

(No Model.)

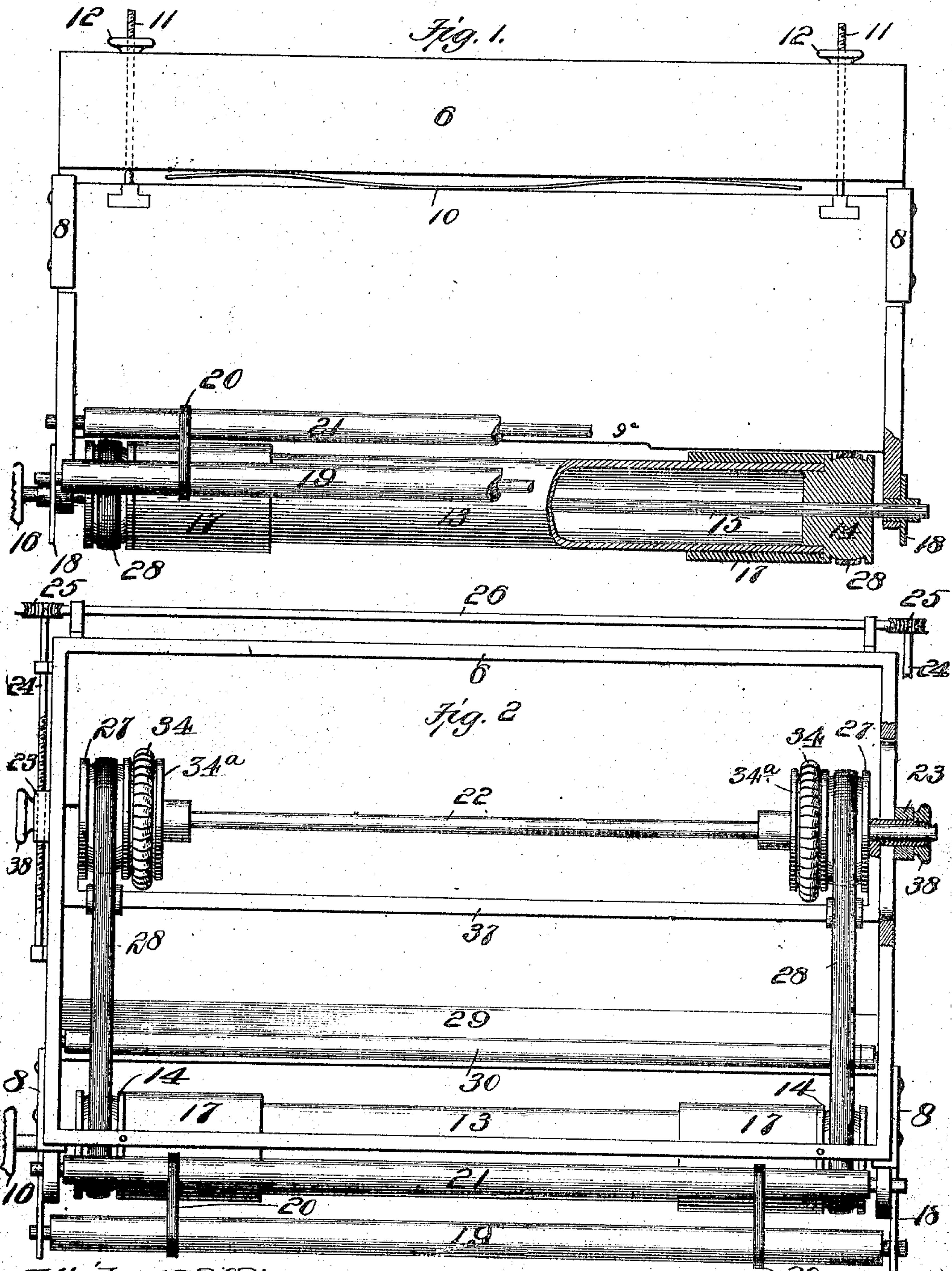
3 Sheets—Sheet 1.

B. S. WASH.

DEVICE FOR FEEDING ENVELOPS TO TYPE WRITING MACHINES.

No. 584,435.

Patented June 15, 1897.



Witnesses:
J. R. Cornwall
Hugh H. Wagner

Inventor:
Bert S. Wash
by Paul Bakewell
attorney

(No Model.)

