

No. 631,266.

Patented Aug. 15, 1899.

J. D. BAUMANN.
APPARATUS FOR PERFORATING CHECKS.

(Application filed May 10, 1897.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.

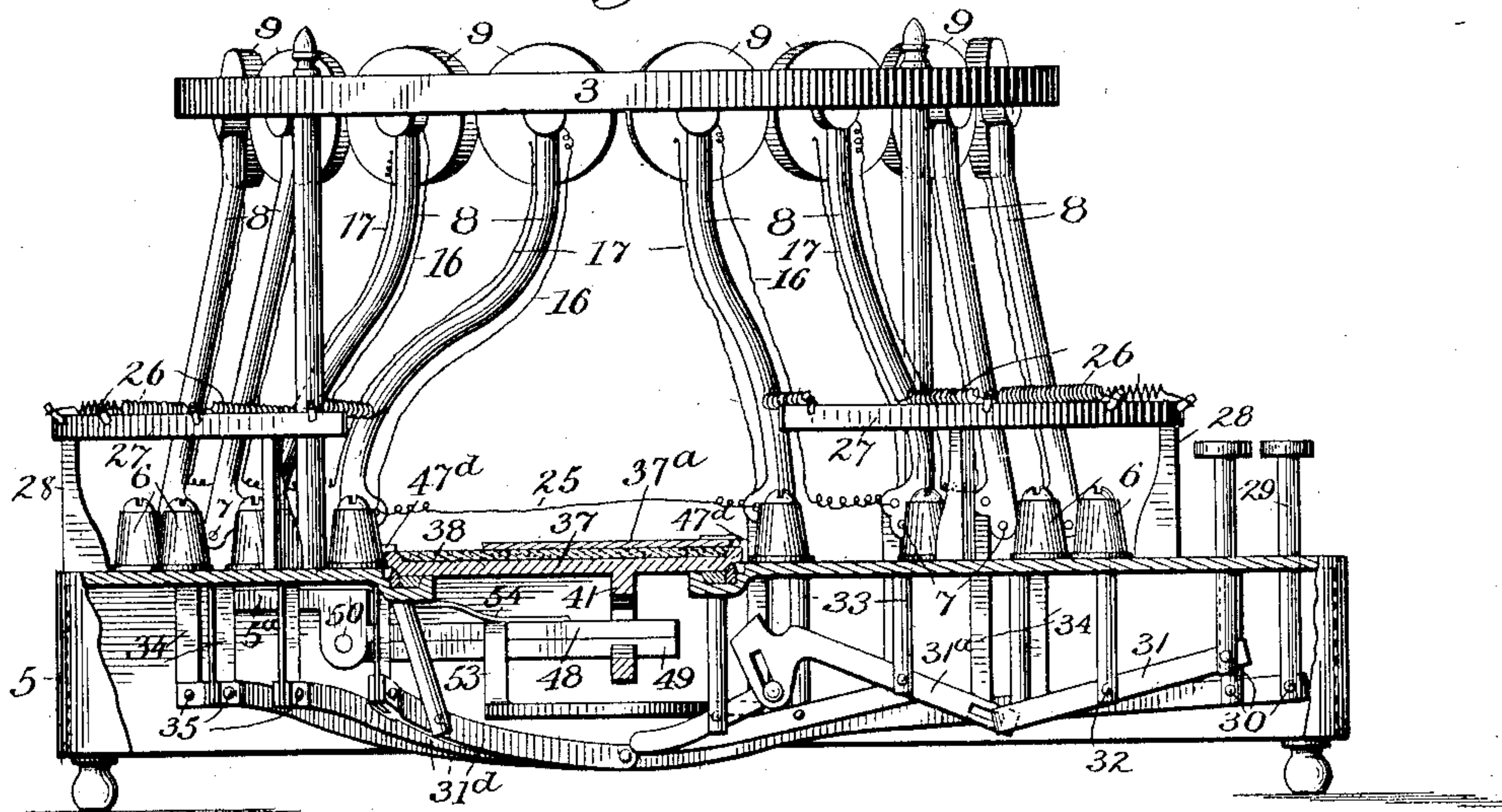
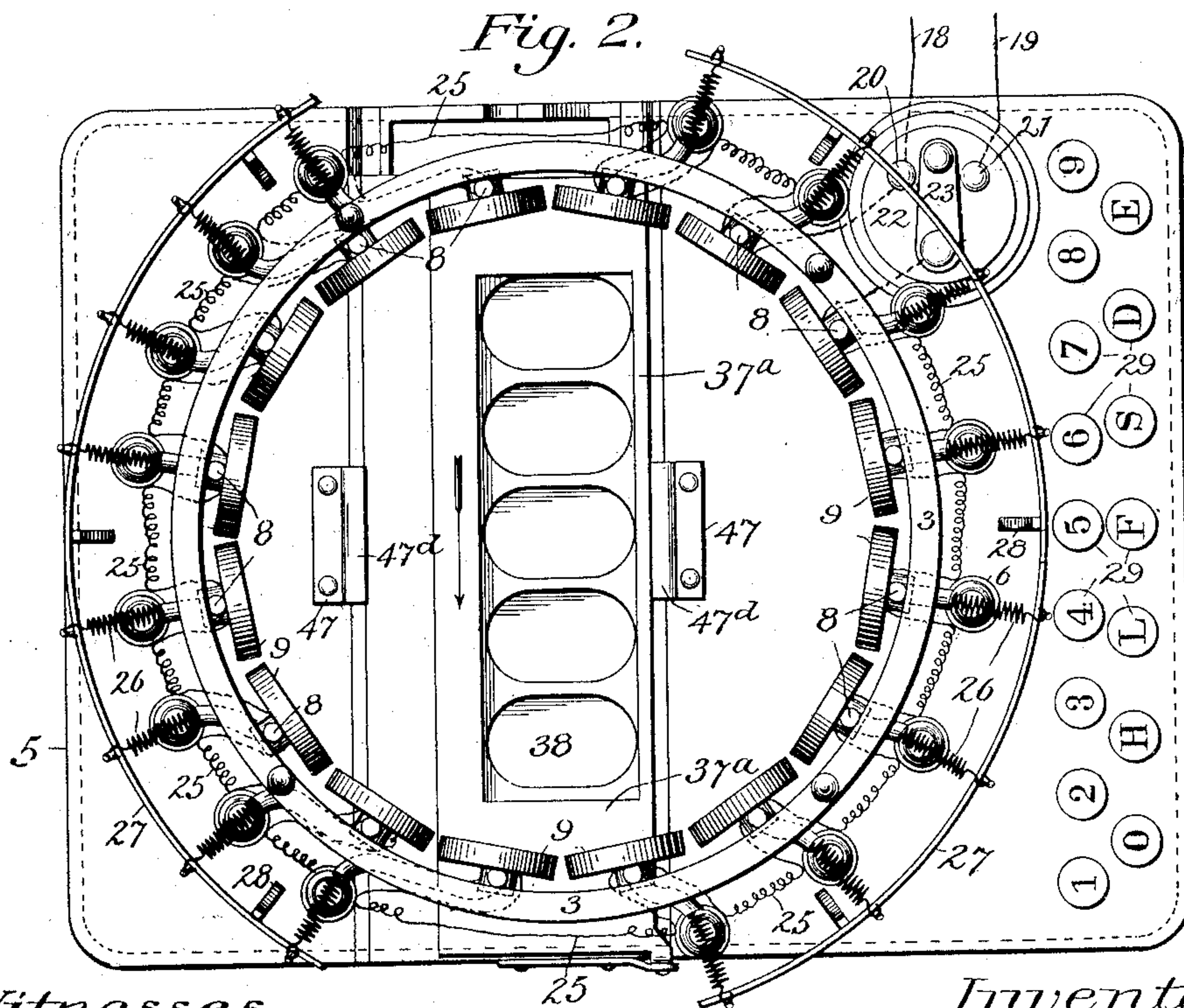


