(No Model.)

2 Sheets—Sheet 1.

F. D. BELKNAP.

ADDRESSING MACHINE.

No. 538,403. Patented Apr. 30, 1895.

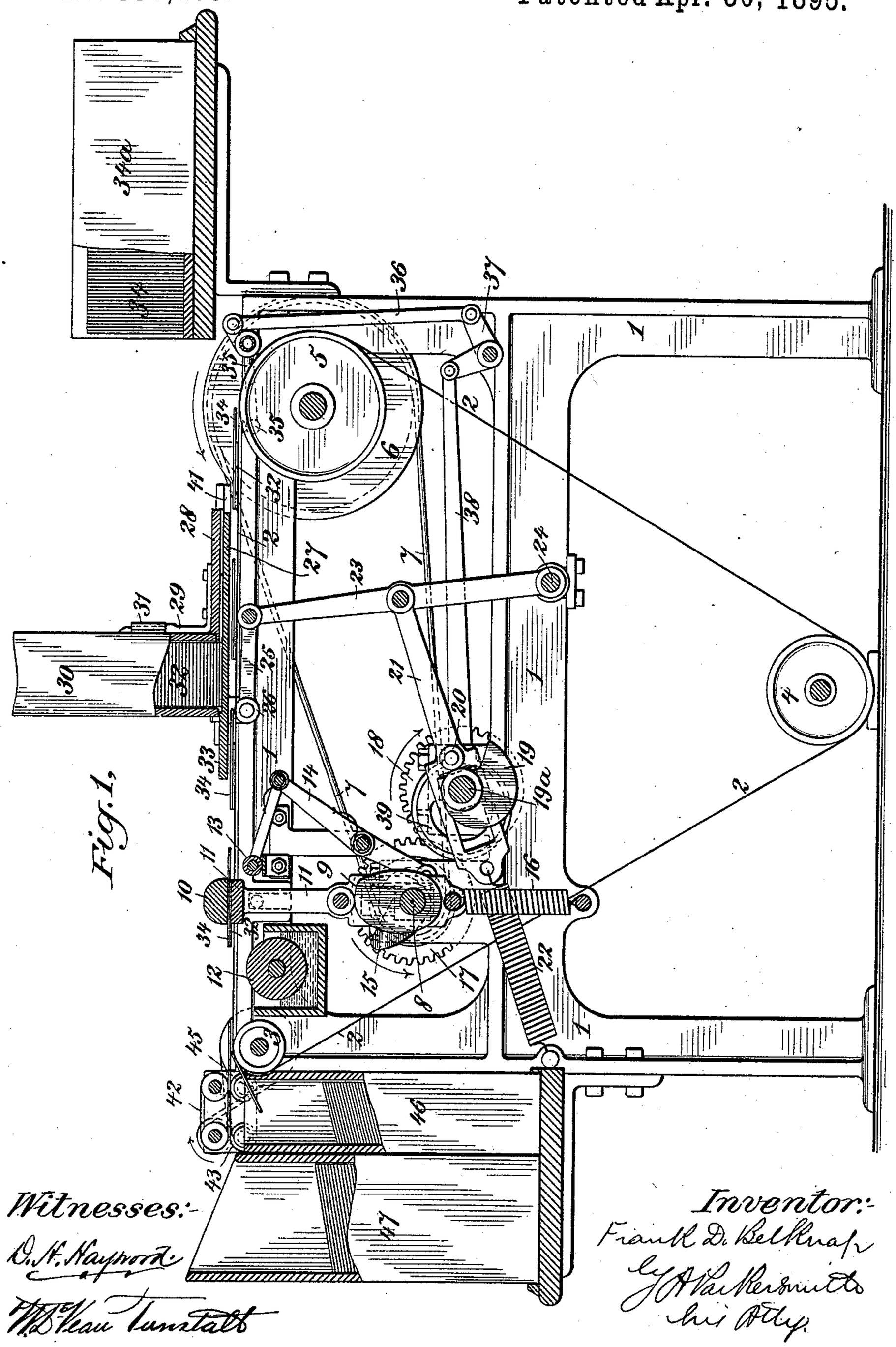

Fig. 1.

