No. 627,380.

Patented June 20, 1899.

F. D. BELKNAP.

CARD RECEIVING BOX.

(Application filed Sept. 30, 1898.)

(No Model.)

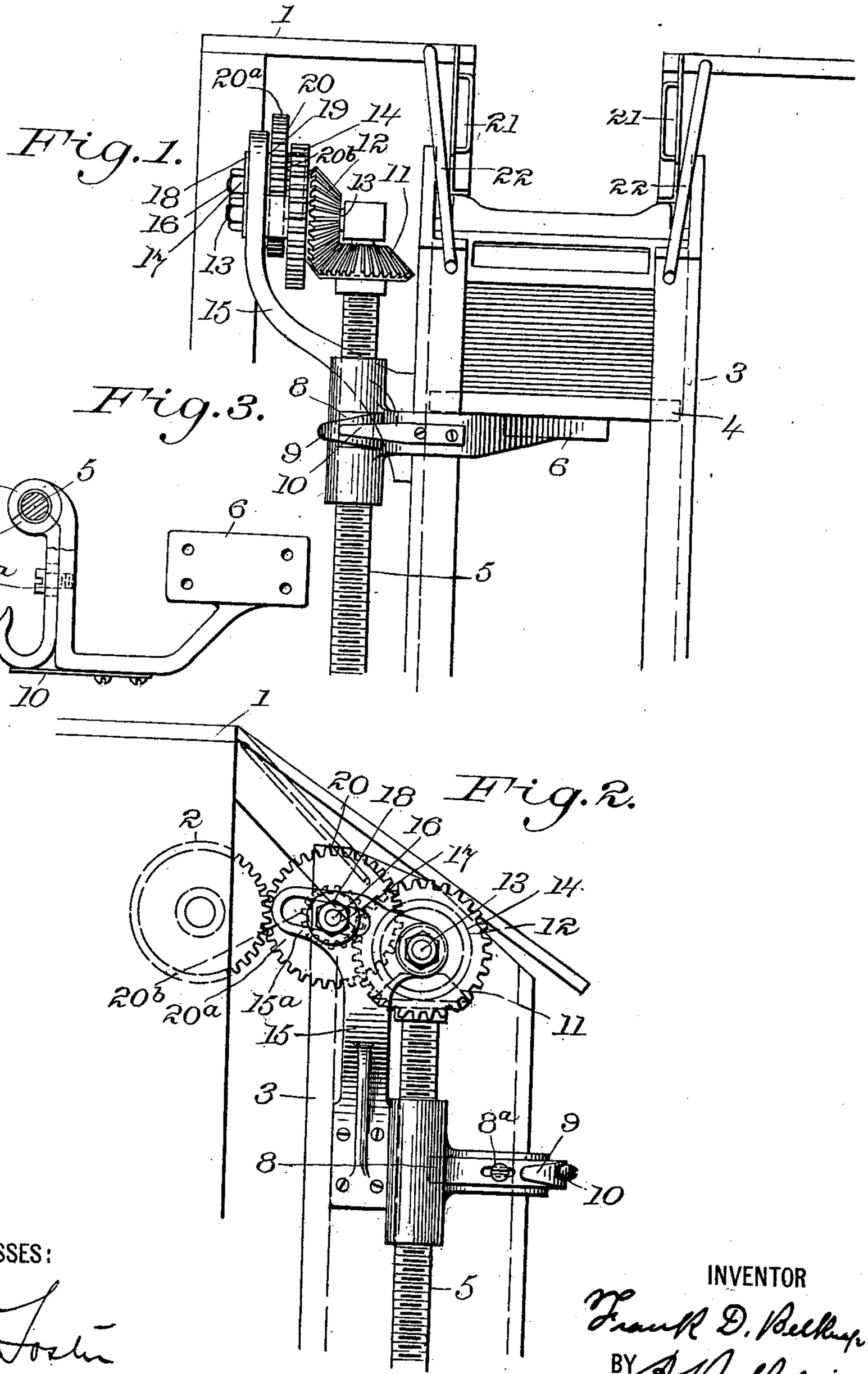

Fig. 1.