Fig. 2.



Witnesses.

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3 Sheets—Sheet 2.

Fig. 3.

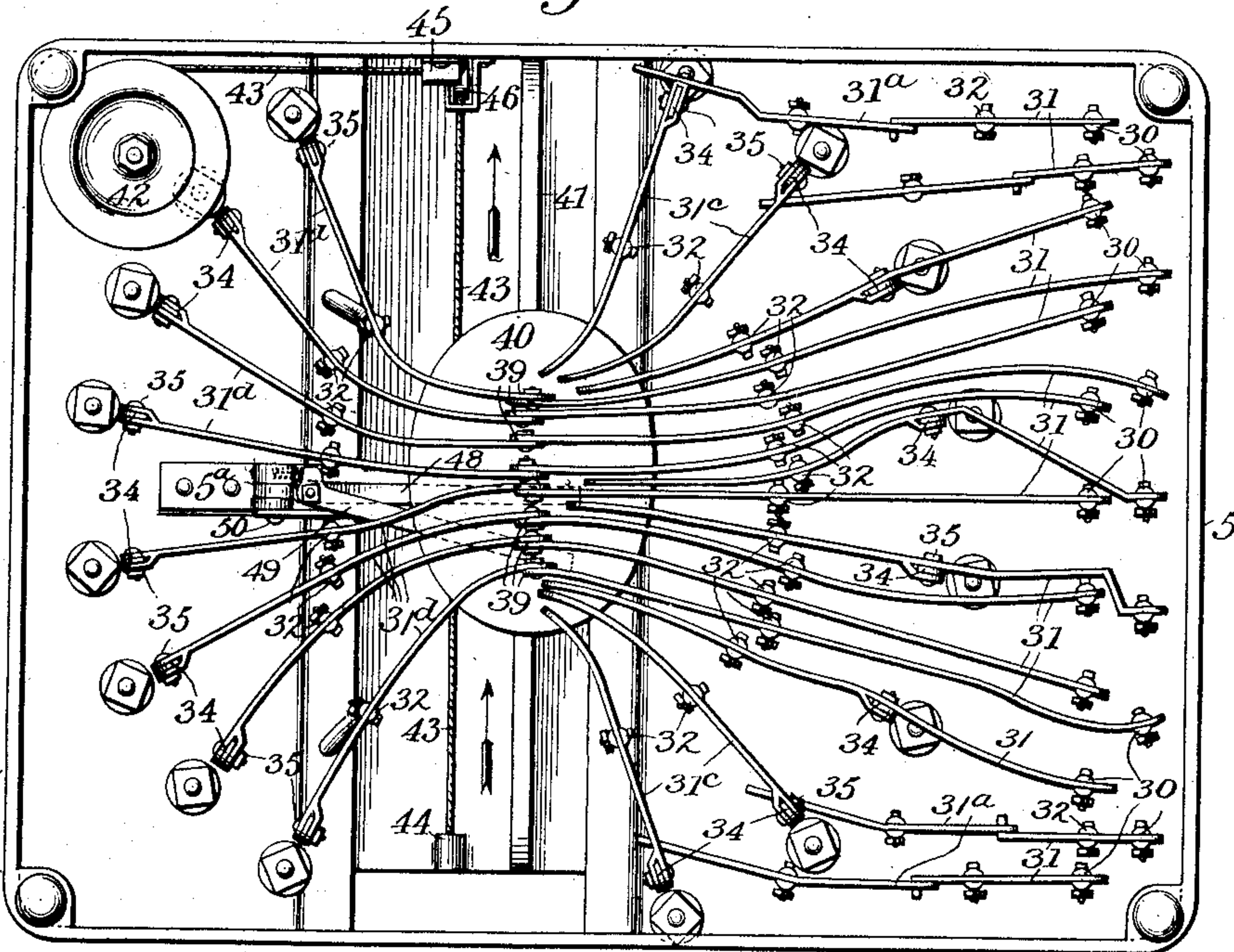


Fig. 4.

Fig. 5.

