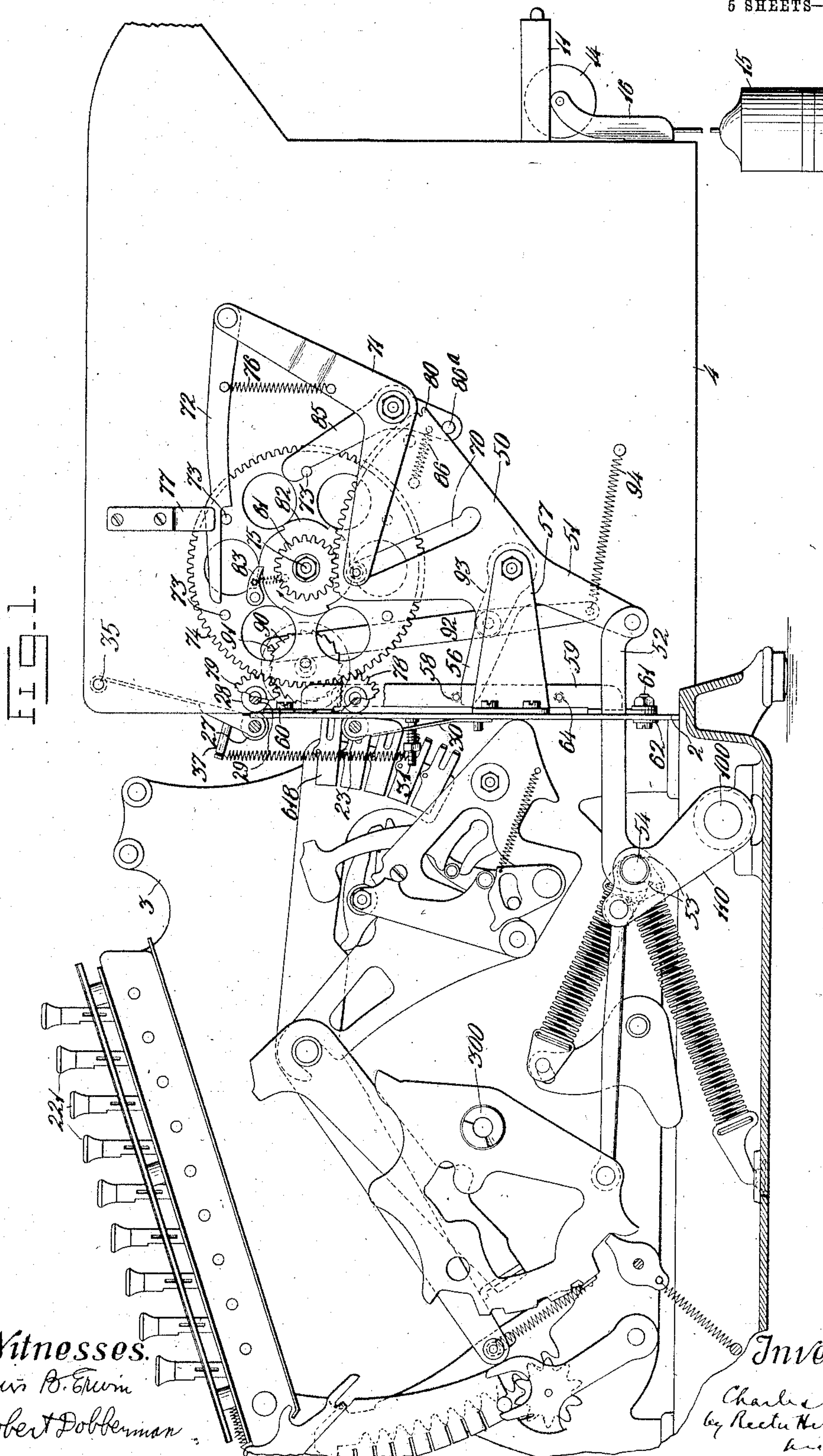


ACCOUNTING MACHINE.

Patented Nov. 22, 1910.

5 SHEETS—SHEET 1.

976,234.



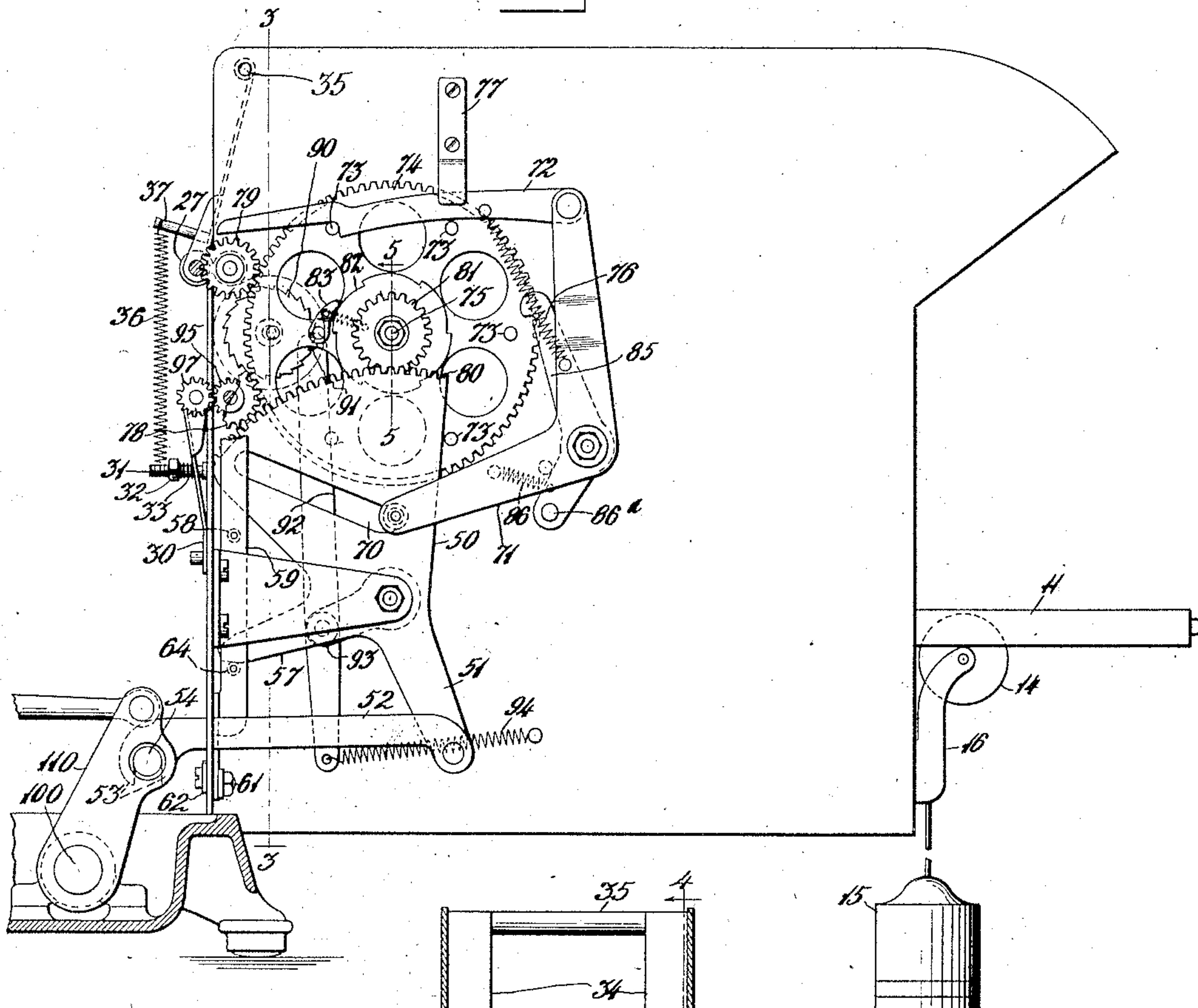
Witnesses.  
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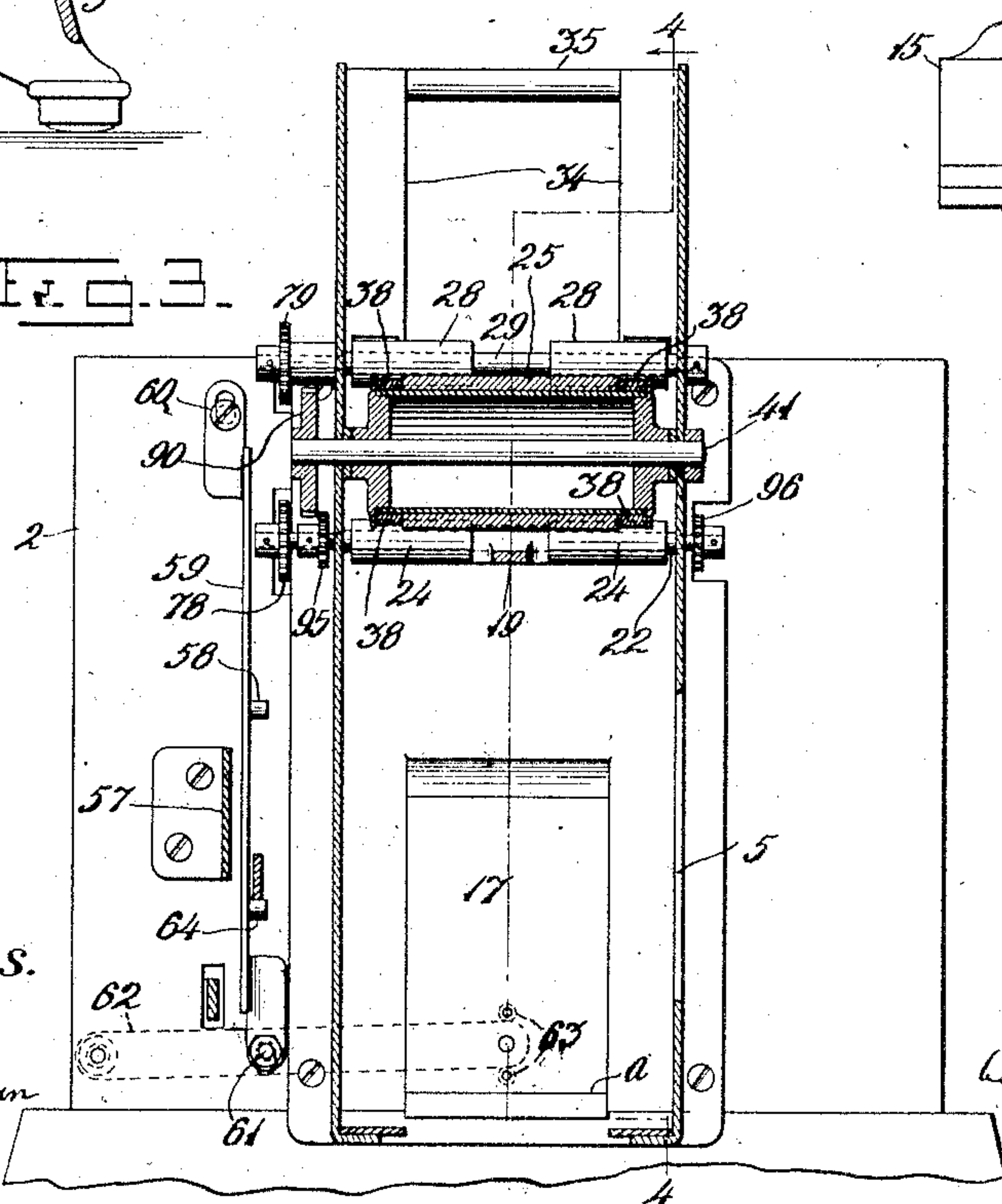
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5 SHEETS—SHEET 2.



