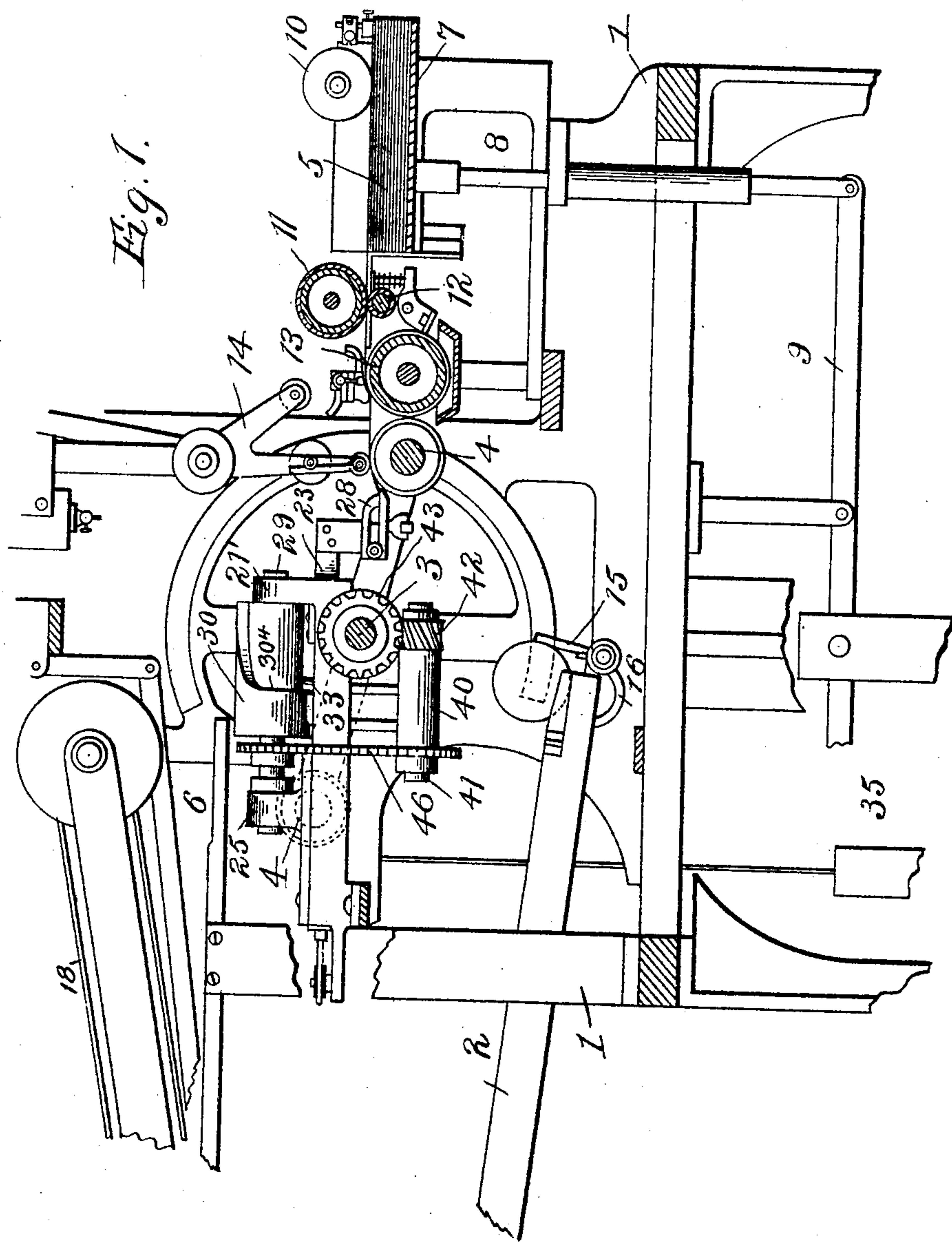


No. 805,832.

PATENTED NOV. 28, 1905.

