

Feb. 14, 1933.

H. G. KLETT

1,897,200

COIN CHANGING MACHINE

Filed Jan. 3, 1931

4 Sheets-Sheet 2

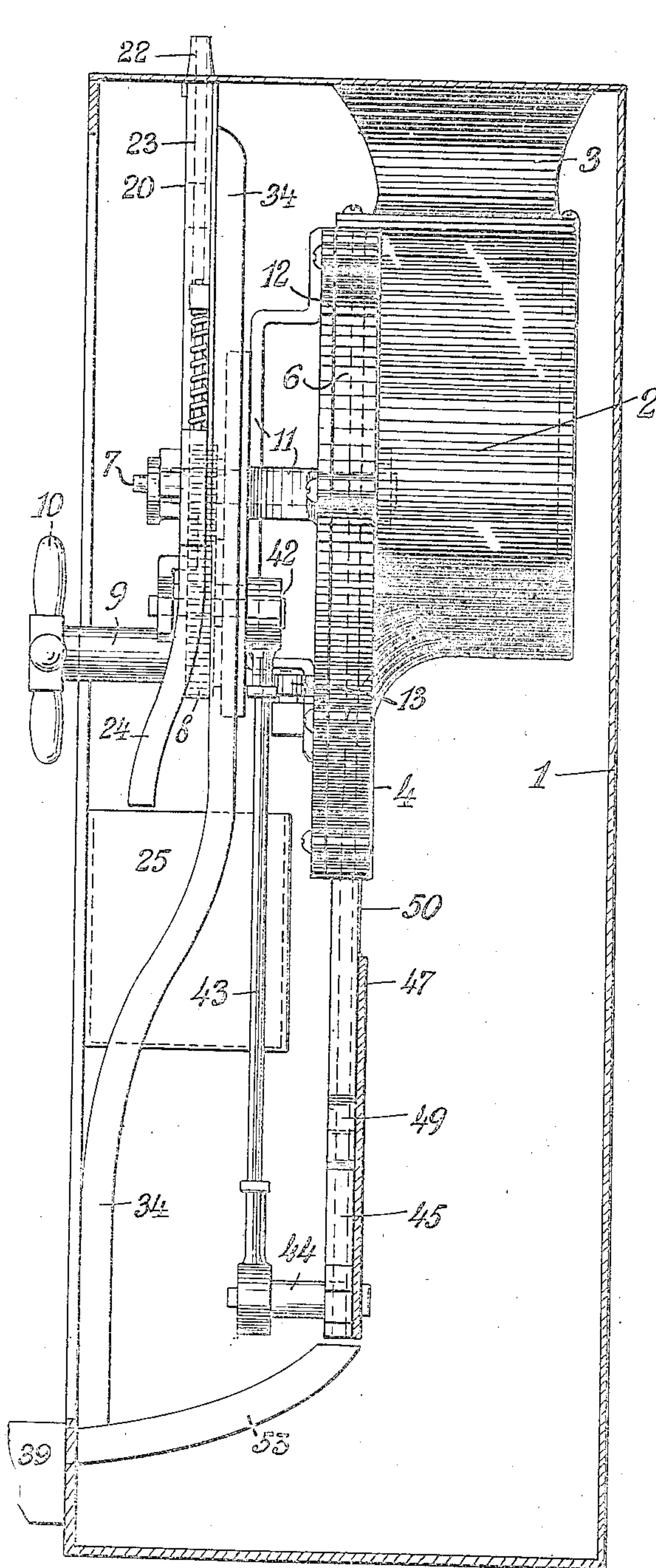


Fig. 3.