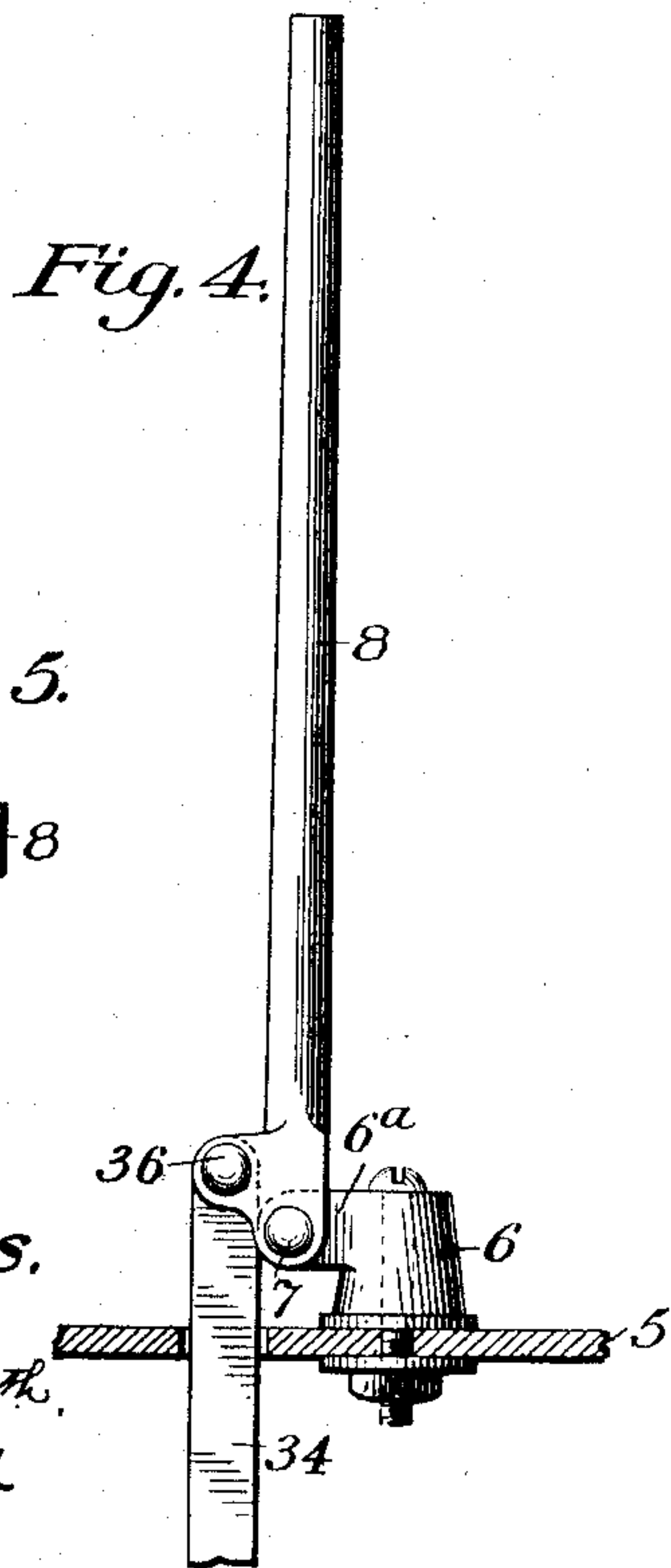
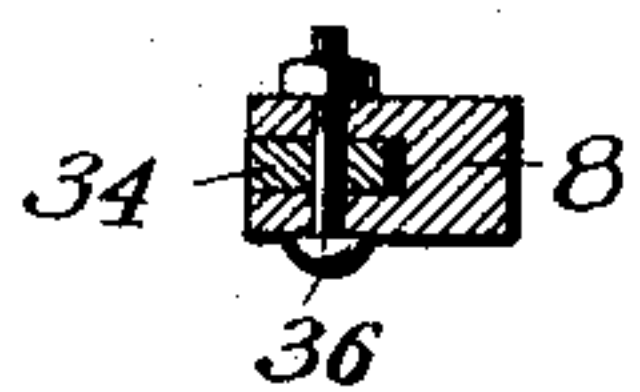


Fig. 6.

