

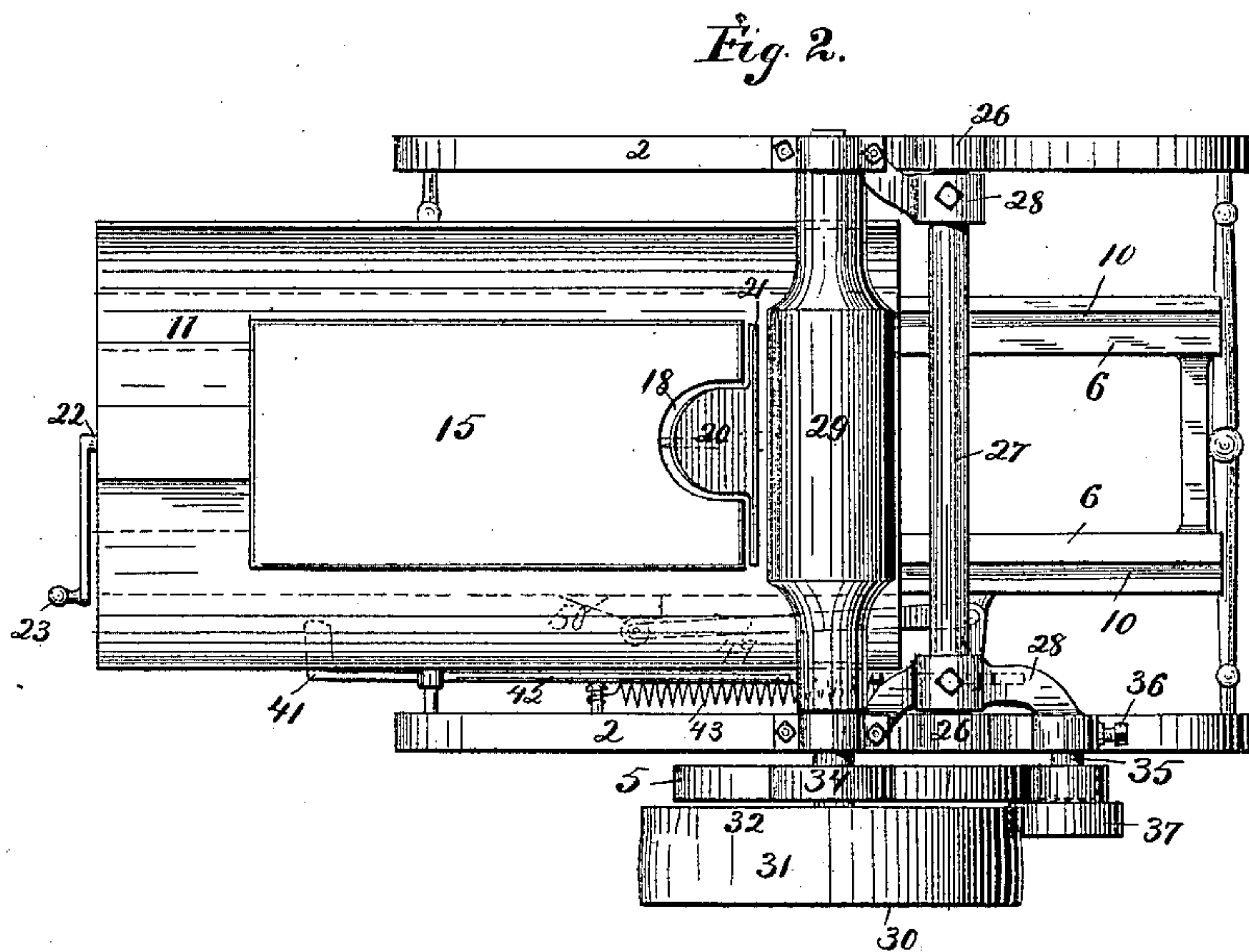
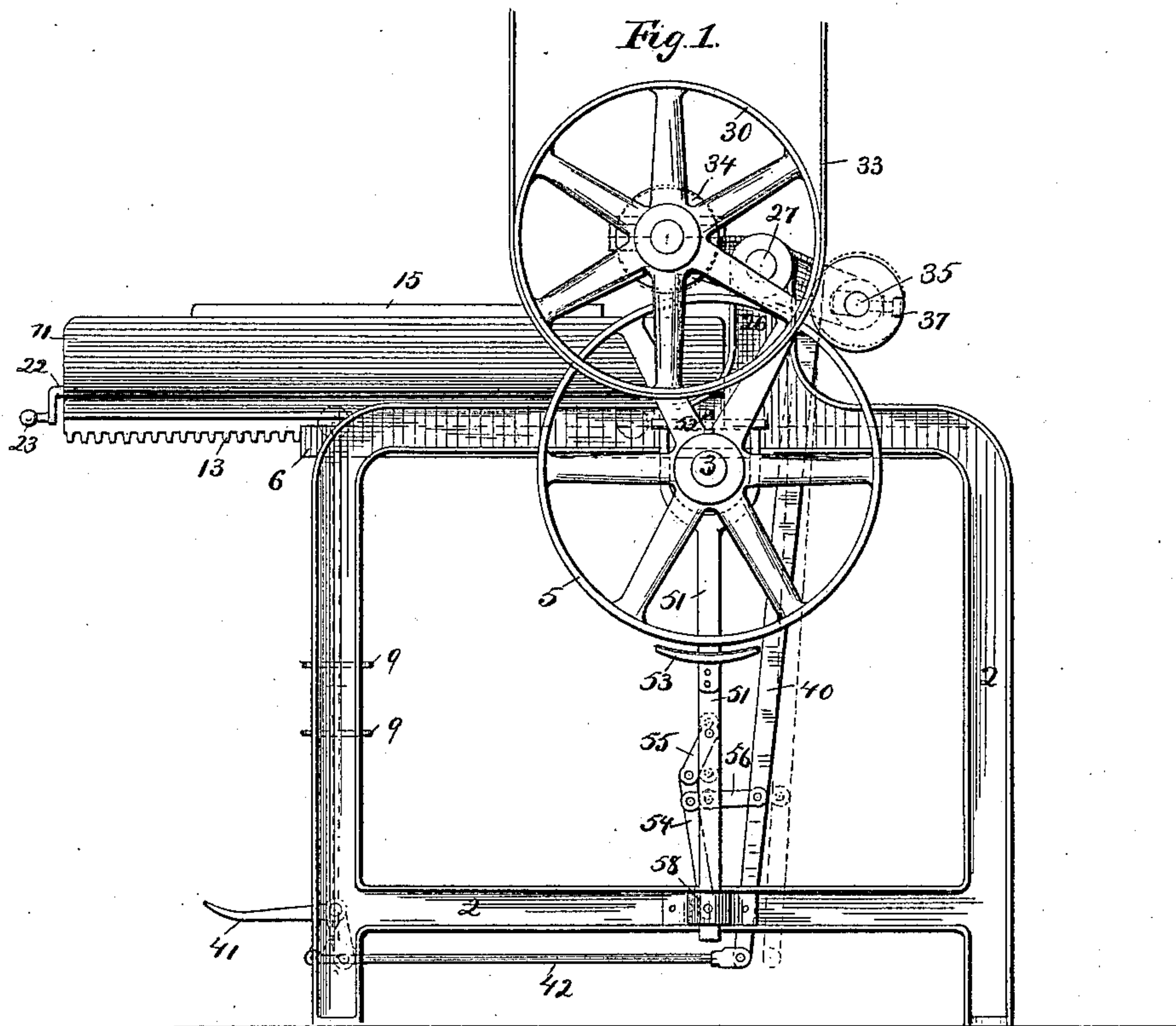
(No Model.)