Fig. 3.

Fig. 2.

WITNESSES:

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CARD-RECEIVING BOX.

SPECIFICATION forming part of Letters Patent No. 627,380, dated June 20, 1899.

Application filed September 30, 1898. Serial No. 692,287. (No model.)

To all whom it may concern:

Be it known that I, FRANK D. BELKNAP, a citizen of the United States of America, and a resident of New York city, New York county, New York State, have invented certain new and useful Improvements in Card-Receiving Boxes, of which the following is a specification.

My invention relates to card-receiving boxes having movable bottoms automatically controlled, so that the said bottom may be lowered gradually as the cards are fed into the box. It is more specifically designed for attachment to one of the general type of address-printing machines illustrated in my Patents No. 592,603, granted October 26, 1897, and No. 609,402, granted August 23, 1898, in which a series of stencil-cards are used to carry the addresses to be printed, and said cards must be collected in a column in a receiving-box, each card right side up after its discharge from the machine, so that they will be in order for use over again.

The preferred form of my invention is illustrated in the accompanying sheet of drawings, in which—

Figure 1 is a detail elevation of a portion of the address-printing or other card-delivering machine with my card-box in position thereon. Fig. 2 is a side elevation at right angles to Fig. 1. Fig. 3 is a detail showing the sleeve with movable toothed sector for the feed-screw and the manner in which the movable bottom of the card-box is supported from said sleeve.

Throughout the drawings like reference-figures refer to like parts.

1 represents a portion of the frame of the address-printing or other card-delivering machine. 2 is a gear-wheel thereon, which is rotated at a speed corresponding to the rate of delivery of the cards.

3 is the body of the removable card-box, which is supported on horizontal slides (not shown) extending from the frame of the machine in substantially the manner illustrated and described in my above-mentioned patents. 4 is the sliding bottom for said card-box, and 5 is the feed-screw extending along said box and controlling the movement of the sliding bottom. 6 is a bracket supporting said sliding bottom 4, and 7 a sleeve to which said bracket is attached, which said sleeve slides up and down on the feed-screw. This sleeve has a removable sector 8, which is provided with teeth or sections of a screw-thread meshing with the screw-thread on the feed-screw 5. This sector is preferably mounted in a slide whose motion is limited by the pin and slot 8^a, and the end of the extended portion of the sector is bent over to form a handle 9. 10 is a spring which normally forces said slide and sector inward, so as to engage with the feed-screw.

11 is a bevel-gear on the upper end of the feed-screw meshing with the second bevel-gear 12, mounted on a horizontal shaft 13, which shaft is supported from the bracket 15, mounted on the card-box. On the shaft 13 is the gear-wheel 14, rigidly connected to the bevel-gear 12.

15^a is a slotted ear on bracket 15, in which is adjustably mounted the stud-shaft 16 by means of the nut 17, washer 18, and collar 19 on said stud-shaft. On this stud-shaft is the variable-speed gear 20, composed of the larger gear 20^a, which meshes with the gear 2, and the smaller gear or pinion 20^b, which meshes with the gear 14.

21 21 represent the card-guides delivering the cards to the box, and 22 22 are the envelop-guides to carry the envelops, wrappers, or other articles printed over the mouth of the card-box.