J. B. AUFULDISH.  
LABELING MACHINE.  
APPLICATION FILED JULY 14, 1904.

3 SHEETS—SHEET 1.

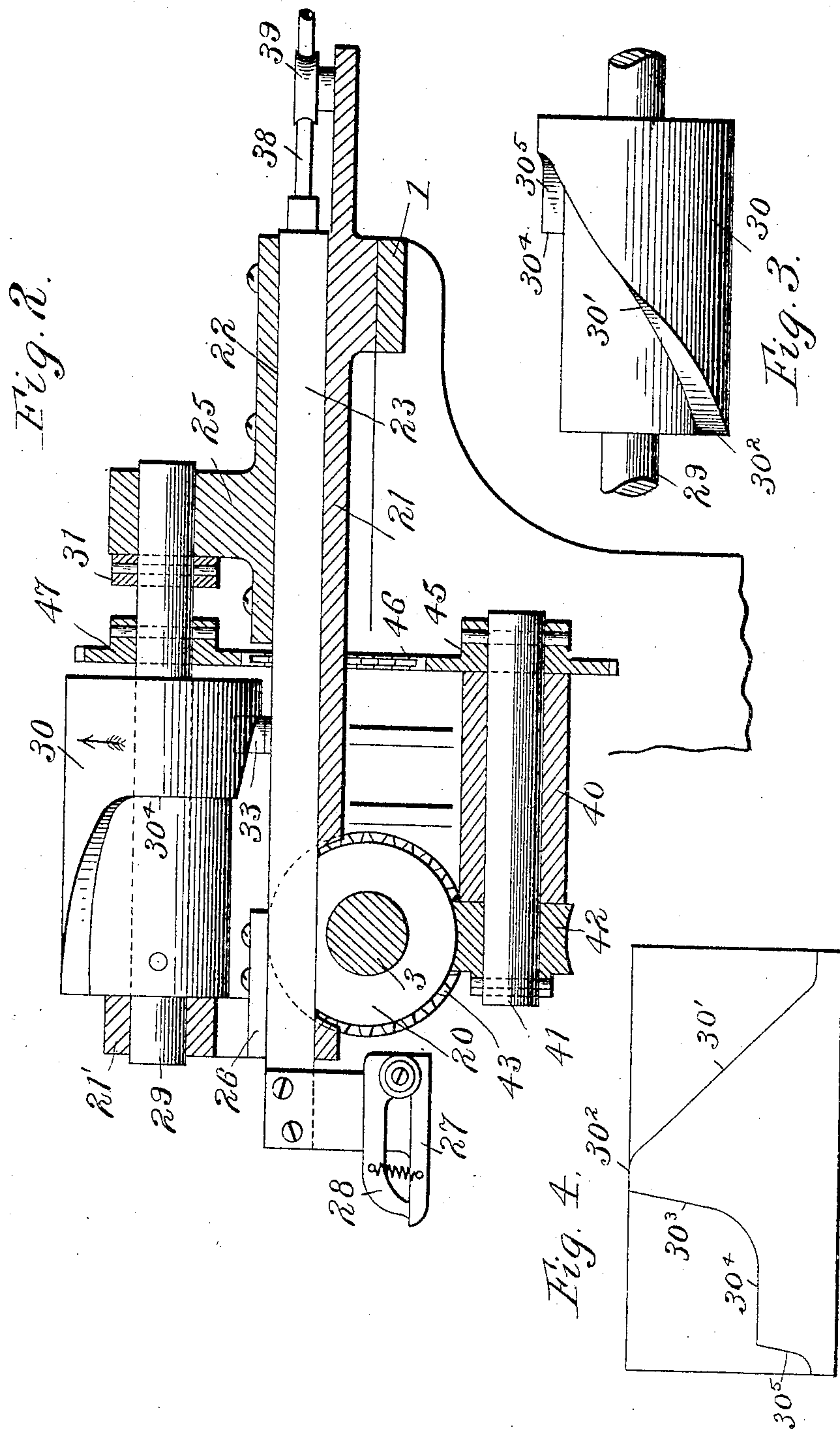