2 Sheets—Sheet 1.

C. O. WHITE.
SHIRT IRONING MACHINE.

No. 429,076.

Patented May 27, 1890.



Witnesses.

J. Jensen.
a. m. gasbill

Inventor.

Clarence O. White.

By Paul W. H. Allen attys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

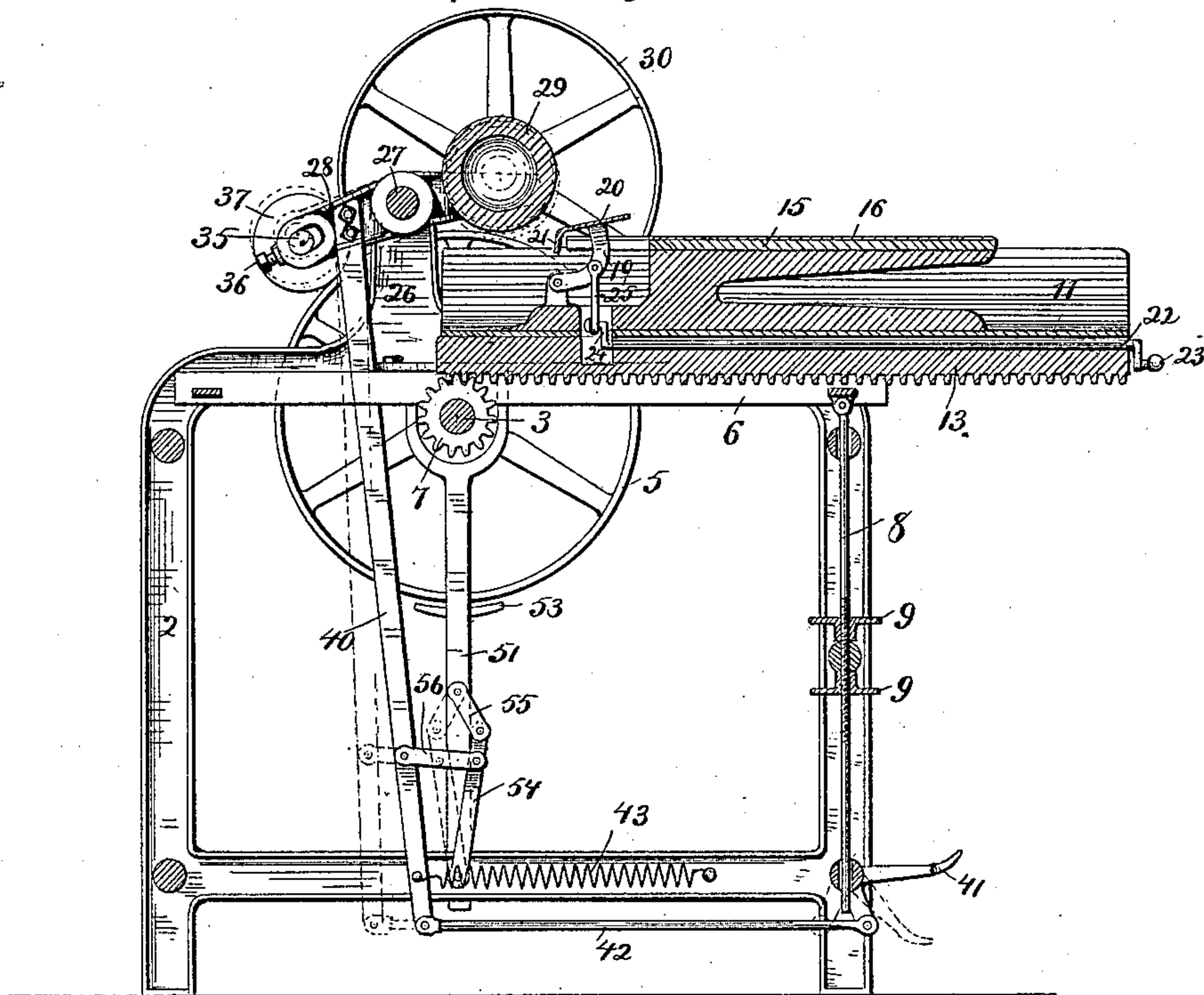


Fig. 4.

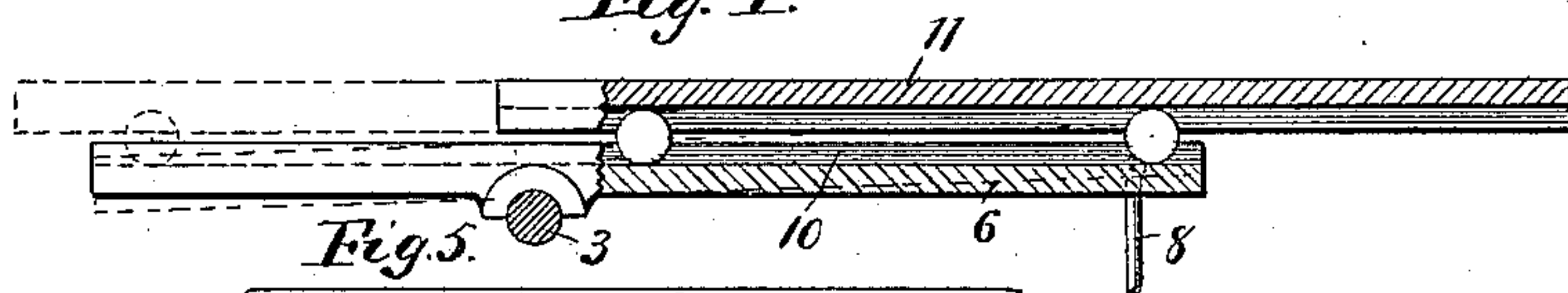


Fig. 5.

