

No. 836,797.

PATENTED NOV. 27, 1906.

W. E. ANDRÉE.  
IRONING MACHINE.

APPLICATION FILED NOV. 10, 1903.

3 SHEETS—SHEET 1.

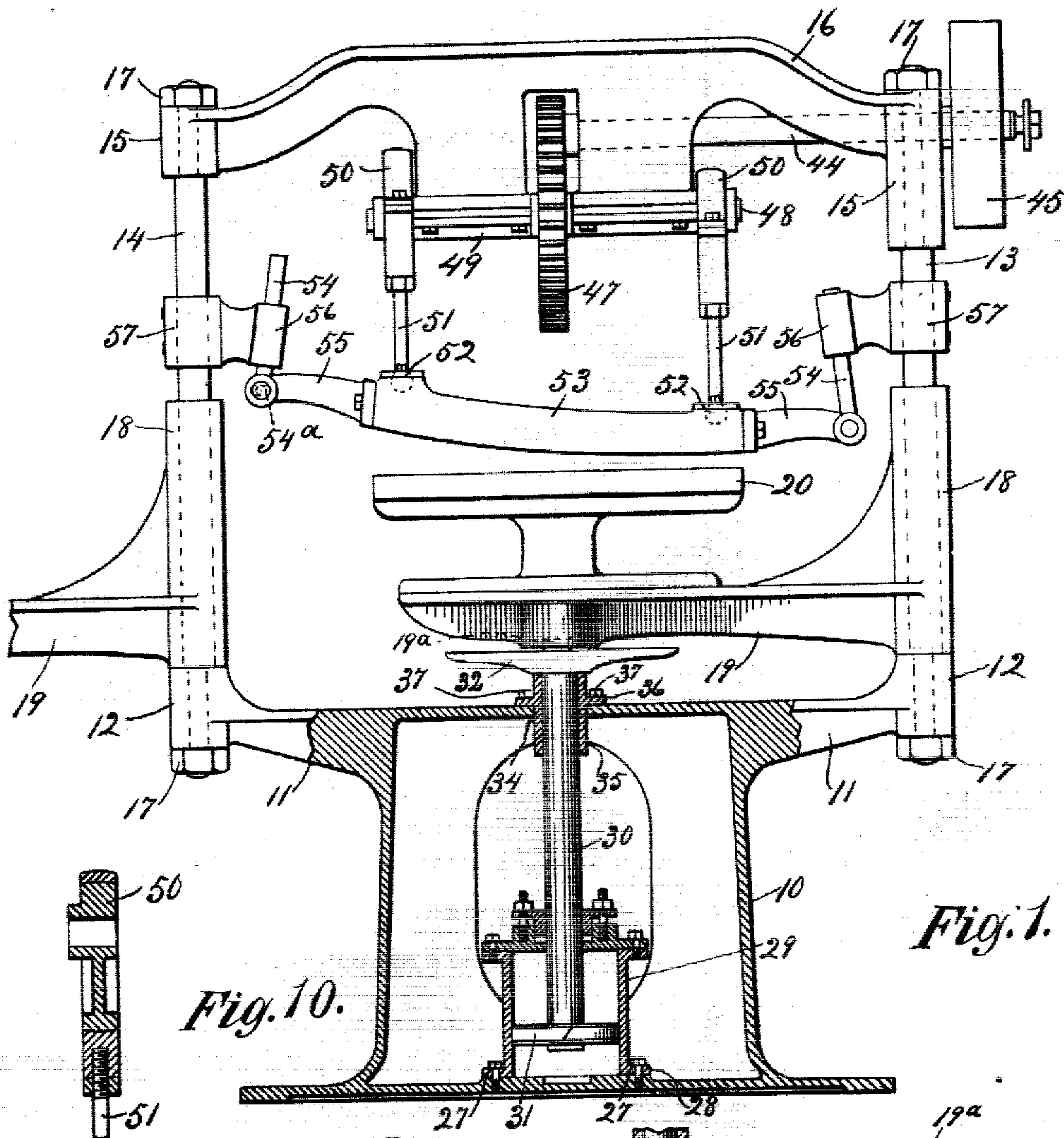


Fig. 10.

Fig. 1.

