

June 21, 1932.

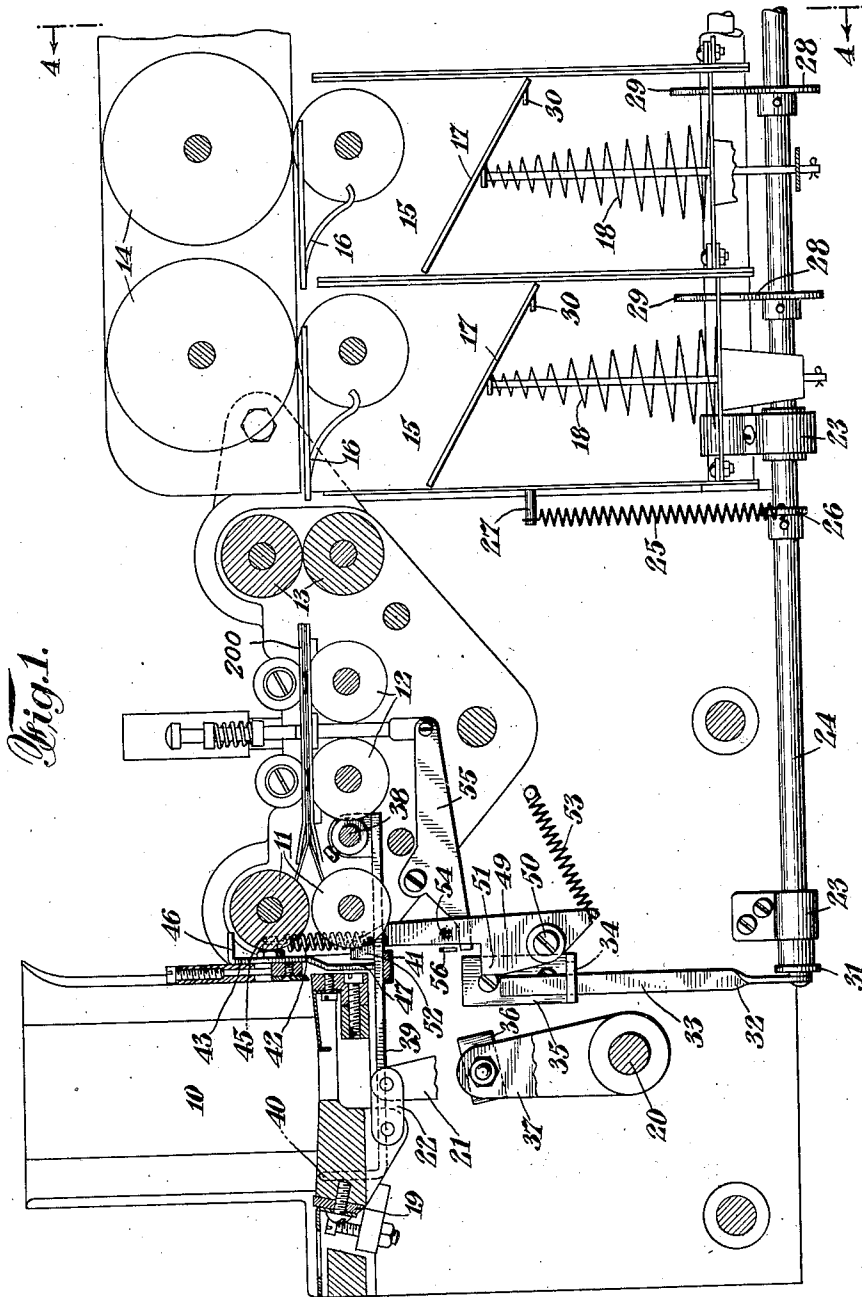
W. W. LASKER

1,864,075

CARD BOX CONTROLLED NONFEED DEVICE

Filed March 28, 1927

4 Sheets-Sheet 1



Inventor
William W. Lasker

By his Attorney

H. A. Sparks

June 21, 1932.