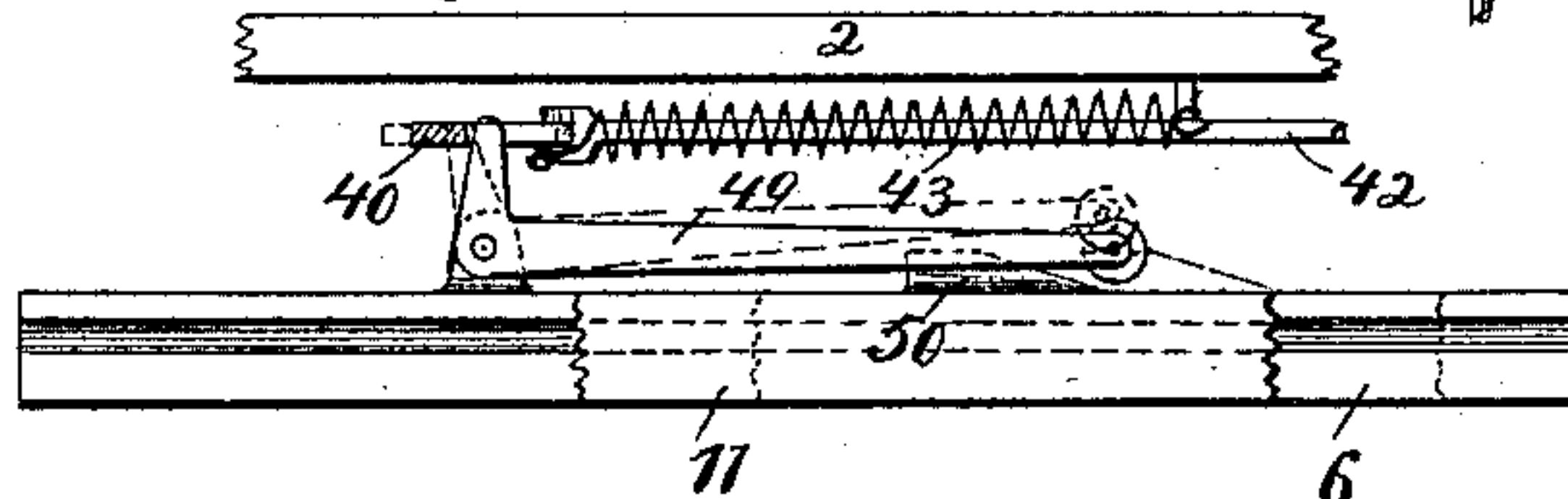


Fig. 6.

