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MAGAZINE THROAT

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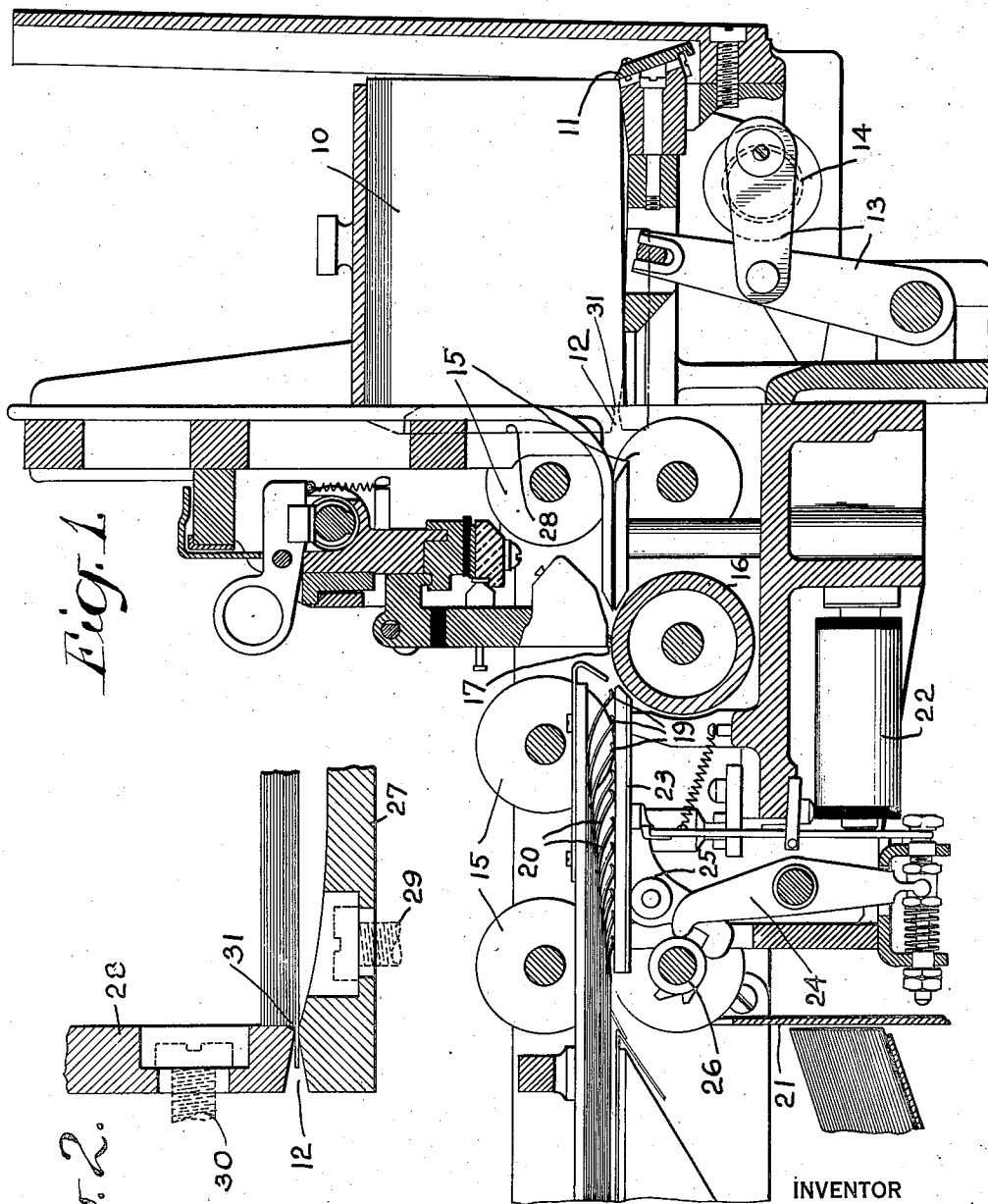


Fig. 1

Fig. 2.

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MAGAZINE THROAT

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This invention relates to record controlled machines and more particularly to a card or sheet feeding mechanism therefor.

It is common practice in sorting machines, 5 tabulating machines, card punching machines, and the like, to feed record cards one at a time by a suitable picker mechanism from a supply magazine through a slot or throat in the magazine of 10 a width sufficient to permit the passage of only one card at a time. It sometimes happens that some of the cards in the magazine have become mutilated or warped and upon being actuated by the card picker, 15 such a card contacts the wall of the magazine adjacent the throat instead of passing through the throat, this causing the card to buckle and interrupting the operation of the machine.

20 The object of this invention is the provision of means for readily permitting the passage through a slot or throat of a mutilated, bent, or warped record card fed from the stack in the magazine without increasing 25 the width of the throat.

Another object of the invention is to provide a throat construction which besides permitting only one card to pass at a time also serves to guide a card so as to facilitate its 30 passage through the throat.

Various other objects and advantages of my invention will be obvious from the following particular description of one form of mechanism embodying the invention or from 35 an inspection of the accompanying drawing; and the invention also constitutes certain new and novel features of construction and combination of parts hereinafter set forth and claimed.