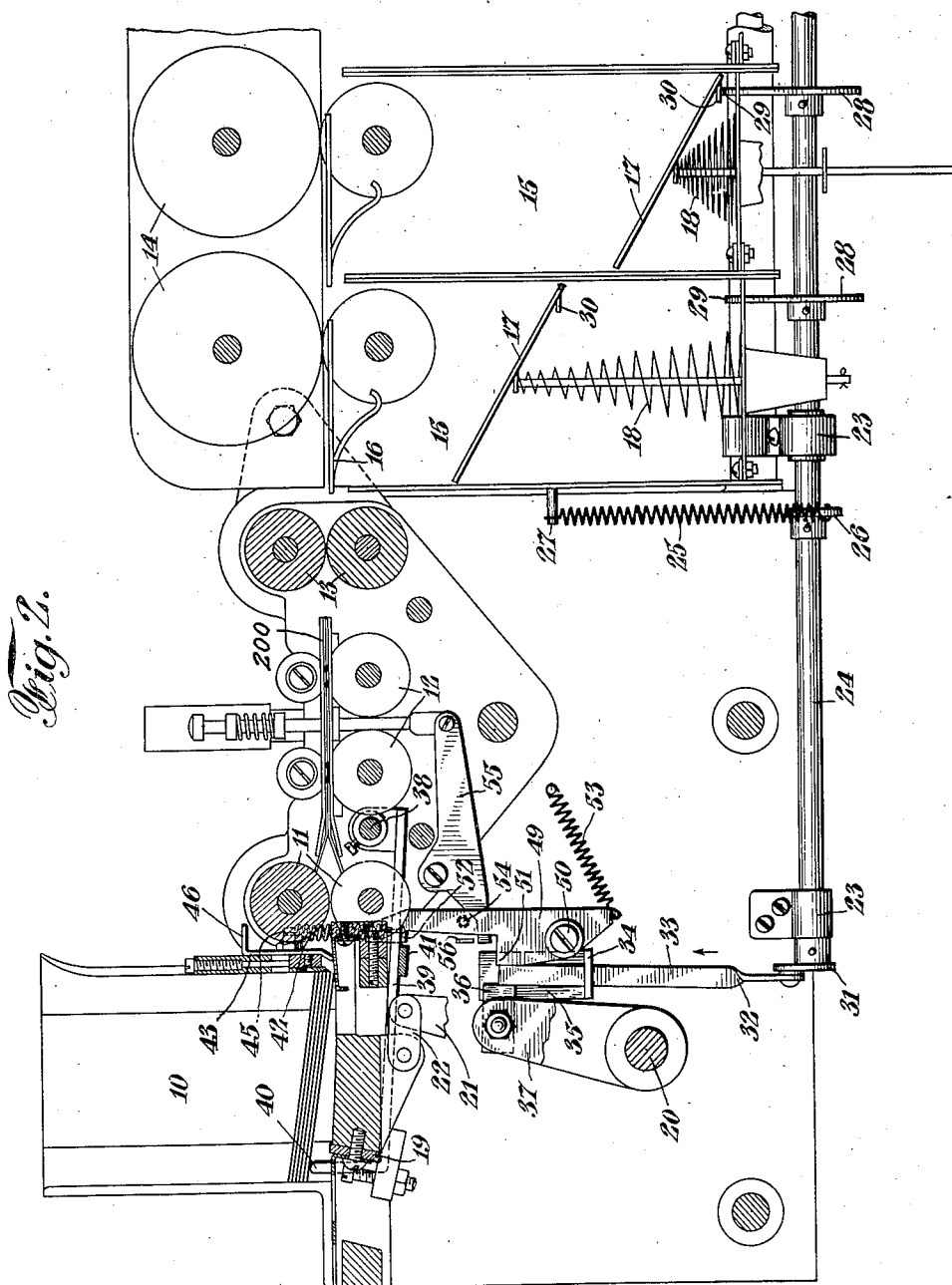
W. W. LASKER

1,864,075

CARD BOX CONTROLLED NONFEED DEVICE

Filed March 28, 1927

4 Sheets-Sheet 2



Inventor

William W. Lasker

By his Attorney

H. A. Sparks.

June 21, 1932.