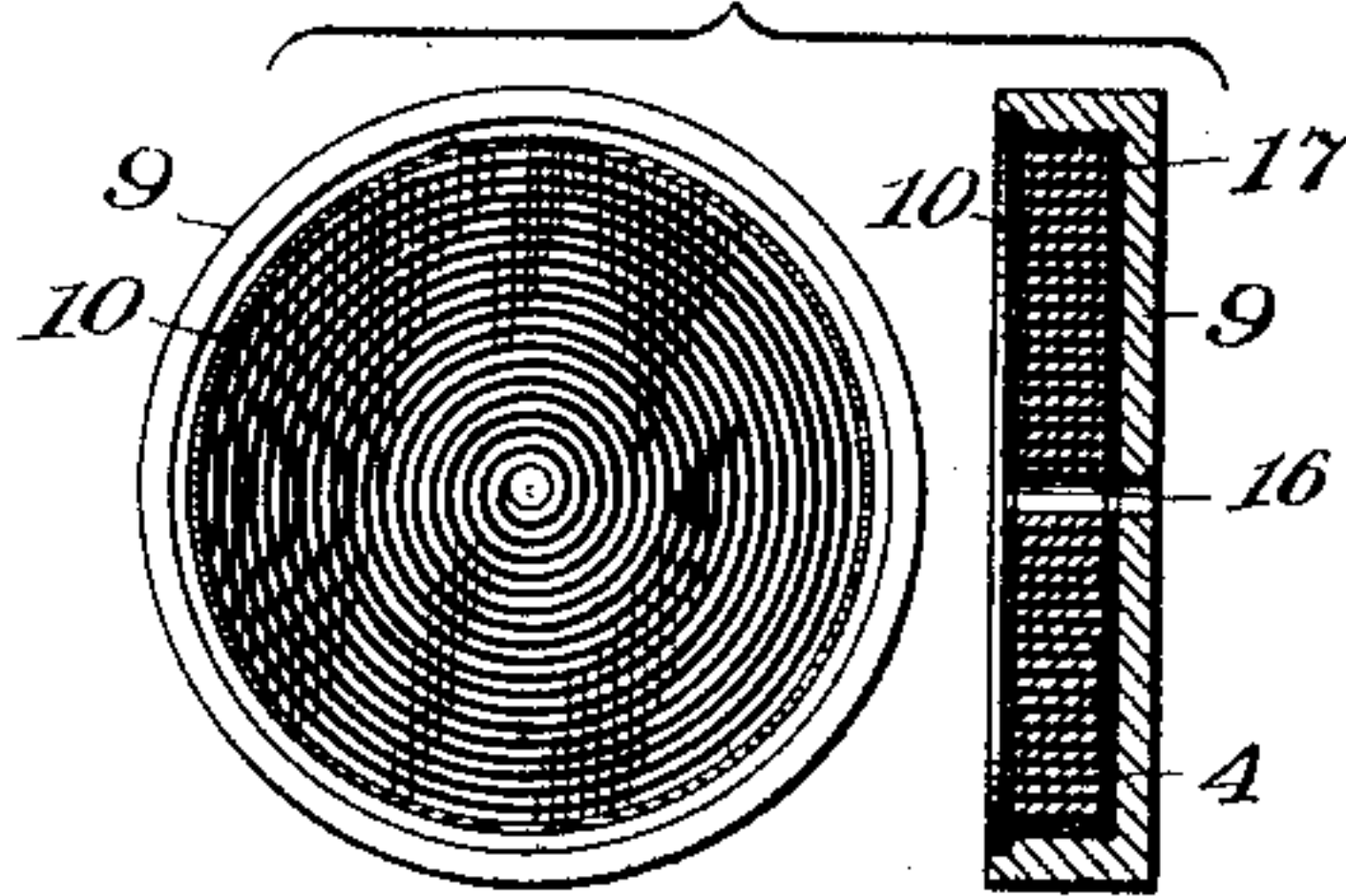
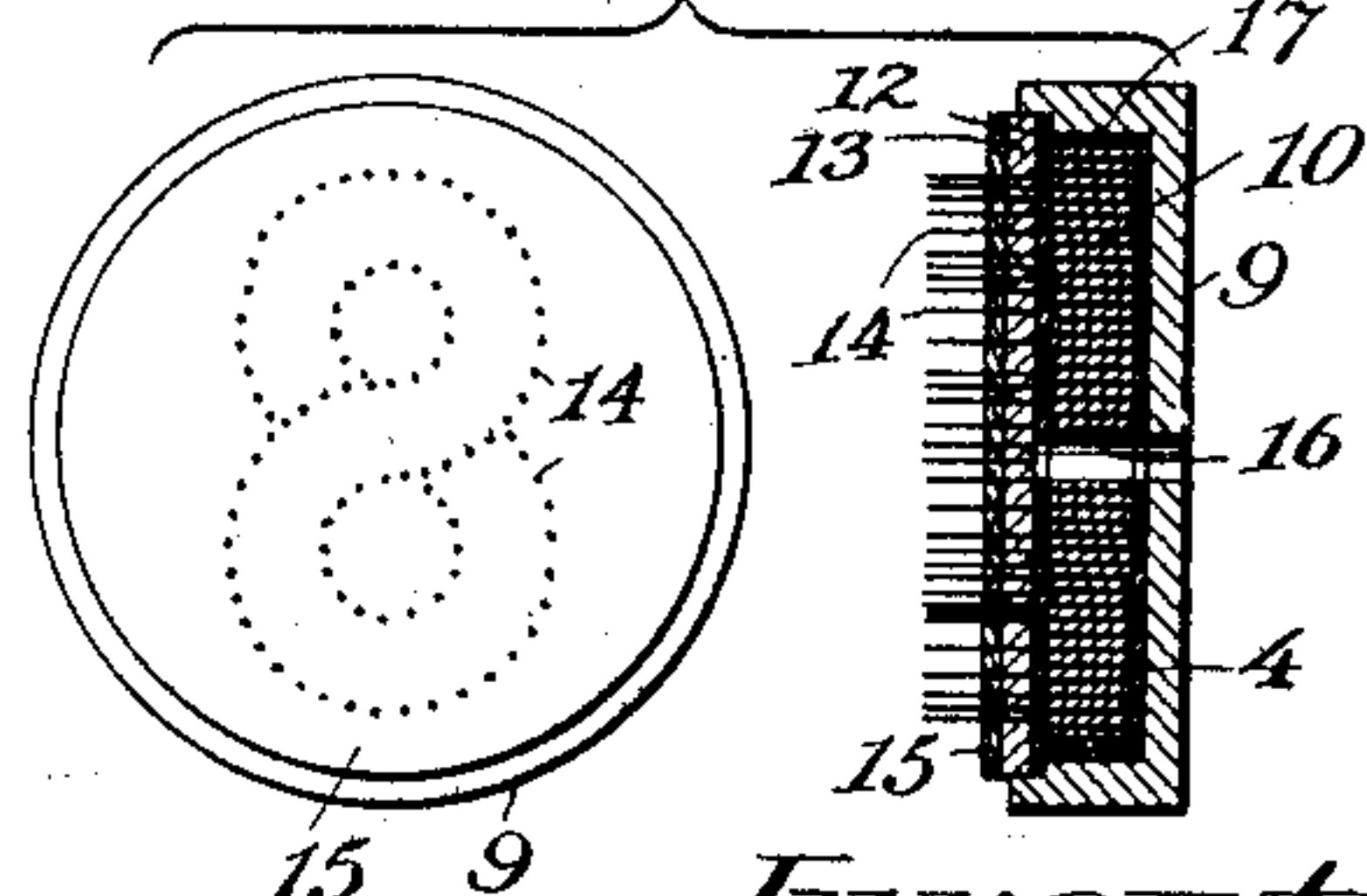


Fig. 7.