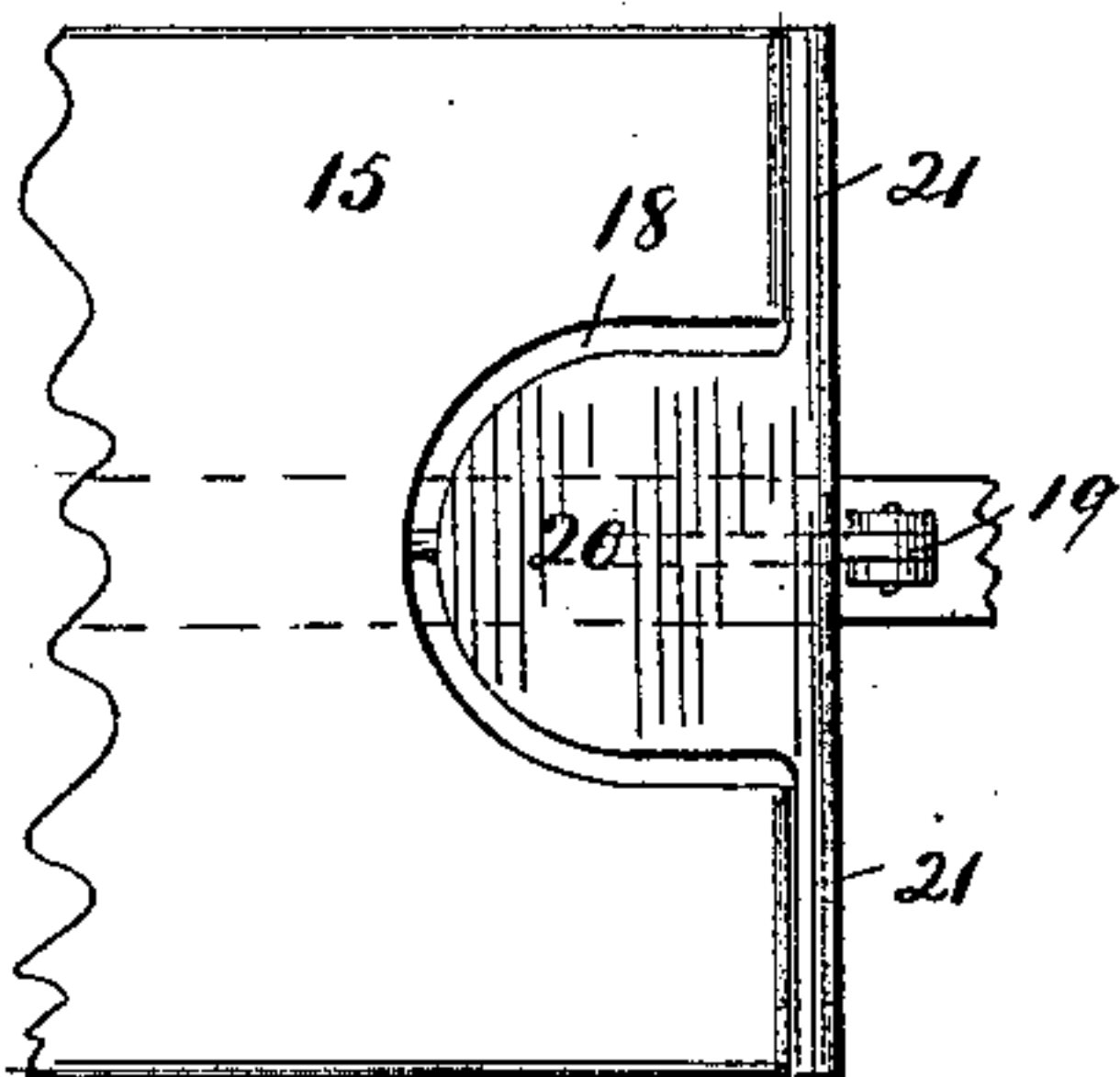