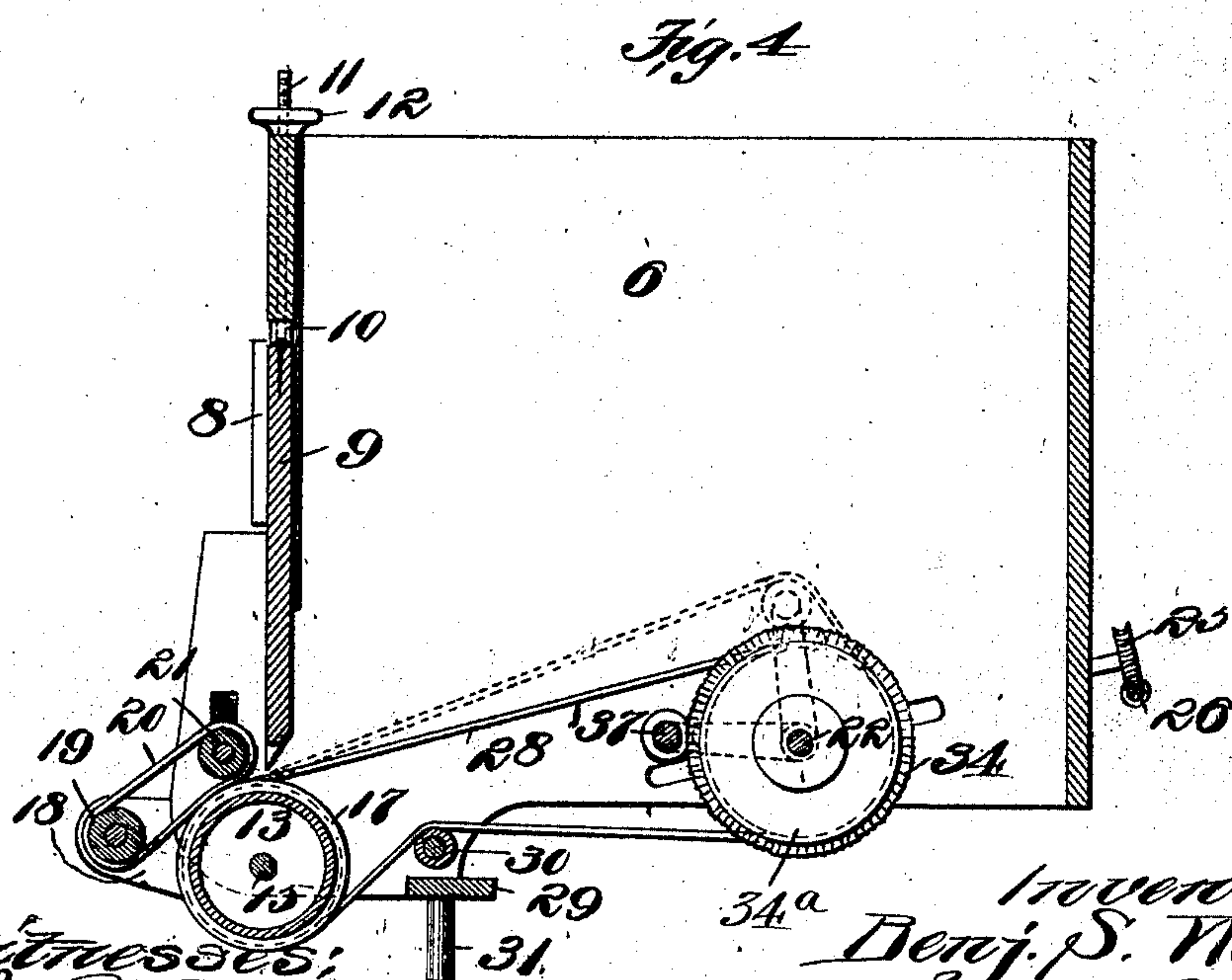
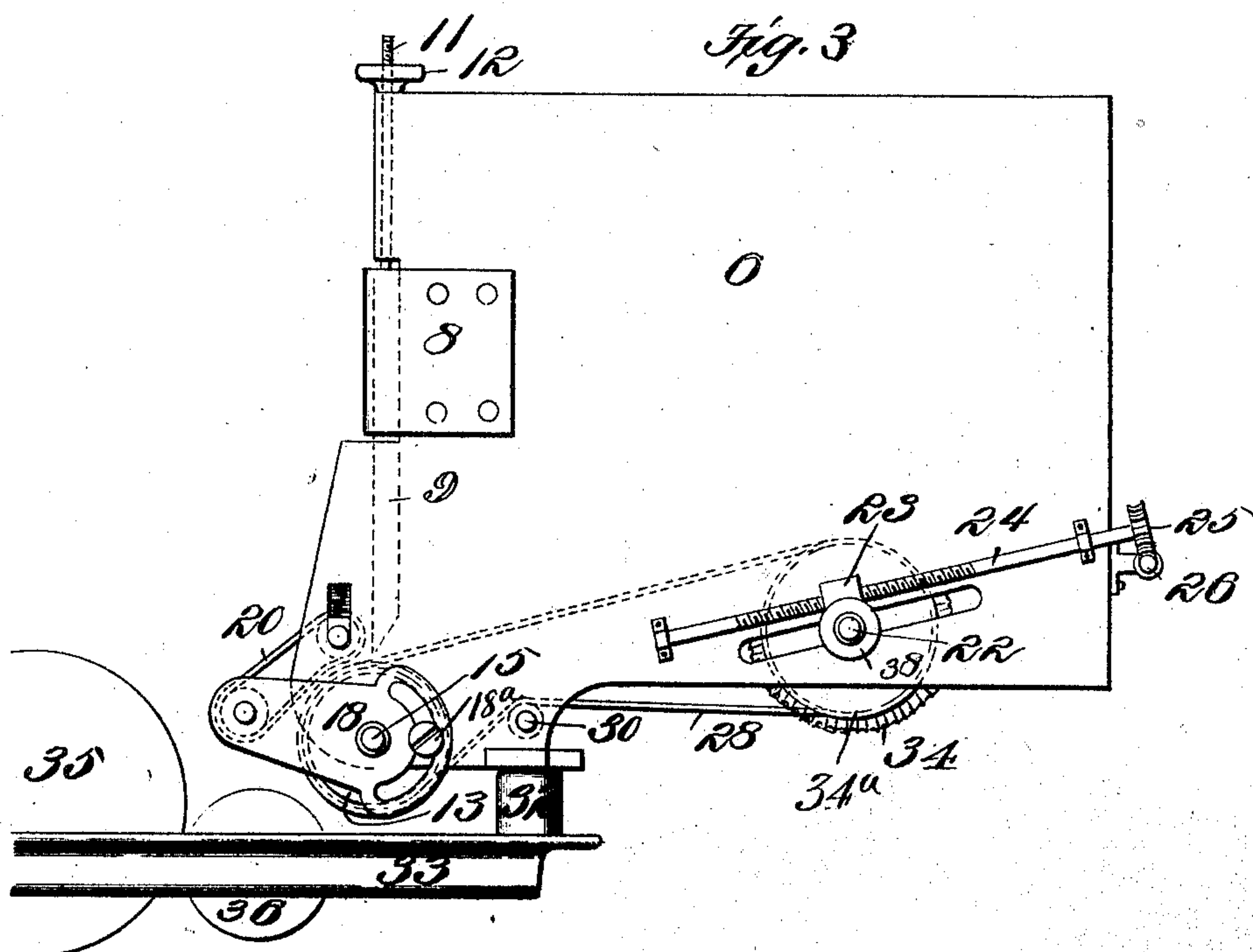
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3 Sheets—Sheet 3.