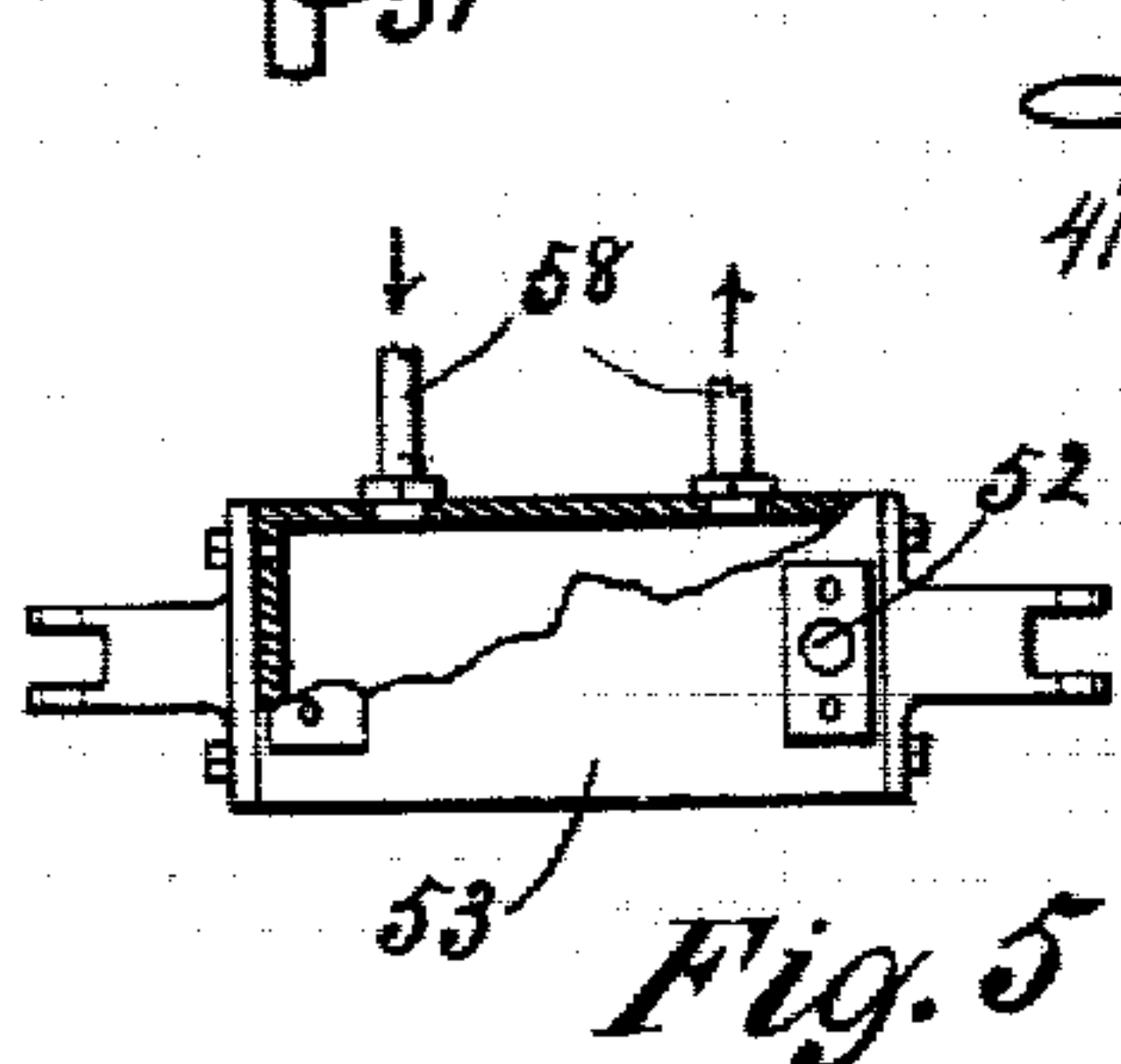


Fig. 5.

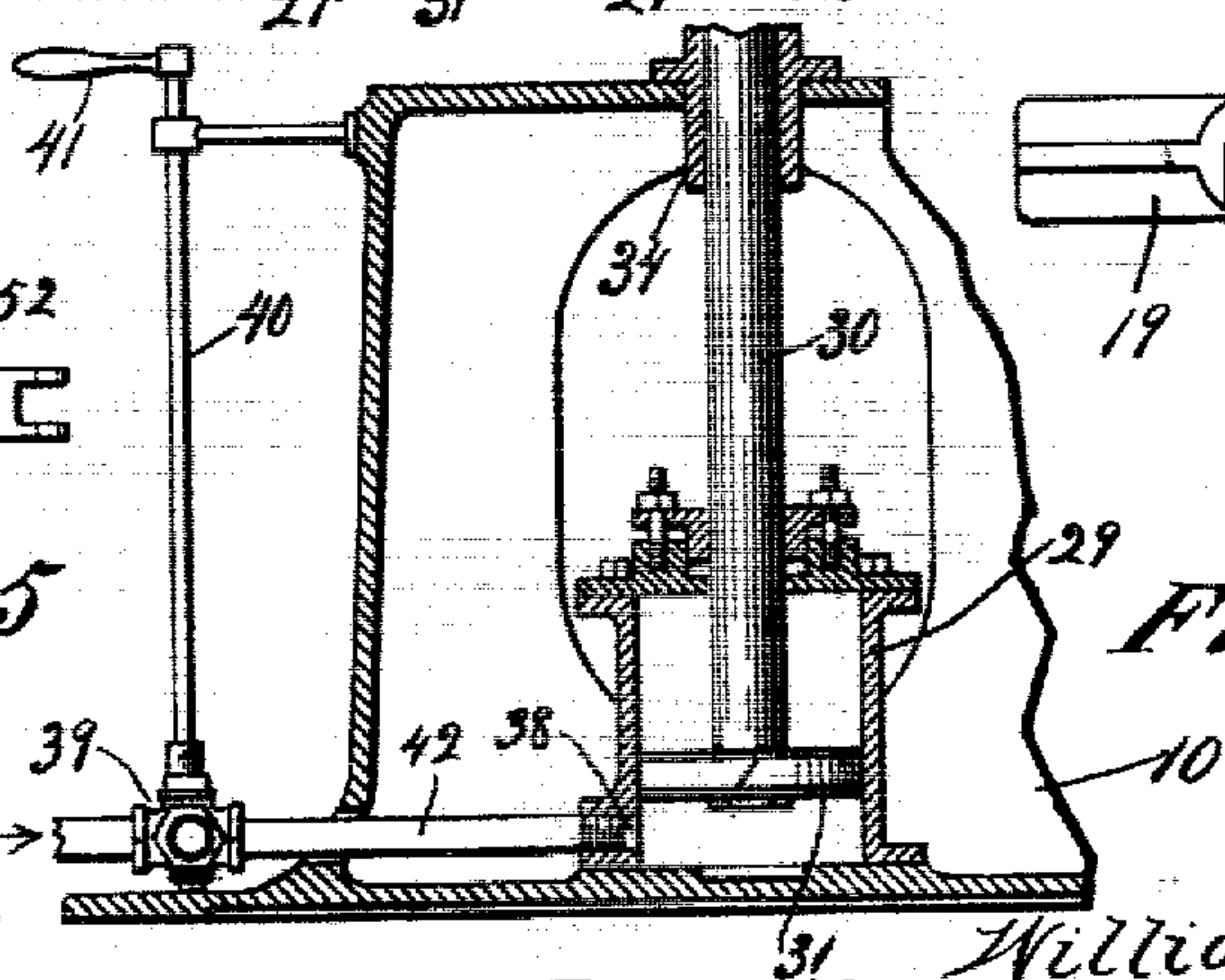


Fig. 4.