Witnesses  
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

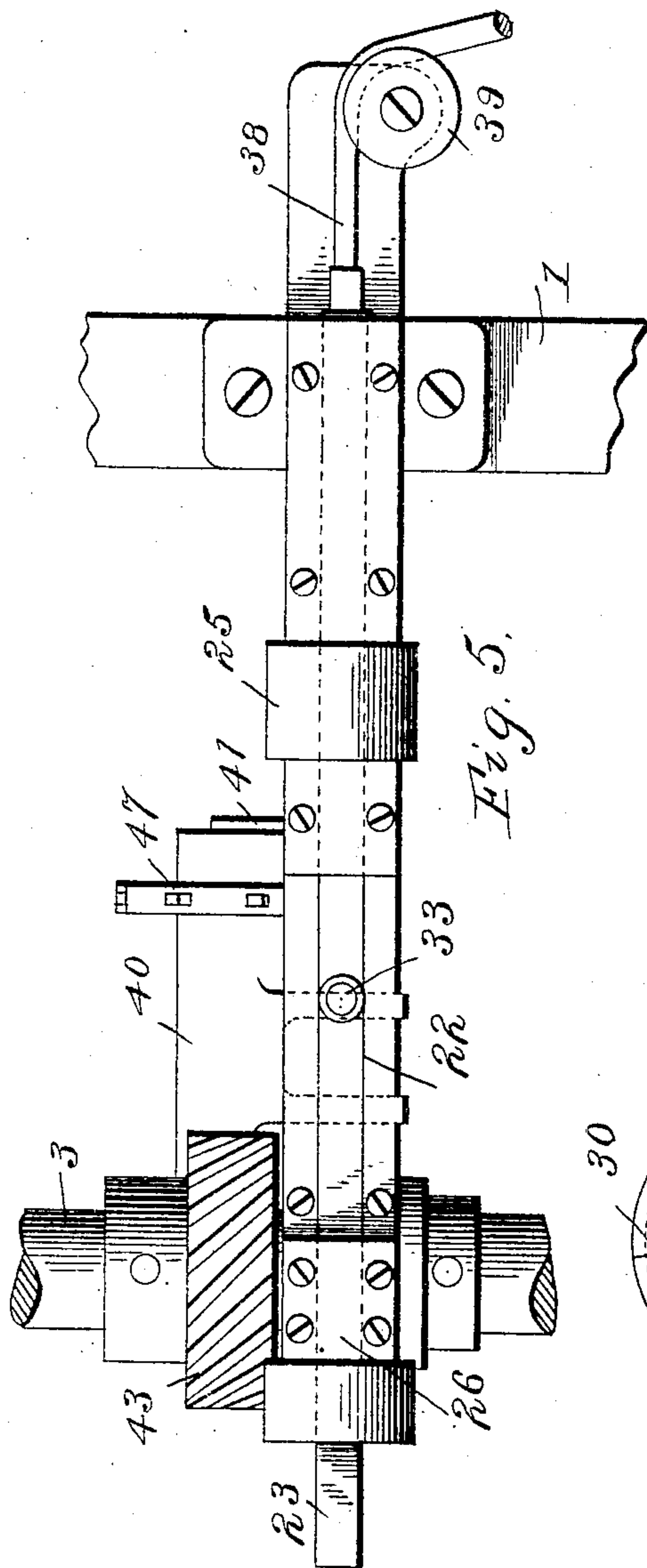


Fig. 5.