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Inventor:-
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his Attys.

(No Model.) 2 Sheets—Sheet 2.

F. D. BELKNAP.

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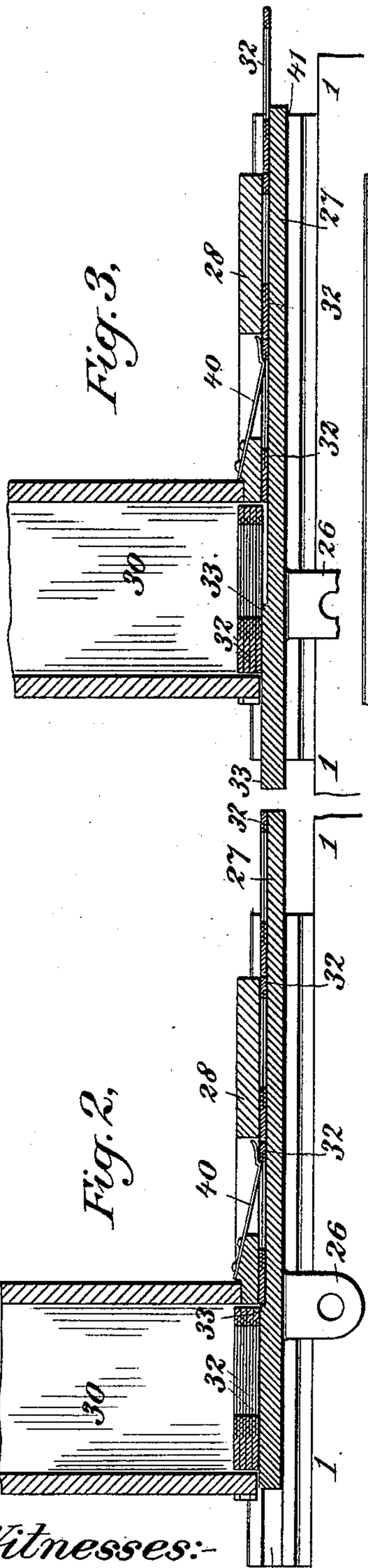

