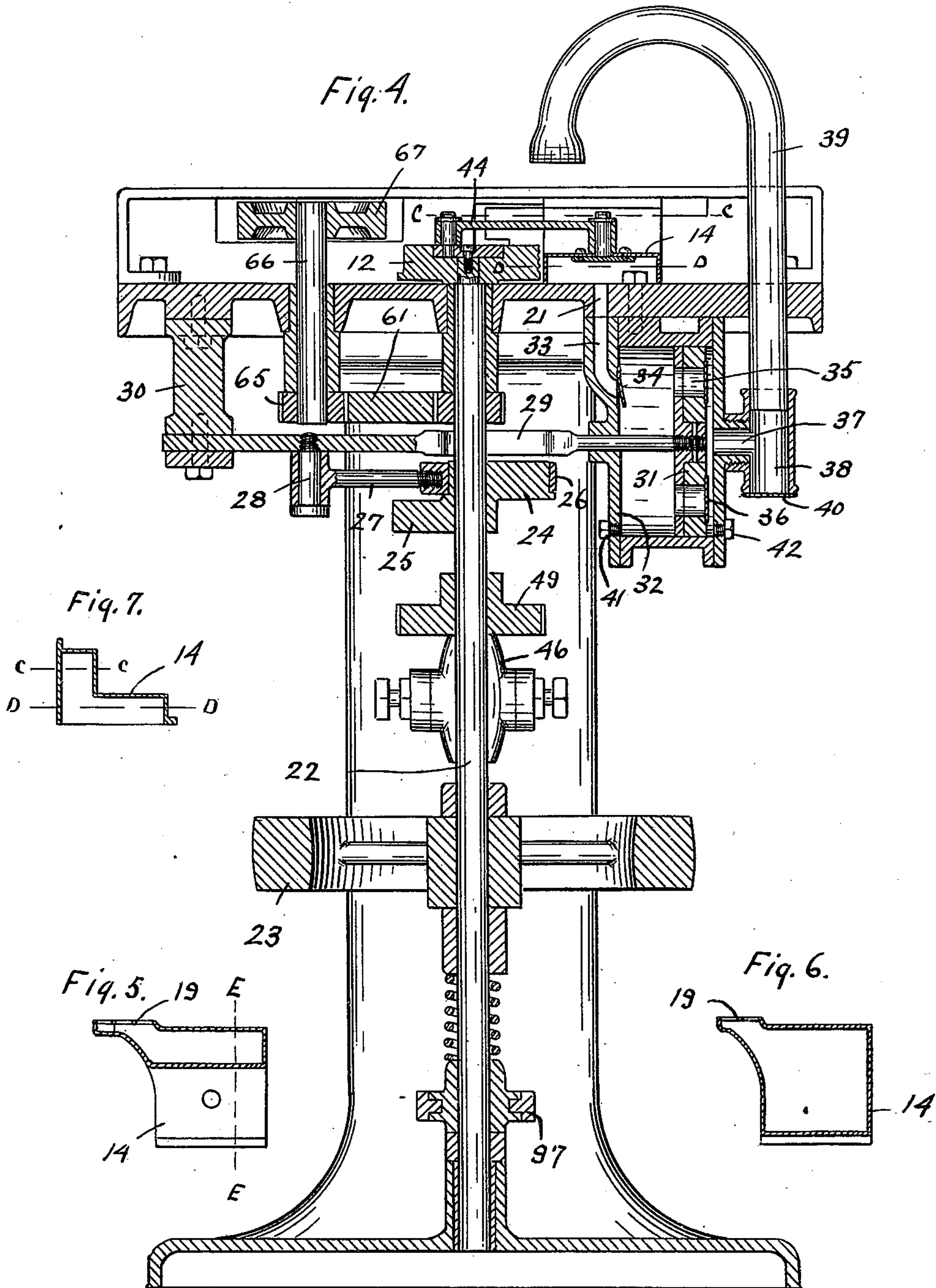
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