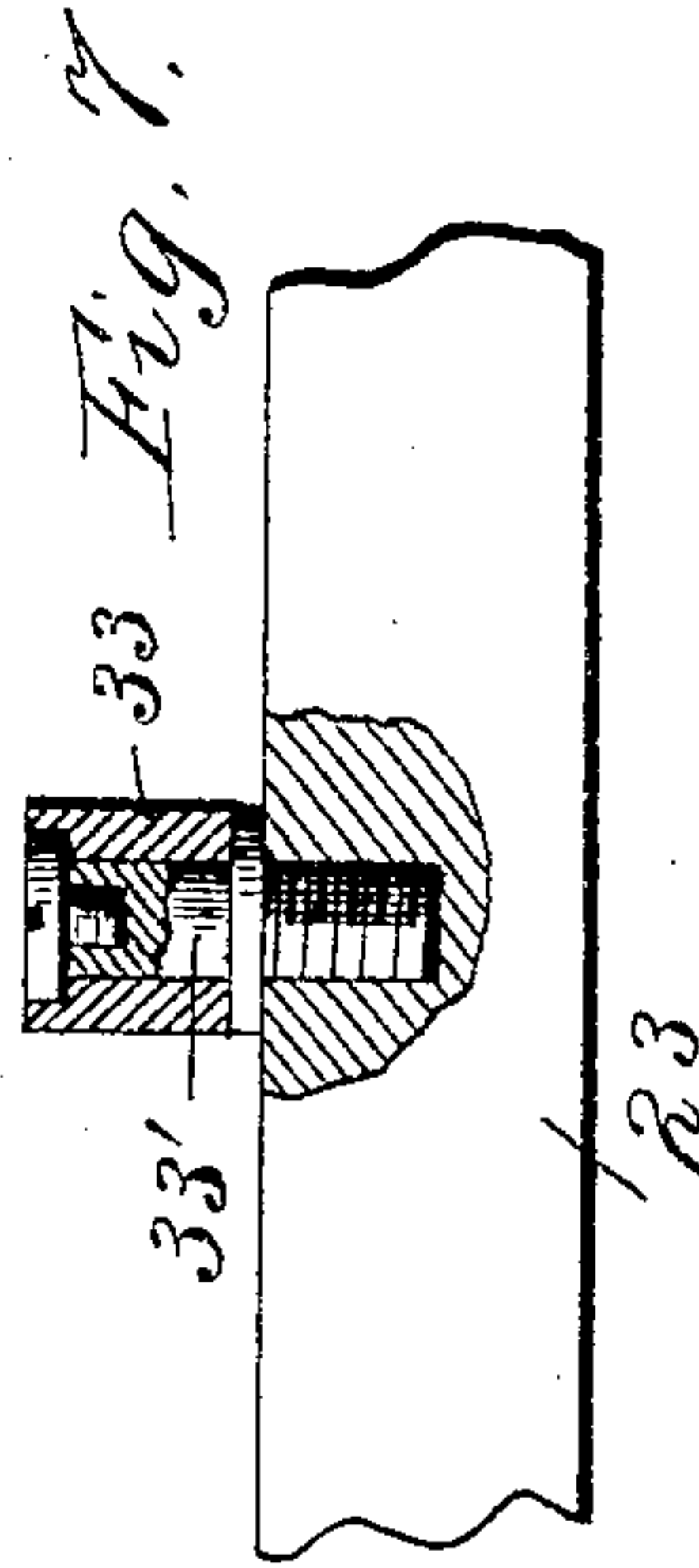


Fig. 7.