12-3



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ACCOUNTING MACHINE.  
APPLICATION FILED FEB. 26, 1909.

Patented Nov. 22, 1910.

5 SHEETS—SHEET 3.

Fig. 4.

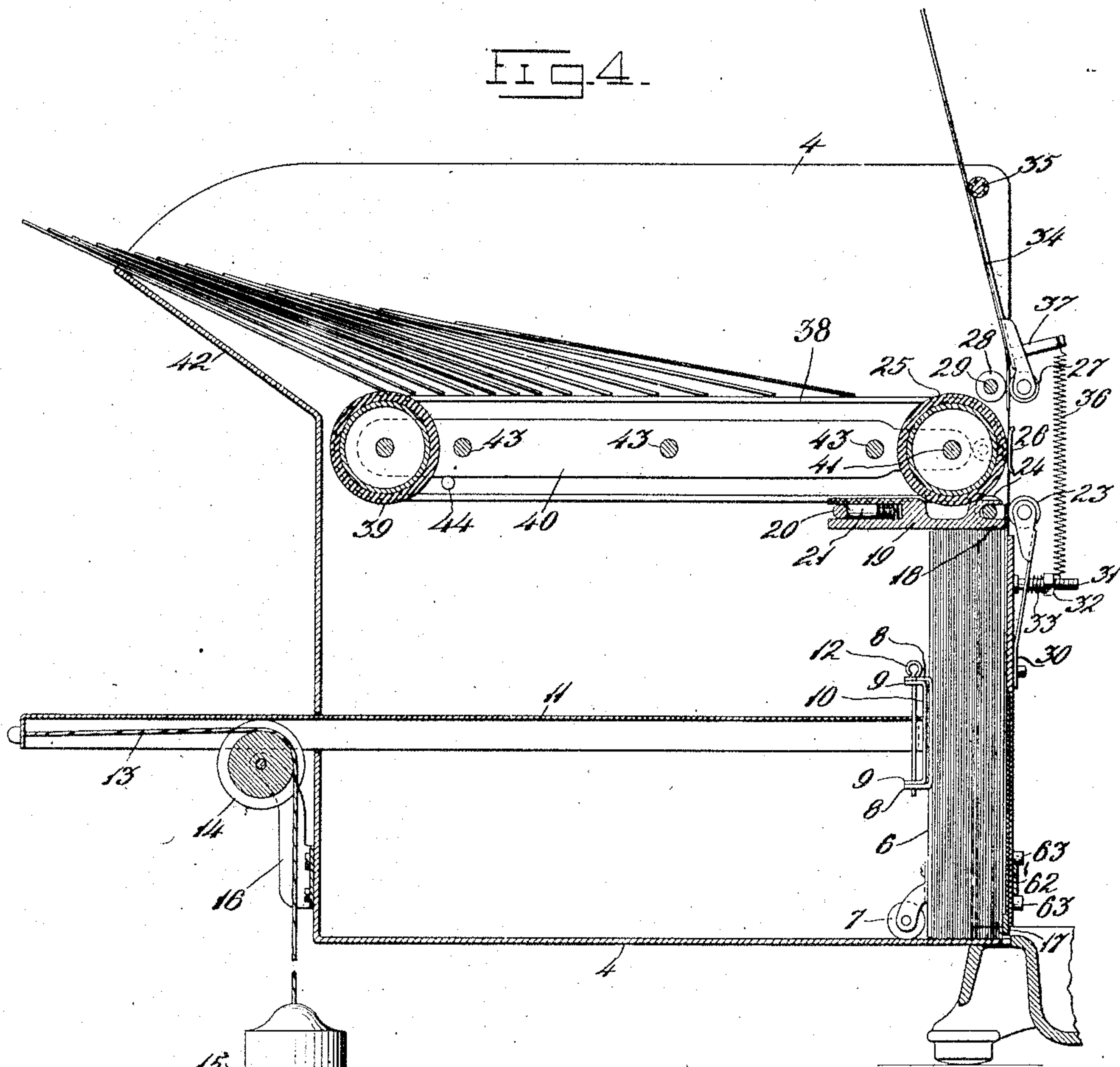


Fig. 11.