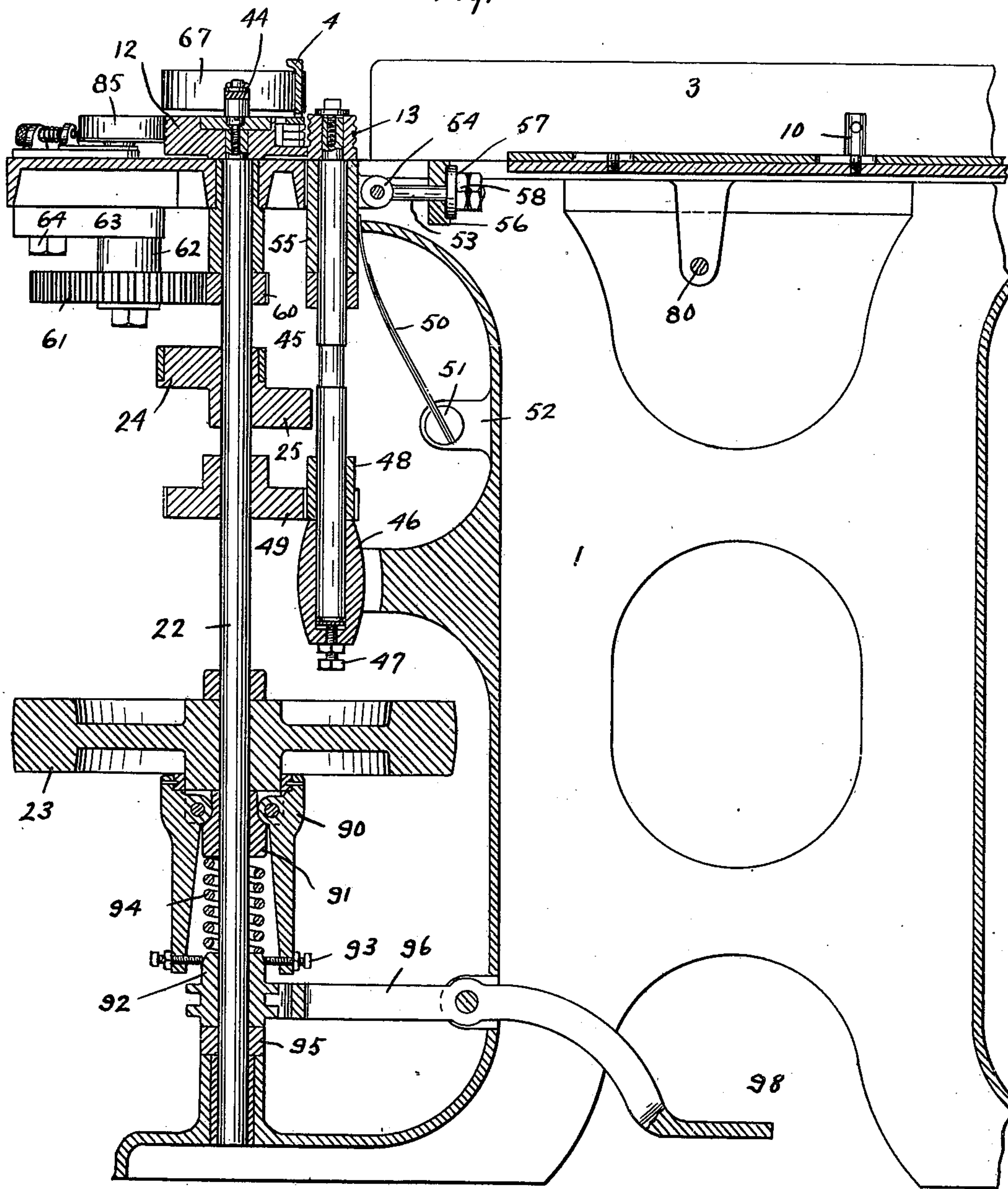
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Fig. 8.