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Fig. 8.

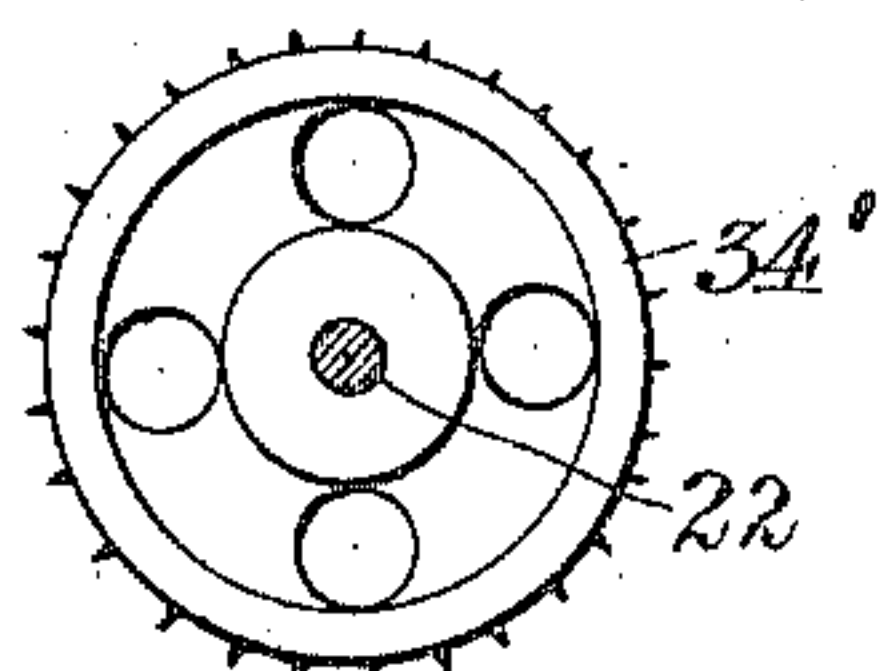


Fig. 5.