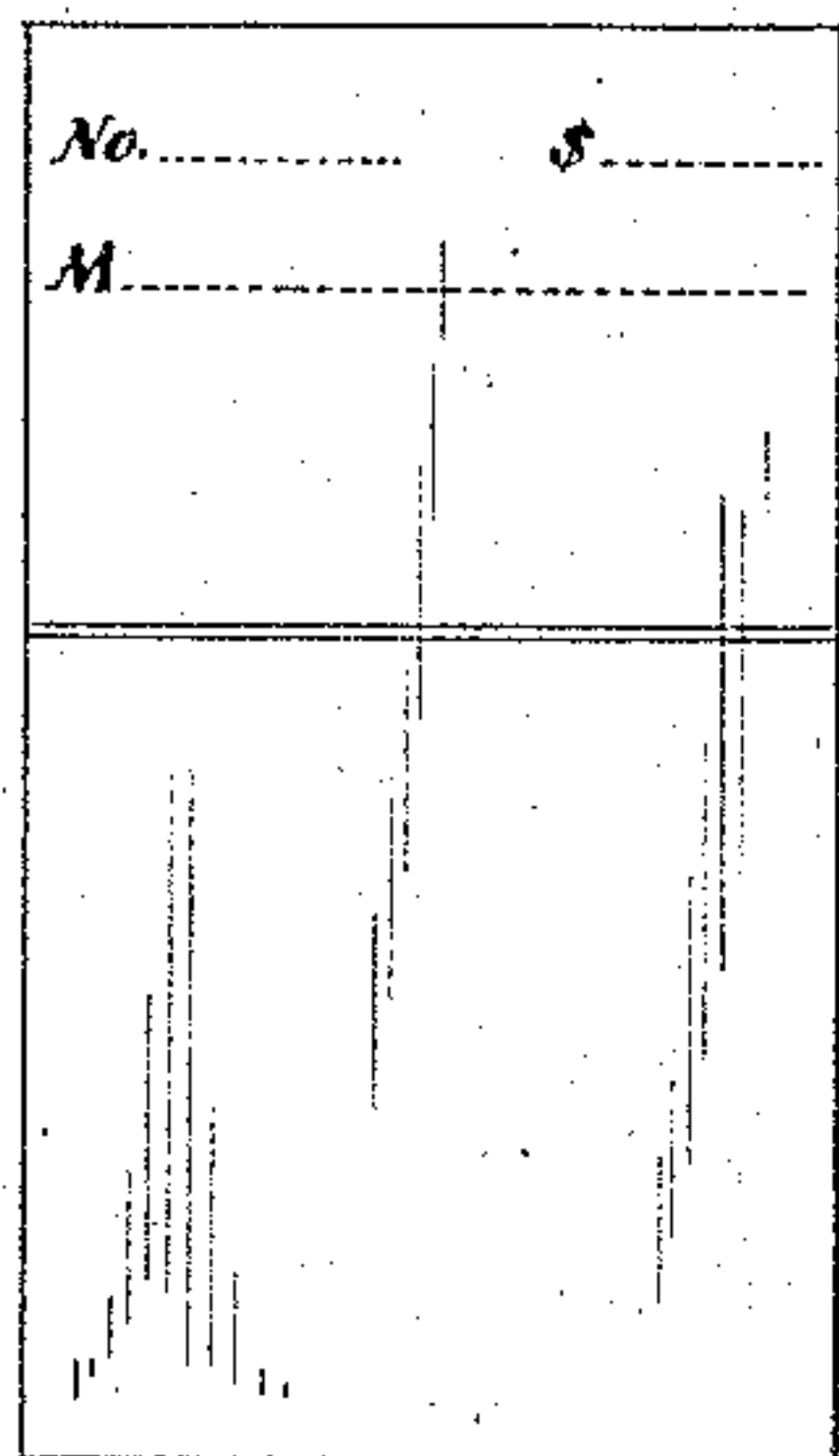


Fig. 12.

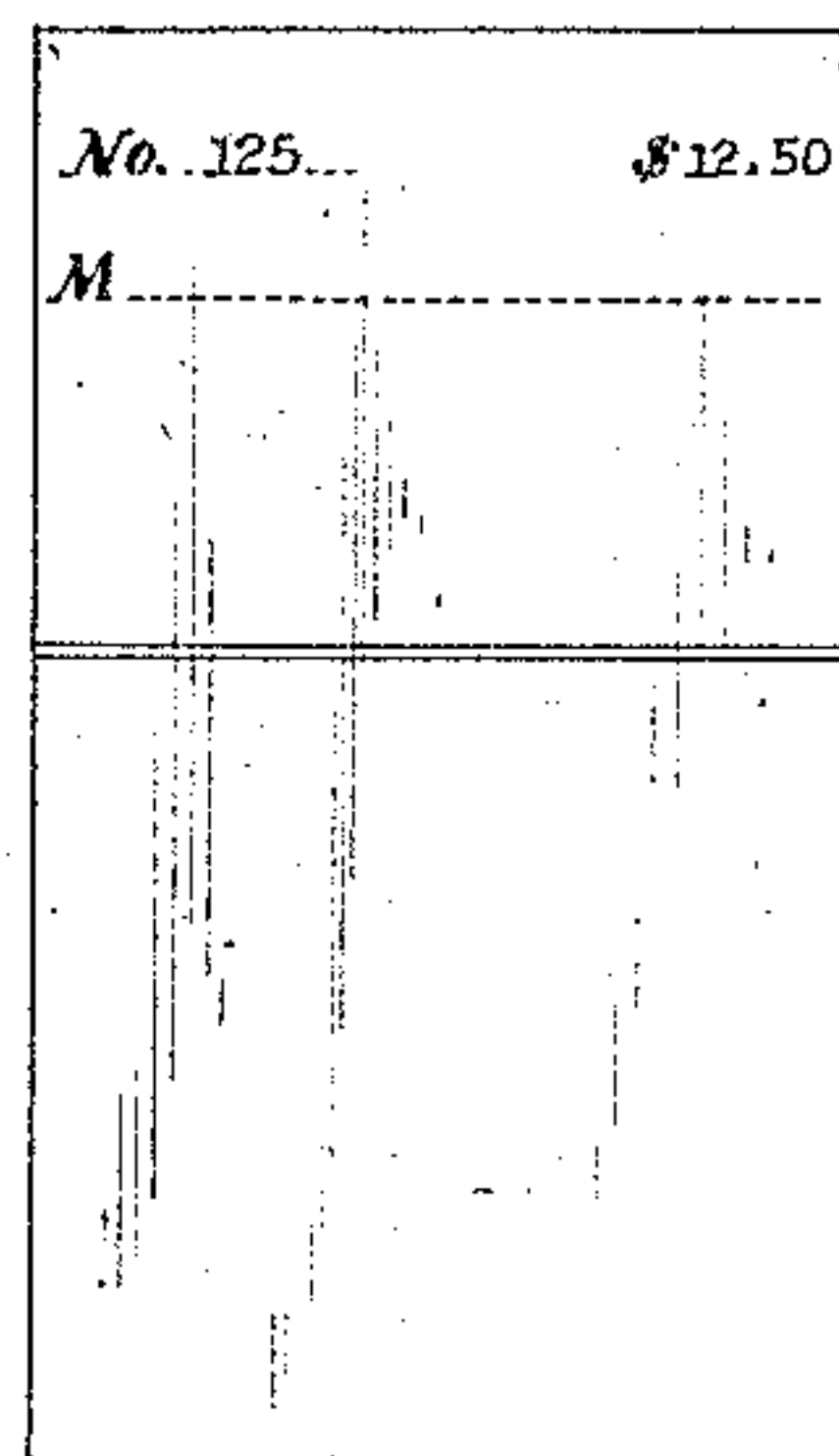
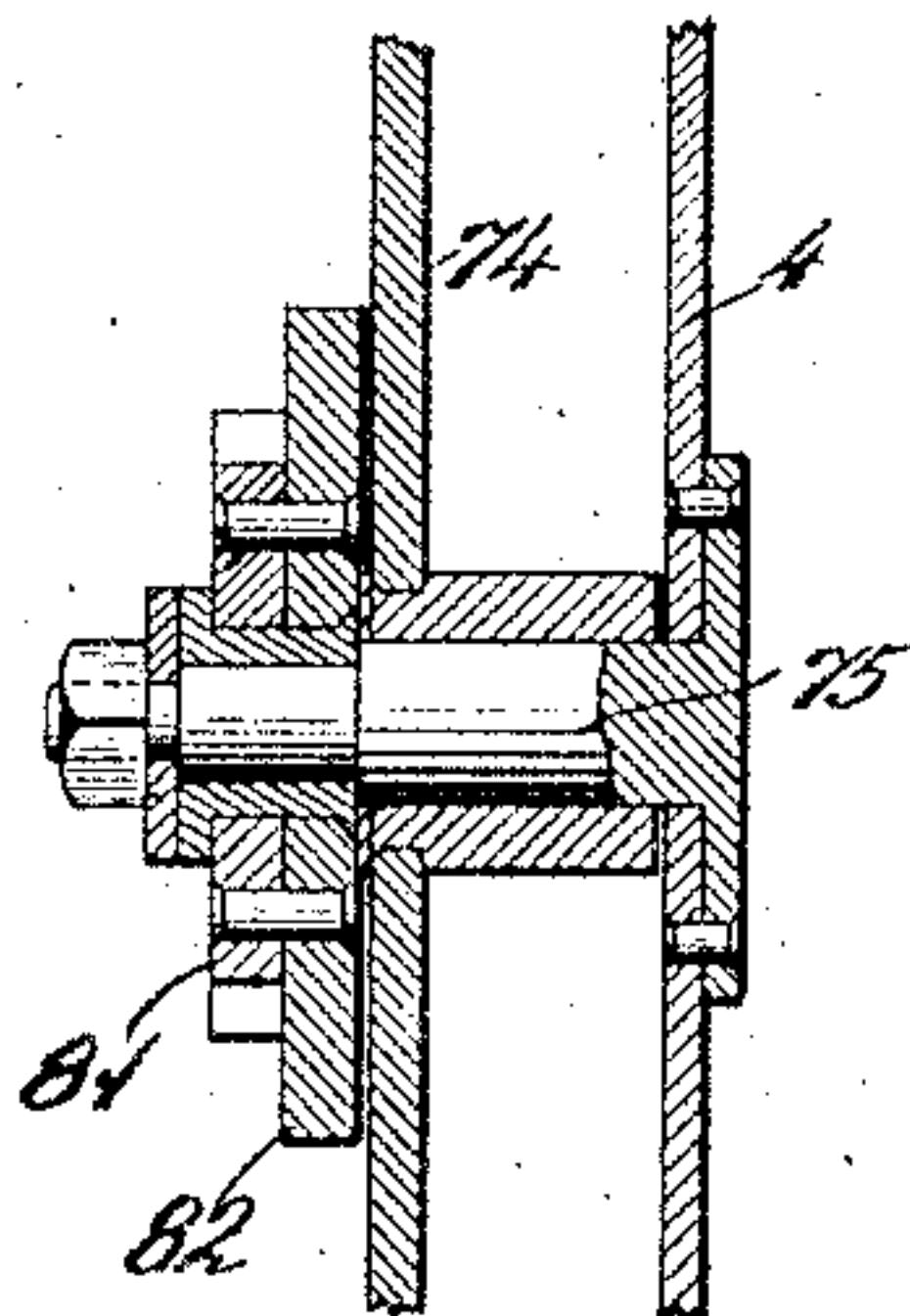


