Nov. 11, 1952 W. WOCKENFUSS 2,617,648

THROAT MECHANISM FOR STATISTICAL CARD MACHINES

Filed Sept. 1, 1949

Fig. 1

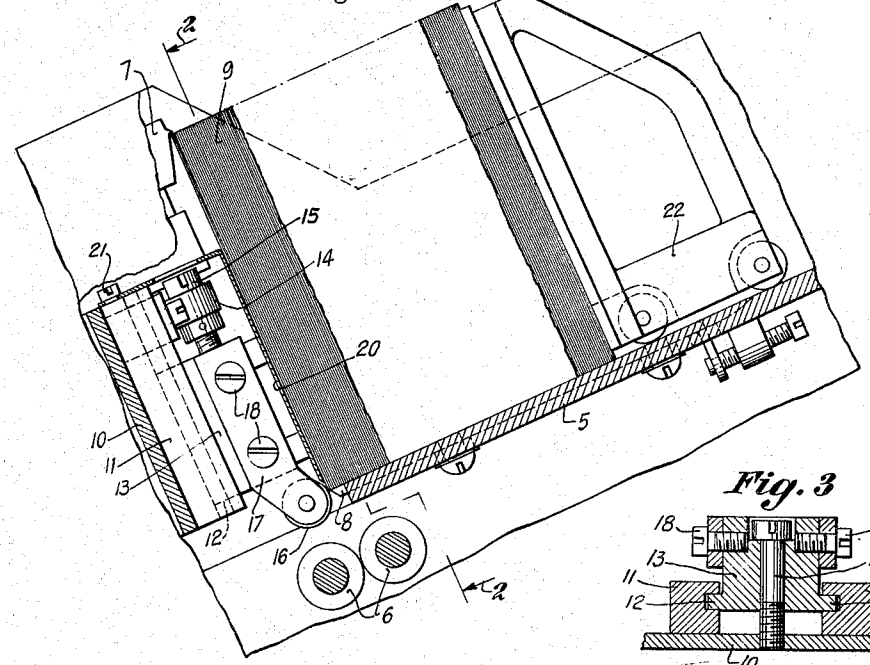
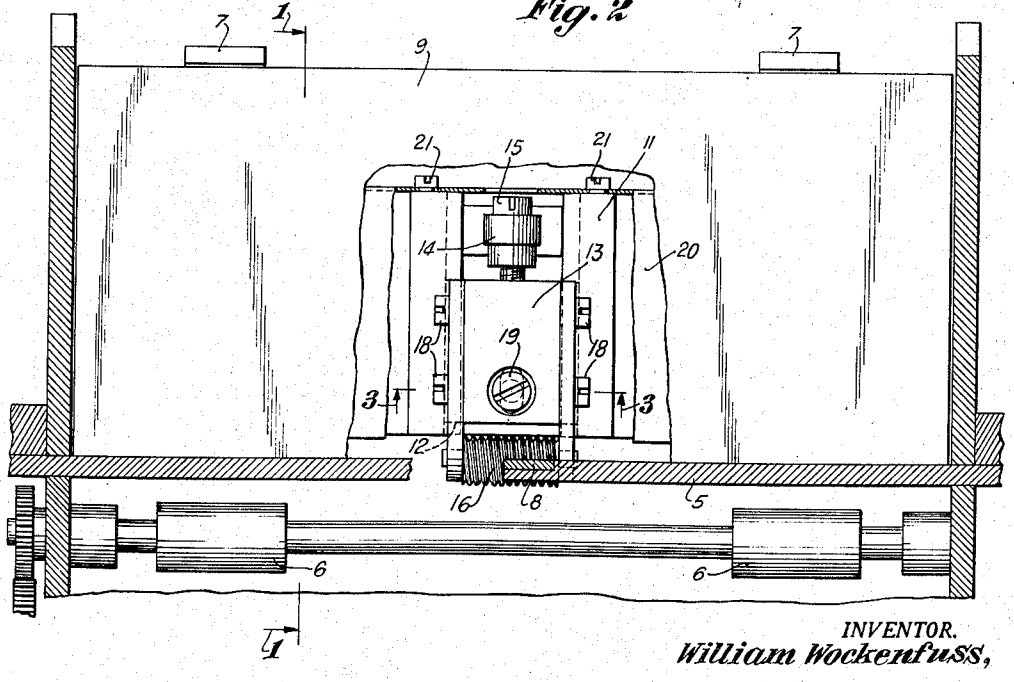


Fig. 3

Fig. 2



INVENTOR.
William Wockenfuss,
BY
Edward L. Mueller
ATTORNEY.