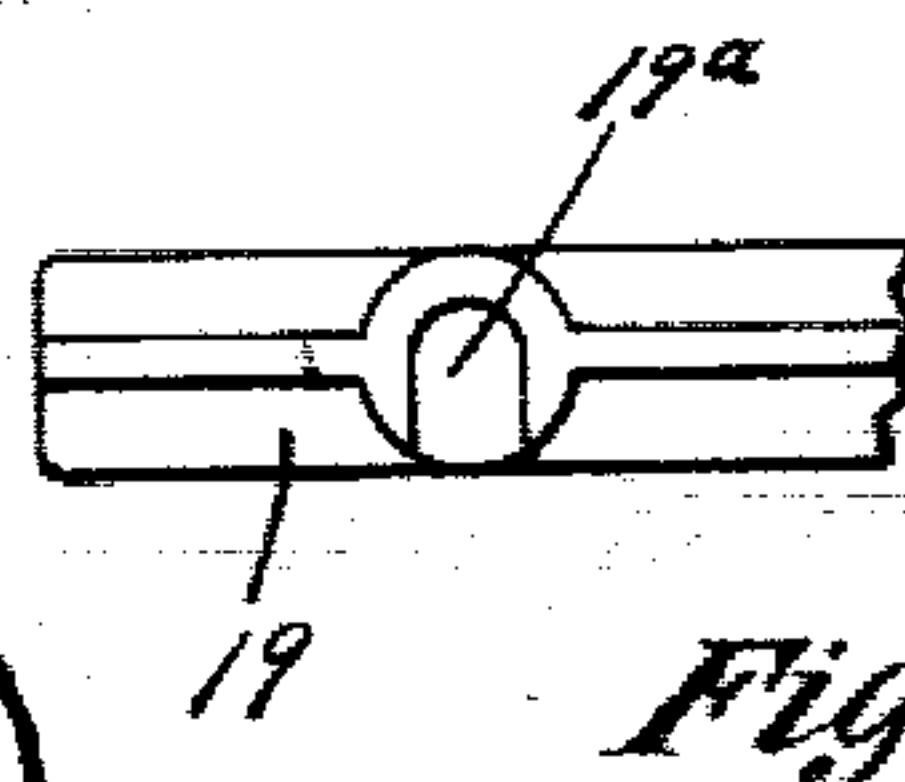


Fig. 11.

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3 SHEETS—SHEET 2.

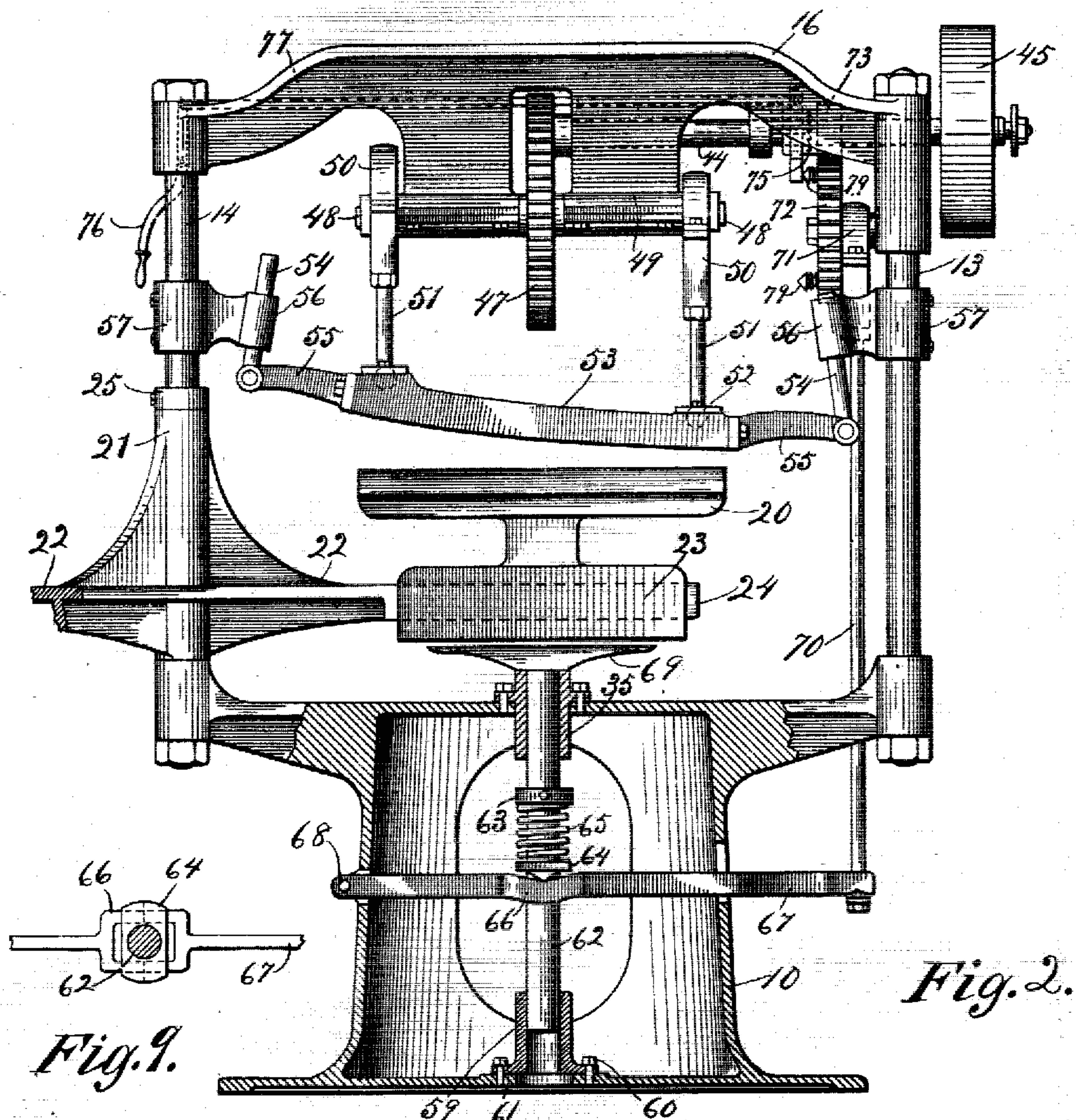


Fig. 2.

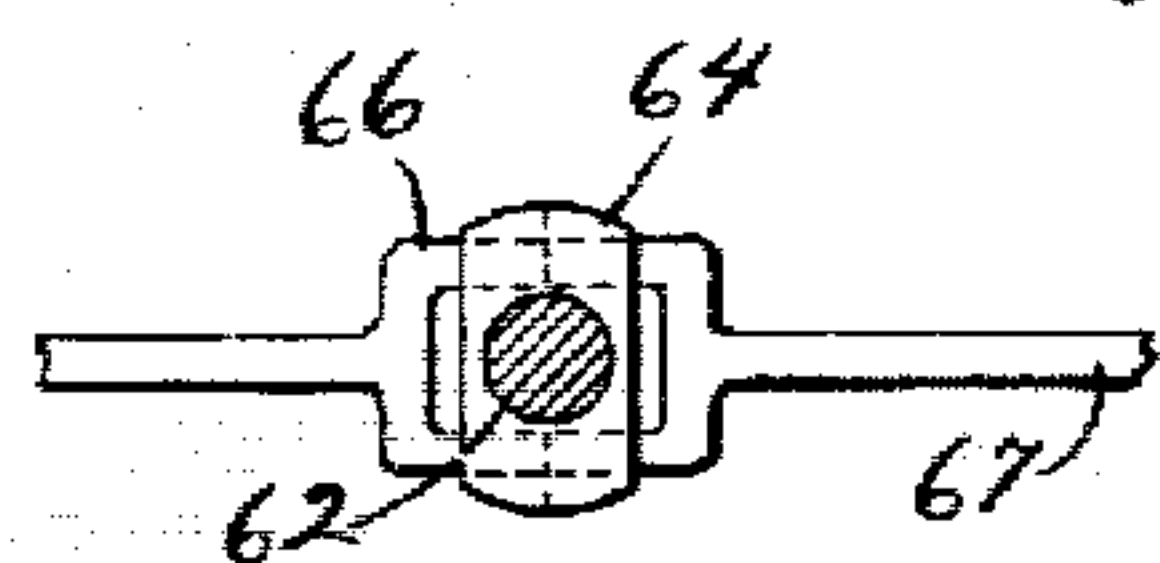


Fig. 9.