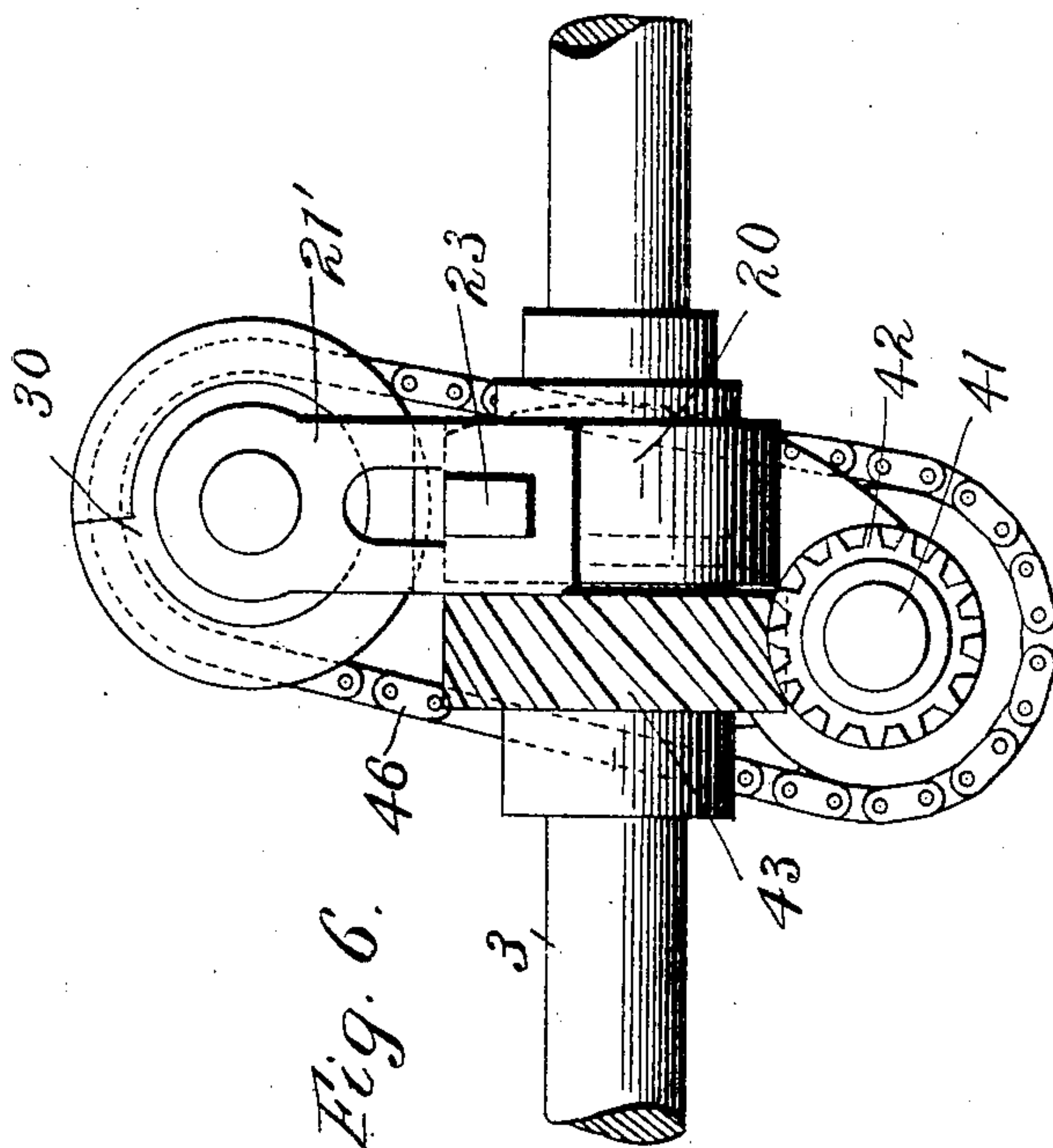


Fig. 6.

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# UNITED STATES PATENT OFFICE.

JOHN B. AUFULDISH, OF DAYTON, OHIO, ASSIGNOR TO THE AUTOMATIC MACHINES COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF DELAWARE.

## LABELING-MACHINE.

No. 805,832.

Specification of Letters Patent.

Patented Nov. 28, 1905.

Application filed July 14, 1904. Serial No. 216,546.

*To all whom it may concern:*

Be it known that I, JOHN B. AUFULDISH, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Labeling-Machines, of which the following is a specification.

This machine relates generally to improvements in labeling-machines of the kind employed in labeling cans, bottles, or articles of like nature, and specifically to improved means for operatively controlling the mechanism employed in drawing the label over the paste-roller and placing it in position to be applied to the can.