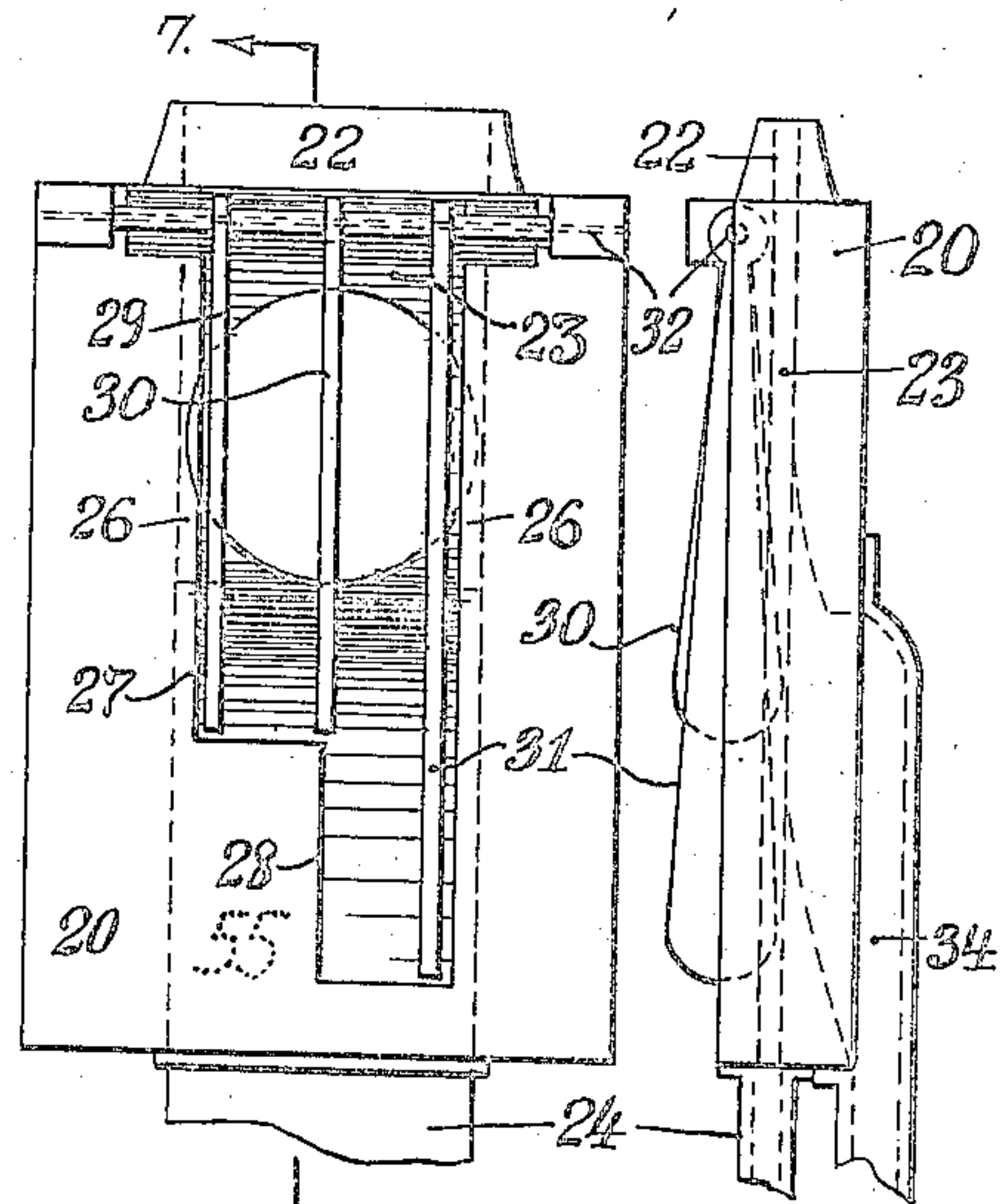


Fig. 4.

Fig. 5.

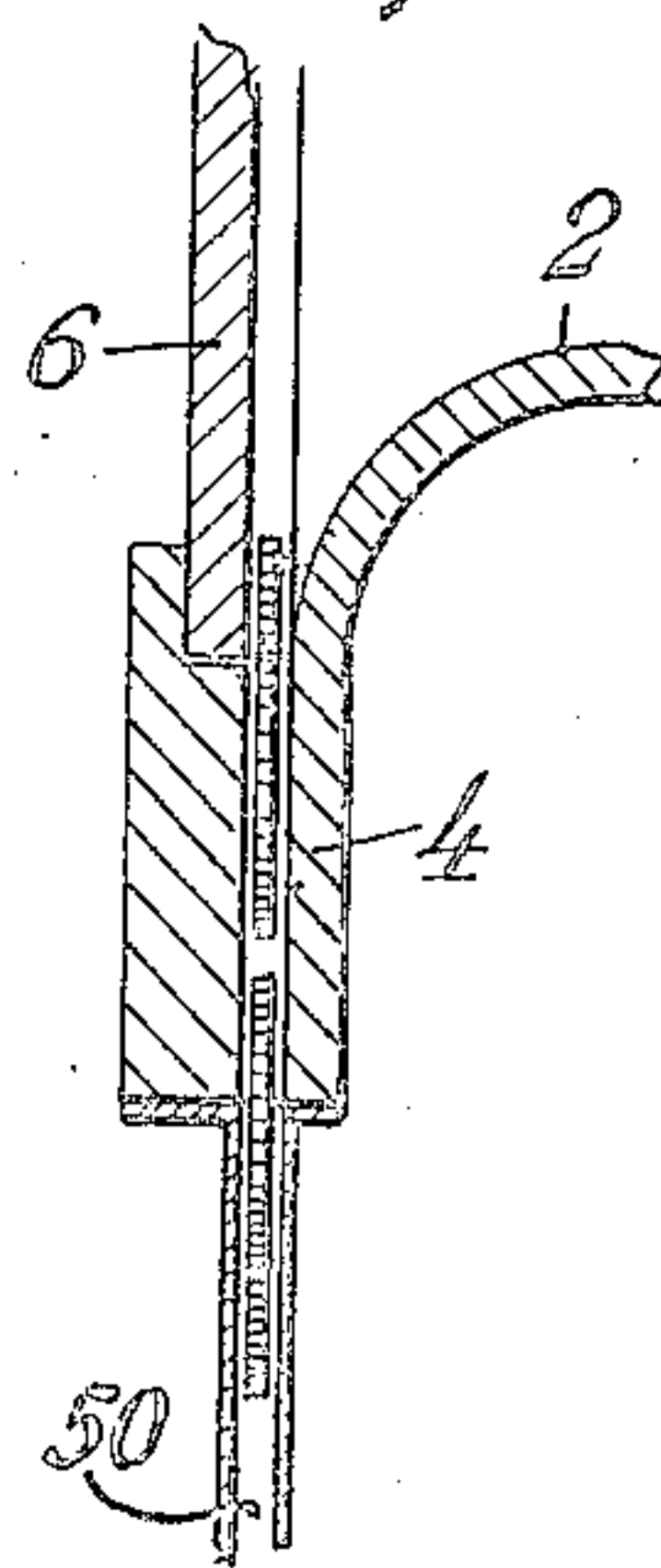


Fig. 6.