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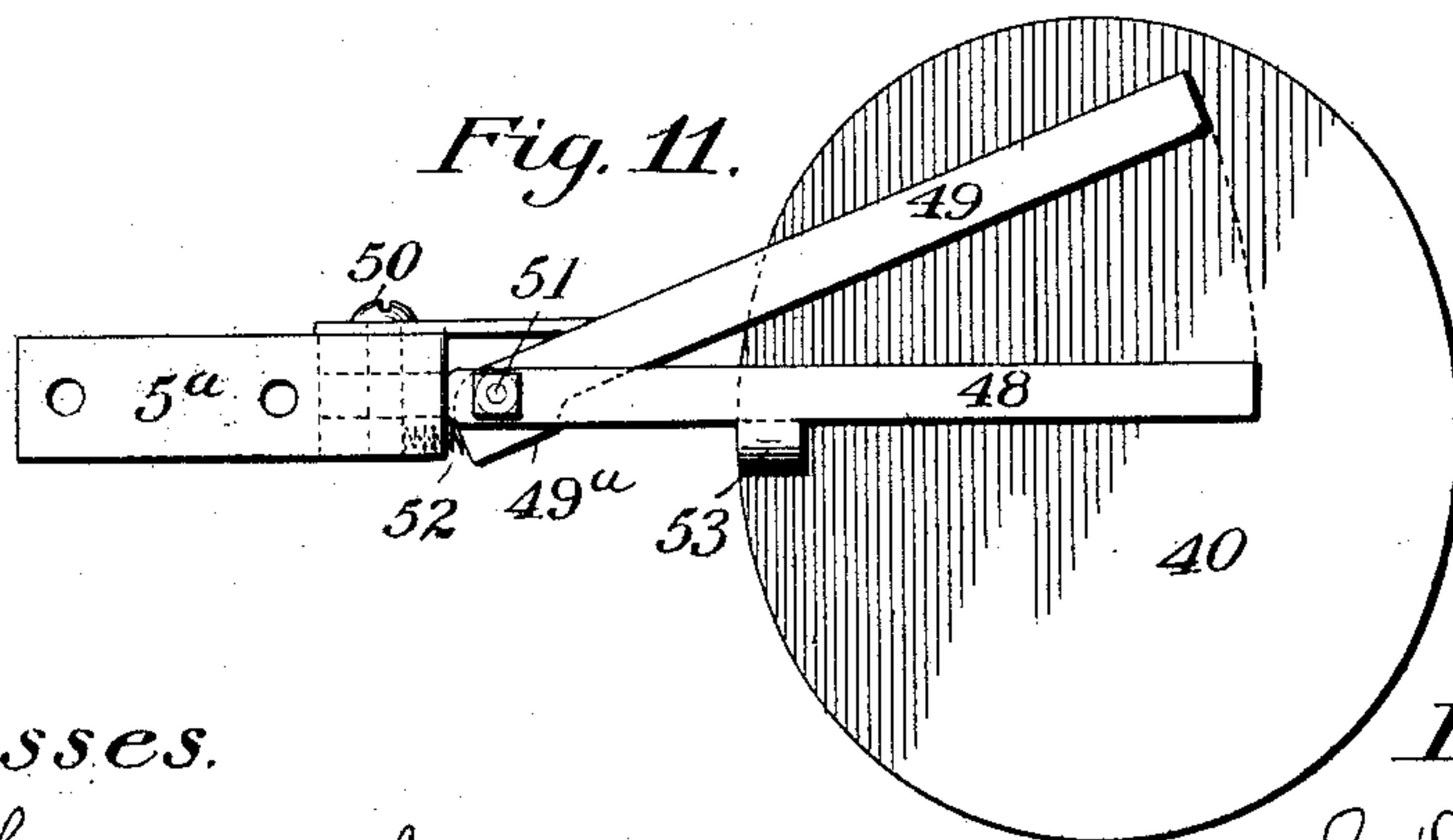
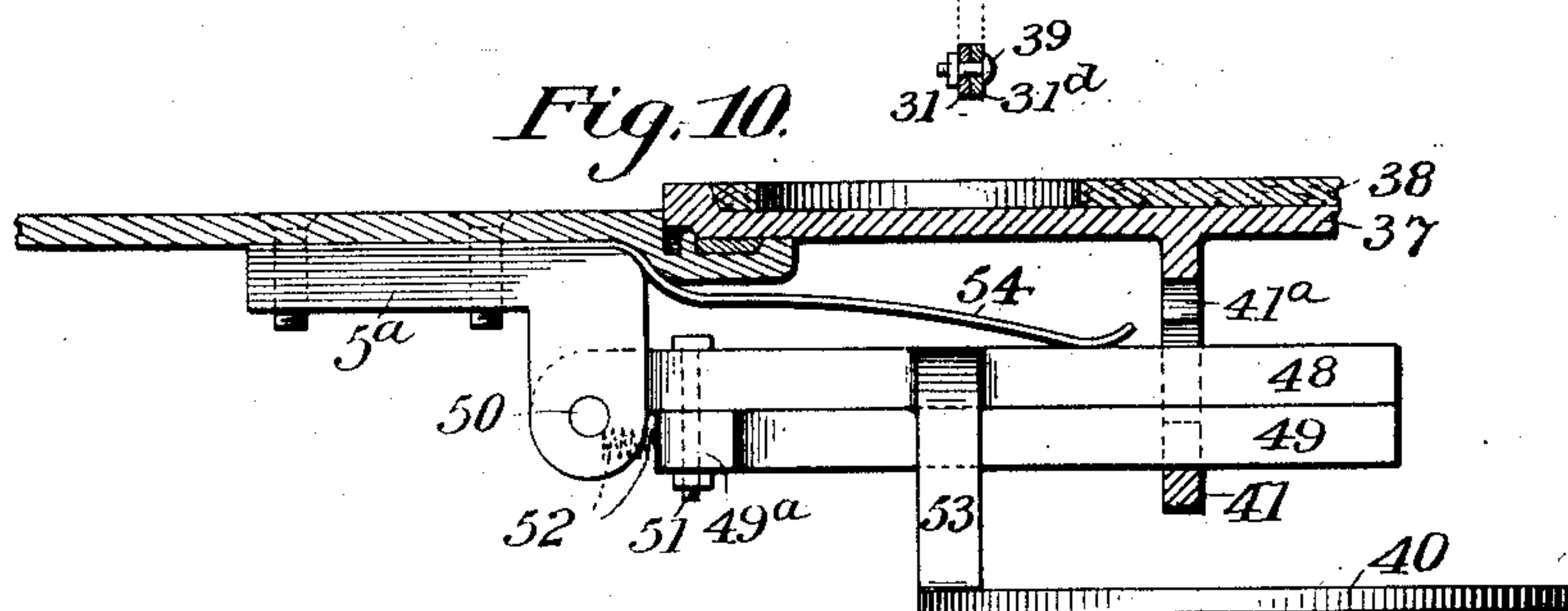