The object of the invention is to construct a label-gripping machine which will be positive in its operation, simplified over the present forms employed, and more economical in construction and operation.

The type of machine to which this improvement is applicable is illustrated in United States Letters Patent to Neth and Aufuldish, No. 585,282, granted June 29, 1897. These machines have rotary can-carrying arms, preferably in duplicate, which convey the cans from the feeding-chute to the labeling devices and thence to the discharge-chute, and for each revolution of the shaft carrying the can-holding arms two cans will have labels applied thereto. In order to accommodate the labeling of two cans during one revolution of the driving-shaft, the present device is so constructed that the label-gripping fingers will be moved forward twice during each revolution of said shaft, thereby placing a label on each can when it reaches a position to receive the same. In this type of machine the label-gripping fingers are moved forward twice during each revolution of the driving-shaft; but heretofore the mechanism for accomplishing the same has been more or less complex, more costly, and not positive and accurate in its operation.

In the present invention the above-named difficulties have been obviated and a mechanism constructed comprising a cam-faced cylinder driven by the main shaft at a relative speed of two to one by suitable connections therewith, so that the label-gripping mechanism is positively driven forward to seize the label twice for each revolution of the driving-shaft.

With these ends in view I have devised and constructed the hereinafter-described invention, which will first be explained as to detail and then specifically pointed out in the annexed claims.

In the accompanying drawings, Figure 1 is a vertical section of a can-labeling machine, showing the present improvements applied thereto. Fig. 2 is a vertical section of the improved device for operating the label-gripping mechanism. Fig. 3 is a detail view of the cylindrical cam. Fig. 4 is a developed view of the cylindrical cam. Fig. 5 is a plan view of Fig. 2 with the cam removed. Fig. 6 is an end elevation looking to the right of Fig. 5. Fig. 7 is a detail view of the cam-roller.

Referring to Fig. 1, the general construction of a can-labeling machine to which the present improvement is applicable is described as follows: 1 is the main frame of the machine, so constructed and disposed as to afford proper support for the various elements of the mechanism. 2 is a chute or guideway into which the cans to be labeled are placed and down which they travel. 3 is the main shaft, and 4 4 are can-grippers carried by and rotating around said shaft and adapted to take the cans from the lower end of the chute 2 to carry them to the position to which the right-hand gripper 4 is shown, at which point a label is applied thereto from the pile of labels 5 and then to carry the said can up and deliver it upon the delivery-chutes 6, whence it is conveyed to any desirable place. The pile of labels 5 is carried upon a platen or table 7, supported upon a vertical sliding rod 8, and is pressed up by the adjustable weighted lever 9. 10 is a buckling-roll for moving the label off the pile. 11 and 12 are rubber-covered feed-rolls adapted to receive the label from the pile and convey it over the paste-roller 13, from which position it is taken by the label-gripping mechanism and placed upon the can. 14 is a frame carrying the lap-laying and label-laying rollers.

The devices shown at 15 and 16 are employed to release and retain the cans on the feeding-chute, and at 18 a belt is shown which is adapted to roll the can along the delivery-chute.

The mechanism for handling the label and placing it in position to be applied to a can is constructed and operated in the following