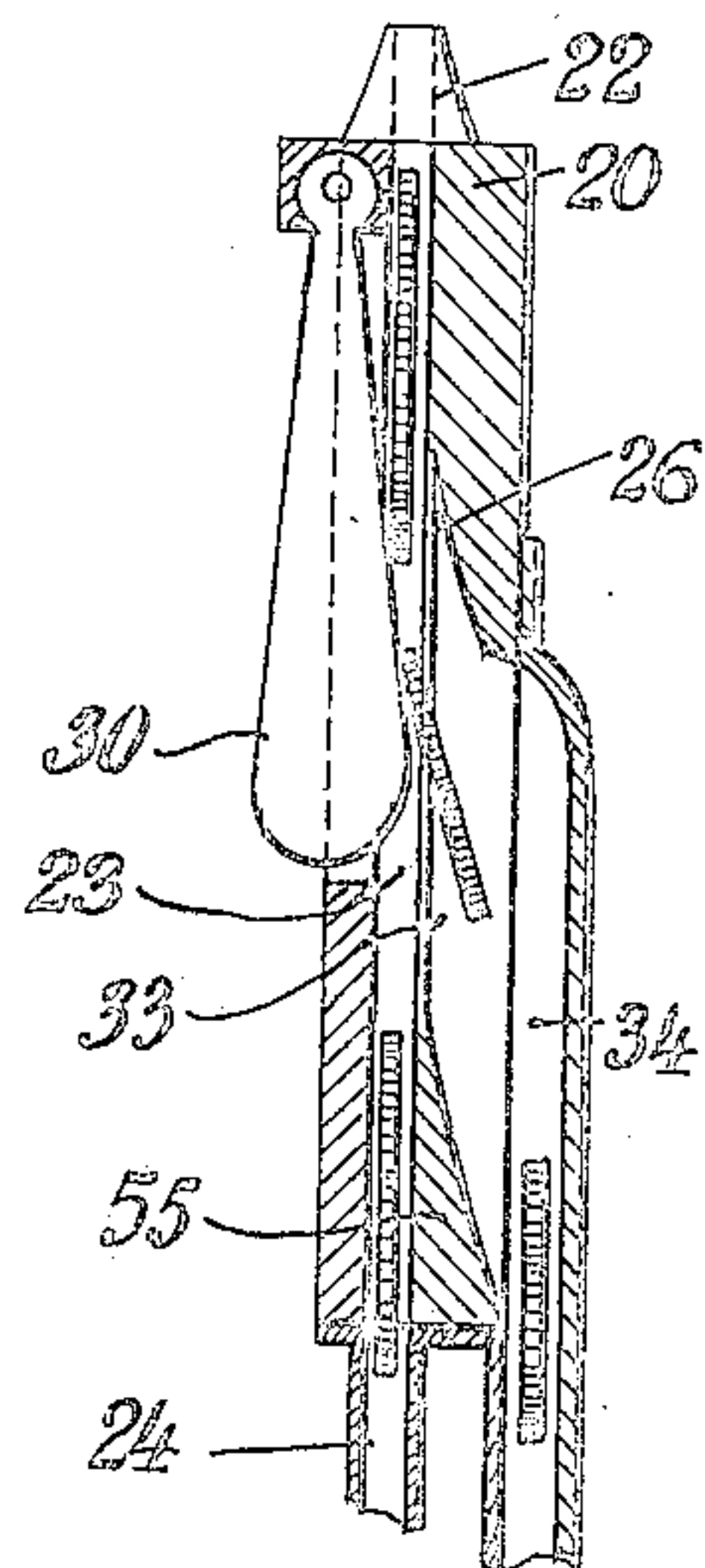


Fig. 7.

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4 Sheets-Sheet 3

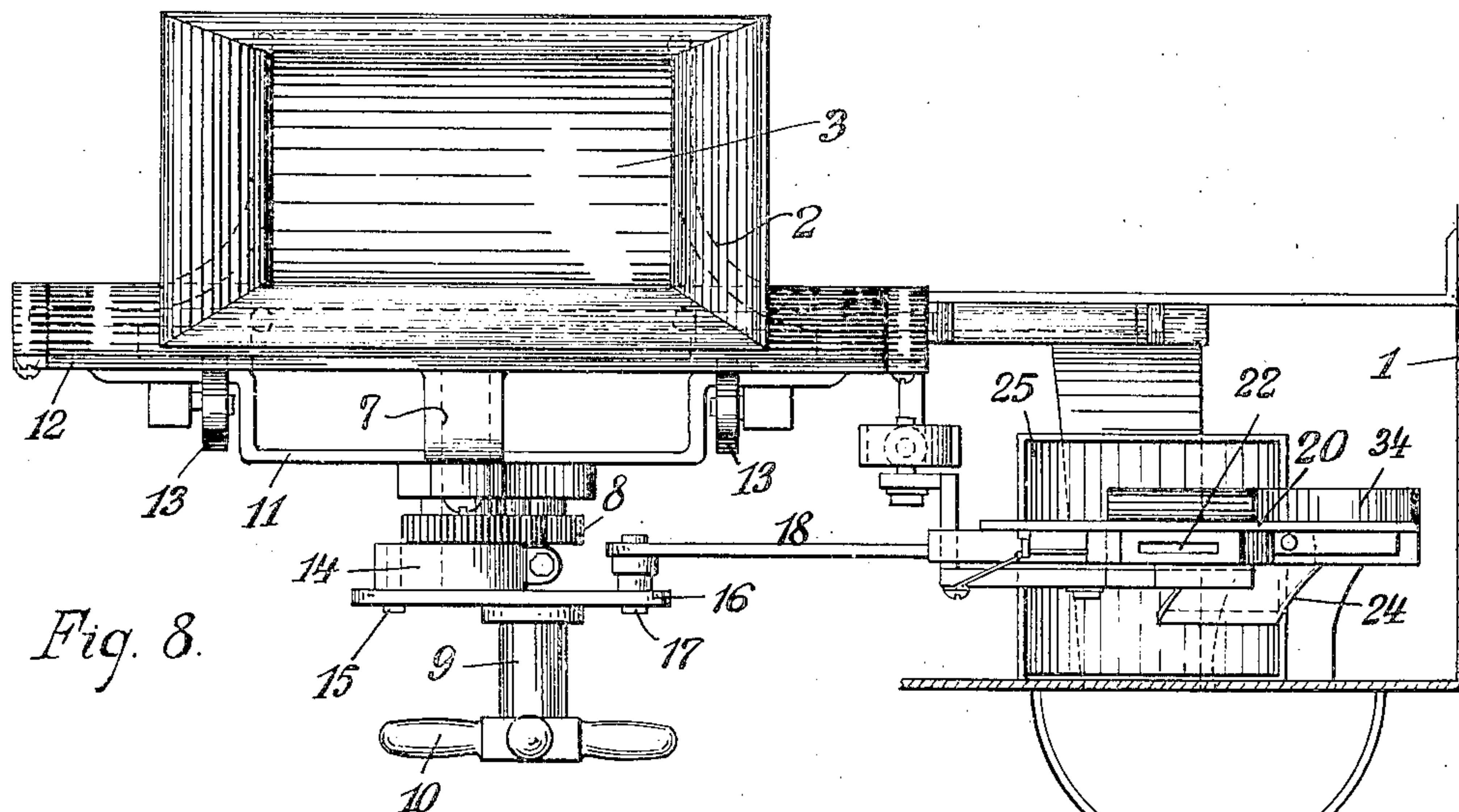


Fig. 8.