W. W. LASKER

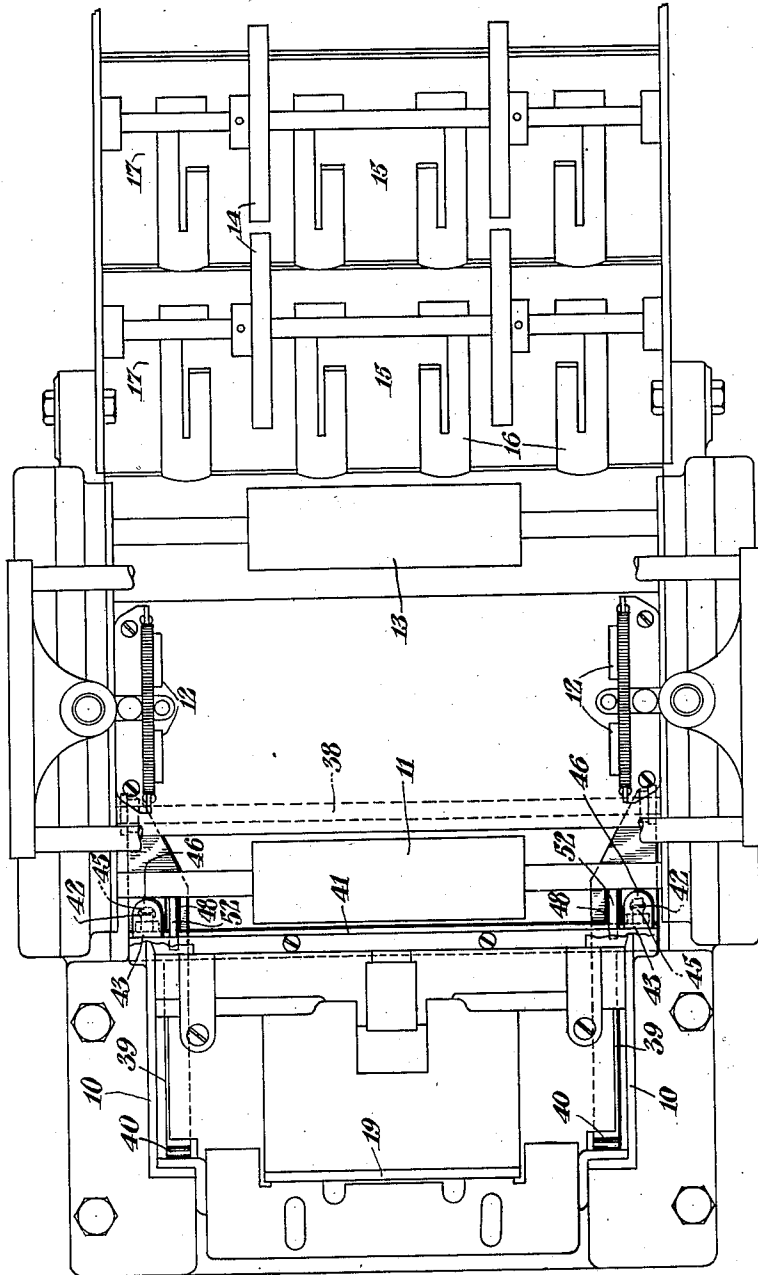
1,864,075

CARD BOX CONTROLLED NONFEED DEVICE

Filed March 28, 1927

4 Sheets-Sheet 3

Fig. 3.



Inventor
William W. Lasker

By his Attorney

H. A. Sparks

June 21, 1932.