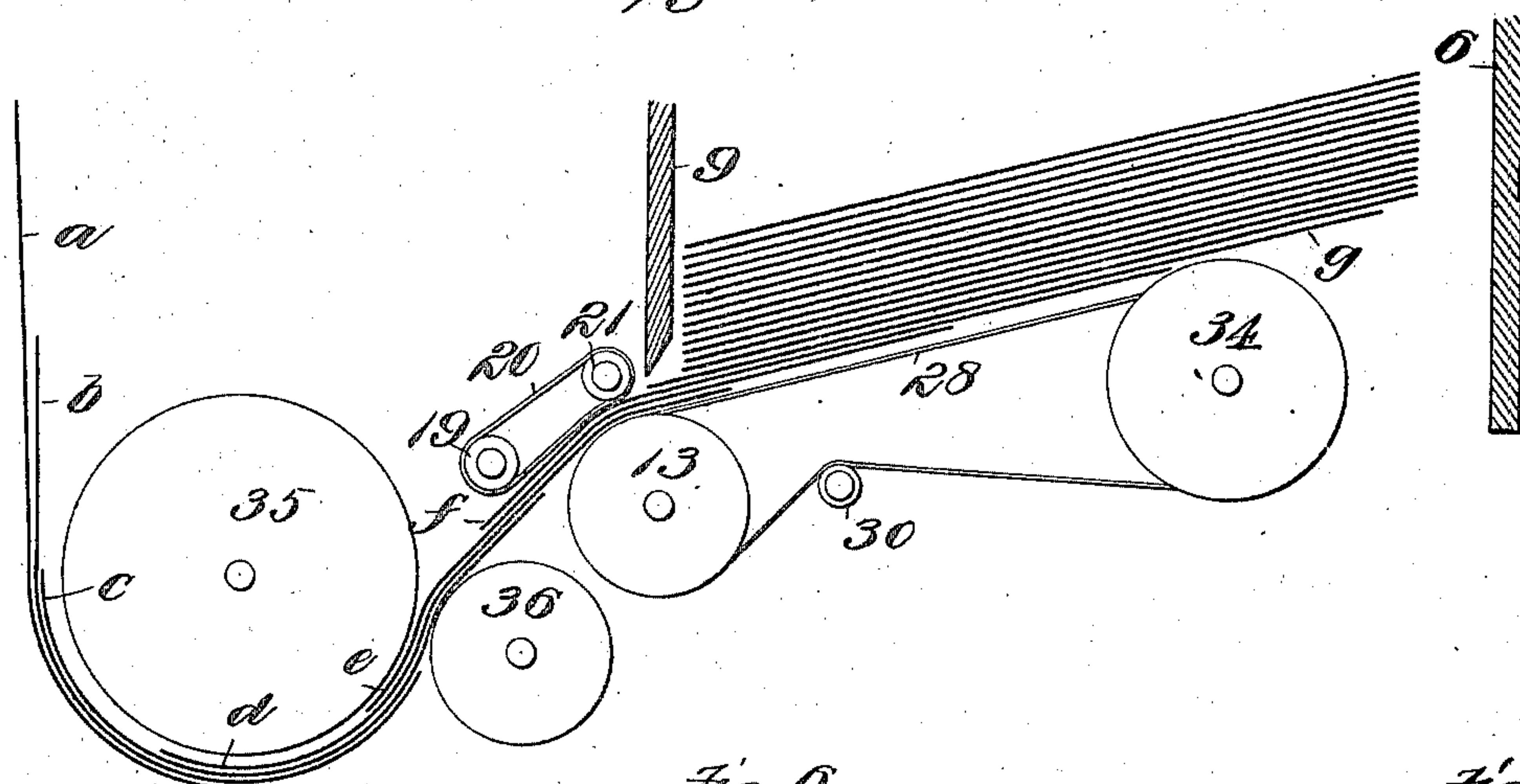


Fig. 6.

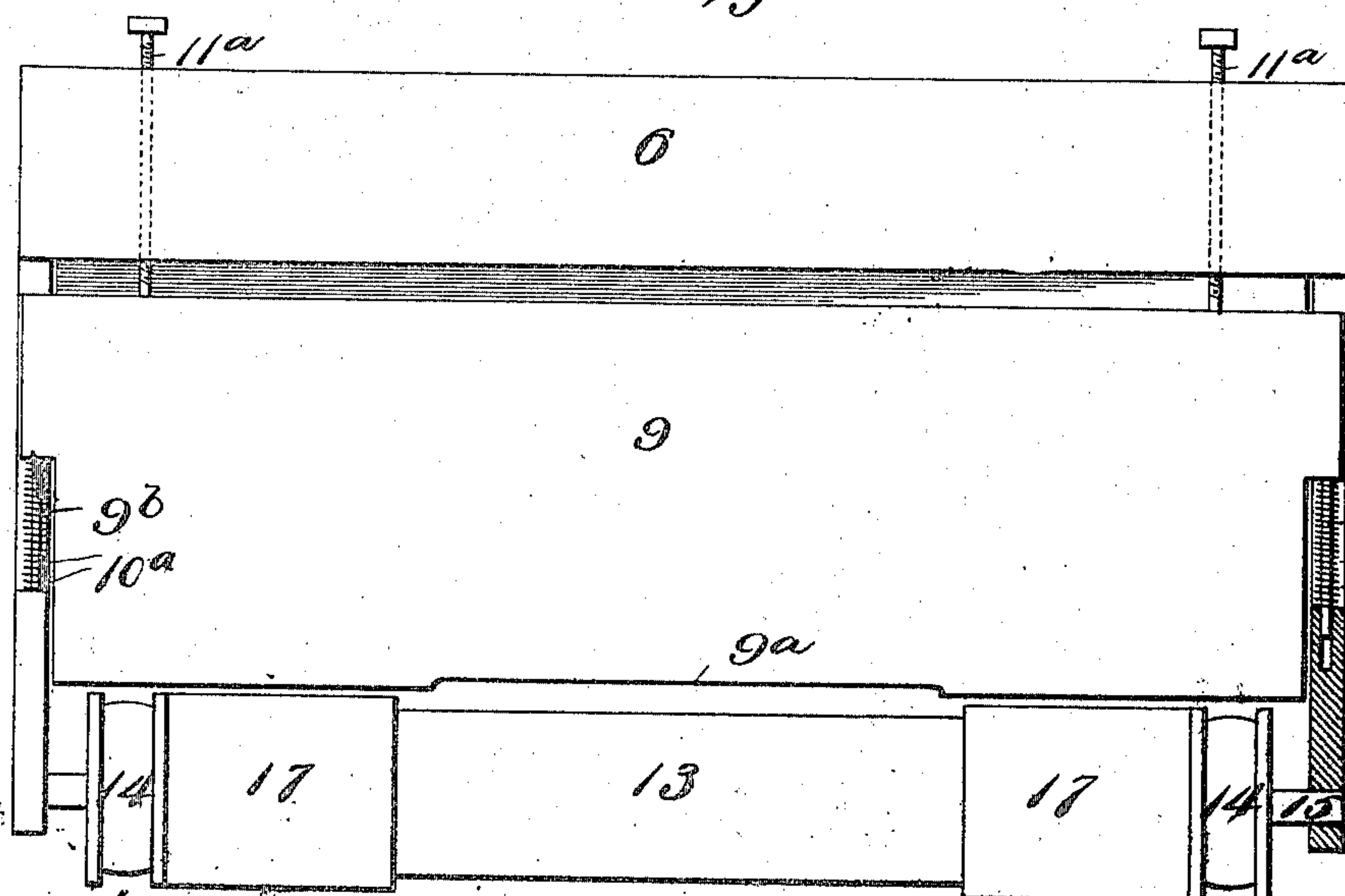
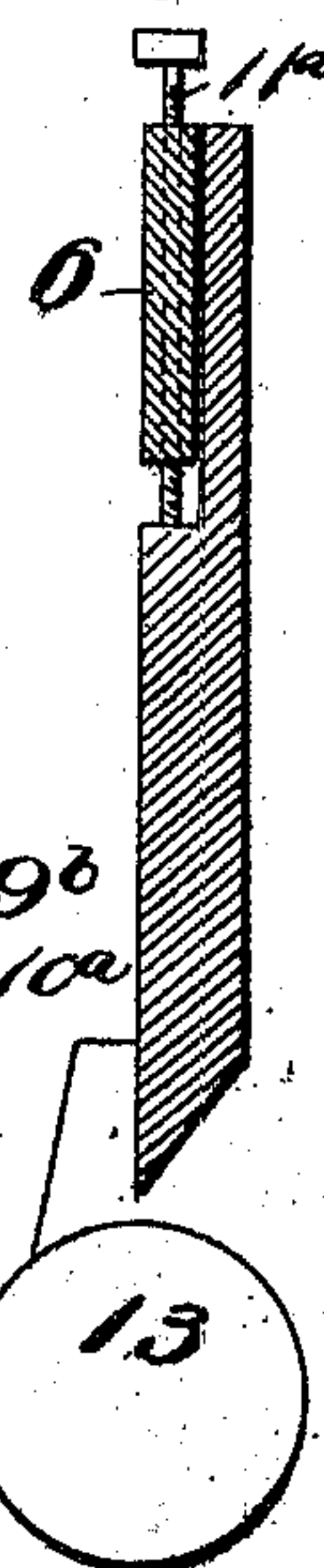