Fig. 5.



Witnesses.

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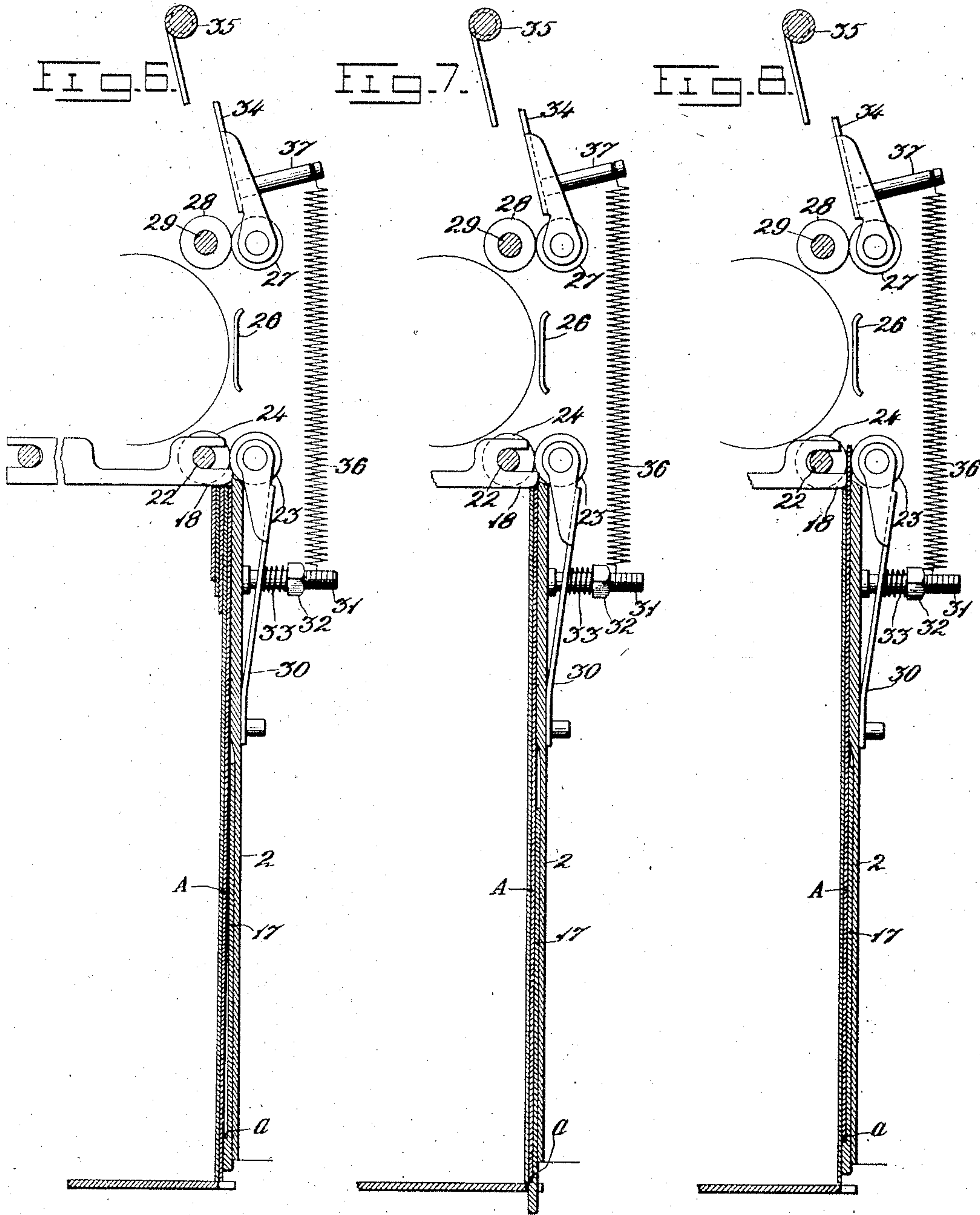
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ACCOUNTING MACHINE.  
APPLICATION FILED FEB. 26, 1909.

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Patented Nov. 22, 1910.

5 SHEETS—SHEET 4.



Witnesses.  
Louis B. Ewin  
Robert Dobberman

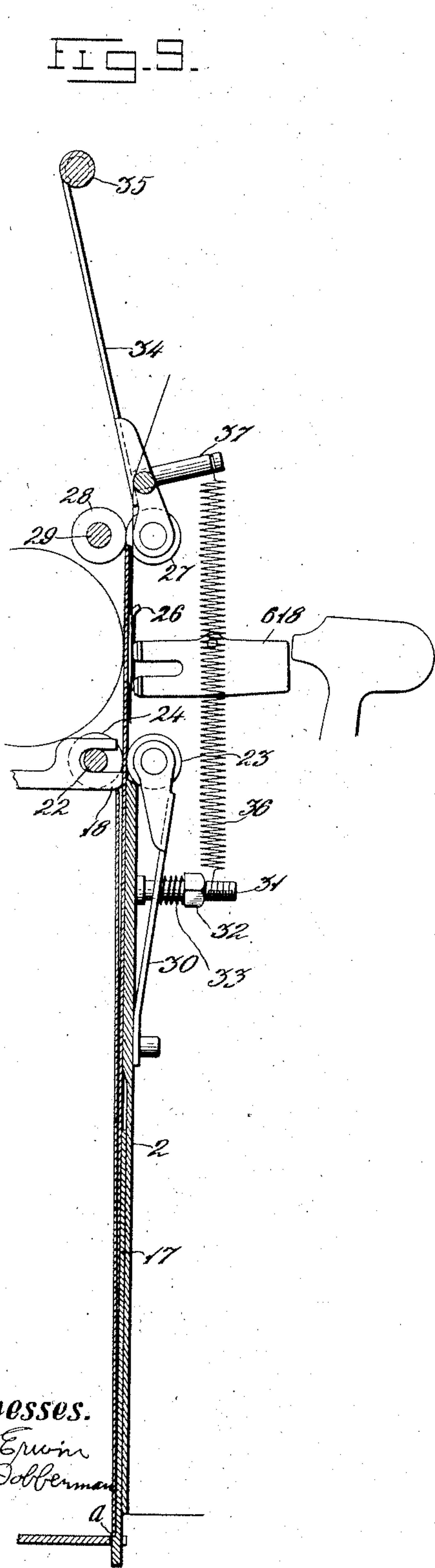
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Attys.

C. WALES.  
ACCOUNTING MACHINE.  
APPLICATION FILED FEB. 26, 1909.

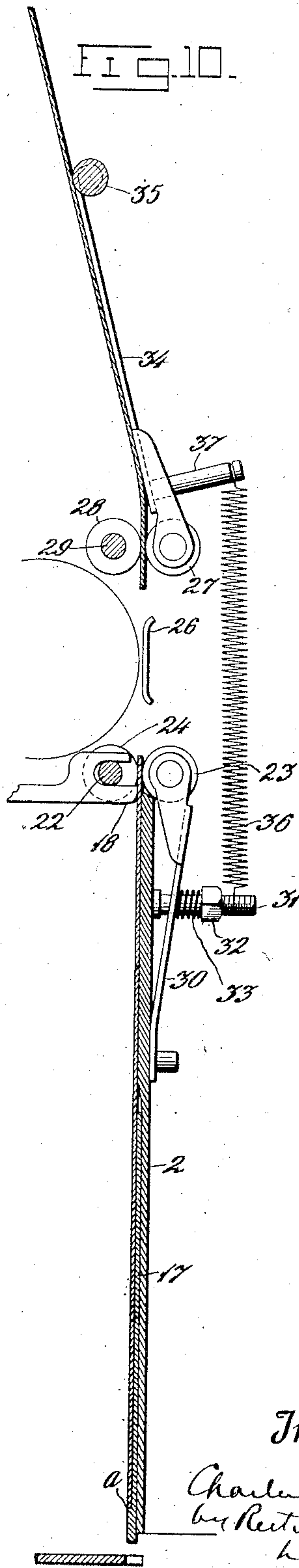
976,234.