W. W. LASKER

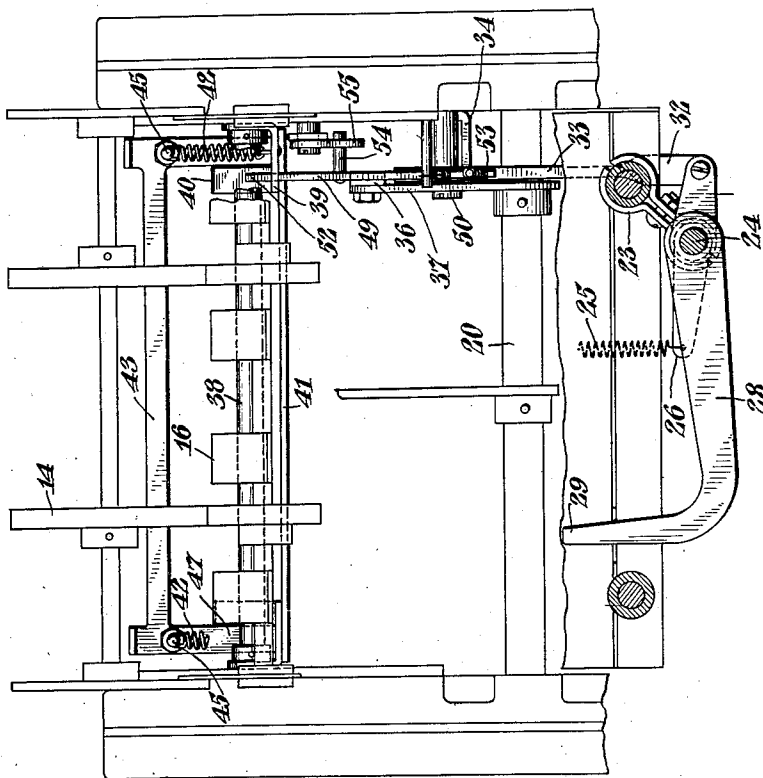
1,864,075

CARD BOX CONTROLLED NONFEED DEVICE

Filed March 28, 1927

4 Sheets-Sheet 4

Fig. 4.



Inventor
William W. Lasker

By his Attorney

H. A. Sparks

UNITED STATES PATENT OFFICE

WILLIAM W. LASKER, OF BROOKLYN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS,
TO REMINGTON RAND INC., OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

CARD-BOX CONTROLLED NONFEED DEVICE

Application filed March 28, 1927. Serial No. 179,024.

This invention relates to card-box controlled non-feeding devices for use in connection with card sorters of the type shown in the patent to W. W. Lasker No. 1,315,370 issued Sept. 9, 1919, and commonly known on the market as the Powers sorter.

The principal object of the present invention is to provide mechanism whereby when a card box becomes filled or has received a certain number of cards the mechanism will automatically prevent the feeding of further cards to the card sorter, without stopping the machine.

Another object of the invention is to produce a machine of this type wherein the card feed may be held up when the card box is filled and yet permit by manual control the feeding of a number of additional cards through the machine. Another object of the invention is to provide a device of this nature whereby the operation of the machine may be greatly facilitated by not having to start up the operating mechanism after each card box has been filled.

Another object of this invention is to produce a device of this nature which shall be simple in construction and very effective for the purpose for which it is designed.

Other objects will appear as the specification proceeds and will be pointed out in the appended claims.

The mechanism by which I attain these objects is illustrated in the accompanying drawings in which:

Fig. 1 is a vertical sectional view of a sorter provided with my card-box controlled non-feeding device.

Fig. 2 is a similar view but indicating the position of the parts of the card-box when filled.

Fig. 3 is a fragmentary top plan view.

Fig. 4 is a vertical sectional view taken on line 4-4 of Fig. 1.

Like numerals of reference refer to like parts in the several views.