Fig. 7.



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UNITED STATES PATENT OFFICE.

BENJAMIN S. WASH, OF ST. LOUIS, MISSOURI, ASSIGNOR TO JACOB E. BRUNER, TRUSTEE, OF BOWIE, TEXAS.

DEVICE FOR FEEDING ENVELOPS TO TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 584,435, dated June 15, 1897.

Application filed December 11, 1895. Serial No. 571,741. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN S. WASH, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Devices for Feeding Envelops to Type-Writing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, wherein—

Figure 1 is a front elevational view, partly in section, of my improved envelop-feeding machine. Fig. 2 is a top plan view of the same. Fig. 3 is an end elevational view of my machine, showing the same mounted on the carriage of a type-writing machine. Fig. 4 is a cross-sectional view through the device. Fig. 5 is a detail view showing the manner of feeding the envelop to the type-writing machine. Fig. 6 is a front view illustrating an approved form of adjustable slide. Fig. 7 is a sectional view therethrough. Fig. 8 is a modified form of feed-roller.

This invention relates to a new and useful improvement in a device for feeding envelops to type-writing machines, the object being to construct a device of the character described which is adapted to be mounted on the carriage of the machine and feed envelops to be addressed continuously and automatically to the platen of said machine.

With this object in view the invention consists in combining with the carriage of a type-writing machine a suitable receptacle for the envelops to be printed and in arranging means upon said receptacle for making up a train of lapped envelops from the pile in the receptacle and feeding this train to and under the platen, said train-making mechanism being so constructed that the lap of the envelops may be predetermined, said train acting as a power medium to actuate the train-making mechanism.

Another feature of the invention resides in the feed-roller, which determines the distance between each envelop or the extent of the lap of one envelop over another, said feed-roller being belted by flexible belts to an issuing-roller having frictional contacting surfaces for the issuing envelops at its ends only,

whereby the increased thickness in the center of the envelop, due to the number of overlapping flaps at that point, will not affect the issue of the envelops.

Another feature resides in the means for raising the feeding-belts, so as to make practically a movable bottom in the receptacle carrying the envelops, in which event the envelops will be fed singly.

Another feature resides in the arrangement of the guiding-belts and rollers, which direct envelops to the platen of the machine.

Other features reside in the peculiar construction and manner of operation of the initial feeding-roller and its means of adjustment, and, finally, the invention consists in the construction, arrangement, and combination of the several parts of my invention, all as will hereinafter be described, and afterward pointed out in the claims.

In the drawings, 6 indicates a suitable receptacle, preferably open at its top, in which is placed a stack of envelops to be addressed, said envelops having their flaps facing up, the sealing end being at the front. Care should be taken in placing the envelops in their receptacle that they do not adhere to each other and that their loose flaps do not include other envelops.