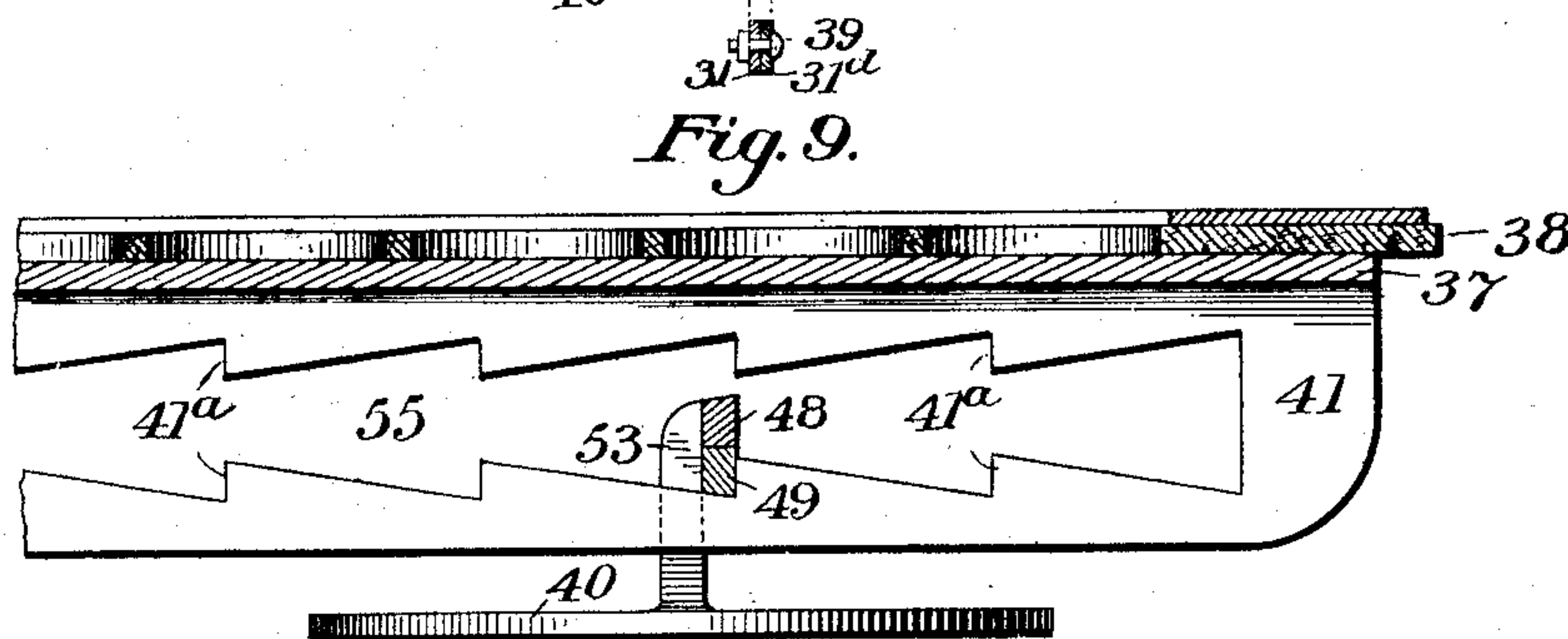
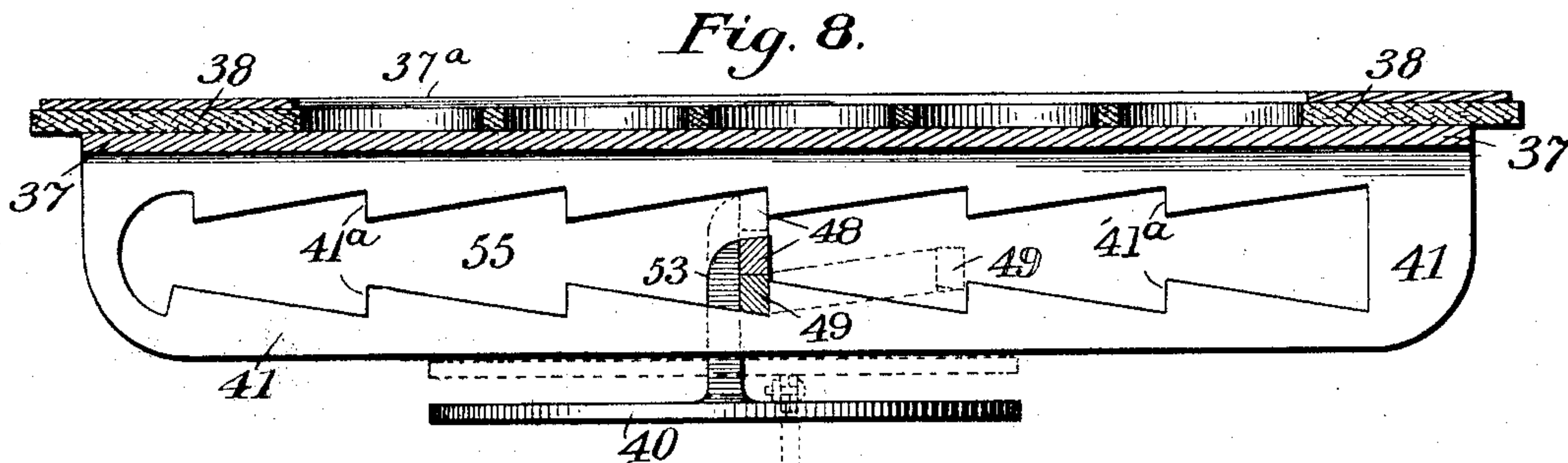
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APPARATUS FOR PERFORATING CHECKS.