40 In the accompanying drawing I have shown for the purpose of illustration one form of mechanism embodying the invention in which Fig. 1 is a side sectional view of a portion of a sorting machine including the feeding 45 mechanism thereof.

Fig. 2 is an enlarged sectional detail of the throat construction of the magazine.

Referring to Fig. 1 I have shown my novel card throat applied to a sorting machine al- 50 though it is obvious that the invention may be

applied to any tabulating machine wherein cards are fed one at a time from a magazine.

Briefly, the sorter includes a card supply magazine 10, a card picker 11 for feeding the 55 record cards one at a time through a throat 12 and means comprising a linkage 13 operating from a main shaft 14 for actuating the card picker. As a record card passes through the throat it is gripped between a set of rollers 60 15 and fed to an analyzing device consisting of the usual metallic roller 16 and analyzing brush 17 which is adjusted to read a selected one of the columns on the record card. As the card continues to pass beneath the brush 65 17, its forward edge moves beneath the upturned edges 19 of a plurality of guide blades 20 which lead to the various sorting pockets 21. Immediately upon the analyzing brush 17 encountering a perforation in the record 70 card, a magnet 22 is energized attracting its armature which then allows the plate 23 supporting the guide blades at their front ends to drop. If when the plate drops the card 75 has passed under some of the blades, it will continue to hold these blades in their upper position. The other blades will drop with the plate 23 and the card will then move in the path formed by the first of the lowered blades which will guide the card to the pocket 80 21 corresponding to the position of the hole in the card. When the magnet 22 has been deenergized, an arm 24 and a pawl 25 coacting with a cam 26 will return the armature of the magnet 22 and the plate 23 to their 85 normal positions in readiness for the next sorting operation.

Reference will now be had to Fig. 2, wherein an enlarged sectional detail of my card throat construction is illustrated. The maga- 90 zine includes a base or support 27 and a vertically extending front wall 28 both of which are adjustably fixed to the frame of the machine by set screws 29 and 30. The portion of base 27 leading to the throat 12 is con- 95 caved, leading gradually upwards toward the throat, thereby gradually guiding a card whose front edge is bent downwardly into the throat. At the upper entrance to the throat, the wall plate 28 has a beveled portion 100

31 to facilitate the passage of a record card whose forward edge is bent upwardly. Should the picker feed a card with a turned up forward edge, the turned up portion of the card will engage the beveled portion 31 of the member 28 and will be cammed down gradually thereby facilitating the movement of the card through the throat and avoiding mutilation of the card which would result were the card allowed to strike the vertical surface of the front wall 28. It is thus seen that a card whose forward edge is bent upwardly will be gradually guided into the throat by beveled portion 31 while a card whose forward edge is bent downwardly will be gradually led into the throat by the concave surface of the base 27.

Should the throat wear, the plate 28 may be adjusted by means of set screw 30.

While I have shown and described and pointed out the fundamental novel features of the invention as applied to a single modification it will be understood that various omissions and substitutions and changes in the form and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention. I intend to be limited therefore only as indicated by the scope of the following claims.

I claim:

1. In a tabulating machine having a magazine for holding a stack of cards, the bottom one of which is engaged by a picker to positively feed it forward; an upper front wall having its lower end provided with a steeply bevelled flat surface inclined along its entire length at only a very slight angle relative to the vertical whereby it is adapted to restrain movement of the cards under the force of friction imparted to them by the upper surface of the positively fed bottom card while serving to cam said bottom card downwardly as it is fed, a second surface on the lower end of the wall intersecting the first-mentioned surface and inclined upwardly therefrom, and a lower front wall having a hollowed out upwardly extending portion at the entrance side to accommodate a concavely curved card, and a downwardly extending portion on said lower wall at the exit side, said bottom card as it is advanced having substantially a line contact with the ends of the upper and lower walls whereby the frictional resistance to feeding of the bottom card is lessened.

2. In a tabulating machine having a magazine for holding a stack of cards and having a picker for engaging the rear edge of the bottom card for feeding it through an aperture; a bottom surface provided on the magazine for supporting the entire weight of the cards, said surface being hollowed out lengthwise and concavely curved upwardly at each end whereby a stack of cards having a similar concave curvature may have its rear edge

occupying its normal position for engagement by the picker and its forward edge in line with the aperture.

3. A device comprising a magazine for holding semi-stiff paper cards, picker means for engaging the rear edge of a bottom card to feed it forward, an upper front vertical wall on the magazine having at its lower end and at the entrance side a flat straight portion extending downwardly at a slight acute angle to the vertical and having at its exit side a portion intersecting the other portion in a straight line and extending upwardly, and a lower front wall member on the magazine having at its upper end at the entrance side an upwardly extending portion and at its exit side a downwardly extending portion, said latter two portions intersecting substantially in a straight line vertically alined with the first-mentioned intersecting line, the distance between the first and second mentioned lines being sufficient to permit passage of only one card at a time, the bottom card as it is fed by said picker from the rear engaging the first and second mentioned intersecting lines and being free of the exit portions during its feeding whereby the feeding friction of the card is lessened.

In testimony whereof I hereto affix my signature.

EUGENE A. FORD.