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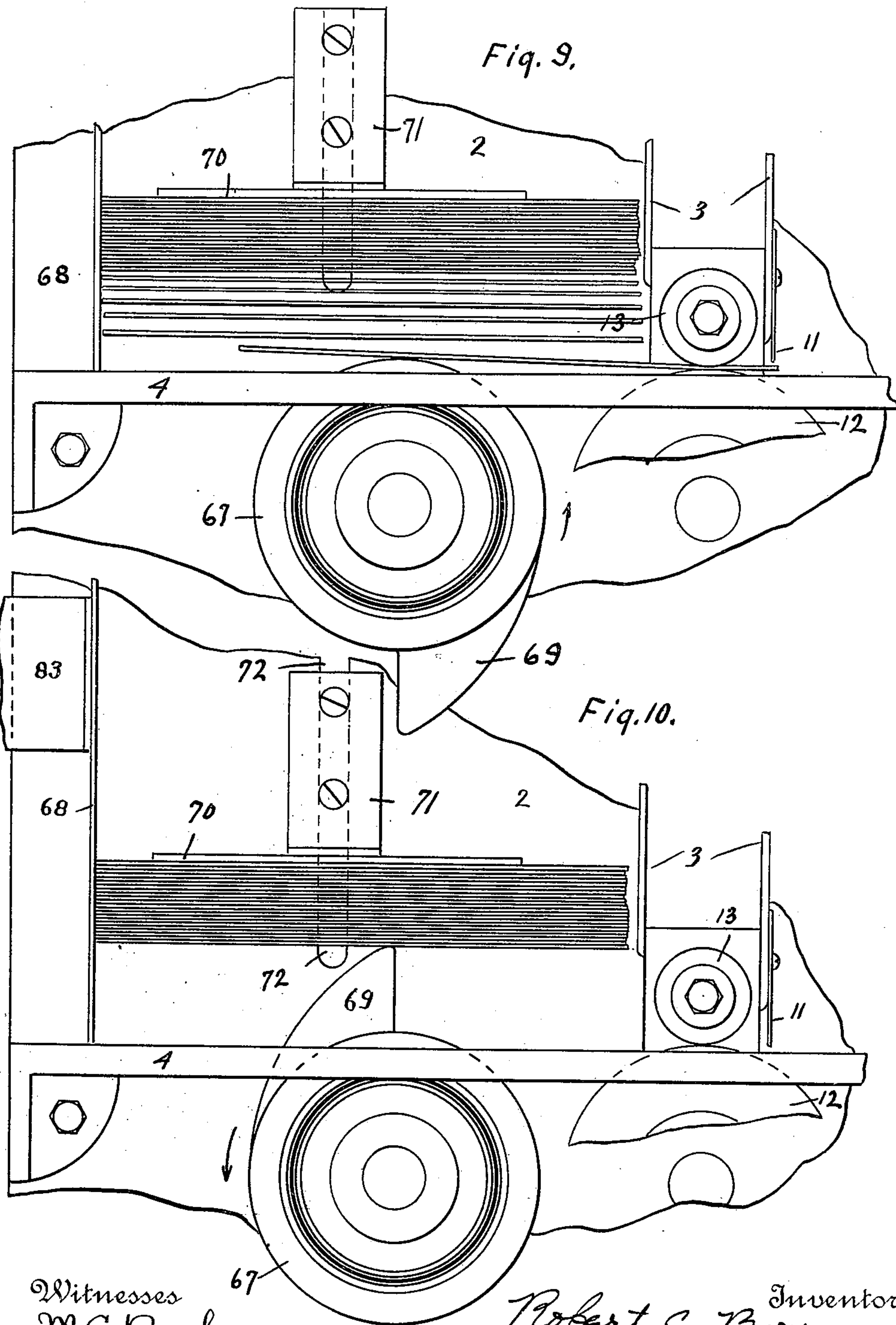
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5 Sheets—Sheet 5.