(Application filed May 10, 1897.)

(No Model.)

3 Sheets—Sheet 3.



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UNITED STATES PATENT OFFICE.

JOHN D. BAUMANN, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO
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APPARATUS FOR PERFORATING CHECKS.

SPECIFICATION forming part of Letters Patent No. 631,266, dated August 15, 1899.

Application filed May 10, 1897. Serial No. 635,890. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. BAUMANN, a citizen of the United States of America, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Apparatus for the Perforation of Checks; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to an improved apparatus for the perforation of bank-checks and all like or similar negotiable financial instruments. My object is to prevent the raising or changing of the amount called for by these instruments.

The invention belongs to that class of perforating or branding apparatus in which by the heating of the perforating devices the paper or fabric of the check is burned or seared around the perforations. This partial burning or searing of the check by the perforating devices gives a peculiar appearance that is somewhat difficult to imitate and destroys the strength of the paper fabric to such an extent that the paper in the immediate vicinity or surrounding the perforations will not support or hold the pulp or filling material ordinarily employed in changing an instrument of this character. The perforating devices are heated by the electric current through the instrumentality of material forming such resistance to the current as to make this means of heating practicable.

To this end the invention consists of the features hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is an elevation, partly in section, of my improved machine. Fig. 2 is a top or plan view of the same. Fig. 3 is an underneath view of the apparatus. Fig. 4 illustrates one of the pivoted arms. Fig. 5 is a section taken through the base of the arm and the link with which it is pivotally connected. Fig. 6 shows a face and a sectional view of one of the cup-shaped disks carrying

the resistance material. Fig. 7 shows similar views with a perforated plate in position. Figs. 8 and 9 illustrate the feed mechanism connected with the movable plate or carriage. Fig. 10 is a side elevation of the locking-dogs and their connections. Fig. 11 is a top view of the same after removing the carriage.

Similar reference characters indicating corresponding parts in these views, let the numeral 5 designate the base of the apparatus, upon which are mounted a series of lugs 6, having ears 6^a. To these ears are pivoted, as shown at 7, the arms 8, to whose upper extremities are attached the perforating-disks, whose construction will now be described in detail.

The casing 9 of each disk is cup-shaped and preferably composed of platinum. Within this casing is located the resistance-coil 10, composed of German silver or other suitable material possessing sufficient resistance for the purpose. The convolutions of the coil 10 are insulated from each other by mica or other suitable insulating material capable of withstanding a high degree of heat. This coil is also insulated from the casing 9 both at its bottom and sides. In the bottom of the casing is located a plate 4, of mica. Outside of the resistance-coil, inclosing the cup-shaped casing, is a plate 12, of mica, which insulates the resistance-coil from the platinum plate 13, carrying the perforating-pins 14. I employ mica for insulation in the construction of the disk, for the reason that it is not appreciably affected by the degree of heat necessary to attain the result sought. On the plate 13, at the base of the pins, is placed a layer of asbestos 15 to prevent the plate 13 from burning the paper should it come in contact with the check. The electric current is passed through the resistance-coil by means of conductors 16 and 17, connected with its respective extremities. The current to supply the perforating-disks may be taken from any suitable source of electricity.

The conductors 18 and 19 (see Fig. 2) lead from the respective poles of the electric source to the binding-screws 20 and 21 of a switch 22. From the binding-post 20 the wire 17 passes to the base of one arm 8, which it follows upward to the disk, which it enters and

connects with one extremity of the resistance-coil 10. The circuit-closing arm 23 of the switch is pivoted on a post 24, from which leads the conducting-wire 16 to another arm 5 8, which it follows upward to the disk, where it connects with the opposite extremity of the resistance-coil 10. These resistance-coils of all the disks are connected in series. The wires 16 and 17 are insulated from the arms 10 8 and from the casing 9 of the disk, whereby all possibility of a short circuit is prevented. The wires themselves should of course be thoroughly insulated to prevent any current from escaping to the metal parts of the machine, except such as are to be heated, as heretofore explained.

The circuit is closed by moving the switch-arm 23 to engagement with the screw 21. The wires 16 and 17 between the arms 8 are connected by conductors 25. When the circuit is closed, the current passes simultaneously through the resistance-coils of all the disks and quickly heats said coils. This heat passes by conduction to the plate 13, and 25 thence to the pins 14, which are set into said plate. In this manner the perforating-pins are heated sufficiently to perform the function heretofore stated—namely, to sear the check around the perforations when they are 30 passed therethrough.

The perforating-pins may be arranged on the disks to form any desired numerals or other characters, designs, or emblems. The disks make it practicable to form the numerals or other characters, designs, or emblems of a large size, if desired.

The arms 8 are normally supported in the upright position (see Fig. 1) by means of coil-springs 26. One extremity of each of these 40 springs is connected with an arm 8, while the other extremity is attached to a stationary rod 27, mounted on posts 28, attached to the base 5.

The arms 8 are actuated by a suitable arrangement of levers located within the base and fulcrumed thereon. These levers are actuated by the keys 29, movably mounted on the base, which is apertured to receive them. The keys pass through these apertures, and 50 their lower extremities are connected with the levers.

Referring now to Fig. 3, let the numeral 30 designate the pivoted connection between the levers 31 and the lower extremities of the actuating-keys 29. These levers 31 are fulcrumed, as shown at 32, on depending pins or hangers 33, attached to the under surface of the base-plate. The levers 31 are either directly or indirectly connected with the 60 lower extremities of links 34 by pivot-pins 35. The upper extremities of these links are connected with lugs or projections on the lower extremities of the arms 8 by pivot-pins 36, whereby as the links 34 are drawn downward the arms 8 will move on the pivots 7 sufficiently to throw the perforating-disks downward and cause the pins 14 to pass through

the check, which is held on the movable plate or carriage 37, the latter being actuated by suitable feed mechanism, as herein- 70 after described. This carriage-plate is covered with a pad or layer of asbestos 38 of sufficient thickness to prevent the pins 14 from becoming dulled or destroyed by contact with the plate. A plate 37^a is placed on the carriage above the asbestos pad to hold the check 75 in place. This plate is provided with openings to allow the perforating devices to engage the check.

At the sides of the machine two auxiliary 80 levers 31^a and 31^c are employed, as shown in the drawings, for actuating the arms 8, located in front of the carriage-plate or adjacent the keyboard. The fulcrums of all the levers, both principal and auxiliary, are designated by 85 the numeral 32. The arms 8 on the opposite end of the machine from the keyboard are actuated through the instrumentality of levers 31^d, pivotally connected with the central levers 31, as shown at 39, just below the plate 90 40, which forms a part of the feed mechanism. When the keys 29 are pressed, these joints 39 are moved sufficiently to raise said plate for a purpose hereinafter described. The inner extremities of the levers 31^c also engage 95 the plate 40 for the same purpose.