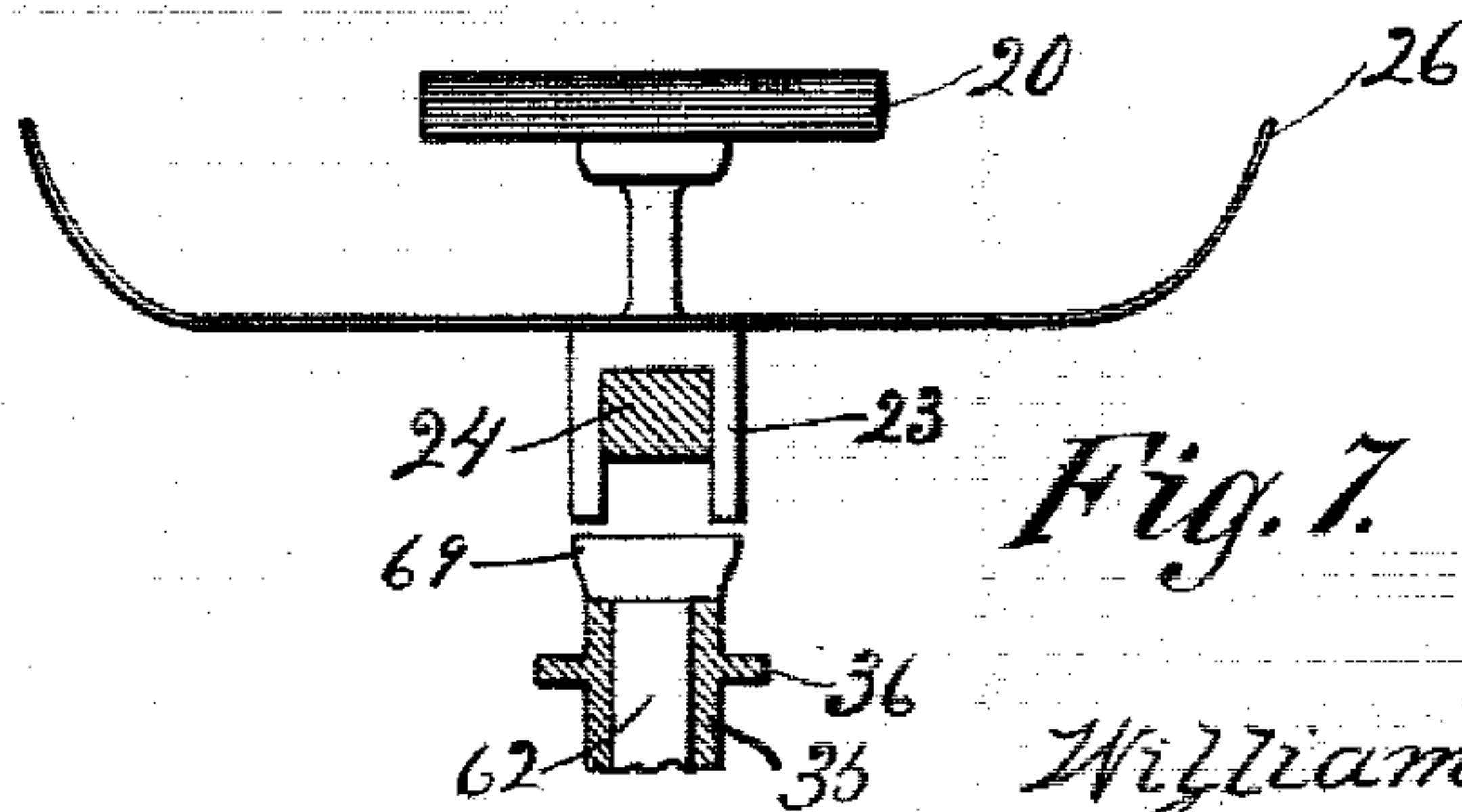


Fig. 7.