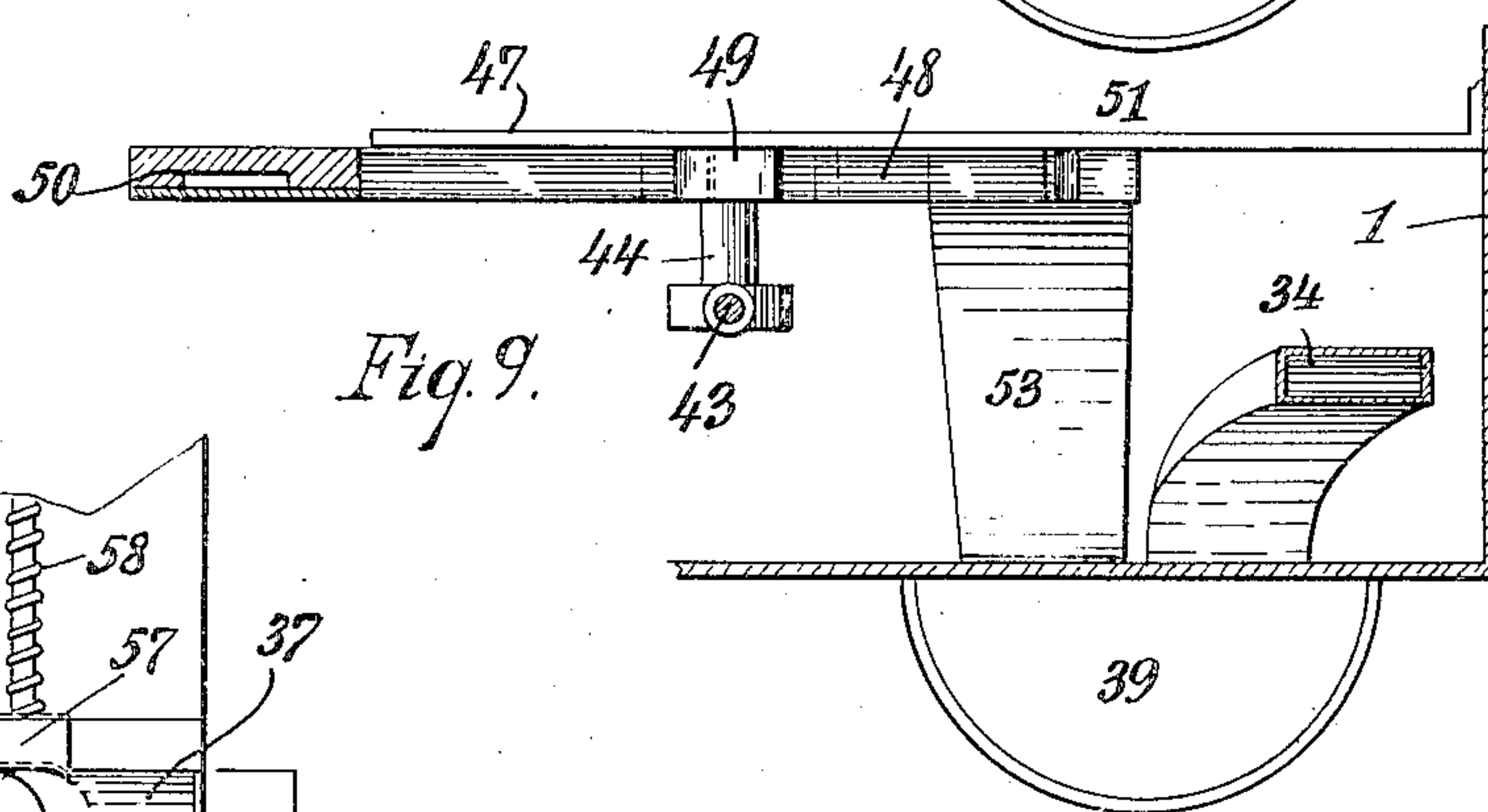


Fig. 9.