From the foregoing description it will be observed that whether the links 34 are connected directly with the levers 31 or indirectly therewith through the instrumentality of auxiliary levers they are drawn downward as the keys 29 are pressed, resulting in the movement of the arms 8, whereby the pins of the perforating-disks may be made to pierce a check placed on the feed-plate. 105

Since the perforating-disks are all arranged to strike at a common center or point, the plate 37 must be connected with suitable feed mechanism. This plate 37 is slidingly mounted on the base-plate and covers an opening 110 therein. It is held in place by guides 47, attached to the base and having flanges 47^d, which overlap the edge of the movable plate. To the under surface of this carriage-plate is attached a depending rack 41, which is of 115 the same length as the feed-plate and stands edgewise thereon. The construction of this rack is clearly shown in Figs. 8 and 9. The plate 37 is normally drawn in the direction indicated by the arrows in Figs. 2 and 3 by 120 a spring-actuated-winding drum 42, to which is attached one extremity of a cord 43, whose opposite extremity is connected with a lug on the plate, as shown at 44. Between its extremities the cord engages intermediate 125 guide-pulleys 45 and 46, suitably mounted on the base 5. The movement of the plate 37 is controlled by two dogs 48 and 49, which engage the rack 41. The dog 48 is pivoted to a depending lug 5^a on the base. The dog 49 130 occupies a position below the dog 48 and is pivoted on the latter by means of a vertical pin 51. The dog 49 has a lug 49^a, which is engaged by a coil-spring 52, which has a tend-

ency to move the dog horizontally on its vertical pivot. This dog 49 also has a vertical movement with the dog 48, upon which the dog 49 is pivoted, as before stated. The dog 48 is rigidly connected with a vertical projecting arm 53, made fast to the plate 40. This plate, together with both dogs, is normally pressed downward and held in the lowest position of movement (see Fig. 9 and full lines in Fig. 8) by means of a leaf-spring 54, attached to the base-plate and acting directly on the dog 48. Both dogs 48 and 49 project into a longitudinal interior opening 55, formed in the rack-plate 41, which is provided with notches, forming teeth 41^a on both sides of the opening, forming a double rack. The aggregate width or thickness of the dogs 48 and 49 is a little greater than the distance between the teeth 41^a on opposite sides of the double rack. Hence as the plate 40 is raised by the upward movement of a joint 39 the dog 48 will engage an upper tooth 41^a before the dog 49 releases the corresponding lower tooth 41^a. Hence the rack will be locked against movement. The dog 49, however, as soon as it is released from its tooth 41^a will move toward the right (see Figs. 8 and 9) under the influence of its spring 52. Hence when the plate 40 is raised to the dotted-line position (see Fig. 8) the dogs 48 and 49 will occupy the respective positions shown in dotted lines in the same figure—that is to say, the dog 48 will engage the upper tooth 41^a of the rack, while the dog 49 will be supported in the opening 55 to the right of the dog 48. When, however, the joint 39 falls to its normal position, the spring 54 will depress the dogs 48 and 49, releasing the dog 48 from the upper tooth of the rack. As soon as this occurs the rack 37 is released and moves in response to the cord and spring-actuated drum toward the left until the dog 49 engages the next lower tooth 41^a toward the right. This operation occurs every time a key 29 is depressed and released. The distance of the plate's movement for every action of this character is determined by the distance between the teeth 41^a, and this distance will depend upon the size of the numerals or other characters which the disks are adapted to form. These numerals, emblems, or designs will be printed on the tops of the keys forming the keyboard for the guidance of the operator.

Instead of the perforating-disks herein described any other suitable construction of perforating devices may be employed. The manner of heating these devices is immaterial. The electric current may be employed in any suitable manner. Instead of conducting the heat from the resistance-coil to the perforating-pins the current may be passed directly through the said pins, whose resistance may then be regulated accordingly.

The check while operated on by the machine may be held on the carriage-plate by the employment of any suitable devices.

The operation of the machine will be readily understood from the foregoing description. In using the apparatus shown in the drawings the check is first placed in position on the movable plate or carriage. The circuit in which the resistance-coils of the perforating-disks are located is then closed by shifting the circuit-closing arm 23 to contact with the binding-screw 21. The perforating-pins of all the disks will then be heated, and as many checks as desired may be perforated before breaking the circuit and allowing the disks to cool. Every time a key is pressed a perforating-disk acts on the check. As soon as the key is released the spring 26 returns the arm and disk to their upright or normal position. As the key is actuated a lever-joint 39, or the extremity of a lever 31^c, is pressed upward against the plate 40, thus actuating the feed mechanism heretofore described. After the plate 37 has reached its limit of movement in the direction indicated by the arrows in Figs. 2 and 3 it may be reversed or moved in the opposite direction in the same manner as the platen of a type-writing machine.

Having thus described my invention, what I claim is—

1. The combination with a suitable supporting-base, of a number of pivoted spring-held arms mounted on said base, perforating devices attached to said arms, each perforating device consisting of a casing, a resistance-coil located therein, and a plate carrying perforating-pins, means for operating said arms, a movable plate mounted on the base, and suitable feed mechanism connected with said plate and actuated simultaneously with the operation of the perforating-arms.

2. The combination with a suitable supporting-base, of spring-held arms pivotally mounted thereon, perforating devices attached to said arms, each consisting of a casing, a resistance-coil located therein, and a plate carrying perforating-pins, a circuit in which the resistance-coil is located, keys movably mounted on the base, levers connected with the keys, links connecting the pivoted arms with the levers, whereby the said arms are operated by the movement of the keys, and a movable plate or carriage mounted on the base for the support of the check or other instrument to be perforated.

3. The combination with a suitable supporting-base, of spring-held arms pivotally mounted thereon, perforating devices attached to said arms, each being composed of a casing, a resistance-coil located therein, and a plate carrying perforating-pins, a circuit in which the resistance-coil is located, keys movably mounted on the base, levers connected with the keys, links connecting the pivoted arms with the levers, whereby the said arms are operated by the movement of the keys, a movable plate or carriage mounted on the base for the support of the check or other instrument to be perforated, and suitable feed mechanism

connected with the rack and operated from the keys.

4. The combination with a suitable support-
ing-base, of spring-held arms pivotally mount-
5 ed thereon, perforating devices attached to
said arms, each device consisting of a casing,
a resistance-coil located therein, and a plate
carrying perforating-pins, a circuit in which
the resistance-coil is located, keys movably
10 mounted on the base, levers connected with
the keys, links connecting the pivoted arms
with the levers whereby said arms are oper-
ated by the movement of the keys, a movable
plate or carriage mounted on the base for the
15 support of the check or other instrument to

be perforated, and suitable feed mechanism
connected with the movable plate, said mech-
anism comprising a spring-actuated winding-
drum, a suitable connection between the said
drum and the plate, a rack attached to the 20
plate, locking-dogs engaging the rack, and
suitable means lying in the path of the key-
operated levers for actuating the dogs and re-
leasing the rack.

In testimony whereof I affix my signature 25
in presence of two witnesses.

JOHN D. BAUMANN.

Witnesses:

ISHAM R. HOWZE,
EDITH HIMS WORTH.