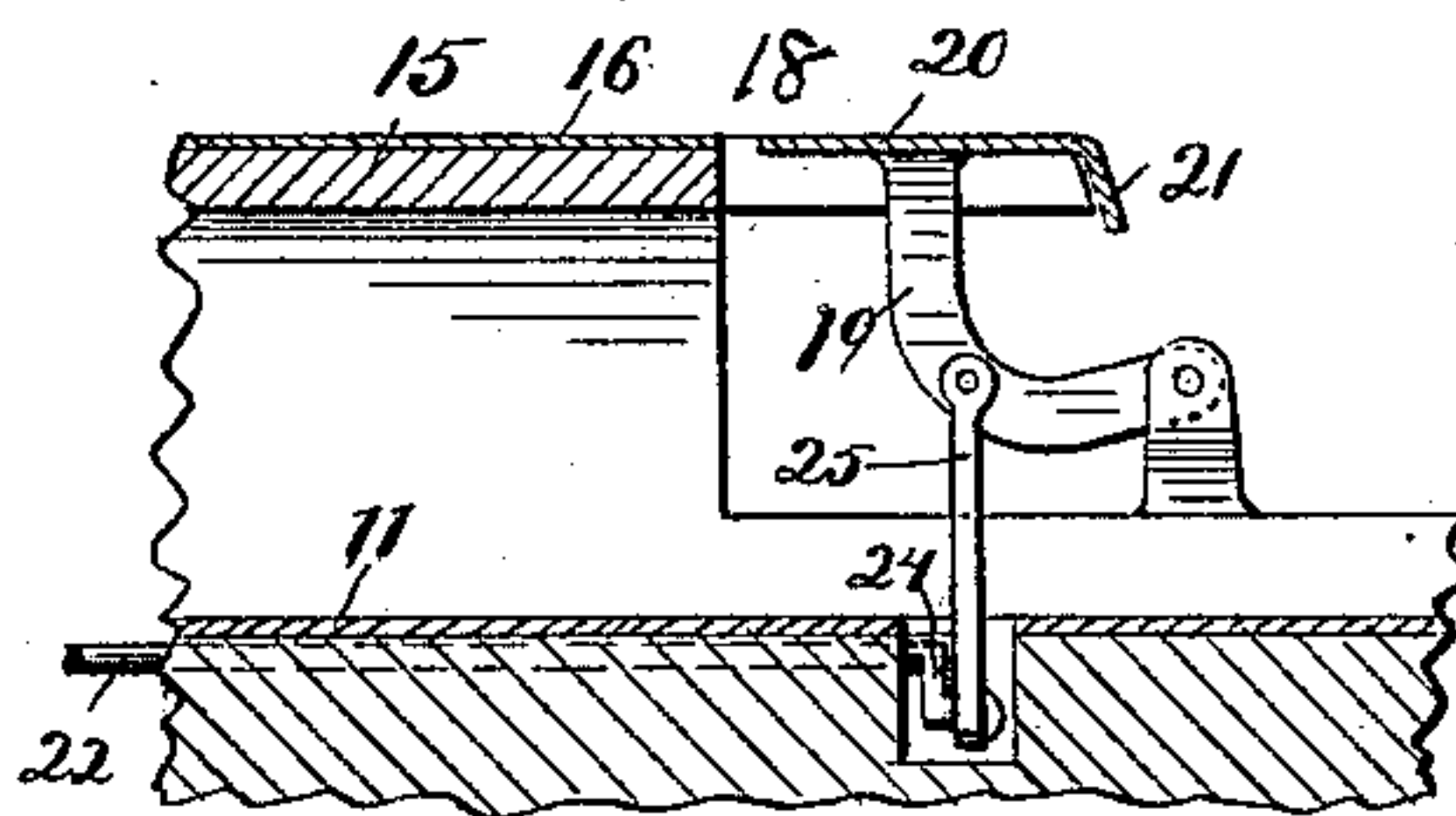