Referring now to the drawings in detail, the general portions of the ordinary Powers sorter are shown, a card magazine being indicated at 10 the card inject rollers at 11, the feed rollers at 12 and the eject rollers at 13.

The usual analyzer is indicated at 200, none of it being shown except the two perforated plates between which the cards are held when being sensed. The carry rollers are indicated at 14, and the card boxes are indicated generally at 15. Each of the card boxes includes a deflector 16 which is fully described in the above mentioned Lasker patent and which is set to operate by mechanism not shown herein so as to direct the card passing thru the sorter into the respective card-boxes, for which they are intended. Each of the card-boxes is provided with a movable bottom plate 17 which when the card-box is empty is supported in an upper position by spring 18. As the card-box is filled the plate 17 is moved downwardly against the tension of the spring 18 as shown in the right hand card-box on Fig. 2.

In the normal operation of the machine a picker knife 19 is operable from shaft 20 by means of arms 21 and links 22 as fully set forth in said Lasker patent. The picker knife is reciprocated once at each cycle of operation of the machine and picks the bottom card of the stack in the magazine 10 and moves it along between the inject rollers 11.

The part of the mechanism thus far described is old in the said patent as is of course the general framework of the machine indicated in the drawings. The shaft centers have also been shown and it will be readily seen from the said patent that these shafts were already in use in such a machine. The novel mechanism which forms the specific subject matter of this application will now be described.

Mounted in bearings 23 and supported upon the framework of the machine is the shaft 24 which extends under the card-boxes 15 and is rotatable to a certain extent to effect operation which will presently be described.

The spring 25 is attached at one end to an arm 26 secured to the shaft 24, said spring being anchored to a pin 27 and normally operating to turn the shaft clock-wise in Figure 4, such turning movement of the shaft being limited by arm 28 contacting with the edge of the slot through the bottoms 29 of the several card boxes.

The arms 28 are rigidly secured to the shaft 24, one arm 28 being provided for each card box and each arm 28 being formed with an upwardly extending portion 29 which is located below the shoulder 30 on the respective plate 17.

It will now be seen that as cards pass through the machine and are deflected into the respective boxes, that the respective plates 17 are borne downwardly against the action of spring 18 owing to the weight of the cards and that eventually the shoulder 30 will press down its respective finger 29, thereby rocking the particular arm 28 so as to rock shaft 24 counter-clock-wise in Figure 4 and against the tension of spring 25. Such rocking of shaft 24 prevents further feeding of cards by operating mechanism which will now be described.

Secured to the end of shaft 24 below the magazine 10, is an arm 31 to which is pivotally connected an upwardly extending link 32 whose upper portion constitutes a throw-off member 33. The member 33 passes thru and is guided in a slot 34 in a bracket 35 carried by the frame of the machine. In its lowered or normal position, member 33 is below the path of movement of a lug or finger 36 on an arm 37 operable from shaft 20 which operates the picker knife 19.

Secured on a rock shaft 38 is a pair of rock-arms 39 which extend toward the left in Fig. 1 and extend under the card magazine 10, terminating in fingers 40 which project upwardly at opposite ends of the picker knife 19, and when the machine is feeding cards and none of the card boxes is so full as to have rocked shaft 24, these fingers stand slightly below the bottom card in the card magazine 10. A cross bar 41 rigidly secures the arms 39 together forming a rigid frame comprising shaft 38, arms 39 and cross bar 41, which frame is constantly urged upwardly by a pair of springs 42, each anchored at one end to one of the arms 39 and at the other to a respective stationary stud or pin 45. A two legged slide 43 is guided on the studs 45 for vertical movement by either of two manipulative portions 46. The legs or fingers 47 of the slide bear on the arms 39. The construction is such that the frame comprising the cross bar 41, shaft 38 and arms 39 may be depressed by pressing on either of the manipulative portions 46.