The method of operating my invention is as follows: The speed at which the bottom of the card-box should fall being determined by the thickness of the cards to be delivered the corresponding variable gear 20 is mounted in the slotted ear 15^a of the bracket 15 and adjusted so as to mesh with the gear 14, and also when the card-box is in position to mesh with the gear 2. The movable sector 8 being withdrawn from engagement with the feed-screw by pulling the handle 9 outwardly the sliding bottom 4 may be lifted up to the highest position. The handle 9 being released the spring 10 will then force the movable sector 8 back into engagement with the feed-screw. When the machine is started up, the gear 2 will begin to revolve and the cards be delivered down the guides 21. The rotation of the gear 2 is transmitted through adjustable gear 20 to gear 14 and through the

bevel-gears 11 and 12 to the feed-screw 5, rotating the same at a speed which lowers the sliding bottom 4 a distance equal to the thickness of one card during the period which the card-delivering machine is occupied in delivering such card. Accordingly the top of the column of cards will always be approximately even with the mouth of the card-box, and the cards will have no opportunity to turn over or become otherwise disarranged, as would occur if they were dropped down the whole or any considerable portion of the length of the box. When the box is full, it may be removed by pulling it off the slides without any further trouble in the way of disengaging the gearing and another one slid into its place, the second one coming immediately into mesh with the gear 2 and being ready to start off into operation. If the cards are to be removed and stored in another receptacle, the column of cards may be lifted out and the sliding bottom moved to the top to receive a new lot in the manner before described.

The slot in the slotted ear 15^a being considerably wider than the diameter of the stud-shaft 16 the same may be adjusted up and down within limits to insure the most perfect intermeshing of the gears 2 and 20^a. Also when the speed of the sliding bottom is to be changed the variable-speed gear 20 may be removed and another one substituted having a gear 20^a of less diameter and pinion 20^b of greater diameter when the speed of the sliding bottom is to be increased or having directly opposite changes of dimensions when the speed of the sliding bottom is to be decreased.

In cases where cards of only one thickness are used in a given machine the cost of the apparatus may be reduced by substituting a single gear for the double gear 20^a 20^b, said single gear being a simple intermediate gear between the gears 2 and 14.

The advantages of the invention consist in its convenience of manipulation and adjustment, as above described, and in the fact that the box may be taken off and put on the machine without any delay in the making and breaking of gear connections.

It is evident that various changes could be made in the details of construction of the apparatus described and illustrated without departing from the spirit and scope of my invention so long as the relative arrangement of parts shown in the drawings and the general mode of operation described in the specification are preserved. Thus gearing of a different character from that described might be substituted for the toothed gearing shown. Other forms of feed-gear than the screw and nut shown might be substituted, &c.

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

1. The combination of the card-delivering machine, the rotating gear thereon, the detachable card-box, the movable bottom therefor, the mechanism for raising and lowering said bottom, and the driving-gear for said mechanism, arranged to mesh with the first-mentioned gear when the box is in position, and to disengage when the box is removed substantially as described.

2. The combination of the card-delivering machine, the rotating gear thereon, the detachable card-box, the movable bottom therefor, the mechanism for raising and lowering said bottom, and the adjustably-mounted driving-gear for said mechanism, arranged to mesh with the first-mentioned gear when the box is in position, and to disengage when the box is removed, substantially as described.

3. The combination of the card-delivering machine, the rotating gear thereon, the detachable card-box, the movable bottom therefor, the mechanism for raising and lowering said bottom, and the variable-speed driving-gear for said mechanism, arranged to mesh with the first-mentioned gear when the box is in position, and to disengage when the box is removed, substantially as described.

4. The combination of the card-delivering machine, the rotating gear thereon, the detachable card-box, the movable bottom therefor, the feed-screw extending along said box, the sleeve for said screw connected to said box-bottom, and the movable toothed sector for said sleeve adapted to engage the screw, substantially as described.

5. The combination of the card-delivering machine, the rotating gear thereon, the detachable card-box, the movable bottom therefor, the feed-screw extending along said box, the sleeve for said screw connected to said box-bottom, and the movable spring-controlled toothed sector for said sleeve adapted to engage the screw, substantially as described.

Signed by me, at New York city, New York, this 28th day of September, 1898.

FRANK D. BELKNAP.

Witnesses:
PETER R. GATENS,
MARTIN D. JOYCE.