Fig. 7.



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UNITED STATES PATENT OFFICE.

CLARENCE O. WHITE, OF MINNEAPOLIS, MINNESOTA.

SHIRT-IRONING MACHINE.

SPECIFICATION forming part of Letters Patent No. 429,076, dated May 27, 1890.

Application filed March 8, 1889. Serial No. 302,490. (No model.)

To all whom it may concern:

Be it known that I, CLARENCE O. WHITE, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented a certain new and Improved Shirt-Ironing Machine, of which the following is a specification.

This invention relates to improvements in machines that are designed for ironing the bosoms of shirts, and the object I have in view is to provide an improved machine by means of which the shirt-bosoms may be ironed in one direction only, the pressure of the roll being removed or the roll being entirely raised from the shirt while it is being passed in the opposite direction beneath the roll and the motion of the table being reversed by raising the roll.

Other objects of the invention will appear from the following detailed description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of my machine. Fig. 2 is a plan of the same. Fig. 3 is a longitudinal vertical section. Figs. 4, 5, 6, and 7 are details.

In the drawings, 2 represents the frame of the machine, which may be of any suitable construction. Mounted in bearings on the frame of the machine is a suitable shaft 3, which is provided with a driving-wheel 5, which is preferably a friction-wheel, and with a pinion 7. A track-frame 6 extends lengthwise of the upper part of the frame of the machine, being pivotally supported upon the shaft 3. One end of this track-frame is provided with a supporting-rod 8, which is preferably threaded and provided with the adjusting hand-wheels 9, which engage a cross-bar 10 on the machine-frame, through which the rod 8 passes. The interiors of the hand-wheels act as nuts upon the rod 8, so that by turning these wheels the rod may be moved up or down, as desired. By this means the forward end of the track-frame may be raised or lowered for the purpose of adjusting the track-frame.

The track-frame 6 is provided upon its upper surface with ways 10, upon which travels a reciprocating table 11. This table is provided upon its under surface with a rack-bar 13, which meshes with the pinion 7 upon the

shaft 3. Supported upon the table 11 is a suitable ironing-board 15. The ironing-board will usually be provided upon its upper surface with a suitable cloth covering 16. A U-shaped opening 18 is formed in the end of the ironing-board to receive the neckband of the shirt. A lever 19 is pivoted upon the ironing-board beneath the opening 18 and supports a plate 20, somewhat smaller than the opening 18, but of substantially the shape of said opening. A bar 21 is secured to the plate 20 and extends across the end of the ironing-board. A rod 22 is supported in the table 11, and is provided with a suitable handle 23 and at its opposite end with a short crank-arm 24.

A link 25 connects the crank-arm 24 with the lever 19. By turning the rod 22 into the position shown in Fig. 3 the plate 20 may be raised above the top of the ironing-board and the bar 21 be moved slightly away from the end of the board. By turning the rod so as to move the crank-arm downward the plate 20 may be depressed and brought into the opening 18 and the bar 21 be clamped firmly against the end of the board at each side of the opening 18.