Fig. 2,

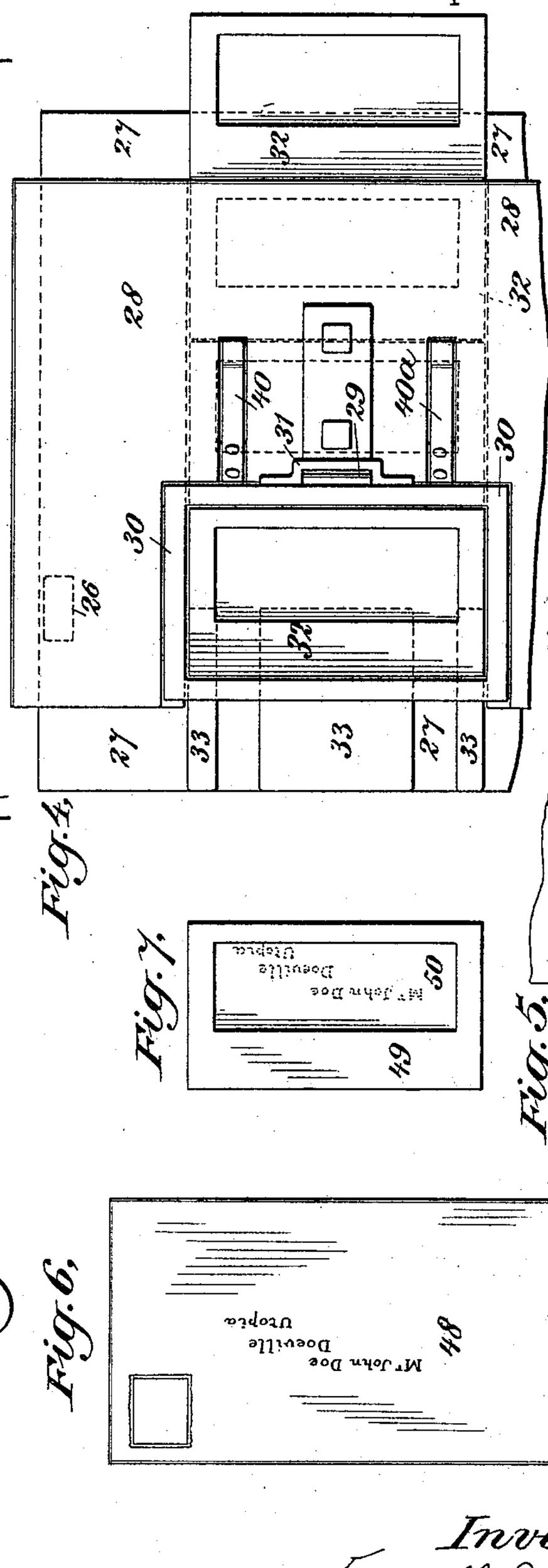

Fig. 3,

Fig. 4,

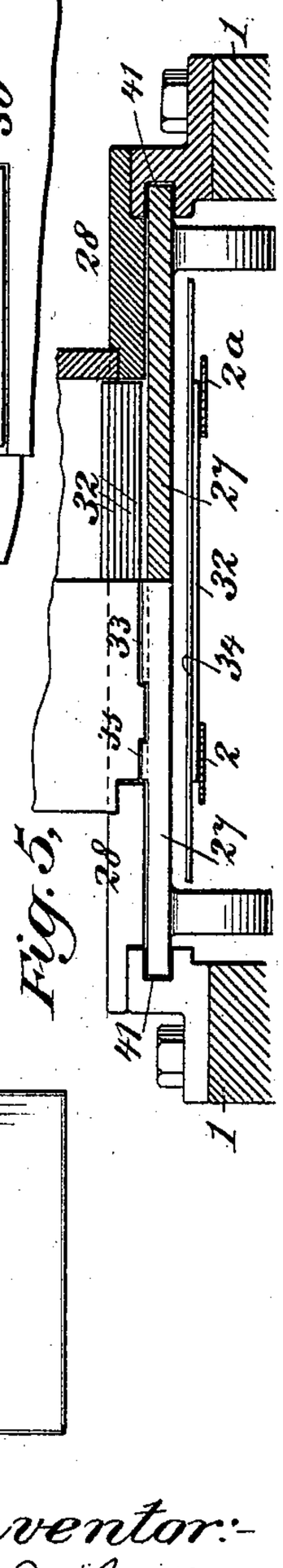

Fig. 5,

Fig. 7.

Fig. 6,

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UNITED STATES PATENT OFFICE.

FRANK D. BELKNAP, OF NEW YORK, N. Y.

ADDRESSING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 538,403, dated April 30, 1895.

Application filed September 21, 1894. Serial No. 523,679. (No model.)

To all whom it may concern:

Be it known that I, FRANK D. BELKNAP, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Addressing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to what are known as addressing machines—that is, machines by which a number of envelopes, postal cards, newspaper wrappers, or other articles can be printed each with one name from a long list of such names and addresses, and mailed accordingly. It is specifically designed to apply to that class of addressing machines in which non-metallic stencils are used. These stencils have heretofore commonly been used in the shape of long rolls of parchment or similar suitable material upon which have been written the names and addresses by means of perforations through said parchment. As frequent corrections, additions and erasures are necessary in any such list it has been a matter of great difficulty to make these changes on such a roll and still preserve the alphabetical order or other classification of the names. To overcome this difficulty I propose to substitute for the parchment roll a set of small non-metallic perforated stencil cards which can be packed in a magazine like cards of a card catalogue and easily removed or added to.

My present invention consists of a simple machine specifically designed to use such card stencils in the addressing of envelopes, &c. The machine is illustrated in the accompanying five sheets of drawings, in which—

Figure 1 is a longitudinal section of a machine embodying my invention. Fig. 2 is a section of a detail of the card-feeding mechanism, showing the slide in its farthest position to the right. Fig. 3 is a similar view showing the slide partially retracted. Fig. 4 is a plan view of the card-magazine, table supporting the same, and slide mechanism. Fig. 5 is a half rear elevation and half cross-section of the slide mechanism. Fig. 6 is a view of the addressed envelope; Fig. 7, a view of the stencil-card.

