

Aug. 14, 1928.

1,680,863

E. A. FORD

CARD FEEDING DEVICE

Original Filed Nov. 7, 1924

Fig. 2.

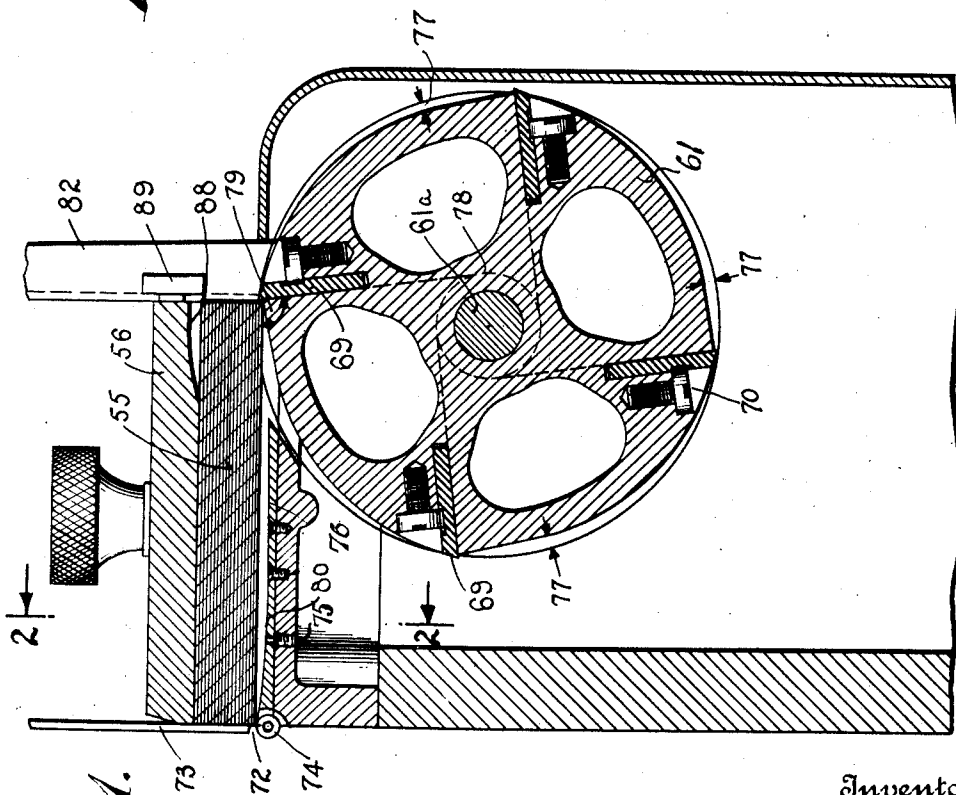
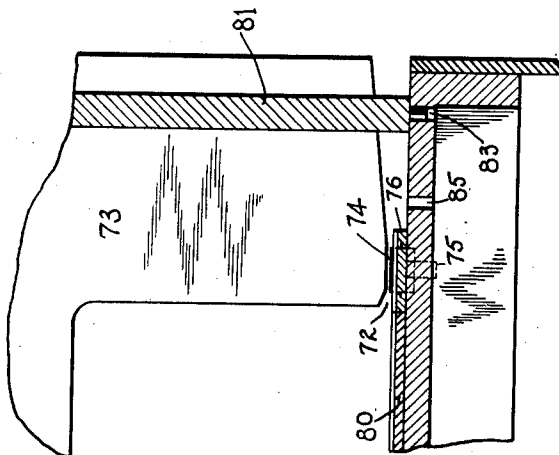


Fig. 1.

Inventor
Eugene A. Ford

By his Attorneys
Cooper, Kerr & Dunham

Patented Aug. 14, 1928.

1,680,863

UNITED STATES PATENT OFFICE.

EUGENE A. FORD, OF SCARSDALE, NEW YORK, ASSIGNOR TO THE TABULATING MACHINE COMPANY, OF ENDICOTT, NEW YORK, A CORPORATION OF NEW JERSEY.

CARD-FEEDING DEVICE.

Original application filed November 7, 1924, Serial No. 748,347. Divided and this application filed January 12, 1926. Serial No. 80,728.

This invention pertains to machines such as card-controlled tabulators, sorters and the like in which record cards are fed one by one from a magazine, the invention referring particularly to improved devices for feeding the cards from the magazine and being a division of my copending application, Serial No. 748,347, filed November 7, 1924.

One of the objects of the invention is to provide a card feeding device of a rotary nature capable of operating at higher speed than the reciprocating devices commonly used in machines of this kind.

Another object is to provide a card feeding device which is less noisy than the ordinary reciprocating type thereby better fitting it for office use.

Another object is to provide means to obviate harmful buckling of the cards while being fed from the magazine.

Another object is to be able to positively feed the cards even if they are slightly buckled.

Another object is to provide an improved throat opening and means for adjusting it.