Upon the frame 2 at each side of the track-frame 6 are the standards 26, which support the shaft 27. Arms 28 are secured upon the shaft 27, and they are provided with bearings for the hollow ironing-roll 29. This roll is of ordinary construction and may be heated in the usual way. The shaft of the roll is provided with a pulley 30, having a belt-face 31, to which a driving-belt 33 is applied, and with a friction driving-face 32. A friction-pulley 34 is also arranged upon the shaft of roll 29. The pulley 34 is arranged over the face of the wheel 5. One of the arms 28 projects in the rear of the shaft 27 and is provided with a stud 35, which is arranged in a slot in the arm and made adjustable therein by means of a set-screw 36. A double friction-pulley 37 is mounted on the stud 35. One face of this pulley is in engagement with the face 32 of the wheel 30. The other face of this pulley is adapted to be brought into engagement with the face of the wheel 5. As here shown, the two parts of the pulley 37 are of unequal diameter. The portion of the pulley having the larger diameter is here shown in engagement with the face 32 of the

driving-wheel 30. By removing the pulley from its stud 35 and reversing it and changing the position of the stud 35 by means of the set-screw 36 the smaller portion of the pulley may be brought into engagement with the driving-wheel. The wheel 5 will then be driven at a greater speed. Power being applied to the wheel 30, the ironing-roll will be constantly rotated, and when the friction-pulley 34 is in engagement with the wheel 5 the shaft 3 will be driven in one direction and the ironing-board will be advanced beneath the roll.

When the pulley 37 is in engagement with the wheel 5, the shaft 3 will be driven in the opposite direction and the movement of the table will be reversed. As the ironing-board is advanced, I depress the ironing-roll and apply pressure thereto, so as to hold it down firmly upon the surface of the ironing-board. As soon as the ironing-board has passed wholly or partially beneath the roll the pressure is relieved and the roll is raised either so as to entirely remove it from the cloth or so as to leave it in contact therewith, but causing but slight pressure thereon. The motion of the table upon which the board is supported is then reversed and the board is then carried back beneath the roll, and while so passing the roll does not touch the surface of the shirt upon the board, or if it does touch it it applies but slight pressure thereto. I provide means for raising and lowering the ironing-roll and bringing first one friction-pulley and then the other into engagement with the wheel 5. A lever 40 is secured to the arm 28 and extends toward the lower part of the frame 2. A treadle 41 is pivoted upon the frame 2, and is connected by a rod 42 with the lever 40. A spring 43 is connected to the frame 2 and to the lever 40. This spring tends to depress the rear end of the arm 28, and thereby to hold the rear friction-pulley in engagement with the wheel 5 and the ironing-roll in its elevated position. By depressing the treadle 41 the arms 28 are turned together with the shaft 27, the rear friction-pulley is carried away from the wheel 5, the forward friction-pulley is brought into engagement therewith, and the roll is depressed and brought into position to act upon a shirt placed upon the ironing-board. When neither one of the friction-rolls is in engagement with the wheel 5 the shaft 3 and the table will remain stationary. I provide an automatic stop that is operated by the table, and throws the friction-rolls out of engagement with the wheel 5 when the table has been brought into position for having a shirt removed from or applied to the board.

A bell-crank lever 49 is pivoted upon the track-frame 6, and its short arm is arranged to engage the lever 40. A lug 50 is arranged upon the side of the sliding table, and when the table reaches the end of its reverse movement this lug strikes the long arm of the lever 49 and throws its short arm against the lever

40, thereby moving that lever a sufficient distance to raise the rear friction-roll from the wheel 5 without bringing the forward friction-roll into engagement therewith. Both friction-rolls are now out of engagement with the wheel 5, and the shaft 3 remains stationary.

A brake-rod 51 is arranged to move vertically upon bearings 52 and 58, and is provided with a brake-shoe 53, that is adapted to be brought against the face of the wheel 5. A rod 54 is pivoted to the frame of the machine, and is connected to the rod 51 by means of a short rod 55. A link 56 is joined to the rod 54 and to the lever 40. The rods 54 and 55 together form a knuckle-joint. When the rods 54 and 55 are in line with each other, the brake-shoe will be raised against the wheel 5, and this wheel and the shaft 3 will be held stationary. When the center of the joint is thrown to either side of the center, the rod 51 drops down, so as to bring the brake away from the wheel 5. When the lever 40 is moved by the bell-crank lever 49, as the table reaches the limit of its receding movement, the knuckle-joint will be straightened out, the brake applied, and the table stopped. The treadle will then be depressed and the parts of the joint brought into the position shown by dotted lines in Fig. 3. The table will then begin to advance. When it is depressed, to reverse the movement of the table, which can be done at any point in its travel, the pressure is removed from the treadle and the spring 43 draws back the lever 40.

The operation of the machine will be readily understood from the foregoing detailed description.