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# UNITED STATES PATENT OFFICE.

ROBERT C. BERRY, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO THE PNEUMATIC CANCELING MACHINE COMPANY, OF SAME PLACE.

## PRINTING, STAMPING, OR CANCELING MACHINE.

SPECIFICATION forming part of Letters Patent No. 643,624, dated February 20, 1900.

Application filed March 8, 1899. Serial No. 708,219. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT C. BERRY, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Printing, Stamping, or Canceling Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

This invention relates to improvements in postal machines of the kind shown in my prior patents, Nos. 622,106 and 622,107, granted to me on March 28, 1899. While these machines differ in many respects, they are similar in being supplied with pneumatic feeding mechanism.

My improvements relate to the combination herein shown of an air-pump with an exhaust-feed box, which is also adapted to furnish a blast against the top of the pack of letters. Also I provide an air-escape slot or opening beneath the pack of letters and the blast-tube above. I also construct the pneumatic feed-box in such manner as to enable it to approach very closely to the feed-rolls and hold the letter until it is grasped by the feed-rolls. I also provide means for adjustably fixing the position of the back-stop board on the table of the machine, against which the edges of the letters bear when packed after being canceled. This adapts said back-stop board to the varying sizes of the mail-matter. These and the other features of my invention will more fully appear from the accompanying drawings and the description and claims following.

In the drawings, Figure 1 is a plan of the machine with the blast-tube removed. Fig. 2 is an elevation of the right-hand end as the machine is used. Fig. 3 is a detail of the packer-block. Fig. 4 is a vertical section on the line A A of Fig. 1. Fig. 5 is a horizontal section of the suction-box on the line C C of Fig. 7. Fig. 6 is the same on the line D D of Fig. 7. Fig. 7 is a vertical section on the line E E of Fig. 5. Fig. 8 is a vertical section on the line B B of Fig. 1, a portion of the right-hand end of the machine being broken away. Fig. 9 is a plan of the part of the machine showing the operation of the packer. Fig. 10

is the same as Fig. 9 with the packer in a different position.

Referring now to details of construction of the machine herein shown whereby I preferably carry out my invention, 1 is a metallic frame on which and in which the other parts of the machine are mounted. It is provided with a top or table 2, which can be said to be divided into three sections by the channel-shaped partition-bar 3 and the feed-board 4. The feed-board 4 extends across one end of the top from front to rear, and the letters are fed to the canceling mechanism along this feed-board. The channel-shaped bar 3 extends from said feed-board at a right angle centrally along the top and separates the feeding side in front from the packing side to the rear, as seen in Fig. 1. The letters are packed for cancellation on the front or feeding side of the table or top, as seen in Fig. 1, and are pushed up toward the pneumatic feeder by the plate 5, secured to a sliding block 6, that slides in the slot 7 and is forced to the left by the hand or any other suitable means. In this part of the operation the letters abut against the channel-shaped bar 3. Said channel-shaped bar 3 is so mounted as to be longitudinally adjustable, as shown in Figs. 1 and 4—that is, it is provided centrally with slots 8, through which pins 9 from the table-top extend—and it is clamped in position by a screw-bolt 10. On its left-hand end it is provided with a flat spring 11, that extends almost to the feed-board 4. The purpose of this spring is to prevent the passage between it and the feed-board of more than one letter at a time, and the adjustable mounting of the bar 3, as has been explained, is to adjust this spring 11 for mail-matter of varying thickness.

The letters are fed singly between the type-wheel 12 and the feed-roll 13 by the reciprocating pneumatic box 14. This box 14 reciprocates in the guideways formed by the flange 15 and the plate 16 on the guide-board 4, as shown in Fig. 1. The sliding box 14 is formed as shown in Figs. 1, 5, 6, and 7, and it has an extension 17 through the slot 18 in the feed-board 4, as seen in Figs. 2, 5, and 6. This extension passes through and a little beyond said feed-board, as seen in Fig. 1, and has in