manner: Freely mounted on the operating-shaft 3 is a block 20. 21 is a bracket or frame, one end of which is fastened to the block 20 in any suitable manner, such as screws, as shown in Fig. 5. The other end of the said frame or bracket 21 is supported on and secured to the machine-frame 1. The frame 21 has a longitudinal groove 22, as shown in Figs. 2 and 5, in which rides the gripper-bar 23. The gripper-bar 23 slides with a free longitudinal movement in the groove 22 and is held within said groove by the cam-shaft-supporting bracket 25 at one end and a plate 26 at the other end. Mounted on the left-hand end of the gripper-bar 23, as shown in Fig. 2, are the label-gripping fingers 27 and 28. The fingers 28 are spring-controlled and are actuated to open and close upon the label by cams or other suitable mechanism. (Not shown, as it does not form part of the present invention.) Journaled in the bracket 25 and the upwardly-projecting portion 21' of the frame 21 is a shaft 29, upon which is rigidly mounted a cylindrical cam 30. The cam-face of the cylindrical cam 30 is engaged by a cam-roller 33, rotatably supported on a stud 33', said stud being secured to the gripper-bar 23. The cam-roller 33 is held against the operating-face of the cam by means of a weight 35, (see Fig. 1,) said weight being attached to one end of the gripper-bar 23 by a cord 38 and guided by a pulley 39, supported in the end of the frame 21. The shaft 29 is prevented from longitudinal movement by the collar 31, which is pinned to said shaft and abuts the bracket 25 and the cylindrical cam which abuts the portion 21'. Forming part of the bracket 21 is a dependent journal-bearing 40, in which is journaled a shaft 41, said shaft carrying at one end a spiral gear 42, which is adapted to mesh with and be driven by a spiral gear 43, rigidly mounted on the main operating-shaft 3. These spiral gears 42 and 43 bear a two-to-one relation with each other, so that for each revolution of the main driving-shaft 3 the shaft 41 will receive two revolutions. A sprocket-wheel 45 is carried on the shaft 41 and drives a sprocket-chain 46, which engages and drives a sprocket-wheel 47, rigidly mounted on the cam-shaft 29, thereby imparting motion to the cam-shaft. Thus it will be seen that for each revolution of the main driving-shaft the cylindrical cam 30 will be given two revolutions, thereby projecting the gripper-bar and gripper-fingers forward to a position where a label will be seized and placed upon each can when said can is brought to the proper position to receive the label by the can-carrying arms. The cylinder 30 has a cam-face which engages the cam-roller 33, carried by the gripper-bar 23, and moves said gripper-bar and gripper-fingers 28, attached thereto, directly forward to a position to seize the label when such label is passed over the paste-roller. When the cylindrical cam is rotated in the direction of the arrow shown in Fig. 2, the cam-

roller 33 will ride up the inclined portion 30', which will be seen by referring to Figs. 3 and 4, Fig. 4 being a diagrammatic view of the developed condition of the cam until it reaches the portion 30<sup>2</sup>, which is the limit of throw of the cam. At this point the gripper-bar will have been projected sufficiently far forward to seize the label, whereupon the cam-roller will quickly travel back over the inclined surface 30<sup>3</sup> until it reaches the surface 30<sup>4</sup>, where the grippers will hold the label momentarily until the label-laying mechanism has placed a label on the can, whereupon the cam-roller will travel back over the surface 30<sup>5</sup>, during which movement the grippers will be open to release the label and the bar resume its normal position, as shown in Fig. 2. This operation will be repeated twice for each revolution of the main shaft, owing to the fact that the spiral gears 42 and 43 are made with the two-to-one relation with each other.

The general operation of the machine is as follows: When the main shaft is operated, the label-feeding mechanism will feed a label over the paste-roller, so that its end will project sufficiently far therefrom to allow it to be seized by the gripper-fingers. Simultaneous with this movement the gripper-bar 23, carrying the gripper-fingers 27 and 28, will move toward the paste-roller by reason of the cam-roller 33 being operatively controlled by cylindrical cam 30. The gripper-fingers will when they reach the end of the label seize the same, at which time the cam-roller is at the extreme point 30<sup>3</sup> of the cylindrical cam. Further rotation of the cam will cause the gripper-bar and gripper-fingers to recede, carrying with it the label, by which time the can-carrying grippers will have moved the can to a position to receive the label, as shown in Fig. 1. The cam-roller 33 is traveling over the cam portion 30<sup>4</sup> when the parts are in the position shown in Fig. 1, which momentarily checks the receding movement of the gripper-bar and allows the label-laying mechanism to place the label on the can. Continued rotation of cam 30 will cause the gripper-fingers to recede and move down the portion 30<sup>5</sup> of the cam, during which operation they will be opened, the labels released, and the gripper-operating mechanism be in the position shown in Fig. 2, which is the normal position. When the can-grippers 4, which are diametrically opposite to the grippers just described, reach the position shown in Fig. 1, the label-gripping mechanism will have been again operated to seize a label and place it in position to be applied to the can in the manner hereinbefore described.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a machine of the character described, the combination of can-feeding means, the main operating means, means for placing the