Patented Nov. 22, 1910.

5 SHEETS—SHEET 5.



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# UNITED STATES PATENT OFFICE.

CHARLES WALES, OF DETROIT, MICHIGAN, ASSIGNOR TO BURROUGHS ADDING MACHINE COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

## ACCOUNTING-MACHINE.

976,234.

Specification of Letters Patent.

Patented Nov. 22, 1910.

Application filed February 26, 1909. Serial No. 480,178.

*To all whom it may concern:*

Be it known that I, CHARLES WALES, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Accounting-Machines, of which the following is a specification.

The object of the present invention is to provide an attachment for amount-printing mechanisms such as the ordinary adding and listing machine, which attachment is adapted to present one at a time to the printing mechanism envelopes or the like in an automatic manner, the envelopes being automatically discharged as they are printed upon. In the present instance an attachment of this character is shown applied to the rear portion of a well-known type of adding and listing machine and so connected to the working parts of such machine that as the amount keys are manipulated to set up different amounts and the handle of the machine is pulled or the machine is otherwise operated in a familiar manner, envelopes stacked in a suitable runway are successively taken from the stack singly, presented with the desired portion confronting the type, held at such position so as to receive an impression from the type, then discharged and finally re-stacked.

With the above object in view the invention consists in certain novel features of construction and combinations of parts, the essential elements whereof are recited in the appended claims and a preferred form of embodiment of which is described in detail hereinafter and fully illustrated in the accompanying drawings forming a part of this specification.

Of said drawings Figure 1 represents in right side elevation an adding and listing machine of the well-known Burroughs type with an attachment thereon embodying the present invention; Fig. 2 illustrates in right side elevation the attachment and its connection with the working parts of the adding and listing machine, the conditions being such as obtain at the middle of an operation of said machine, whereas in Fig. 1 the various parts are shown at normal; Fig. 3 is a vertical cross section of the attachment taken substantially on the line 3—3 of Fig. 2; Fig. 4 is a section taken substantially on the line 4—4 of Fig. 3; Fig. 5 is

an enlarged detail section taken on line 5—5 of Fig. 2; Figs. 6 to 10 are enlarged sections similar to the right-hand portion of Fig. 4 and illustrating the successive steps in handling the envelopes; and Figs. 11 and 12 show an envelop before and after treatment.

It will not be necessary to describe in detail the adding and listing machine here shown but reference may be had to Burroughs' Patents 504,963 and 505,078, issued September 12, 1893. It is to be understood that this is merely chosen as one of several types of adding and listing machines and that the invention is adaptable to other types. It is proposed in the present embodiment of the invention to apply the attachment where ordinarily a paper carriage is mounted. Thus a supporting plate 2 is secured across the back of the machine, being suitably bolted or otherwise attached to the main framework 3 of the machine. There is secured to this plate projecting rearwardly therefrom a box 4 here shown as of considerable depth and rectangular in cross section. The lower portion of this box constitutes a runway for envelopes stacked with ends resting on the bottom of the box as shown in Fig. 4. An opening 5 is provided in one side of the box as shown in Fig. 3 through which to introduce the envelopes in packages. They can be so introduced with the usual bands on them and such bands broken and removed after the packages of envelopes have been stacked in the box. A plate 6 (Fig. 4) is mounted to travel in the box as a follower for the stack of envelopes, constantly thrusting the same forward. Said plate is preferably equipped with rollers 7 to run on the bottom of the box and reduce friction. The plate has ears 8 (Fig. 4) overlying ears 9 on a head 10 of a plunger rod 11, and a swivel pin 12 extends through the ears and said plunger rod, connecting the follower and the plunger rod so as to allow for pivotal movement of the former to compensate for irregularities in the envelopes and provide for close engagement between the follower and the rearmost envelopes and for uniform pressure tending to advance the stack of envelopes. The plunger rod 11 is here shown in the form of a channel bar but may of course take various forms. There is secured to its rear end, which protrudes from the box, a cable 13 running forward over a



sheave or pulley 14 and having suspended on it a weight 15. Said sheave or pulley is supported in a suitable bracket 16 secured to the back of the box and it will be obvious  
 5 that the weight acts to constantly thrust the follower 6 forward, forcing the envelopes to the forward end of the box as long as any of them are contained in the box.

Mounted on the front side of the box 4  
 10 is an envelop lifter which is in the form of a rectangular plate 17 confined in a vertical slideway formed in the rear side of the supporting plate 2, the box 4 not having a front side of its own but partially closed at the  
 15 front by said supporting plate. The lifting plate 17 is thus presented to the first envelop of the stack in the box and such envelop will be closely pressed against said lifting plate. The latter is thickened along its  
 20 lower edge and formed with a ledge or shoulder  $\alpha$ , and the bottom of the box 4 is cut out so as to provide for the thickened portion of the lifter plate passing down through such bottom until said ledge or  
 25 shoulder is flush with the upper surface of the bottom of the box as shown in Fig. 7. Normally, however, the lifter plate is elevated as shown in Fig. 4 so that said shoulder or ledge is considerably above the bot-  
 30 tom of the box, as shown in Figs. 4, 6, 8 and 10.

In the upper forward portion of the lower division of the box which contains the stack of envelopes there is mounted a stop bar for  
 35 preventing any but the foremost envelop rising. As here shown this bar comprises a head 18 and a shank 19, the latter bifurcated to embrace a cross rod 20 supported in the sides of the box. This shank contains a  
 40 spring-pressed plunger 21 bearing against said cross rod, the spring acting to thrust the stop bar forward. The head 18 of the latter is also bifurcated and embraces the central portion of a shaft 22. The lower  
 45 forward corner of the head 18 is slightly chamfered or rounded off so that the foremost envelop when lifted by the plate 17 may enter the bite of a pair of feed rollers 23—24, the latter carried by the shaft 22.  
 50 The spring applied to the plunger 21 is comparatively light so that it may yield when the said envelop is lifted and as it is carried up by the feed rollers. Frictional engagement between this and the next en-  
 55 velop is prevented from causing such next envelop to rise, by reason of the obstruction offered by the head 18 in advance of the upper edge of such next envelop.

It will be later explained through what  
 60 particular means motion is imparted to the lifter plate through the operation of the adding and listing machine but it may now be stated that with the latter at normal the lifter plate is elevated and a blank opera-  
 65 tion of the adding and listing machine will

lower the lifter plate so that the foremost envelop will thereupon engage over the shoulder or ledge  $\alpha$  and then said plate will rise so as to carry the foremost envelop up into the bite of the feed rollers 23—24, which  
 70 condition is illustrated in Fig. 4. At this time said feed rollers are in motion so that they take hold of the envelop and at the conclusion of the blank operation stand ready to further raise the envelop. Fig. 6 illus-  
 75 trates the condition when the machine is at normal and a stack of envelopes is put into the box and the follower released so that it is pressing the stack forward. Fig. 7 illustrates the condition shortly after the com-  
 80 mencement of the blank operation of the adding machine. Fig. 8 illustrates the condition at the conclusion of such blank operation. A in each of these figures designates the foremost envelopes. 85

In ensuing operations of the adding machine in which the amount keys 221 (Fig. 1) are manipulated and the shaft 300 oscillated by the drawing forward and release of the  
 90 usual operating handle or otherwise, the envelopes will be brought one at a time to position for receiving impressions from the type plates 618. In the box 4 just above the stop bar 18—19 there is journaled a platen roller  
 95 25 (Fig. 4) located to back up the envelop when the type plates 618 are driven against it, it being understood of course that a suitable inking ribbon intervenes. The supporting plate 2 is open in front of said platen roller and there project from the sides of  
 100 the opening suitable guiding clips 26 behind which the envelop passes when advanced to printing position by the feed rollers 23—24. In line with the said feed rollers and located above the printing  
 105 line are similar feed rollers 27—28, the latter secured to a shaft 29 journaled in the sides of the box 4. There are here shown two feed rollers 23 and two feed rollers 27 and the feed rollers 24 and 28 are  
 110 of sectional construction as shown in Fig. 3 uncovering the shafts 22 and 29 for a space at the middle of each. Thus there are in a sense four pairs of feed rollers, two at each side. The feed rollers 23 are journaled in  
 115 resilient arms 30 secured at their lower ends to the supporting plate 2 and having screw studs 31 passing through apertures in them and carrying nuts 32, bearing against spiral springs 33 for causing said rollers 23 to be  
 120 pressed yieldingly toward the roller 24. The upper rollers 27 are journaled in arms 34 loose on a cross rod 35 supported in the sides of the box 4, at the upper forward part thereof. Spiral springs 36 extend between  
 125 studs 37 on said arms 34 and the screw studs 31, said springs serving to press the rollers 27 toward the roller 28. The arms 34 not only serve to support the rollers 27 but also act to deflect the envelopes as they are fed into 130



the upper part of the box 4 by the feed rollers, as indicated in Fig. 4, said arms being inclined rearward.