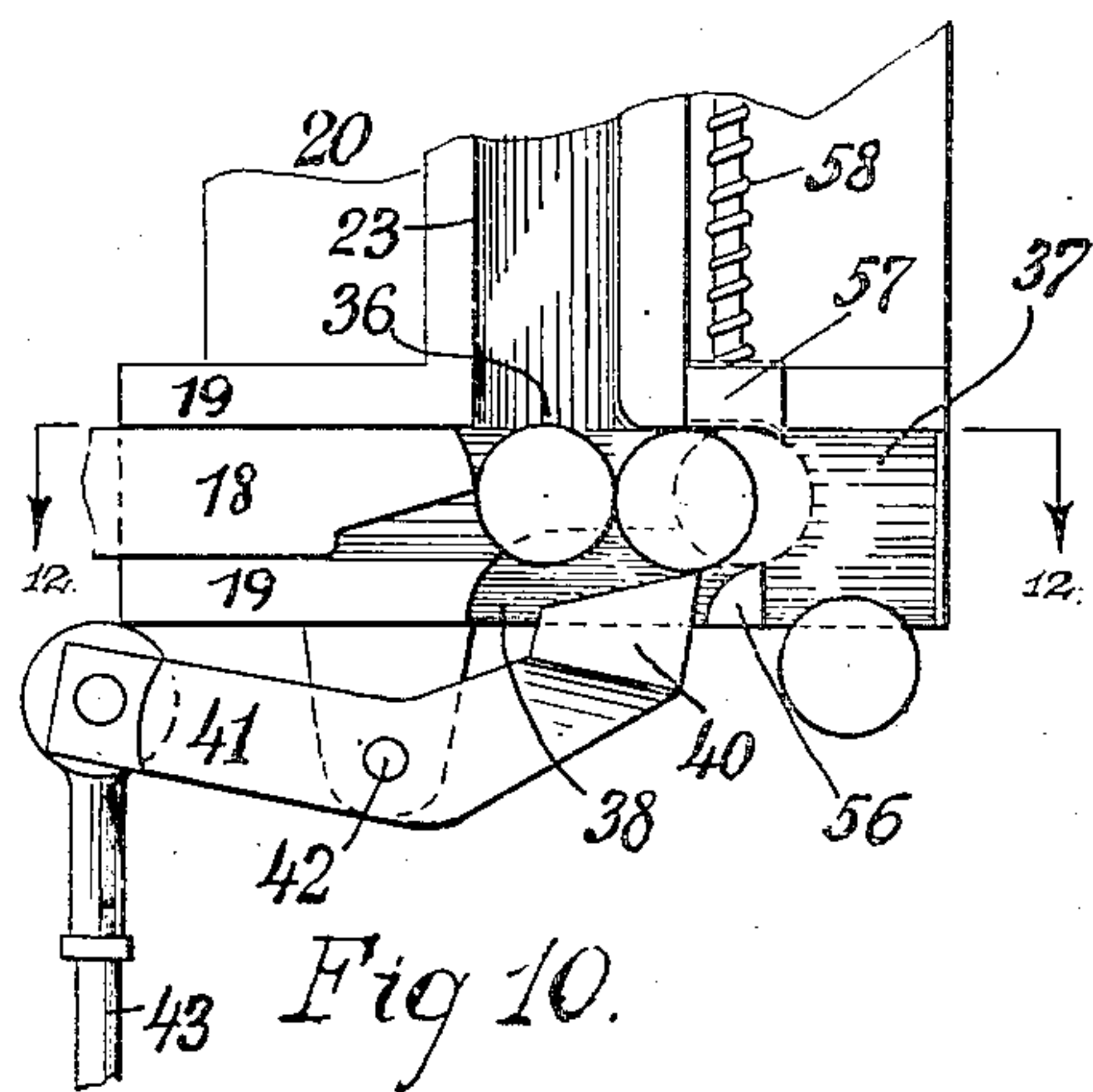


Fig. 10.

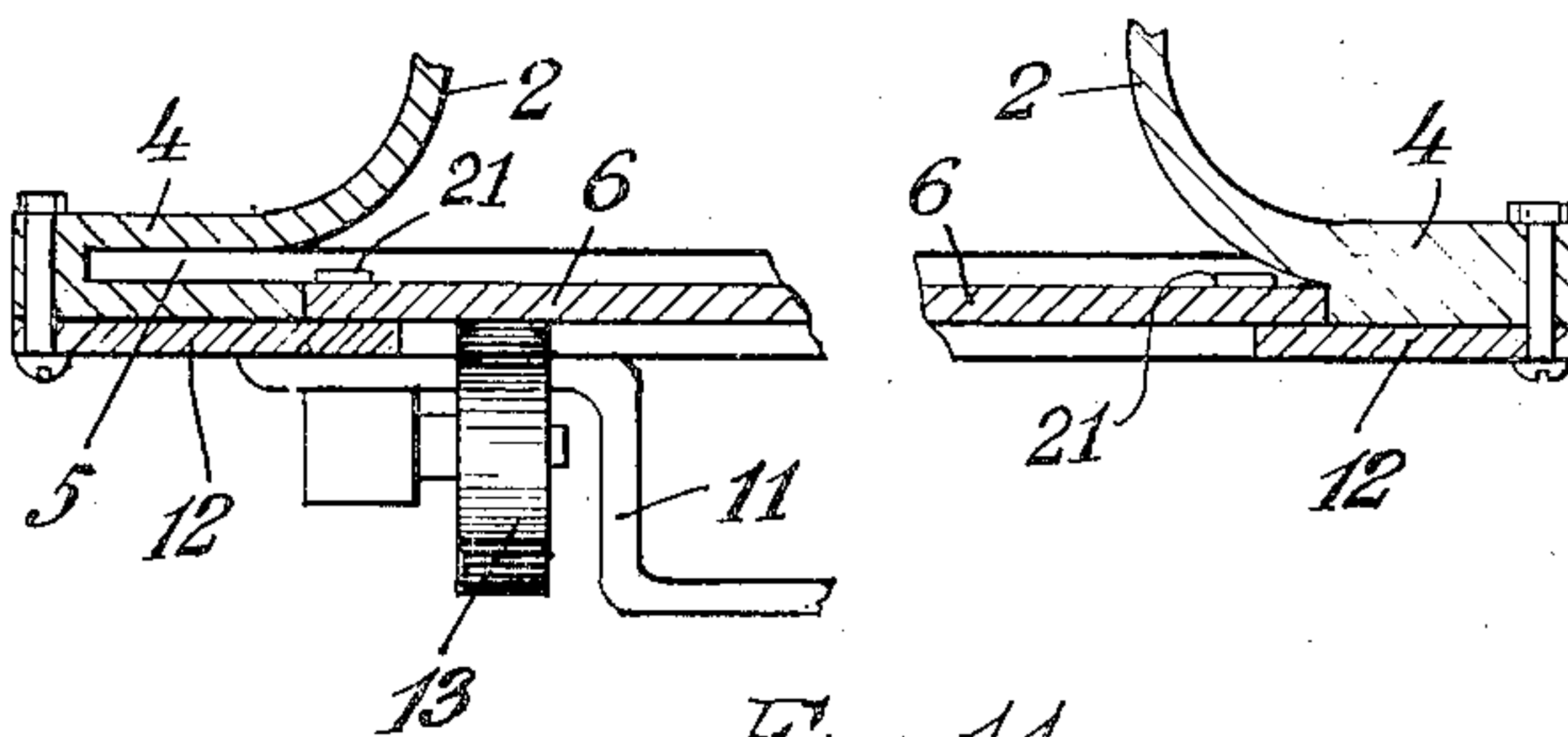


Fig. 11.