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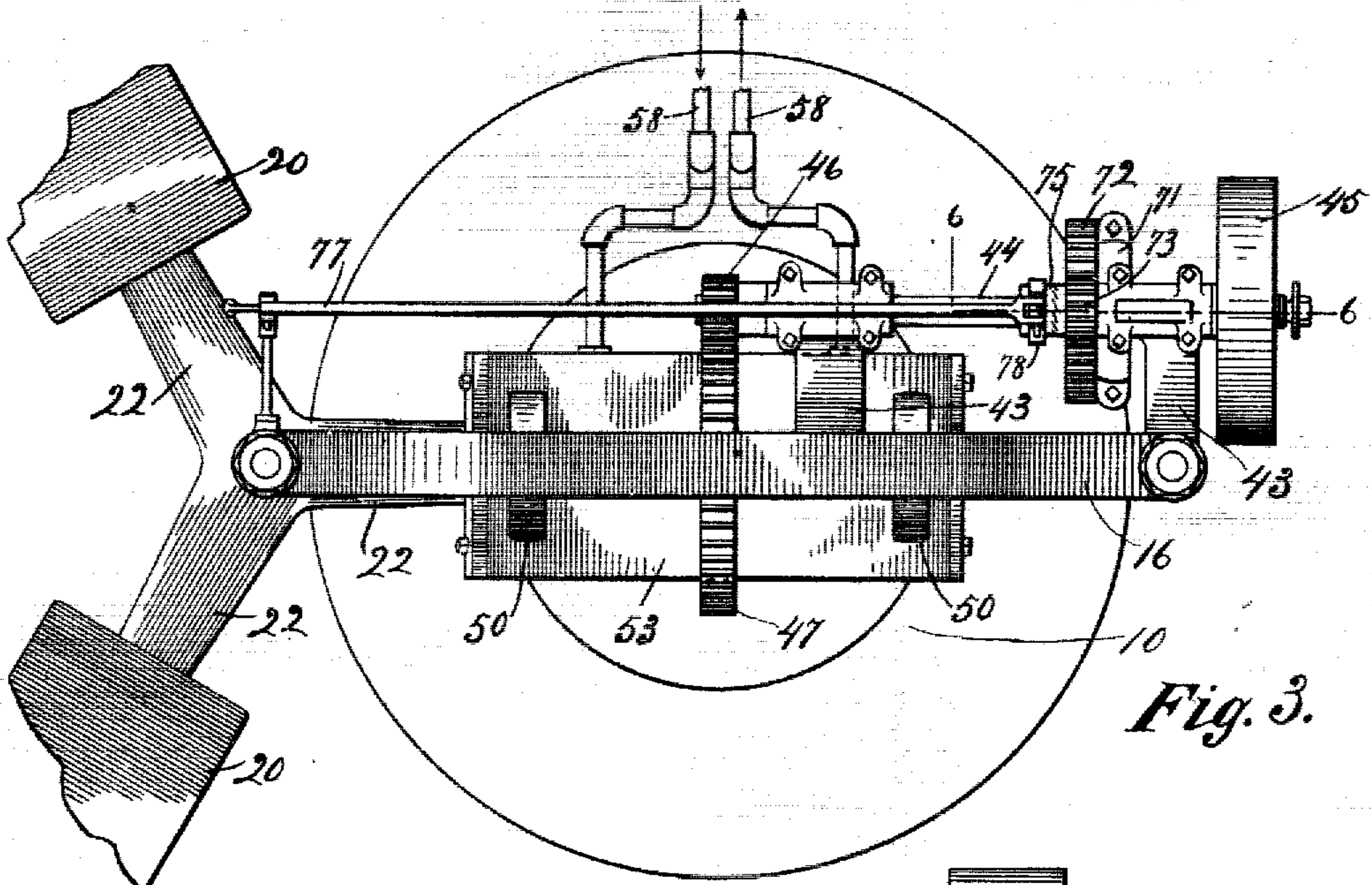
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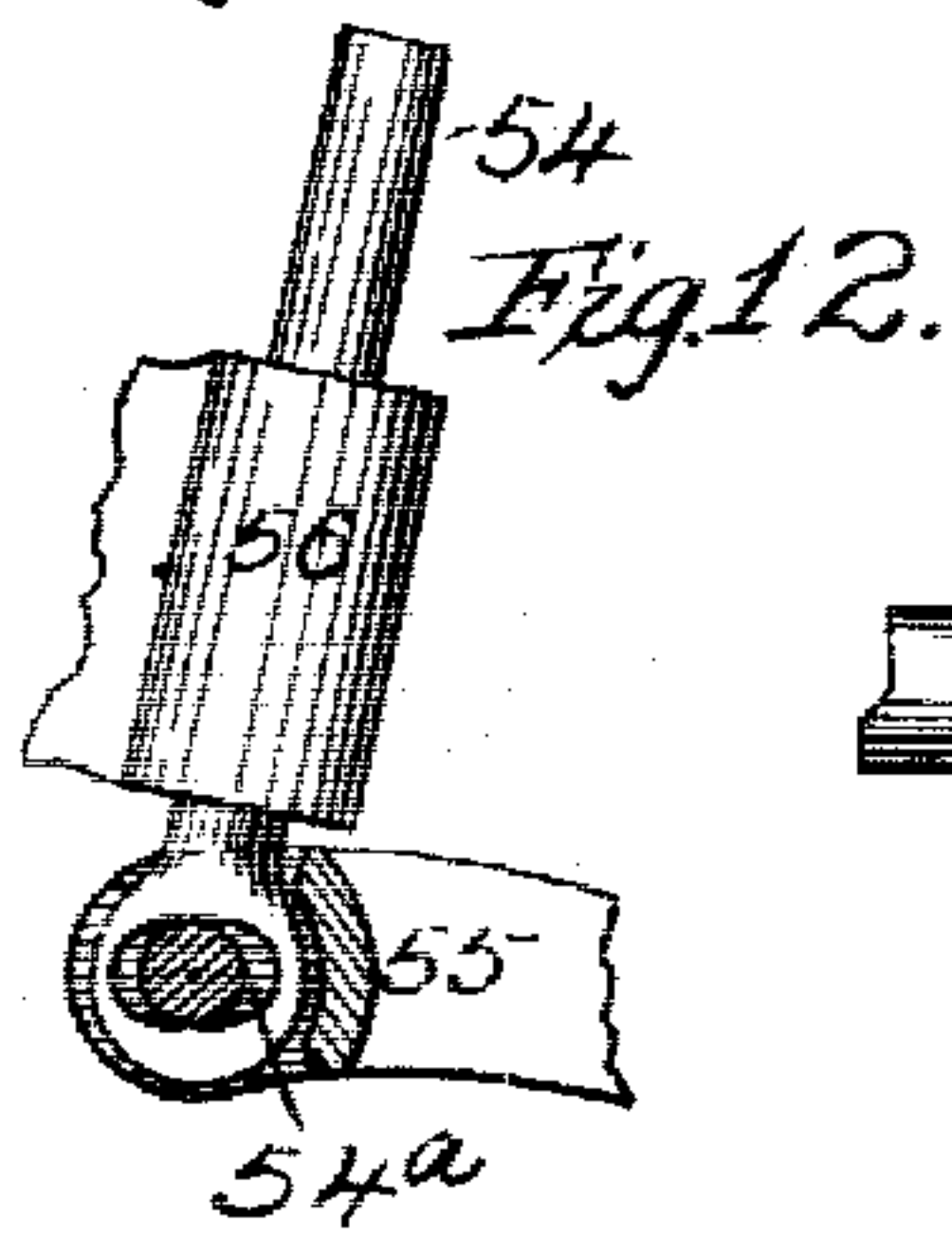
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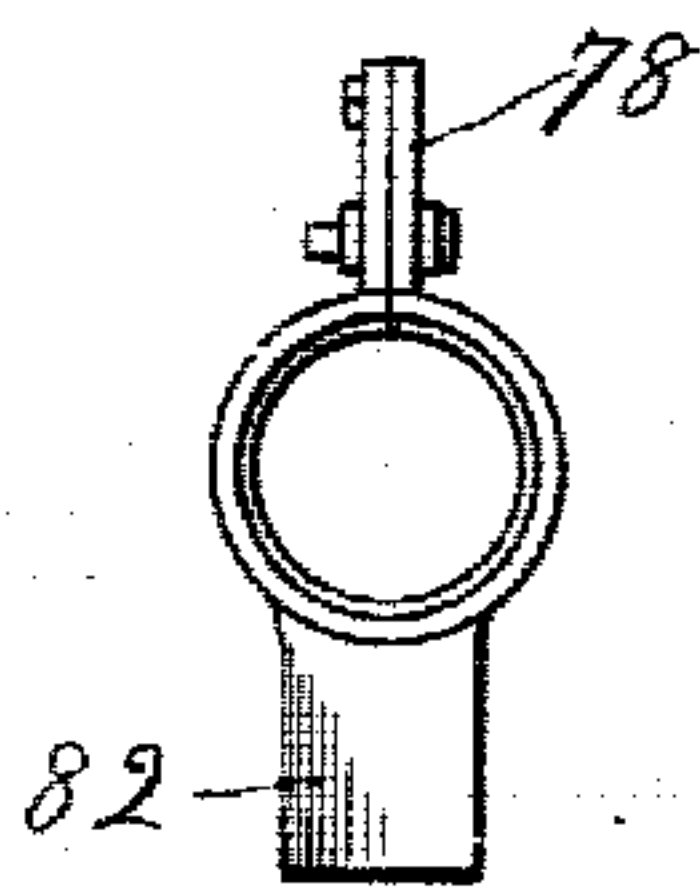
3 SHEETS—SHEET 3