The shirt is placed on the ironing-board, the neckband being turned under the plate 20. This plate is then depressed, turning the neckband into the opening, and bringing the clamp 21 against the shoulders of the shirt clamps them upon the end of the ironing-board. The treadle is then depressed and the table advanced, carrying the ironing-board beneath the roll, which is now brought with considerable pressure upon the bosom of the shirt. As soon as the table has passed the shirt-bosom beneath the roll the pressure is removed from the treadle and the ironing-roll is slightly raised, either carrying it wholly clear of the cloth or leaving it in contact therewith, but with only a slight pressure upon the cloth. As soon as the pressure is removed from the table the knuckle-joint connected with the brake-rod is straightened out, thereby pressing the brake-shoe against the wheel 5 and stopping it. The movement of the lever 40 continues and carries the knuckle-joint by the center, bringing the parts into the position shown by full lines in Fig. 3, thereby removing the brake and bringing the rear friction-roll into engagement with the wheel 5 and reversing the machine. The table recedes, and when it reaches the backward limit of its travel it operates the bell-crank lever, which raises the rear friction-

roll, leaving both friction-rolls out of engagement with the wheel 5, and applies the brake to that wheel.

Suitable gear-wheels might be substituted for the friction-wheels without departing from my invention.

I claim as my invention—

1. In an ironing-machine, the combination of a vertically-movable continuously-rotating ironing-roll and a reciprocating table connected by suitable gearing with said roll and driven in both directions therefrom, and arranged to be moved in one direction as the roll is depressed and to be reversed and moved in the other direction whenever the roll is raised.

2. The combination, in an ironing-machine, of a vertically-movable continuously-rotating ironing-roll, a reciprocating table adapted to be moved back and forth beneath said roll, and direct and reverse driving mechanisms arranged between said roll and said table and operated by said roll, and adapted to move said table in one direction when the roll is depressed and to reverse it and move it in the opposite direction whenever the roll is raised.

3. The combination, in an ironing-machine, with a suitable frame, of a shaft mounted on said frame and provided with a pinion, a track-frame pivotally supported upon said shaft, and a reciprocating table mounted on said track-frame and provided with a rack-bar engaging said pinion, substantially as described.

4. The combination, in an ironing-machine, with the reciprocating table, of the shaft 3, provided with the pinion 7 and with the driving-pulley 5, the vertically-movable ironing-roll 29, provided with the driving-pulley 30 and with the friction-roll 34, and the friction-roll 37, whereby when said ironing-roll is depressed the table is moved in one direction and when the pressure upon said roll is relieved the table is moved in the opposite direction, substantially as described.

5. The combination, in an ironing-machine, with the reciprocating table, of the vertically-movable roll, the lever for raising and depressing said roll, the treadle connected with said lever, the shaft for reciprocating said table, and the brake connected with the roll-operating lever and arranged to engage the pulley on said shaft, substantially as described.

6. The combination, in an ironing-machine, with the reciprocating table, of the vertically-movable roll and a direct and a reverse driv-

ing-gearing between said roll and said table governed by said roll, whereby as said roll is depressed said table will be advanced and when the pressure is relieved upon said roll said table will be moved in the opposite direction, substantially as described.

7. The combination, in an ironing-machine, with the reciprocating table provided with the lug 50, of the vertically-swinging arms 28, the ironing-roll mounted in said arms, the friction-roll 37, supported on one of said arms, the lever 40, connected with said arm and adapted to move the same, and the bell-crank lever 49, engaging said lever 40 and adapted to be operated by the lug on said table, substantially as described.

8. The combination, in an ironing-machine, of a driving-shaft mounted in stationary bearings and provided with a pinion and with a wheel, a track-frame pivotally supported on said shaft, a reciprocating table mounted on said track-frame and provided with a rack-bar engaging said pinion, a vertically-movable ironing-roll, and a wheel on the shaft of said ironing-roll adapted to engage said driving-wheel when the roll is depressed and to disengage said wheel when the roll is raised, substantially as described.

9. The combination, in an ironing-machine, of a reciprocating table, a driving-shaft for moving said table, provided with a driving-wheel, a vertically-movable ironing-roll, a wheel on the shaft of said roll adapted to engage said driving-wheel as the roll is depressed and to move the table in one direction, and a reverse driving mechanism between said roll and said driving-wheel adapted to be thrown into operation as the roll is raised, substantially as described.

10. The combination, in an ironing-machine, of a reciprocating table, a driving-shaft for moving said table, provided with a driving-wheel, an ironing-roll mounted in swinging arms, a wheel 34 on the shaft of the roll, adapted to engage said driving-wheel as the roll is depressed, a driving-wheel 30 on the roll-shaft, and a wheel mounted on one of the arms that support the ironing-roll, and adapted as the roll is raised to engage the driving-wheel 30 on the roll-shaft and the driving-wheel on the driving-shaft of the table.

In testimony whereof I have hereunto set my hand this 5th day of March, 1889.

CLARENCE O. WHITE.

In presence of—

A. M. GASKILL,
J. JESSEN.