The arms 39 on which fingers 47 rest are slotted at 48 (Fig. 3) to permit the passage therethru of the free ends of latch members 49 pivotally supported at 50. These latch members 49 are formed with a lug 51 adjacent the upper end of the throw-off member 33, and with a hook 52 adjacent the cross-bar 41. A spring 53 tends constantly to throw the hook toward bar 41. A pin 54 extends laterally over a lever 55 which is a usual part of the equipment of the standard Powers

sorter in which it operates to move a lever 56 to shut off the power when the cards in the magazine 10 are exhausted or fail to feed.

The operation of the mechanism which has been described is as follows:

The operator in setting the machine in operation first depresses a finger piece thereby rocking or shifting the slide 43 so that one of its fingers 47 rocks the frame comprising shaft 38, arms 39 and cross-bar 41, thereby lowering the fingers 40 to the position shown in Fig. 1 so that the cards in the magazine are down in feeding relationship with picker knife 19. The rocking of the frame also brings bar 41 below the hooks 52 of latches 49, and the springs 53 force hooks 52 into latching engagement with bar 41 thereby locking the frame down in the position shown in Fig. 1. The power is now turned on, and cards are fed, sensed, and sorted into their respective card boxes 15, in the usual manner well known in the art. As the operation progresses, one or another of the card boxes becomes considerably filled as indicated at the right in Fig. 2, and as the plate 17 descends under the weight of the cards, the lug 30 engages and depresses the finger 29 of the respective rock-arm 28 thereby rocking shaft 24. Shaft 24 carries with it arm 31 and raises link 32 and throw-off member 33 until member 33 is interposed between the lug 36 and the lug 51. During the ensuing operation of the picker knife operating means, lug 36 forces member 33 against lug 51 thereby rocking the latches 49 until their hooks 52 are free from bar 41. The springs 42 now take effect on the frame raising it so that fingers 40 lift the cards in the magazine 10 out of the path of the picker plate 19 as shown in Fig. 2, so that no more cards will be fed from the magazine. At the same time the pin 54 takes a position over the inclined edge of the power-cut-out lever, 55, as shown in Fig. 2, so that said lever cannot move lever 56 to stop the machine. If there are only a few more cards in the magazine 10, it may be desired to sort these before removing the cards from the filled card box. In this case, the operator presses down one of the finger pieces 46 and holds it down until the magazine is exhausted. It is necessary to hold the finger-piece down for the throw-off member 33 remains raised and latches 49 will be kicked off at every operation until the cards are removed from the filled box. However, if the magazine is filled when the card box is filled sufficiently to cause the cards to stop feeding, then the operator removes the cards from the filled box, whereupon the shaft 24 returns to normal under the influence of springs 25 and the throw-off member 33 is again moved down out of the path of lug 36. A finger-piece 46 is again depressed, and as the power has not been shut off, feeding of cards from the magazine is immediately resumed, the frame is again

latched down, and the sorting continues until a card box is again sufficiently filled to effect stopping of the card-feed. It is to be remembered that when the latches 49 are in the position shown in Fig. 1, the pin 54 is sufficiently removed to the left so that the operation of lever 55 is not interfered with but may shut off the power if the magazine is emptied or if for any reason other than the filling of a card box, cards fail to feed.

While I have said that the machine operates to prevent feeding of cards when a card box is filled, it is readily understood that what is meant is when a card box is filled to the desired extent and the exact extent can be determined and set when the machine is being manufactured. Obviously the box does not have to be choke-full to effect stopping of the feed. It will also be seen that there is a great advantage in stopping the card feed without shutting off the power, first, in that additional cards may be fed without removing the cards from the filled box, and second, in that the feeding of cards may be resumed after removing the cards from the filled box instantly upon depressing the finger-piece 46.

While I have described what I consider to be the preferred embodiment of my invention, it is obvious that minor changes might be made without departing from the spirit of my invention, and I therefore do not limit myself to the specific embodiment herein shown and described, nor to any thing less than the whole of my invention as hereinafter claimed.