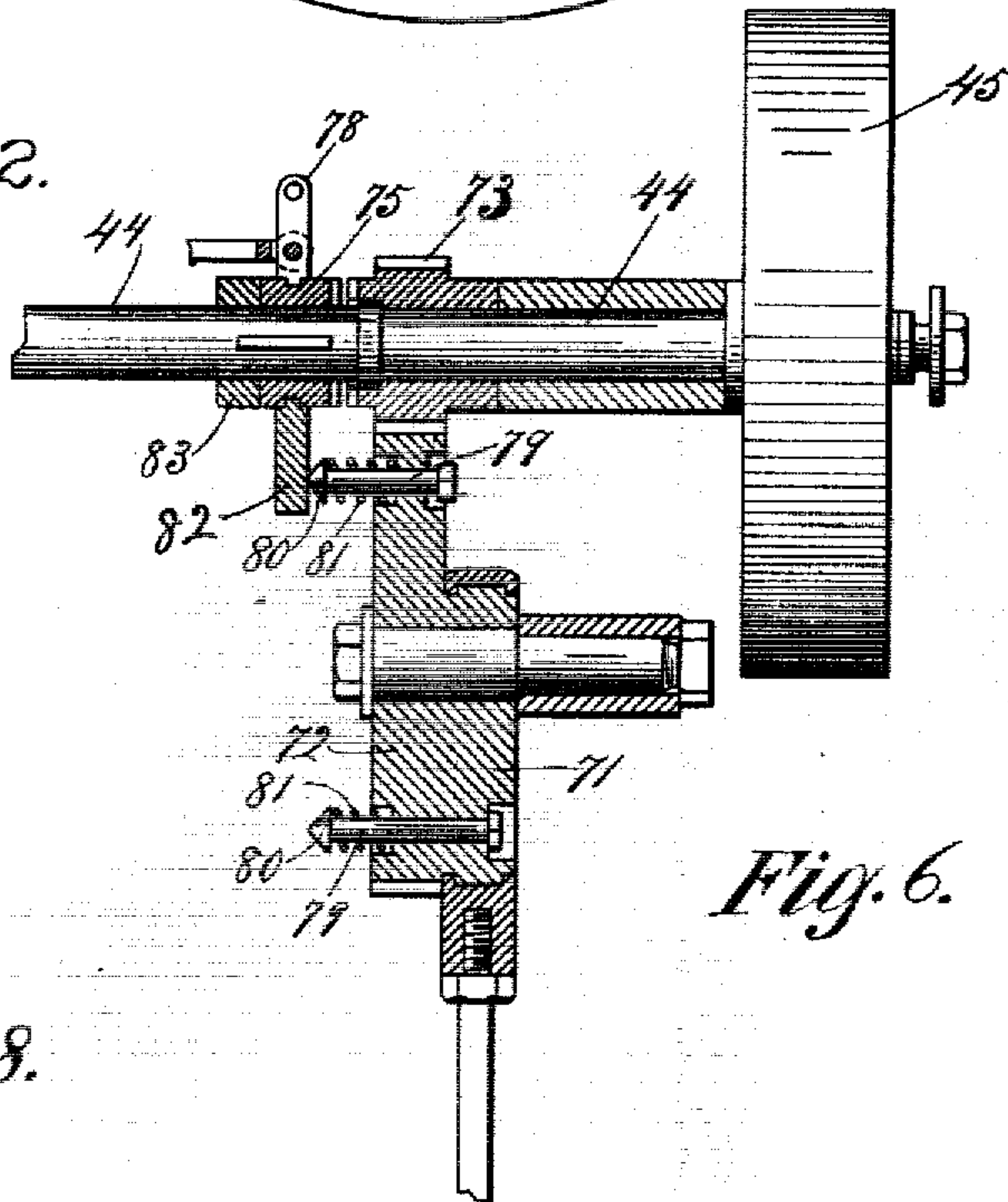
*Fig. 3.*



*Fig. 12.*



*Fig. 8.*



*Fig. 6.*

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# UNITED STATES PATENT OFFICE.

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## IRONING-MACHINE.

No. 836,797.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed November 10, 1903. Serial No. 180,581.

*To all whom it may concern:*

Be it known that I, WILLIAM EDWARD ANDRÉE, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Ironing-Machines, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

My invention relates to ironing-machines, and more particularly to that class of machines in which the garment is ironed between pressure-plates.

The object of my invention is to provide a machine in which the operation of ironing will be performed in a manner which conforms as nearly as possible to that of hand-ironing.

To this end I employ, in conjunction with an ironing-board, an ironing-plate of novel character and novel means for operating the plate, with a view to accomplishing the object indicated.

While the sphere of usefulness of my ironing-machine is not confined to any one class of garments, yet it is particularly adapted to the ironing of shirt-bosoms, the constantly-reciprocating action of the rocking ironing-plate serving to polish, as well as to iron, the shirt-bosom.