Mounted in suitable guides 8 is an adjustable slide 9, which is preferably formed with a tapering lower end, as shown. This slide, as shown in Figs. 1 and 4, is yielding in an upward direction and held in its normal position by a spring 10.

11 are bolts extending from the side through a cross-bar of the receptacle 6, said bolts having thumb-nuts 12 on their upper ends by which the slide may be adjusted.

In Figs. 6 and 7 I have shown a modified form of slide in which guide-rods 9^b are arranged at its sides, said rods being seated in pockets in an extension of the box 6. Springs 10^a are arranged around these rods, which exert an upward tension on the slide. Bolts 11^a adjust the vertical position of the slide. In this form the slide has an upward extension, which passes behind the front cross-piece of box 6, and this, in connection with the rods 9^b, holds the slide in place, but admits of its vertical adjustment. By adjusting this

slide relative to the issuing-roller the space between the two accommodates but a certain number of envelops, and in the operation of the machine, as will hereinafter appear, as this number is decreased by one envelop passing beyond the issuing-roller and from beneath the slide the slide will prevent any more than one envelop, in addition to those already between it and the issuing-roller, entering into position to be issued. The adjustability of the slide is necessary, not only to accommodate different grades of paper of which the envelops are made, but to also accommodate different numbers of envelops as fed by the feeding-rollers, as when the envelops are fed with but a short space between.

Mounted beneath the slide is an issuing-roller 13, whose construction is best seen in Fig. 1. This roller preferably consists of a tubular portion in whose ends are received collars 14 in the form of pulleys, said collars being mounted on a suitable shaft 15, upon one end of which is arranged a knob 16, by which the roller 13 may be rotated either to start the continuous feed of the envelops, as when the device is first put on the machine, or to feed the envelops singly to the machine, as will hereinafter be described.

Arranged at the ends of roller 13 are raised surfaces 17, which are preferably in the form of rubber sleeves. The object of having these two friction-surfaces at the ends of the roller and in leaving practically a recess or reduced portion in the center of the roller is to enable the envelops to be guided more accurately in their movement, as in the center of some envelops there are about five thicknesses of paper, while nearer the ends three thicknesses of paper are usually found, at the most. It will thus readily be seen that if this frictional surface was continuous throughout the length of the roller when the five thicknesses of paper in the center of the envelop were in contact with the roller the envelop would be held as on a pivot, rendering it liable to become disarranged in its path to the platen of the type-writing machine. In order to further allow for this increased thickness in the middle of the envelop, I preferably cut away the slide 9 at its center, as at 9^a. (Seen in Figs. 1 and 6.)

Mounted on the ends of spindle 15 are adjustable frames 18, in the ends of which is mounted a roller 19, which roller is belted by suitable flexible belts, preferably in the form of rubber bands 20, to a roller 21, mounted in slots in the end walls of the receptacle, which slots preferably contain light springs for forcing the belts 20 into contact with the friction-surfaces 17 on roller 13. The adjustment of these frames is accomplished by forming slots in their inner or rear ends, which slots are concentric with the pivotal point thereof, which is the rod 15. Screws 18^a pass through these slots into the end walls of the receptacle and bind the frames 18 in their adjusted positions. 22 indicates a spindle whose ends pass

through slots in the end walls of the receptacle and are mounted in nuts or blocks 23, arranged outside of the end walls. These blocks are tapped to receive threaded rods 24, mounted in suitable bearings on the end walls, and the ends of these rods—preferably the rear ends—have worm-wheels 25 mounted on them, with which worm-wheels engage worm-screws on a rod 26, mounted at the back of the box. A suitable handle (not shown) may be provided at one or both ends of rod 26, by which the same may be rotated.

From the above it will be seen that when the rod 26 is rotated the worm-screws carried thereby, engaging the wheels 25, will rotate rod 24, upon which the blocks 23 are mounted. By the threaded connection between rod 24 and blocks 23, upon the rotation of the former the blocks will be moved simultaneously longitudinally the rod, or backward and forward, depending upon the direction of rotation of the rod, and will carry with them the spindle 22.

Mounted on the rod 22 and in line with the pulleys or collars 14 are pulleys 27, belted to pulleys 14 by flexible belts 28, preferably in the form of rubber bands, said belts passing over an idler 30, which raises the belts out of contact with a cross-bar 29, from which project pins 31 to engage seats in lugs 32 of a carriage 33 of a type-writing machine, the same as the paper-rest is mounted.

Conjoined to pulleys 27 is a support for a feed-roller 34, which is preferably in the form of a rubber ring having a corrugated surface, said ring being mounted in a grooved wheel 34^a, as shown.

The operation of the device as above described is as follows: Assuming the feeder to be mounted on the carriage of type-writing machine, as shown in Fig. 3, all the parts properly adjusted, and the envelops in position, it is only necessary to turn the knob 16 until the first envelop is directed between the platen 35 of the type-writing machine and its idler 36. The line-spacing lever for the platen being now operated, to feed the envelops to the platen it is no longer necessary to manually operate any part of the envelop-feeder, as the feeding of the first envelop between the platen and its idler 36 and under and around the platen will operate roller 13, belts 28, and feed-rollers 34. The first envelop will be line-spaced until in proper position to be addressed, and the act of addressing and line-spacing will feed the next envelop in position and place the first envelop in readiness for removal from the machine.