Throughout the drawings like reference figures refer to like parts.

1, is the main frame of the machine.

2 is an endless feed band which preferably is composed of two parts, 2, 2^a, although the invention would operate in exactly a similar manner if the said endless feed band was made in one piece with open spaces formed therein; the object of the construction in either form being to provide an open space or spaces in the feed belt over which the stencil cards may be placed so as to form removable parts of what is practically an endless stencil belt. The feed band 2 runs around the pulleys 3, 4 and 5. The pulley 5 is driven by the larger pulley 6 which is keyed on to its shaft. The pulley 6 is driven by the belt 7 which runs around a smaller pulley on the main shaft 8.

34 is a series of envelopes, postal-cards or other articles which are to be addressed, placed in a magazine 34^a.

32 is a similar series of stencil cards contained in a magazine 30 which rests upon the table 28 and is prevented from moving horizontally by reason of the strap 31 encircling the vertical portion of the angle iron 29, which angle iron is bolted to said table 28. Running beneath said table 28 and beneath the mouth of the magazine 30, is the reciprocating slide 27 which is mounted in grooved portions 41 of the main frame of the machine as best shown in Fig. 5. This slide 27 has a raised portion 33 which is equal to or slightly less than the thickness of one of the stencil cards 32.

The slide 27 should be given a reciprocating motion and preferably that motion should be of moderate rapidity toward the right but a quick return toward the left. The preferred mechanism producing this motion consists of the cam 19 on the shaft 19^a, which by means of the reciprocating link 21, the cam roller 20 mounted thereon, the retracting spring 22, the lever 23, pivoted to the main frame at 24, and link 25 and lugs 26, transmits a slow outward motion and a quick return motion to the slide 27, as will be readily understood by referring to Fig. 1 of drawings. Shaft 19^a is revolved

by means of a pinion 18 meshing with the pinion 17 on the main shaft 8.

The envelopes 34 are fed down one at a time on the endless feed band by means of the suction fingers 35, operated by the link 36, bell crank 37, eccentric rod 38, and eccentric 39 on the shaft 19a.

The inking mechanism consists of the reciprocating inking pad 11 operated by the cam 9 on the main shaft and the retracting springs 16, acting with the ink fount 12, inking roller 13, and connecting lever 14 operated by the cam 15 on the main shaft. The inking pad lifts up the envelope from the continuously moving feed band together with the stencil card and presses them against the stationary platen 10.

40 and 40a are light spring fingers operating through recesses in the table 28 to prevent the backward motion of the stencil card with the slide 27 when said slide is moved toward the left to permit of the dropping of another card from the magazine.

42 and 43 are rapidly running tapes operated from the pulley on the shaft of roller 3 by means of the crossed belt 45. These tapes are arranged in two sets at a distance apart a little less than the length of an envelope but greater than the length of a stencil card.

46 is the magazine or collecting box for the stencil cards, and 47 is a similar box for the printed envelopes.

48 represents a printed envelope and 49 is a stencil card having a thin portion 50 through which the address is pricked in the manner well understood in this art, while the thicker portion 49 gives stiffness to the card.

The operation of my invention is as follows: Motion being given to the main shaft 8 in any convenient way the feed band 2 is given a continuous motion. The reciprocating slide 27 is given a slow equable motion to the right and slips off the bottom card in the magazine 30 of stencil cards. The said card is prevented from returning with the quick return motion of the slide 27 by reason of the retarding effect of the spring fingers 40 and 40a. The second movement of the slide forces out another card and drives the first card to the extreme position to the right shown in Fig. 1. A third motion of the slide 27 forces the first card out into the position at the extreme right as shown in Fig. 2, and upon its rapid return to seize a fourth card from the magazine, the first card is dropped upon the feed band 2. Fig. 3 shows the slide upon its return motion just before the card at the extreme right is dropped. The motion of the slide is so quick that the card falls flat upon the feed band and this action is assisted and regulated by reason of the fact that the envelope in the grasp of the suction fingers 35, comes down on top of the stencil card at the moment the support of the slide 27 is withdrawn from under it and the two are deposited on the feed band as shown in Fig. 1. The motion of the feed band carries each stencil card with its envelope on top of it along to the inking mechanism and the different parts of the machine are so timed that at the moment each envelope and card arrives under the stationary platen 10, the inking pad 11 comes up, lifts the card and envelope from the feed band, forces them against the platen 10, prints the address on the card upon the envelope and then on its downward motion the inking pad leaves the card and printed envelope upon the feed band to be carried forward by its motion. When these arrive over the roller 3 the rapidly moving tapes 42 and 43 pick up the envelope and shoot it over into the collection box 47. The shorter stencil card falls between the two sets of tapes and into the collection box 46.