In the drawings,

Fig. 1 is a vertical cross section through the picker drum and the card magazine.

Fig. 2 is an enlarged view of the card throat taken on line 2—2 of Fig. 1 with all cards removed.

The drawings show only the card magazine, picker mechanism and devices associated therewith. The card after being pushed through the card throat by the picker may pass into control of any suitable mechanism such as conveyor rolls, such mechanism forming no part of the present invention.

The feed mechanism consists of the rotary picker drum 61, mounted on shaft 61^a which rotates in synchronism with the rest of the machine. Drum 61 carries in its rim a number of picker blades 69 extending lengthwise of the drum and secured in place by the screws 70. These blades project from the drum a distance slightly less than the thickness of a card. As the drum revolves each blade in turn picks a card from the bottom of the stack 55 and feeds it through the micrometer or card throat openings 72 provided between the fixed plates 73 and rollers 74, carried by plates 76, one micrometer opening being located toward each end of

the card. The openings are adjusted so that only one card may pass at a time, the adjustment being accomplished by set screws 75 which raise or lower plates 76 thereby moving rollers 74 relative to plate 73. The card is impelled by the picker blade until it is seized by the conveyor rollers or other suitable devices.

The picker drum varies from true cylindrical shape as best shown in Fig. 1 wherein it will be noticed that after a picker blade has taken its card, the weight of the right hand side of the stack of cards is resting on that portion of the drum which is truly cylindrical, and as the drum revolves, the stack, following the cut-away contour of the drum, gradually reaches a low position at the point 77, from which point the edge of the stack is rapidly pushed upward again as that portion of the drum between 77 and the blade pass under it, and is still being raised when the blade contacts with the card.

The front faces of the blades are not radial, but if extended inwardly would be tangent to the circle 78. This is done so there will be a slightly obtuse angle between card and picker blade at time of contact as indicated by angle 79, and the blade thereby gets a positive grip on the card.

Each card, when struck by the rapidly moving picker blade, has a tendency to buckle, but this is rendered unobjectionable by making plate 80 slightly concave. This construction allows the card to buckle slightly downwards in the middle without disturbing the stack or interfering with the positiveness of feed. Likewise the lower edges of plate 73 are curved upwards on both sides of micrometer opening 72 to allow the card freedom to curve slightly at its ends without interfering with regular operation of feed.

The stack of cards is held in position to be fed into the machine by plate 73 and by the two side plates 81 and by the two slotted posts 82. The side plates 81 are held in position by dowel pins extending from their lower ends into the frame of the machine, as at 83, and by thumb screws through the plate 73 near the upper ends of the posts. Provision may be made for feeding cards of different lengths by moving side plates 81 to different positions, as for instance, to the positions indicated by dowel holes 85 in the

frame. Posts 82 are slotted vertically to receive guide studs (not shown) in keeper plate 56.

The under side of plate 56 is slightly cut away as at 88 to prevent the picker knives hitting the edge of the plate after the last card has been fed. To further provide against injury to plate or blades the plate is provided with two studs 89, their lower edges being lower than the bottom of the plate so that when the last card has been fed the heads of the studs ride on the drum and keep the plate out of contact with drum or picker blades. The blades are notched to provide a clear path for the studs 89.

What I claim is—

1. In a machine of the character described, in combination, a card magazine and a rotary feed drum having one or more picker blades, the surface of the drum being cylindrical for a distance behind each picker blade, then gradually decreasing in radius for a distance and then increasing to full diameter at next picker blade.

2. In a machine of the character described, in combination, a card magazine and a rotary picker drum, said drum being arranged to feed cards one by one from the magazine, the surface of the drum being so shaped that after a card is fed the side of the stack of cards resting on the drum will be lowered, and then raised again before the next blade reaches it.

3. In a machine of the character described, in combination, a card magazine and a rotary picker drum, said drum being arranged to feed cards one by one from the

magazine, one edge of the stack of cards in the magazine resting on the drum, the surface of the drum being so shaped that after each card is fed the side of the stack of cards resting on the drum will be gradually lowered and more quickly raised before the next blade reaches it.

4. In a machine of the character described, in combination, a stack of cards, a rotary feed drum having picker blades, and a keeper plate to rest on top of the cards while being fed, said plate and picker blades being provided with means to prevent contact between plate and blades after the last card has been fed.

5. In a machine of the character described, in combination, a stack of cards, a rotary feed drum with picker blades, and a keeper plate, said plate being cut away on under side of rear edge, and being provided with one or more studs projecting from its rear edge and arranged to bear on the surface of the drum in order to keep the keeper plate and blades out of contact, substantially as described.

6. In a machine of the character described, in combination, with a stack of cards, a picker, means for feeding cards one by one from the bottom of said stack, a keeper plate to rest upon the top of the cards while being fed, said plate and picker being provided with means to prevent contact between the plate and picker after the last card has been fed.

In testimony whereof I hereto affix my signature.

EUGENE A. FORD.