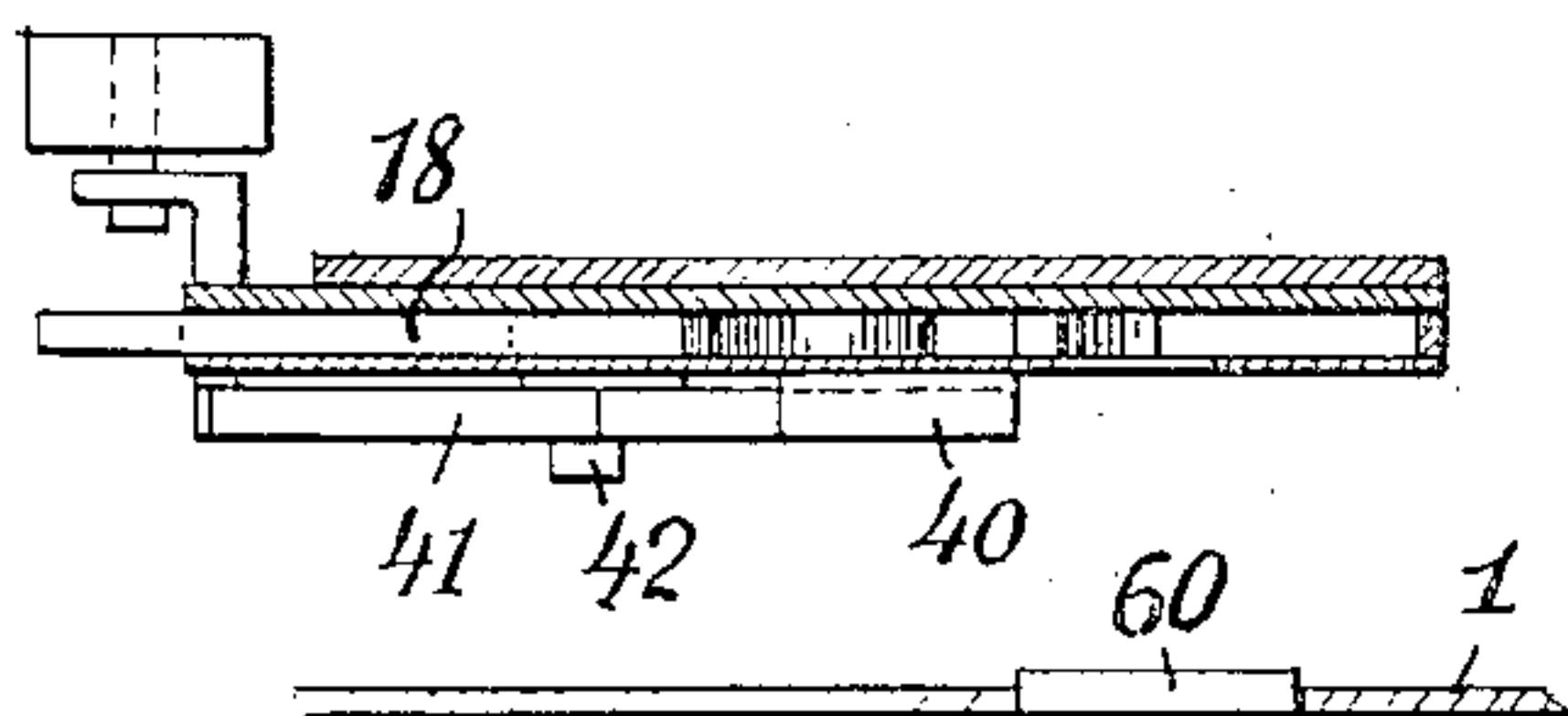


Fig. 12.

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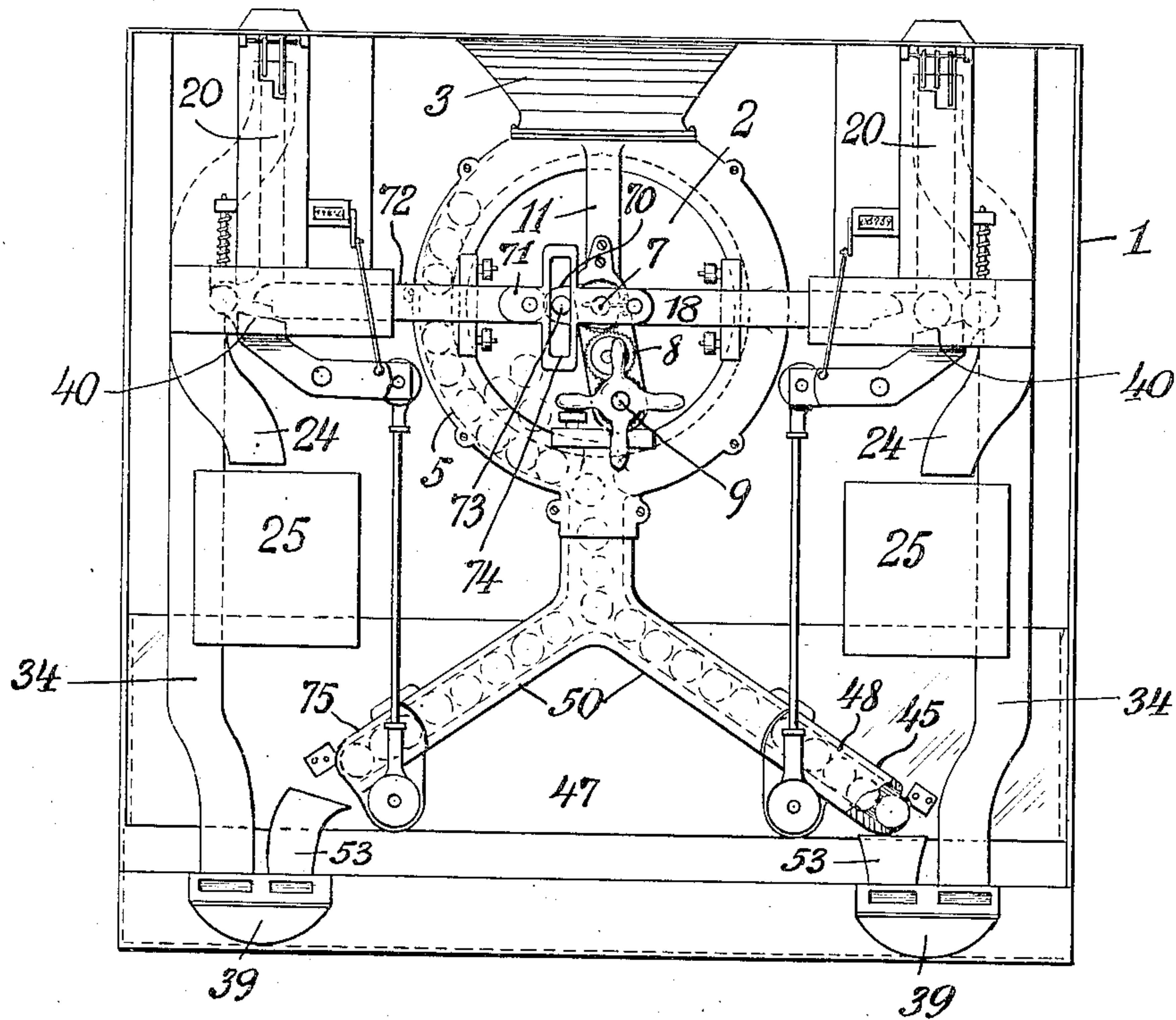