its face a suction-opening provided with cross-bars 19, as seen in Fig. 2. The upper part of this extension projects over the type-wheel, being extended, as seen in Figs. 2 and 5. Said extension of the suction-box is also curved parallel with the type-wheel. The purpose of this extension is to cause the box to move as far as possible while feeding the letters to the type-wheel and feed-roll, as seen in Fig. 1. The under side of said feed-box 14 is open, as seen in Fig. 4, and the air is exhausted therefrom through a conduit 21 in the table-top by the following means: As seen in Fig. 4, a main shaft 22 extends from the bottom to the top of the machine and is driven by power applied from some suitable source to the pulley 23. On said shaft toward the upper end I mount an eccentric wheel 24, that is balanced by the extension 25 and carries the strap 26, to which the connecting-rod 27 is screwed. Said rod 27 is mounted on a wrist pin or bolt 28, that is secured to the piston-rod 29. Said piston-rod 29 is horizontal, with one end slidably mounted in the guide-block 30, and the other is secured to a piston 31, that operates in the cylinder 32, secured to the under side of the table. The conduit 33 leads from the conduit 21, heretofore referred to, into the cylinder and is provided with the check-valve 34. As the piston moves into the position it occupies in Fig. 4 air is exhausted from the box 14 above. As the piston is reversed in its movement the air in the cylinder is forced out through the ports 35 in the piston-head and guarded by the check-valves 36 into the portion of the cylinder on the right-hand side of said piston-head. Then as the piston is again reversed and moves into the position it occupies in Fig. 4 the air in said end of the cylinder is forced through the conduits 37 and 38. The air passes upward through the blast-tube 39 and is directed upon the upper edges of the letters that are forced against the feed-board 4 on the feed or front side of the table. The position of said tube is shown in Fig. 2, and the blast through it tends to separate the letters from each other, so that when a letter adjacent to the feed-board 4 is grasped by the pneumatic feed-box and fed to the canceling device it will not by friction draw with it the adjacent letter or letters. Said tube 39 is loosely mounted at its lower end in the conduit 38, so that it can be readily turned therein into any position or removed, as in Fig. 1. An opening 96 through the table under the outlet of the blast-tube 39 is provided, as seen in Fig. 1, to permit the passage of the air from said tube between the letters and away without blowing the letters away. To blow or clean out said cylinder 32, I provide apertures at each side closed by the bolts 41 and 42.

On the upper end of the shaft 22 the type-wheel 12 is mounted. The type-wheel is constructed substantially as shown in my last application for Letters Patent, above men-

tioned, except that the canceling-lines 43, as seen in Fig. 1, are in this machine detachably secured to the periphery of the type-wheel instead of being integral, as in the former application. The box 14 is reciprocated by the link 44, that is pivotally secured to said box and eccentrically pivoted to the top of the type-wheel, as seen in Figs. 1 and 4, whereby perfect uniformity of movement of these two coöperating parts is secured.

The feed-roll is driven by the means shown in Fig. 8. It is mounted on the upper end of the shaft 45, whose lower end is adjustably mounted in the rocking bearing 46 and vertically adjusted by the screw-bolt 47. Said shaft carries the pinion 48 secured to it, which is driven by the gear 49 on the shaft 22. Said feed-roll is pressed into engagement with the type-wheel by the flat spring 50, mounted in the bolt 51 in the arm 52. The action of said spring, however, is limited by the bolt 53, that is pivoted at 54 to the sleeve 55, surrounding the shaft 45, and extends through the bar 56. This bar is provided with a recess or seat cylindrical to receive the disk 57, that is secured to the inner set-nut 58, so that the construction acts like a dash-pot. This furnishes an air-cushion behind said disk when the feed-roll is moved quickly to the left to prevent the clicking noise which otherwise would occur. On the shaft 22 another pinion 60 is mounted that meshes with the intermediate gear 61, carried on the spindle 62 in one end of the arm 63, which at its other end is secured by the bolt 64 to the under side of the table-top. If desired, this gear, with the pinion that meshes with it, can be adjusted by releasing the bolt 64 and resetting it. This intermediate gear drives the pinion 65, (shown in Fig. 4,) which is secured to the vertical shaft 66, on whose upper end there is mounted the packer 67, as seen in said figure and also in Fig. 1. This packer is a disk so placed that it extends through a horizontal slot in the feed-board 4 somewhat beyond said feed-board, as is to be seen in Figs. 1, 9, and 10. The purpose of this is to cause said disk to engage the letter as it passes away from between the type-wheel and feed-roll, as seen in Fig. 9, and carry it endwise against the back-stop plate 68. This disk is provided with a cam-shaped arm 69—that is, an arm curved on its forward side—which engages the letter that has been moved into position by the disk and pushes it back against the pack, as shown in Fig. 10. The curved contact-surface of said arm 69 is a continuation of the periphery of the disk, but with a smaller degree of curvature. Its engagement with the letters is gradual and not sudden or violent, so that the forward movement of the letter will be easy, and thus the letter will not be thrown out of place or turned or otherwise injured, and it will lie against the pack at all points.