When the magazines and collection boxes are respectively emptied or filled they can be removed and replaced by new ones.

The slide 27 is extended out underneath the projecting portion of the table 28 and together with such projecting portion of the table forms a guide for the cards as they leave the magazine and start on their journey to the printing mechanism. The guides thus formed constitute a greater or less portion of a predetermined path laid out for the card by various parts of the machine, which path passes through the printing mechanism. In the construction shown, the guide forms only a part of said predetermined path which is continued by other parts of the machine, but it might be extended to form a much greater portion of said path, or even the entire portion thereof.

It is also evident that the under guide instead of being a portion of the moving slide might be stationary while the slide would operate through a slot or open space in said under guide. The principle of operation would be the same though the details of construction would be slightly modified.

Having therefore described my invention, what I claim as new, and desire to protect by Letters Patent, is —

1. In an addressing machine the combination of the inking mechanism, the endless feed band which has an open space or spaces therein and passes through said inking mechanism, the magazine of stencil cards, the reciprocating slide which is mounted at one end of said magazine, mechanism for giving said slide one complete reciprocation for each operation of the inking mechanism, a magazine of envelopes, and a set of vibrating suction fingers which pick up the first envelope in the magazine and deposit it on the feed band on top of one of the stencil cards fed out previously by the reciprocating slide, upon an open space therein, substantially as described.

2. In an addressing machine, the combination of the continuously moving feed band, which has an open space or spaces therein, the magazine of stencil cards, the table on which the magazine rests, the reciprocating slide which moves beneath the table, beneath the mouth of the magazine and over the feed

band, the projection on said slide which slips off the bottom card in the magazine at each reciprocation and places a card upon the feed band over an open space therein, together with the inking mechanism to which the slide and feed band deliver the card, substantially as described.

3. In an addressing machine, employing stencil cards, the card feeding mechanism which consists of the following combination of parts: the endless feed band, which has an open space or spaces therein, the magazine of cards, the slide which reciprocates beneath the mouth of said magazine, the projection on said slide which is of a height no greater than the thickness of a single card, the main frame of the machine and the mechanism for reciprocating the slide, substantially as described.

4. In an addressing machine, employing stencil cards, the card feeding mechanism which consists of the following combination of parts: the endless feed band which has an open space or spaces therein, the magazine of cards, the slide which reciprocates beneath the mouth of said magazine, the projection on said slide which is of a height no greater than the thickness of a single card, the main frame of the machine and mechanism for reciprocating the slide, together with the spring fingers which bear on the card after it has been fed out of the magazine and prevent its return to the same on the backward motion of the slide substantially as described.

5. In an addressing machine, the combination of the continuously moving double feed band which carries the envelope and the stencil, the overhanging platen and the reciprocating inking pad which moves between the two parts of the feed band and lifts the stencil and envelope off of the feed band, presses them against the overhanging platen and then drops them on the feed band again substantially as described.

6. In an addressing machine, the inking mechanism the endless feed band having an open space or spaces therein which passes through said inking mechanism and bears the envelope to be addressed and the stencil, located over an open space, the separate collection boxes for the addressed envelope and stencils, and the set of rapidly moving tapes which pick up the larger of the two articles, and deposits it in the farthest collection box, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK D. BELKNAP.

Witnesses:

A. PARKER SMITH,

PETER R. GATENS.