My invention consists in the various details of construction and combination of parts, all as hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which illustrate the invention, Figure 1 is a front elevation, partly in section, of my ironing-machine. Fig. 2 is the same, illustrating a modified form of mounting and actuating the ironing-board. Fig. 3 is a plan view of the machine shown in Fig. 2. Fig. 4 is a detail in vertical section of the lower portion of the machine of Fig. 1, showing the steam connections and controlling means. Fig. 5 is a top plan view, partly in section, of the ironing-plate, showing the steam connections. Fig. 6 is a vertical section on the line 6 6 of Fig. 3. Fig. 7 is an end view of the ironing-board showing the guard. Fig. 8 is a detail of a clutch. Fig. 9 is a detail showing the connection of lever and collar in Fig. 2. Fig. 10 is a vertical sectional view of the eccentric for operating the ironing-plate. Fig. 11 is a

bottom plan view of the ironing-board arm in Fig. 1, showing socket; and Fig. 12 is a detail, on an enlarged scale, of a portion of the machine shown in Fig. 1.

Referring in detail to the drawings, numeral 10 indicates the supporting base or stand provided with lateral arms 11, extending in opposite directions from the upper portion thereof and provided with vertical eyes 12 at their extremities. Rising from each of these eyes, respectively, are the standards 13 and 14, provided with shoulders resting on the upper faces of the eyes, as indicated by dotted lines. The standards are likewise provided with shoulders near their upper extremities, as shown by dotted lines at the lower portion of the eyes 15 of the yoke 16, completing the framework of the machine. The standards are screw-threaded at both extremities, and nuts 17 clamp the framework securely together.

Revolubly and slidably movable upon the standards 13 and 14, Fig. 1, are sleeves 18, having lateral arms 19, each carrying a rigidly-mounted ironing-board 20.

The ironing-board may be provided with a guard 26 to protect any portion of the garment which might overlap or fall from the ironing-surface. As is usual the upper surface of the ironing-board may be provided with a covering of absorbent material. (Not shown in the drawings.)

Centrally seated within the base 10, Fig. 1, and secured to the bottom thereof by the bolts 27, passing through the annular flange 28, is a steam-cylinder 29, from which protrudes upwardly the piston-rod 30, carrying the head 31 and forming a plunger provided with a flange 32 near its uppermost end, the rod extending slightly above it and entering a laterally-opening socket 19<sup>a</sup> in the under face of the arm 19 when the ironing-board is swung under the ironing-face of the ironing-plate, the rearward wall of the socket serving as a stop for the arm. The ironing-board may thus be elevated upon the admission of steam to the cylinder, the sleeve 18 sliding upon the standard; or when the board is loosely mounted upon the arm, as hereinafter described, the plunger may operate directly upon the board, as shown in Figs. 2 and 7.

An aperture 34 is provided in the upper



portion of the stand, through which the piston-rod may pass, and seated within this aperture around the rod is a sleeve 35, provided with a flange 36, which rests upon and is secured to the upper portion of the framework by bolts 37. The flange 32, previously referred to, on the piston-rod rests when inactive upon the top of this sleeve, the length of the piston-rod being such that the piston-head is immediately above the steam-port 38 when occupying its lowest position.

When the ironing-board is in its normal position of rest, the arm 19 remains just out of contact with the flanged top of the piston-rod. The admission of steam to the cylinder is controlled by a three-way cock 39 of any usual construction, it not being deemed necessary to illustrate the same in detail. This cock is actuated, through the medium of the connecting-rod 40, by the handle 41. A pipe 42 connects the cock with the steam-port 38 in the cylinder.

Journaled in rearwardly-extending arms 43 from the yoke 16 is a shaft 44, driven by the belt-pulley 45, keyed thereto. A spur-gear 46, keyed upon the shaft near its inner end, meshes with the gear 47, rigidly mounted upon the short shaft 48, journaled in the lower portion 49 of the yoke 16 and provided at opposite extremities with the eccentrics 50. The peripheries of the eccentrics are turned off spherically, as are the inner surfaces of the straps borne upon them, in order to secure universal movement. Depending from these straps, respectively, are the connecting-rods 51, united by ball-and-socket joints 52 with the ironing-plate 53 near the opposite ends of the latter.

The action of these eccentrics when the short shaft is rotated by means of the gearing described is to impart a rocking motion to the ironing-plate and serves to iron the garment upon the ironing-board when the latter is elevated to its operative position; but for the purpose not only of guiding the ironing-plate when the eccentrics are actuating the same, but also for giving to it an endwise movement, I employ the short rods 54, pivoted to the arms 55, rigidly secured to the opposite ends of the ironing-plate, and which reciprocate in inwardly-inclined sleeves 56, secured to brackets 57 upon the standards 13 and 14, respectively.

One of the rods 54 is preferably slightly slotted at 54<sup>a</sup> to permit of movement of the pivot-pin, and thus prevent binding when the plate is actuated.

When actuated, the ironing-plate, as each rod 54 rises in its inwardly-inclined sleeve, will be caused to move longitudinally in a direction away from the sleeve and toward it as the rod slides downward. Thus the alternate rising and falling of the pivot-rods produces a constant reciprocating motion si-

multaneous with the rocking movement, 65 which is especially of service in polishing a shirt-bosom.

The ironing-plate is hollow and provided with any flexible means, such as the tubes 58, for supplying and exhausting steam thereto and therefrom. It is constructed, preferably, with a slightly-cylindrical lower surface, the arc of curvature extending from end to end.

In the form of machine which I have just delineated it will be observed that after placing the garment upon the ironing-board the latter may be swung into place beneath the ironing-plate and then elevated to permit the ironing-plate to rock upon it by turning the three-way cock so as to admit steam into the steam-cylinder. When it is desired to place another garment in position for ironing, the three-way cock is turned, so as to allow the steam to escape from the cylinder, when the force of gravity will restore the ironing-board to its normal position, and it may be swung back to permit a board carried by the sleeve on the opposite standard to occupy its place under the ironing-plate, when the elevation may again occur.

In Fig. 2 I have shown different means for mounting and operating the ironing-board. I provide one sleeve 21, rotatable upon the standard 14 and having a plurality of radiating arms 22, each supporting an ironing-board 20. The base of the ironing-board in this construction takes the form of a saddle 23, which rides upon the outer end 24 of the arm 22 and depends below it.

Reciprocating in the socket 59, suitably secured to the bottom of the stand 10 and the previously-described sleeve 35, is the rod 62, having the fixed collar 63 and the lower loose collar 64, retaining the coiled spring 65, which surrounds the rod. The lower collar rests upon the yoke 66, formed in the lever 67, which is fulcrumed to one side of the stand by a pivot connection 68. The upper end of the rod 62 carries a chair 69, which engages the under face of the depending flanges of the saddle, so as to raise the board 20. By actuating the lever 67 the result will obviously be to raise the ironing-board independently of the arm 22, the coiled spring absorbing the jar incident to the operation.