The letters are packed against the packing-head 70, that is secured to the block 71, which



slides in the slot 72 on the rear side of the table, as seen in Fig. 1. This block 71 by reason of gravity or friction with the table-top resists the action of the packer, so as to cause the letters to be packed tightly against each other, and it is moved away from the packer by the force of the packer itself in packing the letters against the head 70 one after the other. This resistance is secured by the weight 97, as shown in Fig. 3.

To accommodate letters of different lengths, the back-stop plate 68 is rendered adjustable toward and away from the rear side of the machine by the following means: A rod 80, as seen in Fig. 2, is horizontally and slidably mounted in the framework, as seen in Fig. 8, and extends from the front side, where it has a finger-piece 81, to the rear and is curved up to form the arm 82, that is secured to the rear side of the back-stop plate 68, as seen in Figs. 1 and 2. By pushing said rod backward or forward said back-stop plate 80 is adjusted into position. Said back-stop plate 80 is held upright by the flat straps 83, that are slidably mounted on the under side of the table-top, as seen in Fig. 2, and the portion of said strap under the table as there seen has a longitudinal slot through which a bolt having a nut on it extends, so that said strap 83 is longitudinally movable. The nut 84 is made tight, but reasonably loose, so as to permit said longitudinal movement.

An inking-roller 85 is provided, as seen in Figs. 1 and 8, that is pressed against the type-wheel by the spring 86. This has been explained in my second application above referred to. The machine is thrown in and out of gear by the following means: The pulley 23 is loosely mounted on the shaft 22 and is held by a clutch mechanism, as shown in Fig. 8, whereby it is enabled to drive the shaft 22. This clutch mechanism may consist of the clutch-levers 90, pivoted to the block 91, which is rigidly secured to the shaft, so that their upper ends will clutch the hub of the pulley. Their lower ends are spread outward by the upward movement of the conical block 92, that engages adjustable bolts 93 in the lower ends of the levers 90. A spiral spring 94 holds the block 91 down on the collar 95. The block 92 is loose on the shaft 22 and is vertically moved by the lever 96 and is provided with a yoke 97, (seen in Fig. 4,) which surrounds the block 91. The lever 96 is actuated by a pedal 98. When the pedal

is depressed, the machine is in operation, and when it is not depressed the spring 94, pushing down the block 91, causes the clutch-levers 90 to release the pulley, and thus throw the machine out of gear.

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

1. A printing, stamping or canceling machine including a table with an opening through it, an open-bottom box reciprocable over said opening, a cylinder with a conduit connecting with said opening, a check-valve for closing said conduit, a piston in said cylinder, and a common means for reciprocating the box and piston.

2. A printing, stamping or canceling machine including a reciprocable exhaust box or port, a blast-tube to direct a blast of air on the pack of letters, &c., a cylinder with a conduit from one end connecting with said exhaust box or port and a conduit from the other end connecting with said blast-tube, a check-valve for closing the conduit from the exhaust box or port, a piston with ports through it governed by check-valves on the blast side thereof, and a common means for reciprocating said exhaust box or port and said piston.

3. A printing, stamping or canceling machine including a table having a slot in it over which the letters are packed on their edges in position to be fed to the canceling or printing mechanism, a feed-board against which said letters are packed, means operating through said feed-board for feeding the letters singly to the canceling or printing mechanism, and a blast-tube with its outlet directly above said slot and directed downward upon the pack of letters over said slot.

4. A printing, stamping or canceling machine including a type-wheel, a feed-roll cooperating therewith to receive the letters, &c., between them, and a reciprocable exhaust-box for conveying letters, &c., to the type-wheel and feed-roll with the end of the box next to the type-wheel curved parallel therewith and the extension of the box thereby formed provided with a suction-opening.

In witness whereof I have hereunto affixed my signature in the presence of the witnesses herein named.

ROBERT C. BERRY.

Witnesses:

M. C. BUCK,  
V. H. LOCKWOOD.