What I claim is:

1. The combination with sorting mechanism for perforated cards including a card magazine, and card receptacle having spring-supported card-supporting plates, of means operable by said plates for effecting lifting of cards in said magazine.

2. The combination with sorting mechanism for perforated cards including a card magazine, card boxes, and means for feeding cards from said card magazine, of means co-operative with said sorting mechanism for preventing feeding of cards by said feeding means without preventing operation of said feeding means.

3. The combination with sorting mechanism for perforated cards including a card magazine, card boxes, and means for feeding cards from said card magazine, of means co-operative with said sorting mechanism and operable from said card boxes for preventing feeding of cards by said feeding means without preventing operation of said feeding means.

4. The combination with sorting mechanism for perforated cards including a card magazine, and a picker device for feeding cards from said magazine, of means automatically operable under control of cards fed

from the magazine for moving cards in said magazine out of operative relation with said picker device.

5. The combination with sorting mechanism for perforated cards including a card magazine, a picker device for feeding cards from said magazine, of means for moving cards in said magazine out of operative relation with said picker device, and manipulative means for rendering the card moving means ineffective.

6. The combination with sorting mechanism for perforated cards including a card magazine, a picker device for feeding cards from said magazine, of means for moving cards in said magazine out of operative relation with said picker device, manipulative means for rendering the card moving means ineffective, and automatic means for retaining said card moving means in ineffective condition.

7. The combination with sorting mechanism for perforated cards including a card magazine, a picker device for feeding cards from said magazine, of means for moving cards in said magazine out of operative relation with said picker device, manipulative means for rendering the card moving means ineffective, automatic means for retaining said card moving means in ineffective condition, and automatic means for disabling the first said automatic means.

8. The combination with sorting mechanism for perforated cards including a card magazine, card boxes and means for feeding cards from said card magazine, of a device for rendering the card-feeding means ineffective without interrupting operation thereof, and means for rendering said device ineffective.

9. The combination with sorting mechanism for perforated cards including a card magazine, card boxes and means for feeding cards from said card magazine, of a device for rendering the card-feeding means ineffective without interrupting operation thereof, means for rendering said device ineffective, and a device for automatically retaining the last said means in effective condition.

10. The combination with sorting mechanism for perforated cards including a card magazine, card boxes, and means for feeding cards from said card magazine, of a device for rendering the card-feeding means ineffective without interrupting operation thereof, means for rendering said device ineffective, a device for automatically retaining the last said means in effective condition, and automatic means for rendering the last said device ineffective.

11. The combination with sorting mechanism for perforated cards including a card magazine, means for feeding cards from said magazine, and power shut-off means, of means for preventing feeding of cards from said magazine and simultaneously prevent-

ing operation of said power shut-off means.

12. In a machine of the character indicated, a card magazine, an analyzer, one or more card receptacles, means for stopping the machine when no card is fed from the magazine and means for preventing the machine from being so stopped controlled by the cards in one of said receptacles.

13. In a machine of the character described, a card magazine, an analyzer, one or more card receptacles, apparatus for feeding cards from said magazine through said analyzer to said receptacles, means for stopping the machine when no card is fed to said analyzer and means for interrupting the card feed without stopping the machine when a receptacle is filled.

14. In a machine of the character described, a card magazine, an analyzer, one or more card receptacles, apparatus for feeding cards from said magazine through said analyzer to said receptacle, means for stopping said feeding means when no card is fed to said analyzer and means for interrupting the card feed when a receptacle is filled and at the same time rendering said stopping means ineffective.

15. In a machine of the class described, a card magazine, one or more card receptacles, feeding apparatus between said magazine and receptacles, means for stopping the feeding apparatus when no card is fed from the magazine and means for interrupting the feed of cards when a receptacle becomes filled and at the same time preventing operation of the stopping means.

In testimony whereof I affix my signature.
WILLIAM W. LASKER.

20

25

50

55

60