It has before been stated that normally the lifter plate 17 is elevated and it has been further explained how, in a blank operation of the machine, said plate is lowered and raised and the foremost envelop brought between the feed rollers 23 and 24 to the position shown in Fig. 8. In an ensuing operation of the adding machine said feed rollers will be turned sufficiently to carry the envelop up between the platen 25 and the type or to the position illustrated in Fig. 9, the upper edge of the envelop being then in the bite of the rollers 27—28. The envelop remains at this position until the printing has taken place. Then during the return movement of the adding machine handle or return rocking of its drive shaft, the feed rollers 23 and 24 are further turned and also the feed rollers 27—28 so that the envelop will be carried upward to the position shown in Fig. 10 or until its lower edge has moved beyond the printing line. Then when another operation of the adding machine starts the feed rollers 27—28 again move and discharge the envelop, another meantime being brought to the printing position. The arms 34 deflect the envelop as it is discharged by the rollers 27—28 so that it will fall backward with the printed side uppermost.

The platen roller 25 is grooved, at each end to receive bands or belts 38 which engage similar grooves of a pulley 39 journaled between arms 40 which at their forward ends loosely surround the platen roller shaft 41. These last-described parts constitute an endless conveyer upon which the envelops fall when discharged from the upper feed rollers. The upper stretches of the conveyer belts travel rearward so that the printed envelops are moved toward the back of the box 4. Here the box is formed with an incline 42 up which the rearmost envelop will slide so that the latter eventually assumes a partially upright position as shown in Fig. 4, following envelops sliding up on each other so that the envelops will be stacked after having been printed. The arms 40 are connected by suitable cross rods 43 and normally extend horizontally resting upon pins 44 which project from the sides of the box. The endless conveyer thus divides the box into upper and lower compartments but if desired to gain access to the lower compartment through the top of the box the conveyer can be raised swinging on the platen shaft 41. This may be found more convenient at times when introducing a large number of envelops into the runway, as compared with introducing a bundle at a time through the said opening 5.

It remains to describe the means here shown for imparting movement to the lift

plate 17, the feed rollers and the roller platen. The main operating member for these various parts takes the form of a lever having a segmental portion 50 above its pivot (see Figs. 1 and 2) and an arm 51 below its pivot, the latter pivotally connected to a link 52 which extends through an opening in the supporting plate 2 and is formed at its forward end with jaws 53. The latter embrace a wrist pin or shaft 54 carried by crank arms 110 secured to a rock shaft 100. This shaft and its arms 110 as well as the wrist pin or cross shaft 54 are all familiar parts of the Burroughs adding and listing machine and it will be understood that they oscillate in each operation of such machine. Hence with the jaws of the link 52 engaging the shaft or wrist pin 54, the lever 50—51 will be vibrated every time the machine is operated. This lever is suitably pivoted between the side of the box 4 and a bracket 57 projecting from the supporting plate 2, and has a forwardly-projecting prong 56 normally engaged with a stud 58 (Fig. 1) on a strip or bar 59 slidably mounted upon the supporting plate 2 as shown in Fig. 3. Said strip or bar is there shown as formed with laterally turned end portions, the upper one of which is slotted to receive a screw 60 and the lower one of which is connected by a screw stud 61 with a lever 62 mounted on the front side of the plate 2, said screw stud extending through a slot in said plate 2. Said lever 62 is pivoted at one end and carries the stud 61 intermediate its ends and at its opposite end engages between a pair of studs 63 on the lift plate 17, said studs 63 working in a vertical slot of the plate 2 (Figs. 3 and 4).

As the handle of the adding machine is pulled forward it will be obvious that the accompanying rearward swing of the crank arms 110 causes the lever 50—51 to rock in a direction to lower the prong 56. This prong has been holding the lift plate in elevated position as in Figs. 1, 6, 8 and 10. The downward swing of the prong permits the plate to drop and to make certain its being lowered to the limit where its shoulder or ledge *a*, is flush with the bottom of the box 4, the bar or strip 59 has a lower stud 64 on which the prong acts at the end of the forward movement of the operating handle.

There is formed in the segmental upper portion 50 of the driving lever an oblique slot 70 the sides of which act with a camming effect upon a roller on the end of one arm of a bell crank lever 71 pivoted on a stud projecting from the side of the box 4 and carrying pivoted to its other arm an elongated pawl 72. The latter is adapted to act upon pins 73 projecting from the side of a gear wheel 74, the latter journaled upon a stud 75 which is secured to the side of the box 4 (see Fig. 5). A spiral spring 76 con-



nects the pawl with the lever 71 so as to keep said pawl engaged with the pins 73, and a guard 77 secured to the side of the box 4 prevents sidewise displacement of the pawl. The latter is elongated beyond its acting shoulder so as to keep it from dropping too far when being retracted while the gear wheel is further rotating.

It will be seen that rocking of the lever 50—51 caused by pulling the operating handle of the adding machine forward will rock the bell crank 71 in a direction to advance the pawl 72. Normally the acting edge or shoulder of the pawl stands a little in rear of one of the pins 73. Consequently as the operating handle starts the pawl moves up to said pin and in continued forward movement of the handle acts upon said pin to turn the gear wheel 74. The latter is in mesh with pinions 78 and 79 on the feed roller shafts 22 and 29 so that this movement of said gear wheel causes turning of the feed rollers in a direction to carry the envelop upward. The measure of this movement is such as to take the envelop to the printing position illustrated in Fig. 9. Here the upper feed rollers 27 and 28 do not act upon the envelop but the lower feed rollers 23 and 24 alone perform this function, carrying the upper edge of the envelop into the bite of the upper feed rollers. It will be understood that this assumes a blank operation of the machine to have previously been made with the result before explained, to-wit, that of lifting the foremost envelop of the stack into the bite of the lower feed rollers, the latter having taken hold of the envelop as illustrated in Figs. 6, 7 and 8. Of course in such blank operation the upper feed rollers are performing no work.

It will be understood that at the conclusion of the forward movement of the operating handle printing takes place, amount keys 221 having been depressed before the handle is pulled. There is a short dwell at the lower end of the cam slot 70 which provides for the gear wheels remaining stationary and the envelop consequently being immovable during the printing.

A gear segment 80 is formed upon the upper portion 50 of the driving lever and this gear segment is in mesh with a pinion 81 journaled upon the stud 75 (Fig. 5) and secured to a ratchet wheel 82 mounted alongside of it. A pawl 83 is pivotally mounted on the side of the gear wheel 74 and spring-pressed into engagement with said ratchet wheel (Figs. 1 and 2). During the rocking of the driving lever already described the pinion and ratchet wheel are turned in the direction of the arrow in Fig. 1 so that the teeth of the ratchet wheel simply click past the pawl. Upon the reverse rocking of the driving lever, however, which accompanies the backward swing of the op-

erating handle, said ratchet wheel drives the gear wheel 74 through the medium of the pawl 83. This turning of the gear wheel rotates the feed rollers so as to carry the printed envelop up to the position shown in Fig. 10, the lower feed rollers first acting in conjunction with the upper feed rollers to pass the envelop along and the upper feed rollers then acting to carry the envelop beyond the printing position. Meantime the prong 56 rises and acting upon the stud 58 elevates the lift plate 17, raising the next envelop into the bite of the lower feed rollers and the rotation of the latter having continued they take hold of this envelop, moving it to the position shown in Fig. 8. To prevent overthrow when the gear segment comes to the end of its return movement after driving the gears in the manner described, there is loosely mounted upon the same stud which supports the bell crank 71, a pawl 85 which is swung rearwardly by a spiral spring 86 (Fig. 2) but moved against the stress of said spring by contact of the driving lever with a stud 86 on the arm of said pawl which depends from its pivot (Fig. 1). This rocking of the pawl by the driving lever engages its notched end with one of the pins 73 of the gear wheel 74 which obviously prevents any overthrow of the latter. The lost motion between the pawl 72 and the pins 73 on which it rests provides for the unlocking of the gear wheel before said pawl acts upon said pins.