Fig. 13.

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UNITED STATES PATENT OFFICE

HENRY G. KLETT, OF NEW YORK, N. Y.

COIN CHANGING MACHINE

Application filed January 3, 1931. Serial No. 506,376.

This invention relates to improvements in coin changing machines. The main object of the invention is to provide an automatic coin changing machine which shall be of simple practical construction and design, and adapted to be manufactured economically. Another object of the invention is to provide a machine specially adapted for containing a large supply of nickels to be exchanged for dimes, quarters or half dollars. Still another object is to provide a coin changing machine in which the supply of nickels may be contained in a loose mass in a hopper. Another object is to provide an improved coin changing or dispensing mechanism adapted to operate with certainty and speed. Other objects will appear hereinafter.

Accordingly this invention is embodied in a mechanism for the exchanging of coins of larger denominations into coins of a smaller denomination arranged and constructed as hereinafter set forth and as illustrated in the accompanying drawings in which

Fig. 1 is a front view of the machine with the cover removed and details omitted and parts broken away.

Fig. 2 is a detail view of the coin delivery mechanism.

Fig. 3 is a side view of the machine with the casing in section. This view is looking in the direction of arrow 3 in Figure 1.

Fig. 4 is a detail view of the coin receiving and throw off mechanism.

Fig. 5 is a side view of Figure 4.

Fig. 6 is a detail view of the hopper construction.

Fig. 7 is a sectional view taken on the line 7—7 of Figure 4.

Fig. 8 is a top view of the machine without the casing and with parts in section.

Fig. 9 is a horizontal sectional view taken on line 9—9 of Figure 1.

Fig. 10 is a detail view of the delivery mechanism operating parts.

Fig. 11 is a detail view in section showing parts of the coin hopper.

Fig. 12 is a sectional view on line 12—12 of Figure 10.

Fig. 13 is a face view of a double machine. Referring to the drawings, the machine is

contained within a casing 1 which may be of any suitable design and construction, safe and adequate for its purpose. The nickels to be exchanged for coins of larger denominations are contained within a suitably supported hopper 2 which is shown as being in the form of a drum or cylinder having an inlet funnel 3 for admitting large quantities of nickels. No special cover or locking means for the hopper or in fact for the entire machine has been shown, because they may be of any approved safety type and depend upon the location of the machine. The front portion of the hopper 2 is formed with a large annular flange 4, forming a semi-circular coin groove 5 to one side as seen in Figure 11. This coin groove may be on either or on both sides.

Fitting closely within the flange 4 is a coin agitator disk 6 having pins 21 which is mounted on an operating shaft 7 which is rotated through a train of gears 8 or the like from an actuating shaft 9 having an operating handle 10. The shaft 7 and its associated operating elements may be conveniently supported on brackets 11, 11 in the form of a yoke attached to a hopper flange 12 which secures the agitator disk 6, Fig. 11.

On the brackets 11 there may be mounted antifriction wheels 13 against which the disk 6 is rotated. To the shaft 7 there is secured a crank 14 having a crank pin 15. One end of a link 16 is pivoted on the pin 15. The other end is pivoted at 17 to a coin pusher pawl 18 in the form of a slide operable in guides 19 within the coin insert mechanism 20.

The mechanism 20 is a coin insert and selecting device. It comprises a casting or body portion having at its upper end a coin insert opening 22 leading to a coin insert channel 23 through which the proper coin falls to operate on a coin delivery actuating dog, and thereafter be pushed into a coin chute 24 from which the coin falls into a suitable receptacle 25, Figure 1.

The coin insert channel 23 is wide enough to receive the proper coin but no wider than the diameter of the coin to be exchanged and is provided with side guides 26 to keep the

coin in the channel. The latter is further cut out as at 27, 28 to provide space for throw out levers 29, 30 and 31 pivoted at 32 to swing into and out of the coin insert channel 23.

5 The latter has an opening 33 in the back leading to a throw out coin chute 34, see Figure 7. Between the two passages 23 and 34 there is also a guiding piece or incline 55. The throw out chute 34 leads to an open cup shaped coin shelf 39 outside the casing.

10 The coin chute 24 is offset from the coin channel 23 as seen in Figure 1. The bottom of the insert channel 23 is open as at 36 and communicates with a horizontal coin channel 37 formed between the guides 19 and which leads to the chute 24.

Directly below the insert channel 23, the horizontal channel has an opening 38 in which the aforesaid coin delivery actuating dog 40 is vertically movable. The dog is at the end of a dog lever 41 pivoted at 42. At its other end the lever is pivoted to a vertical rod 43 which at the bottom is pivoted at 44 to a coin delivery member 45. The latter is pivoted at 46 to a suitable support 47.