To more fully explain the above I will refer to Fig. 5, in which we will assume that *a* is an envelop which has been addressed and is ready for removal. When removed, envelop *b* is in position to be written upon without further line-spacing the platen. In writing upon envelop *b* the name of a person to whom the envelop is addressed, as "John Smith," can be placed on one line, his address,

such as "Washington, D. C.," be placed on the next line, after taking a full line-space, when two more line-spaces will place envelop *b* in position to be removed and envelop *c* in position to be written upon. Instead of writing the address on one line said address could as readily be written on two, which would require but one extra space to eject the written envelop and place in position the next envelop to be written upon.

In Fig. 5 envelop *a* is ready to be removed, *b* is ready to be written upon, and *c* is under platen 35 and is just leaving roller 13. *d* is also under platen 35 and has not yet left roller 13. Envelop *d* in this position is the one which actuates roller 13, belts 28, and feed-rollers 34. *e* is just passing beneath platen 35 and extends somewhat past slide 9. This envelop assists envelop *d* in rotating roller 13. *f* is being acted upon by envelop *e* and is being guided to its position between the platen and idler 36 by the belt 20. This envelop has just left the feeding-rollers 34, and said feeding-roller is now acting on the envelop *g* at the bottom of the pile and forcing it between the belts 20 and the roller 13. In this manner a continuous feed of the envelops is carried on, which requires little, if any, attention from the operator of the machine.

If the envelops do not occupy the proper position relative to the striking-point of the type, which might happen if the lap of each is not correct, this lap may be lengthened or shortened by rotating rod 26, which will move the spindle 22, carrying the feed-rollers 34 nearer to or farther from the issuing-roller. This adjustment of the position of the feed-rollers, or, I might say, the location of the feed-rollers relative to the pile of envelops and issuing-roller, is important, for in some cases the names and addresses in a list might take three or four lines, while in others they would occupy but two, and it not being desired to line-space more than once to eject the envelop before the next envelop is in position to be written upon the feed-rollers could be so located that the lap of the envelops would be made to accommodate a given number of lines written upon each envelop.

It may at some time be desirable to feed the envelop singly and by hand, and in order to accomplish this I mount a rod 37 on spindle 22, which rod is provided with rollers to engage and raise the belts 28 above the periphery of the feed-roller 34, as shown by the dotted lines in Fig. 4. When this is done, said feed-rollers 34 are thrown out of contact with the envelops, and when the roller 13 is rotated by its knob 16 but one envelop at a time will be fed to the platen on account of the movement of the entire bottom or support upon which the pile of envelops rest. To secure this rod 37 in its elevated position, I provide a sleeve on its ends which embraces the rod 22 and passes through the nut 23. Thumb-nut 38 on the end of the sleeve, when tightened, binds the nut 23 against the outer

face of the end wall of the receptacle and the angular portion of arm 37 against the inner face of said end wall. By turning the rod 37 down and binding it in position the tension of belt 28 can be regulated.

It will of course be understood that in feeding one envelop at a time the slide 9 may be so adjusted toward the issuing-roller 13 that but one envelop can pass between or be issued, the slide 9 holding back the remaining envelops in the pile until the one issuing has been issued, when the next or bottom envelop of the pile will be in position to be issued. The object of throwing the feed-rollers 34 out of contact with the envelops is to prevent the rough surface of the feed-rollers from crowding the envelop next to the one being issued in under the slide 9 and choking the machine. By elevating the belts 28 to make a movable or traveling bottom the envelop being issued is evenly supported, and as it rests on top of the belts and fills the space between the slide and issuing-roller the front end of the next envelop cannot enter. Moreover, this next envelop has very little tendency to crowd forward, as the friction of the belts themselves is very slight, and it is only when the issuing-roller is in cooperation with the slide that the envelop is grasped firmly.

From the above it will be seen that when the feeding-rollers are thrown out by elevating the belts 28 and the slide 9 is adjusted so as to permit but one envelop to be issued a rotation of the issuing-roller will move the belts 28 and cause a single envelop to be fed to the platen of the machine. This feature is valuable in feeding sheets of paper as required, such as telegraph-blanks, &c.

I have described my invention as being especially designed for feeding envelops to type-writing machines, but it is obvious that postal cards, telegraph-blanks, and other sheets of paper could as readily be fed without materially altering the method of operation of the device. In feeding thin sheets of paper the slide 9 would have to be adjusted, and should it be desired to feed postal cards it may be found advantageous to use a feed-roller 34', corresponding to roller 34, having sharp metallic spurs, such as shown in Fig. 8, as these cards in original packages often adhere to each other tenaciously.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device may be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a device for feeding envelops to type-writing machines, the combination with the carriage and platen of said machine, of a receptacle on the carriage for holding a pile of envelops, and means for making up a train

of lapped envelops from the pile in the receptacle, and feeding this train to and under the platen, said train-making mechanism being so constructed that the lap of the envelops may be predetermined and said train acting as a power medium to actuate the train-making mechanism; substantially as described.

2. In a device for feeding envelops to type-writing machines, the combination with the carriage and platen of said machine, of a receptacle for the envelops mounted upon said carriage, and means for feeding a train of lapped envelops to and under said platen in such manner that the line-spacing movement of the platen advances the train of envelops in such manner that, when the envelop which has been written upon, is removed, the next succeeding envelop in the train, is in position to be written upon and an envelop is added to the train, from the pile, to compensate for the removal of the finished envelop; substantially as described.