In the next ensuing operation while the lower feed rollers are advancing the next envelop to the printing position the upper feed rollers discharge the printed envelop, the latter being deflected by the arms 34 and falling backward onto the conveyer. As one operation after another takes place the printed envelops thus discharged upon the conveyer are carried rearward by the same and eventually the first envelop strikes the box-incline 42, (Fig. 4). The envelops will lie one upon another at different inclines as the operations proceed so that they are stacked in the upper compartment of the box in regular order.

Means are provided for turning the roller platen step by step for the purpose of intermittently actuating the conveyer and also for the purpose of distributing the wear on the platen. Thus there is secured to the right-hand end of the platen journal a ratchet wheel 90 (Figs. 1 and 2) which is engaged by a tooth 91 on an arm 92 pivoted intermediate its ends to a crank arm 93 which is rigid with the driving lever. A spiral spring 94 connects the lower end of said arm 92 with a stud on the side of the box 4, said spring holding the tooth 91 in engagement with the ratchet wheel. The latter has an odd number of teeth—twenty-one in the present instance—and the tooth 91



has a throw of an even number of teeth,—  
in the present instance 4. It will be ob-  
vious that as the driving lever vibrates  
the arm 92 reciprocates and the tooth 91  
5 being held in engagement with the ratchet  
wheel by the spring 94 the platen will  
be intermittently turned and it will fur-  
ther be obvious that wear upon it due to im-  
pact of the type plates will be distributed  
10 over twenty-one different parts of the platen  
roller. The turning of the latter takes place  
during the further movement of the operat-  
ing handle but comes to a close just as the  
hammers of the adding machine are fired.

15 It will be obvious that the intermittent  
turning of the platen roller moves the con-  
veyer belts in a direction to carry the printed  
envelops rearward.

It is sufficient for the upper pressure roll-  
20 ers 27 to simply bear upon the companion  
roller sections 28 but as the lower set of  
feed rollers have more work to do in extract-  
ing the front envelop from the stack against  
the friction between it and the next envelop,  
25 it is preferable to gear the lower feed rollers  
together. To this end the shaft 22 carries  
small gear wheels 95—96 which mesh respec-  
tively with similar gear wheels 97, 98 on the  
pressure rollers 23 so that the latter are re-  
30 spectively driven and do not rely simply  
upon friction engagement with the envelop  
to receive rotary movement.

A machine equipped as above described  
will be found useful in many connections,  
35 but it will suffice to refer specifically to one,  
to-wit, its use in a paymaster's office. In  
this connection the attachment may be as-  
sumed for example to be on a machine such  
as that shown in Vincent Patent No. 908,430,  
40 issued December 29, 1908, where provision is  
made for "splitting" or subdividing the  
printing mechanism, and extending the total  
to the adding wheels associated with the left-  
hand section or subdivision. Envelops will  
45 be stacked in the lower compartment of the  
box 4 with the sides to be printed (Fig. 11)  
facing toward the adding machine. A blank  
operation having been made, the designat-  
ing numbers of employees and wages due  
50 them will be set up on the keyboard and the  
machine operated after each such setting up  
of a number and amount. On each envelop  
will be printed at the proper places such  
numbers and amounts (Fig. 12), and when  
55 the pay-roll has been run through the stack  
of envelops in the upper compartment of  
the box will be removed and filled with cur-  
rency to correspond with amounts printed  
on them.

60 While the construction here shown is well  
adapted to carry out the object primarily  
stated the invention is to be understood as  
not necessarily limited to this one form of  
embodiment which is susceptible of consid-  
65 erable modification.

What I claim is:

1. An attachment for an accounting ma-  
chine, the same comprising, in combination  
with printing and actuating mechanism of  
said machine, such actuating mechanism in- 70  
cluding an oscillating member; a runway  
for stacked envelops or the like, and feeding  
mechanism for presenting the envelops one  
at a time to said printing mechanism, said  
feeding mechanism being operatively con- 75  
nected to the said oscillating member of the  
actuating mechanism of said machine.

2. An attachment for an accounting ma-  
chine, the same comprising, in combination  
with printing and actuating mechanism of 80  
said machine, such actuating mechanism in-  
cluding an oscillating member; a runway  
for stacked envelops or the like, and feed-  
ing mechanism for presenting the envelops  
one at a time to said printing mechanism, 85  
said feeding mechanism comprising a vibra-  
tory driving element coupled to the said os-  
cillatory member of the actuating mecha-  
nism of said machine.

3. An attachment for an accounting ma- 90  
chine, the same comprising, in combination  
with printing and actuating mechanism of  
said machine, such actuating mechanism in-  
cluding an oscillating member; a runway  
for stacked envelops or the like, and feeding 95  
mechanism for presenting the envelops one  
at a time to said printing mechanism, said  
feeding mechanism comprising a vibratory  
driving element coupled to the said oscil-  
latory member of the actuating mechanism 100  
of said machine, feed rollers, and trans-  
lating means whereby the latter will be  
turned in the same direction under both  
directions of movement of said vibratory  
element. 105

4. An attachment for an accounting ma-  
chine, the same comprising, in combination  
with printing and actuating mechanism of  
said machine, such actuating mechanism in- 110  
cluding an oscillating member; a runway  
for stacked envelops or the like, and feeding  
mechanism for presenting the envelops one  
at a time to said printing mechanism, said  
feeding mechanism comprising a vibratory 115  
driving element coupled to the said oscil-  
latory member of the actuating mechanism  
of said machine, a reciprocatory member  
for displacing the foremost envelop, feed  
rollers for receiving the displaced envelop,  
120 feed rollers for discharging the printed en-  
velop, and connections for operating the re-  
ciprocating member and the feed rollers by  
said vibratory element, the latter in one  
direction of movement imparting limited  
125 movement to feed rollers to present the en-  
velop to the printing mechanism, and in the  
reverse direction of movement rotating the  
feed rollers to discharge the printed en-  
velop.

5. An attachment for an accounting ma- 130



chine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway 5 for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the 10 actuating mechanism of said machine and comprising feed rollers, means for introducing envelops or the like one at a time into the bite of said feed rollers, means for intermittently turning the latter to advance 15 the envelop to the printing position, and means for discharging the envelops.

6. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of 20 said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said 25 feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine, and comprising feed rollers, means for introducing envelops or the like one at a time 30 into the bite of said feed rollers, means for intermittently turning the latter to advance the envelop to the printing position, and means for further turning said feed rollers to discharge the envelops.

7. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of 35 said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one 40 at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and 45 comprising feed rollers, means for introducing envelops or the like one at a time into the bite of said feed rollers, means for intermittently turning the latter to advance 50 the envelop to the printing position, a second pair of feed rollers, and means for rotating the same to discharge the envelops.

8. An attachment for an accounting machine, the same comprising, in combination 55 with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one 60 at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising feed rollers, means for introduc-

ing envelops or the like one at a time into 65 the bite of said feed rollers, means for intermittently turning the latter to advance the envelop to the printing position, a second pair of feed rollers, and means for rotating the same and the first-mentioned feed rollers 70 to discharge the envelops.

9. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of 75 said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said 80 feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising feed rollers, means for introducing envelops or the like one at a time into 85 the bite of said feed rollers, a second pair of feed rollers, means for intermittently turning the first-mentioned feed rollers to advance the envelop to the printing position and into the bite of the second pair of feed 90 rollers, and means for rotating the latter to discharge the envelop.

10. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of 95 said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said 100 feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising feed rollers, means for introducing envelops or the like one at a time into the 105 bite of said feed rollers, a second pair of feed rollers, means for intermittently turning the first-mentioned feed rollers to advance the envelop to the printing position and into the bite of the second pair of feed 110 rollers, and means for rotating the latter and the first-mentioned rollers to discharge the envelop.

11. An attachment for an accounting machine, the same comprising, in combination 115 with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one 120 at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising means tending constantly to advance the stack, means for displacing one 125 envelop at a time from the stack and moving it to printing position, and means for discharging the printed envelop.



12. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising means tending constantly to advance the stack, means for displacing one envelop at a time from the stack, a pair of feed rollers adapted to receive the envelop when so displaced, means for turning said feed rollers intermittently to present the envelop at the printing position, and means for discharging the printed envelop.

13. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising means tending constantly to advance the stack, means for displacing one envelop at a time from the stack, a pair of feed rollers adapted to receive the envelop when so displaced, means for turning said feed rollers intermittently to present the envelop at the printing position, a second pair of feed rollers adapted to receive the envelop from the first-mentioned feed rollers, and means for rotating the second pair of feed rollers to discharge the printed envelop.

14. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising means tending constantly to advance the stack, means for displacing one envelop at a time from the stack, a pair of feed rollers adapted to receive the envelop when so displaced, means for turning said feed rollers intermittently to present the envelop at the printing position, a second pair of feed rollers adapted to receive the envelop from the first-mentioned feed rollers, and means for rotating the two sets of feed rollers to discharge the printed envelop.

15. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine with provisions for holding said envelopes stationary during the printing and then discharging them, and an endless conveyer to receive the discharged envelopes.

16. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising feed rollers, means for introducing envelopes or the like one at a time into the bite of said feed rollers, means for intermittently turning the latter to advance the envelop to the printing position, means for discharging the envelopes, and an endless conveyer to receive the discharged envelopes.

17. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising feed rollers, means for introducing envelopes or the like one at a time into the bite of said feed rollers, means for intermittently turning the latter to advance the envelop to the printing position, means for further turning said feed rollers to discharge the envelopes, and an endless conveyer to receive the discharged envelopes.

18. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising feed rollers, means for introduc-



ing envelopes or the like one at a time into the bite of said feed rollers, means for intermittently turning the latter to advance the envelop to the printing position, a second pair of feed rollers, means for rotating the same to discharge the envelopes, and an endless conveyer to receive the discharged envelopes.

19. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising feed rollers, means for introducing envelopes or the like one at a time into the bite of said feed rollers, means for intermittently turning the latter to advance the envelop to the printing position, a second pair of feed rollers, means for rotating the same and the first-mentioned feed rollers to discharge the envelopes, and an endless conveyer to receive the discharged envelopes.

20. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising feed rollers, means for introducing envelopes or the like one at a time into the bite of said feed rollers, a second pair of feed rollers, means for intermittently turning the first-mentioned feed rollers to advance the envelop to the printing position and into the bite of the second pair of feed rollers, means for rotating the latter to discharge the envelop, and an endless conveyer to receive the discharged envelop.

21. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising feed rollers, means for introducing envelopes or the like one at a time into the bite of said feed rollers, a second pair of feed rollers, means for intermittently turn-

ing the first-mentioned feed rollers to advance the envelop to the printing position and into the bite of the second pair of feed rollers, means for rotating the latter and the first-mentioned rollers to discharge the envelop, and an endless conveyer to receive the discharged envelopes.

22. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising means tending constantly to advance the stack, means for displacing one envelop at a time from the stack and moving it to printing position, means for discharging the printed envelop, and an endless conveyer to receive the discharged envelop.

23. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising means tending constantly to advance the stack, means for displacing one envelop at a time from the stack, a pair of feed rollers adapted to receive the envelop when so displaced, means for turning said feed rollers intermittently to present the envelop at the printing position, means for discharging the printed envelop, and an endless conveyer to receive the discharged envelopes.

24. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelopes or the like, and feeding mechanism for presenting the envelopes one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising means tending constantly to advance the stack, means for displacing one envelop at a time from the stack, a pair of feed rollers adapted to receive the envelop when so displaced, means for turning said feed rollers intermittently to present the envelop at the printing position, a second pair of feed rollers adapted to receive the en-



velop from the first-mentioned feed rollers, means for rotating the second pair of feed rollers to discharge the printed envelop, and an endless conveyer to receive the discharged

5 envelops.

25. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising means tending constantly to advance the stack, means for displacing one envelop at a time from the stack, a pair of feed rollers adapted to receive the envelop when so displaced, means for turning said feed rollers intermittently to present the envelop at the printing position, a second pair of feed rollers adapted to receive the envelop from the first-mentioned feed rollers, means for rotating the two sets of feed rollers to discharge the printed envelop, and an endless conveyer to receive the discharged envelops.

30 26. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising a follower in the runway yieldingly impelled for advancing the stack, a shouldered displacing member movable a limited extent transversely of the runway at one end thereof, and feeding devices for receiving the foremost envelop when displaced by said member and presenting it at the printing position.

50 27. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising a follower in the runway yieldingly impelled for advancing the stack, a shouldered displacing member movable a limited extent transversely of the runway at one end thereof, feed rollers adapted to re-

ceive the foremost envelop when displaced 65 by said member, and means for turning said feed rollers to present the envelop at the printing position.

28. An attachment for an accounting machine, the same comprising, in combination 70 with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one 75 at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising a follower in the runway yield- 80 ingly impelled for advancing the stack, a shouldered displacing member movable a limited extent transversely of the runway at one end thereof, feed rollers adapted to receive the foremost envelop when displaced 85 by said member, means for turning said feed rollers to present the envelop at the printing position, a second set of feed rollers to receive the envelop from the first, and means for rotating the feed rollers to dis- 90 charge the envelops.

29. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism in- 95 cluding an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said feeding mechanism being operatively 100 connected to the said oscillating member of the actuating mechanism of said machine and comprising a follower in the runway yieldingly impelled for advancing the stack, a shouldered displacing member movable a 105 limited extent transversely of the runway at one end thereof, feed rollers adapted to receive the foremost envelop when displaced by said member, means for turning said feed rollers to present the envelop at the printing 110 position, a second set of feed rollers to receive the envelop from the first, means for rotating the feed rollers to discharge the envelops, and an endless conveyer to receive the discharged envelops. 115

30. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism in- 120 cluding an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the 125 actuating mechanism of said machine and comprising a follower in the runway yieldingly impelled for advancing the stack, a



shouldered displacing member movable a limited extent transversely of the runway at one end thereof, a spring-held bar for holding back all but the foremost envelop, means for reciprocating said shouldered displacing member, and feeding devices for receiving the foremost envelop from said member and presenting it at the printing position.

31. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising feed rollers for presenting envelops or the like one at a time to said mechanism, and discharging the printed envelops, an oscillating driving element, and translating means whereby the latter under movement in both directions intermittently rotates the feed rollers in the same direction.

32. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising feed rollers for presenting envelops or the like one at a time to said mechanism, and discharging the printed envelops, an oscillating driving element having a gear segment and a camway, a pinion in mesh with the gear segment, a gear wheel engaging the feed rollers, a ratchet-and-pawl connection between the gear wheel and the pinion, a lever engaged with the camway, and a pawl carried by the lever and engaged with the gear wheel.

33. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising a shouldered slide piece at the front of the runway, feed rollers, and a lever having an arm to reciprocate said slide piece and a gear segment to turn the feed rollers.

34. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising a shouldered slide piece at the front of the runway, feed rollers, a lever having an arm to reciprocate said slide piece and a gear segment with a one-way connection to turn the feed rollers, a second set of feed rollers, and means for turning the same by said lever otherwise than through said gear segment.

35. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a runway for stacked envelops or the like, and feeding mechanism for presenting the envelops one at a time to said printing mechanism, said feeding mechanism being operatively connected to the said oscillating member of the actuating mechanism of said machine and comprising a shouldered slide piece at the front of the runway, two sets of feed rollers having gears, a gear-wheel meshing with the latter and having lateral pins, a lever carrying a pawl engaging said pins, a driving lever having a cam to actuate the first-mentioned lever and an arm to actuate the slide-piece and also having a gear segment, a pinion in mesh with the latter, a ratchet wheel, and a pawl engaging the latter and carried by the first-mentioned gear-wheel.

36. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a box, an endless conveyer extending horizontally therein dividing the box into upper and lower compartments, means operatively connected to the said oscillating member of the actuating mechanism of said machine for displacing envelops or the like singly from a stack in the lower compartment and presenting them to the printing mechanism, and means for discharging the envelops successively from the printing position and depositing them on said conveyer.

37. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a box, an endless conveyer extending horizontally therein dividing the box into upper and lower compartments, means operatively con-



5. nected to the said oscillating member of the actuating mechanism of said machine for displacing envelopes or the like singly from a stack in the lower compartment and presenting them to the printing mechanism, and means for discharging the envelopes successively from the printing position and depositing them on said conveyer, one end of the upper compartment of the box being inclined to support the envelopes as they come from the conveyer.

15. 38. An attachment for an accounting machine, the same comprising, in combination with printing and actuating mechanism of said machine, such actuating mechanism including an oscillating member; a box, an endless conveyer extending horizontally

therein dividing the box into upper and lower compartments and being mounted to swing to give access to the lower compartment, means operatively connected to the said oscillating member of the actuating mechanism of said machine for displacing envelopes or the like singly from a stack in the lower compartment and presenting them to the printing mechanism, and means for discharging the envelopes successively from the printing position and depositing them on said conveyer.

CHARLES WALES.

Witnesses:

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ARTHUR W. FRENZEL.