25 The delivery member 45 has a channel 48 and a stop 49 for aligning the channel 48 with a feed chute 50 which leads from the hopper 2 and which communicates with the aforesaid coin groove 5 therein. 51 is a coin stop at the end of the channel 45.

The arrangement is such that the actuating dog 40 is normally held in its upper position within the channel as shown in Figure 1, in which the dog is in a position which prevents inserted coins at the bottom of the channel 23 from being pushed out by the coin pusher pawl 18 without at the same time depressing the dog. The weight of the dog lever 41 and rod 43 is designed to keep the dog 40 in its upper position by gravity and at the same time keeping the delivery member 45 in non delivering position, the coins in the channel 48 being prevented by the stop 51 from passing out into the delivery chute 53 and thence into the shelf 39. In the horizontal channel 37 there is also a fixed bottom stop 56 and a cooperating yielding top stop 57 held down by a spring 58.

50 The operation is as follows: The normal portions of the parts of the machine are as shown in Figure 1. At this time the hopper 2 is filled with nickels which are poured in as it were in a loose mass through the funnel 3. It is a feature of the invention that the machine operates without the necessity of stacking the nickels or otherwise arranging them in any particular manner.

When a person desires to change a quarter, for instance, the quarter coin is dropped into the insert channel 23 and, being heavy enough, it falls straight down, brushing the throw out levers aside and lands in front of the pusher pawl 18 in the position indicated by the dotted circle 65 in Figure 1. The per-

son then turns the handle 10, giving it preferable one complete turn, the result of which is that the pusher pawl 18 hits the coin and pushes it to the right in Figure 1 into the position indicated by the dotted circle 66 to depress the dog 40 and thence into a temporary control position indicated by the dotted circle 67, where the quarter is held between the fixed and yielding stops 56 and 57.

70 The depression of the dog 40 causes an upward movement of the rod 43 to tip the delivery member so that the five nickels held in the delivery channel 48 may fall out and pass into the cup shelf 39 to be received in exchange for the quarter. The movement is very rapid and as soon as the five nickels have been delivered, gravity restores the parts 45 and 40 to normal positions. The machine is then ready for another operation.

At each stroke of the machine a quarter, if inserted, will be changed into five nickels and the inserted coin will be operated to actuate the delivery mechanism and will thereafter be held in a control position as at 67 for the purpose of inspection through a magnifying window 60, Fig. 12. At each stroke also, the nickels within the hopper 2 automatically range themselves flat against the agitator disk and are carried around by the pins 21 on the latter or any other suitable 95 agitating and carrying device, to fall into the coin groove 5 from whence they pass into the feed chute 50 and finally into the delivery channel 48.

Of course there is nothing to prevent 100 nickels from passing directly from the hopper into the feed chute 50 without first passing through the coin groove 5. However, it has been found that the latter facilitates the lining up of the nickels in an orderly manner as it were. It will be noted that when the machine is at rest, the nickels fill the feed chute 50 and the delivery channel 48. When the delivery member is tipped, Fig. 2, the delivery chute 50 is automatically cut off from the feed 110 channel and only the five nickels in the latter are delivered. As the quarters are inserted, they are pushed out, one after another, by the pusher pawl 40 and fall from the horizontal channel 37 into the chute 24 and then into the receptacle 25 to be removed. At each stroke of the machine the agitator disk agitates the coins in the hopper.

If a person drops a smaller coin either by mistake or design into the insert channel 23, 120 the coin, being lighter than a quarter, will in its fall strike the throw out levers 29, 30, 31 and be deflected and thrown out into the channel 34, which may be called the irregular coin channel for purposes of identification and then fall into the cup shelf 39 to be recovered. 125 Should the irregular coin be of such a size that it falls behind the throw out levers 30 and 31, the latter, being longer insures the coin being thrown out. The guiding piece 130

55, Figure 7, is therefore not the full width of the channel 23 but extends only below the throw out levers 29 and 30 and assists in tilting the irregular coin to insure its being thrown out by the longer and heavier lever 31.

This machine therefore provides a supply of nickels, an insert mechanism for regular coins having a throw out device for irregular coins. The regular coin in being pushed into the receptacle 25 operates to actuate the delivery mechanism to deliver the nickels.

Figure 13 shows a double machine which serves to change for instance quarters and dimes into nickels with one operating mechanism. In this instance the parts are numbered as in the preceding figures, but it will be seen that the crank 70 operates a link 71 connected to two pusher pawls 18 and 72. The crank pin 73 operates the link by means of a slot 74 in a well known manner. On the left side of the machine the parts are designed to handle dimes in the insert mechanism 20 and the delivery member 76 is shortened to deliver only two nickels in exchange for a dime.

It will further be noted that the machine will not deliver any coins unless there is a coin in position to be acted upon by the pusher pawls.

When the invention has been illustrated in a preferred form, nevertheless it will be understood that the construction is susceptible of changes and modifications without departing from the principle of the invention or the scope of the appended claim.

For convenience of phraseology the term larger and smaller coin will be used in the claim to designate the coin to be exchanged and to be thrown out and without thereby intending any limitations.

I claim:

In a coin changing machine in combination, a relatively flat drum shaped container for containing a supply of coins in indiscriminate order, one side of said container being open and formed with an annular coin groove, a disk for closing said open side of the container, coin agitating means on said disk extending into the container, means supporting said disk in movable relation to the container, means for rotating said disk whereby to cause said agitating means to agitate the coins and cause them to pass into said coin groove, a coin delivery member for containing a given number of coins, a coin feeding chute leading from said coin groove and coin container to said delivery member, gravity operated means for normally maintaining said delivery member in coin receiving position with respect to said coin feeding chute, a stop normally preventing delivery of the coins from said delivery member, means for placing a larger coin in a given position with respect to said gravity operated means, a

member for displacing said larger coin and cause it to actuate the said gravity operated means whereby to effect automatic delivery of the coins in the delivery member and means for operating said displacing member from the said rotating means.

Signed at New York city, in the county of New York and State of New York this 31st day of December, A. D. 1930.

HENRY G. KLETT. 75

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