While one garment is being ironed, work may be mounted upon a board carried by another arm and swung into place as the one carrying the ironed garment is swung from under the ironing-plate.

The lever 67 is actuated through the medium of the connecting-rod 70, which communicates with the eccentric 71 upon the gear 72, mounted upon a stud-shaft suitably secured in the framework of the machine. This gear 72 meshes with a smaller gear 73, loosely mounted upon the shaft 44 and adapted to



be fixed thereto by means of a clutch 75, operated through the agency of the hand-lever 76 and the rod 77 and clutch-arm 78.

In order to retain the ironing-board in its operative position, as well as in its lower, means are provided for automatically stopping the gear 72 when the ironing-board has been brought to either position. Horizontally disposed within this gear 72, near the periphery and diametrically opposite to each other, are the headed pins 79, projecting loosely through the gear and provided upon the outer ends with coiled expansion-springs 81, encircling each pin and reacting between its head 80 and the face of the gear. These pins are designed to encounter a downward extension 82 of the clutch-arm 78 when the clutch is set at each half-revolution of the gear 72, thereby releasing the clutch. The movement of the latter upon the shaft is limited by the collar 83, so that the head 80 of the pin may be held against the clutch-arm, overcoming inertia and securing the gear 72 against motion. The disposition of the pins respectively on the gear is such as to engage the clutch-arm at the highest and lowest positions of the eccentric.

To lower the board after elevation, the clutch is set, when a half-revolution of the gear 72 will cause the release of the same, with the ironing-board in its lowest position.

While I have shown in Fig. 1 a steam-motor for raising the ironing-board carried rigidly upon the arm of a vertically-movable sleeve and in Fig. 2 an eccentric-actuated lever for raising the ironing-board independent of the sleeve-arm upon which it is carried, the sleeve not being vertically movable, it is to be understood that either means for actuating the ironing-board can be used in conjunction with either method of mounting the board.

It is obvious that many modifications of my improved ironing-machine may be made without departing from the spirit of the invention. Consequently I do not desire to be limited to the specific construction herein shown and described.

I claim as my invention—

1. In a machine of the class described, the combination with an ironing-board, of an ironing-plate having a convex face, and power-actuated means for carrying the plate, such carrying means being movable to impart a rocking motion to the plate.

2. In a device of the class described, the combination with an ironing-board of a heated ironing-plate having a curved ironing-surface, supports attached to each end of the plate for carrying the same, and means for oppositely reciprocating such supports.

3. In a machine of the class described, the combination with an ironing-board, of an ironing-plate having a convex face, and power-actuated means for simultaneously

imparting to the ironing-plate a rocking and a horizontal reciprocating movement.

4. The combination with a movable ironing-board, of a steam-heated ironing-plate having a convex ironing-surface, and power-actuated means for actuating said ironing-plate to produce simultaneously an endwise and a rocking movement of the ironing-plate.

5. In an ironing-machine, in combination, a rocking ironing-plate having a convex face, power-actuated means for rocking the ironing-plate, a swinging arm, and an ironing-board carried by the arm, its face being parallel with the plane of oscillation of the arm.

6. In an ironing-machine, in combination, a rocking ironing-plate, power-actuated means for rocking the ironing-plate, a swinging arm, an ironing-board loosely carried by the arm, and a vertically-reciprocating chair beneath the board and engaging the board to raise it.

7. In an ironing-machine, in combination, a rocking and longitudinally-reciprocating ironing-plate having a convex face, power-actuated means for rocking and reciprocating the ironing-plate, and a movable ironing-board.

8. The combination with the frame of an ironing-machine, of a shaft journaled therein, means for rotating said shaft, differently-set eccentrics mounted upon the shaft, a steam-heated ironing-plate pendent from the said eccentrics, and an ironing-board.

9. In combination with the frame of an ironing-machine, a shaft carried by said frame, oppositely-disposed eccentrics actuated by said shaft, connecting means between said eccentrics and a heated ironing-plate, means for rotating the shaft, and an ironing-board below said ironing-plate.

10. The combination with an ironing-board, of a steam-heated ironing-plate, arms secured to said ironing-plate, pivoted rods secured to said arms, guides for said rods, and means for supporting and actuating said ironing-plate.

11. In an ironing-machine, in combination, a rocking ironing-plate, rods pivoted to the plate, guides for the rods, and an ironing-board.

12. In an ironing-machine, in combination, a rocking ironing-plate having a convex face, power-actuated means for rocking the ironing-plate, an oscillatable arm, an ironing-board carried upon the arm, and a stop for limiting the movement of the arm.

13. In an ironing-machine, in combination, a rocking ironing-plate having a convex face, power-actuated means for rocking the ironing-plate, a swinging arm, and an ironing-board having a saddle which rides upon the arm.

14. In an ironing-machine, in combination, a rocking ironing-plate, a swinging arm, an



ironing-board having a saddle which rides upon the arm, and a vertically-reciprocating chair which engages the saddle to raise it.

15. In an ironing-machine, in combination, 5 a vertically-reciprocating ironing-board, a clutch for fixing gear to rotating shaft to actuate the ironing-board, the clutch when set being in the path of pins adapted to release the same at operative and normal positions 10 of the ironing-board.

16. In an ironing-machine, in combination, a vertically-reciprocating ironing-board, a gear mounted idly upon a driving-shaft and meshing with another gear, a clutch for fixing 15 the first-named gear to the shaft to operate the ironing-board, the clutch being in the path of pins projecting from second-named gear and adapted to engage and release the clutch on rotation of gear.

20 17. In a machine of the class described, the combination with an ironing-board, of a hollow ironing-head having a convex face, steam-pipes connected with said head, and

power-actuated means for carrying the head, such means being movable to impart a rock- 25 ing motion to the head, substantially as described.

18. In an ironing-machine, the combination with a rocking ironing-head having a convex face, power-actuated means for rock- 30 ing it, of a pair of ironing-boards located in a plane beneath said head, arms carrying said ironing-boards projecting radially from a hub and a central support on which said hub is free to be oscillated, substantially as de- 35 scribed.

19. In an ironing-machine, an ironing-board, combined with an ironing-head adapted to be heated, having a convex face, and power-actuated means for rocking said head, 40 and also moving it in a direction lengthwise the ironing-board.

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