label in position to be applied to the can, means for operatively controlling the label-placing means, and driving means intermediate to the main operating means and the means for controlling the label-placing means capable of operating said label-placing means at a speed relatively two to one with the main operating means.

2. In a machine of the character described, the combination of can-feeding means, label-feeding means, a main operating means, label-gripping devices for placing the label in position to be applied to the can, means for operatively controlling the label-gripping devices, and driving means intermediate to the means for controlling the label-gripping devices and the main operating means for giving the means for controlling the label-gripping devices a two-to-one operative relation with the main operating means for the purpose explained.

3. In a machine of the character described, the combination of can-feeding means, label-feeding means, a main operating means, reciprocating label-gripping devices for placing the label in position to be applied to the can, a cam for operatively controlling the reciprocating label-gripping devices, and driving means intermediate to the cam and main operating means for placing the cam and the main operating means, respectively, in two-to-one relative relation with each other, for the purpose explained.

4. In a machine of the character described, the combination of can-feeding means, label-feeding means, a main operating means, reciprocating label-gripping devices for placing the label in position to be applied to the can, a cam for operatively controlling the reciprocating label-gripping devices, gear-wheels intermediate to the cam and main operating means for placing the cam and main operating means, respectively, in two-to-one relation with each other, for the purpose explained.

5. In a machine of the character described, the combination of can-feeding means, label-feeding means, a main operating means, reciprocating label-gripping devices for placing the label in position to be applied to the can, a cam for moving the reciprocating label-gripping devices into position to seize the label, driving means intermediate to the main operating means and the cam for giving said cam a two-to-one operative relation with the main driving means, and means for returning the label-gripping means to normal position, for the purpose explained.

6. In a machine of the character described, the combination of can-feeding means, label-feeding means, a main operating means, reciprocating label-gripping devices for placing the label in position to be applied to the can, a cam rotating transversely to the movement of the label-gripping devices, means attached to the label-gripping devices adapted to ride against the face of the cam and give said label-gripping devices a longitudinal movement, and means for driving said cam operatively controlled by the main operating means, for the purpose explained.

7. In a machine of the character described, the combination of can-feeding means, label-feeding means, a main driving-shaft, reciprocating label-gripping devices supported in transverse relation to the main driving-shaft, a cam supported adjacent to the reciprocating label-gripping devices, means attached to the label-gripping devices adapted to ride against the face of the cam, and driving means intermediate to the main driving-shaft and the cam for giving said cam a two-to-one operative relation with the main driving means, and capable of rotating the cam in a direction transversely to the movement of the reciprocating label-gripping devices for the purpose explained.

8. In a machine of the character described, the combination of label-feeding means, a main driving-shaft, reciprocating label-gripping devices, a cam for moving the label-gripping devices into position to seize the label, and a spiral gearing intermediate to the cam and the main operating-shaft for giving said cam a two-to-one operative relation with said operating-shaft.

9. In a machine of the character described, the combination of label-feeding means, a main driving-shaft, reciprocating label-gripping devices, a bracket supported on the driving-shaft and forming a guideway for the label-gripping devices, a cam supported by said bracket adjacent to the label-gripping devices and operating transversely to the movement of said label-gripping devices, a cam-roller secured to the label-gripping devices and adapted to ride against the face of the cam, and means for yieldingly holding the cam-roller against the face of the cam for the purpose explained.

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