3. The combination with the platen of a type-writing machine, of an envelop-feeding device arranged in juxtaposition thereto, and means for feeding the envelops from said receptacle to the platen which means includes the envelops as a power medium for the feeding mechanism; substantially as described.

4. The combination with the platen of a type-writing machine, of a device for feeding envelops thereto comprising a suitable receptacle for the envelops, a feeding-roller for initially acting on the envelops to determine the lap of each, a friction-roller which is belted to said feeding-roller, and adjustable belts for directing the envelops to the platen as they issue from their receptacle; substantially as described.

5. The combination with a suitable receptacle for the envelops which is adapted to be attached to the carriage of the type-writing machine, a feed-roller mounted in the bottom of said receptacle for initially acting upon the envelops, and a roller located in the front end of said receptacle and belted to the feed-roller above referred to, said last-named roller having a reduced portion in its middle and friction-surfaces at its ends; substantially as described.

6. The combination with a suitable receptacle for the envelops, of an issuing-roller located in the bottom thereof, said roller consisting of a tubular portion in the end of which are inserted collars, a shaft upon which said collars are mounted, and rubber sleeves mounted on the ends of the tube; substantially as described.

7. The combination with the receptacle or box, of an issuing-roller having a reduced central portion, a slide which coöperates with said issuing-roller, said slide also being reduced in its middle portion, whereby the increased thickness due to overlapping flaps will not affect the regular feed of envelops,

and means for adjusting said slide relative to the issuing-roller; substantially as described.

8. The combination with a box or receptacle for the envelops, of an issuing-roller mounted in the lower front portion thereof, adjustable frames mounted on each side of the box, a roller mounted in said frames, a roller 21 mounted in the box, a belt or belts which pass around said last two rollers, said belt or belts contacting with the issuing-roller and directing the envelop as it issues from the receptacle, and means for exerting a pressure against roller 21 to force the belts in yielding contact with the issuing-roller; substantially as described.

9. The combination with a feed-roller for initially moving the envelop, of a yielding belt for operating said feed-roller, and means for throwing said feed-roller out of contact with the envelops; substantially as described.

10. The combination with the feed-roller for initially acting on the envelop to be fed, of a yielding belt for operating said feed-roller, and means for adjusting said feed-roller so as to determine the point at which it shall first operate on an envelop whereby the lap of the train of envelops is determined; substantially as described.

11. The combination with a feed-roller which initially acts upon the envelops to be fed, of a yielding belt for operating the same, and a swinging arm which is adapted to throw said belt beyond the periphery of the feed-roller to prevent envelops from contacting therewith; substantially as described.

12. The combination with a box which is slotted at its ends, a shaft passing through said slots, a feed-roller mounted on said shaft which initially acts on the envelops to be fed, nuts in which the ends of said shaft are mounted, bolts which pass through said nuts, worm-wheels on the ends of said bolts, worm-screws which coöperate with said wheels, and a rod which is common to both screws; substantially as described.

13. In an envelop-feeding device for a type-writing machine the combination with a suitable receptacle, of a feeding-roller located in the bottom of said receptacle upon which the pile of envelops normally rest, mechanism for operating said feed-roller to form a train of lapped envelops, and means for preventing contact of the feed-roller with the envelops whereby a single envelop may be issued from the receptacle at the will of the operator; substantially as described.

14. The combination with a type-writing machine, of an envelop-feeding device comprising a suitable receptacle in which a stack of envelops are placed, a movable bottom in said receptacle for supporting and issuing the bottom envelop, said bottom consisting of a feeding-roller which initially acts on the envelop to be issued, and a friction issuing-roller which is belted to and which operates said feed-roller; substantially as described.

15. The combination with a type-writing machine, of an envelop-feeding device comprising a suitable receptacle in which a stack of envelops are placed, a movable bottom in
 5 said receptacle for supporting and issuing the bottom envelop, said bottom consisting of a corrugated feeding-roller which initially acts on the envelop to be issued, and a friction issuing-roller which is belted to and which
 10 operates said feed-roller; substantially as described.

16. In an envelop-feeding device, the combination with a suitable receptacle for the envelops, of an issuing-roller, an adjustable
 15 slide located directly above said issuing-roller and which coöperates therewith, said slide having a beveled edge for regulating the feed of said envelops, means for adjusting the slide toward and from the issuing-roller, and
 20 springs which bear against said slide; substantially as described.

17. The combination with the feed-roller

which initially acts upon the envelops to be fed, of an issuing-roller, and means for adjusting the position of said feed-roller relative to the pile of envelops and the issuing-roller, whereby the lap of the envelops in a train or continuous feed is predetermined; substantially as described.

18. In an envelop-feeding device, the combination with a suitable receptacle for the envelops, of an issuing-roller having frictional surfaces at its ends only, a slide having a beveled edge for coöperating with said frictional surfaces of the issuing-roller, and means for
 35 adjusting said slide relative to the roller; substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this 4th day of December, 1895.

BENJAMIN S. WASIL.

Witnesses:

F. R. CORNWALL,

HUGH K. WAGNER.