Patented Nov. 11, 1952

2,617,648

UNITED STATES PATENT OFFICE

2,617,648

THROAT MECHANISM FOR STATISTICAL CARD MACHINES

William Wockenfuss, Union, N. J., assignor, by mesne assignments, to Burroughs Adding Machine Company, a corporation of Michigan

Application September 1, 1949, Serial No. 113,509

1 Claim. (Cl. 271—44)

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This invention relates to improvements in statistical card machines and has particular reference to a throat mechanism therefor.

An object of the invention is to prevent the accumulation of fibre particles or the like on one of the elements which form the card throat and thus eliminate possible jamming of cards at said throat which otherwise might occur by reason of such accumulation.

Another object is to produce a wiping action upon a surface of a card as it passes through the throat, by the provision of a member which coacts with the throat plate and which is in the form of a helix.

The above and other objects will appear more clearly from the following detailed description when taken in connection with the accompanying drawing which illustrates a preferred embodiment of the inventive idea; but it is to be expressly understood that said drawing is employed merely to facilitate the description of the invention as a whole and not to define the limits thereof, reference being had to the appended claims for this purpose.

In the drawing:

Fig. 1 is a fragmentary longitudinal section through a card feed mechanism, taken on the line 1—1 of Fig. 2, and showing the present invention applied thereto;

Fig. 2 is a section on the line 2—2 of Fig. 1; and Fig. 3 is a section on the line 3—3 of Fig. 2.

The invention is shown in its application to a card feed mechanism in which the card magazine or chute 5 is arranged in an inclined position and the cards are fed downwardly to the feed rollers 6 by any suitable and well known type of picker mechanism including the knives 7. Recessed in the upper surface of the chute 5 is the usual adjustable throat plate 8 and cooperating therewith is a device for forming a throat through which the cards 9 are fed by the picker mechanism.

Said device is mounted upon a supporting plate 10 to which are suitably secured the opposed guide members 11 grooved to receive the flanges 12 of an adjustable block 13. Mounted above said block in the bearing 14 also carried by the plate 10 is a micrometer adjusting screw 15 having threaded engagement with said block 13 so as to enable adjustment of the latter in its guides 11 to regulate the position of the roller 16 relative to the throat plate 8, said roller being journalled for free rotation in the lower depending ends of the side plates 17 secured to the block 13 by means of screws 18. A locking screw 19 extending through the block and threaded into the plate 10 is utilized

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to secure said block in adjusted positions. A card supporting plate 20 is secured at 21 to the upper ends of the guides 11 and is arranged in substantial alignment with the throat formed by the plate 8 and roller 16, with the card engaging surface of said plate tangential to the periphery of said roller. Said plate forms an abutment for the advance card in the stack 9 and pressure is exerted upon said stack by a weight 22 mounted in said chute.

The knife edge of the throat plate 8 prevents more than one card from passing through the throat upon each operation of the picker mechanism and, in so passing, the surface of each card remote from said knife edge has frictional contact with the element, in this instance the roller 16, which opposes the plate 8 to form the throat. It is well known that such frictional contact, when employing a plain surfaced roller, causes fibre particles on said remote surfaces of the cards to be loosened therefrom and to accumulate on said roller to an extent which will sooner or later form an obstruction thereon to the free passage of a card through the throat, which obstruction reduces the size of the throat opening with the result that a card jam is inevitable.

To avoid such accumulation upon the element 16 and thus maintain the throat opening constant at all times, said element is made in the form of a helix so that it is provided, in effect, with a plurality of spaced card engaging surfaces with intervening grooves. With this construction, as a card is fed into the throat its frictional contact with the surfaces of the helix will rotate the roller and the latter, in so doing, will have a wiping action upon the engaged surface of the card. This wiping action, which is lateral with respect to the direction of feed of the card because of the helical formation of the roller, will dislodge any loosened particles of fibre from the card surface and, at the same time, shift said particles so that they will pass from the contacting surfaces of the roller and enter the intervening grooves thereof from whence they will ultimately fall. Therefore, such particles will not be permitted to accumulate upon the surface of the roller so that the possibility of a card jam due to such accumulation will be eliminated.

What is claimed is:

In a statistical card feeding mechanism, a card magazine having an inclined bottom upon which cards are stacked, a throat plate mounted in said bottom, a supporting structure at the feed end of said magazine and adjacent an edge of said throat plate and including opposed guide numbers, a

block supported by said guide numbers for adjustment relative thereto and to said throat plate, means to adjust said block, side plates secured to said block for adjustment therewith, a roller freely journaled in said side plates and having a spiral groove in its surface said roller combining with said edge of the throat plate to form a throat for the passage of a card, and card feeding means operable to feed cards through said throat the fed cards frictionally engaging and rotating said roller to cause sweeping of the card surface by said spiral groove.

WILLIAM WOCKENFUSS.

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