3,943. PATENTED JUNE 28, 1904.

C. SHUMAN.

FEED ATTACHMENT FOR PAPER BOX MACHINES.

APPLICATION FILED MAR. 18, 1904.

NO MODEL.

Fig. 1.

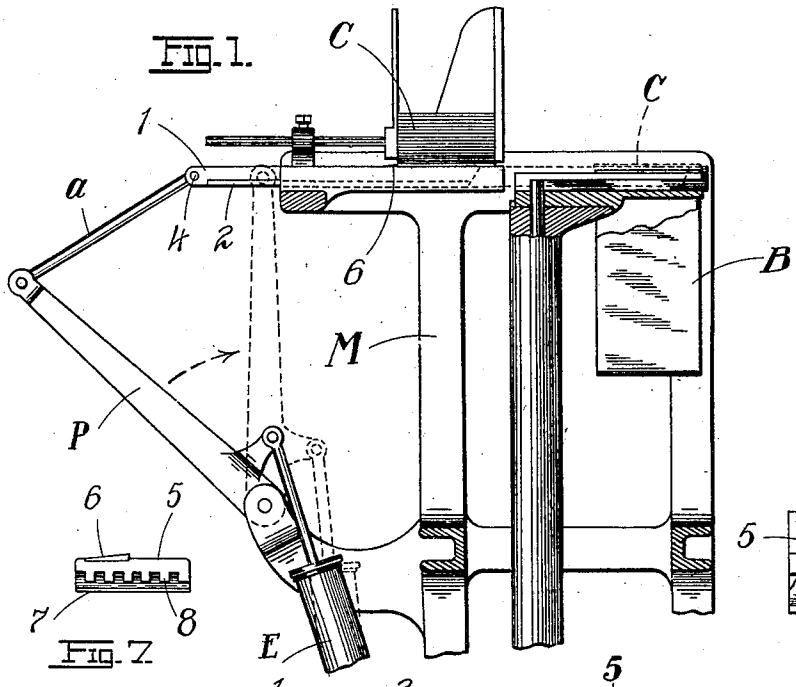


Fig. 7.

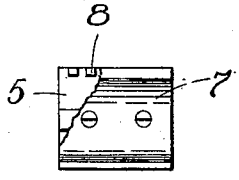


Fig. 8.

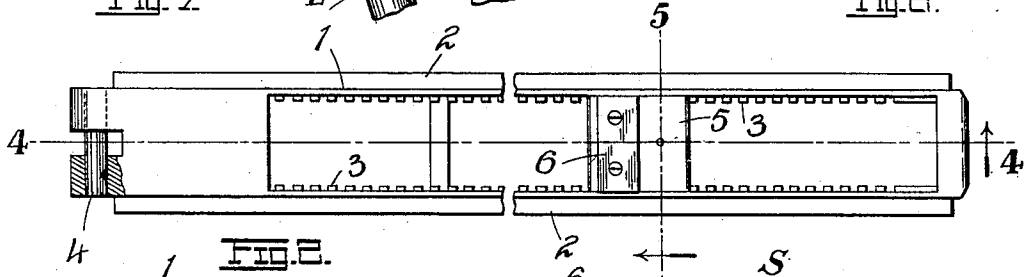


Fig. 2.

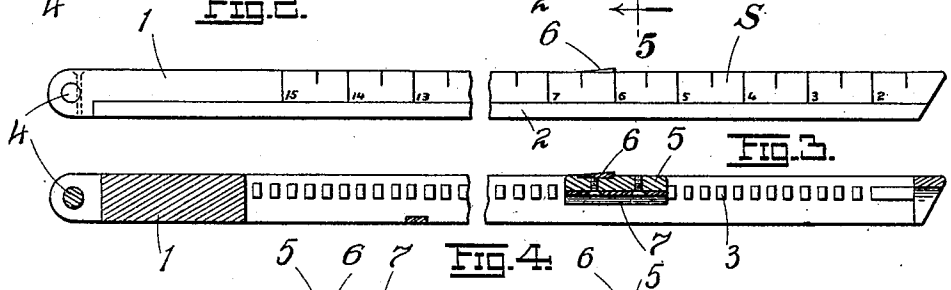


Fig. 3.

Fig. 4.

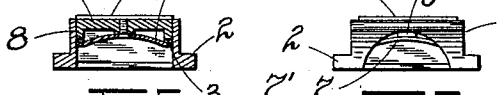


Fig. 5.

Fig. 6.

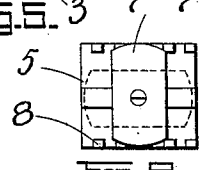


Fig. 9.

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UNITED STATES PATENT OFFICE.

CHARLES SHUMAN, OF ST. LOUIS, MISSOURI.

FEED ATTACHMENT FOR PAPER-BOX MACHINES.

SPECIFICATION forming part of Letters Patent No. 763,943, dated June 28, 1904.

Application filed March 18, 1904. Serial No. 198,727. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SHUMAN, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Feed Attachments for Paper-Box Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in feed attachments for paper-box machines; and it consists in the novel construction and arrangement of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the upper portion of a prevailing type of paper-box machine with my attachment applied thereto. Fig. 2 is a top plan of the attachment. Fig. 3 is a side elevation thereof. Fig. 4 is a middle longitudinal vertical section on line 4 4 of Fig. 2. Fig. 5 is a transverse section on line 5 5 of Fig. 2. Fig. 6 is an end view of the same. Fig. 7 is a side elevation of the adjustable block mounted in the reciprocating frame detached. Fig. 8 is an inverted plan view of Fig. 7, and Fig. 9 is an inverted plan of block provided with a modified form of fastener.

The present attachment is intended to be used in connection with any available existing paper-box machine which contemplates the feeding of individual cards to the point where they are attached to the ends of what constitute the contiguous or adjacent walls of the paper box when finally completed.

The present invention does not concern itself with any of the details or mechanism by which the cards are attached or by which the adhesive effecting the connection is applied, but is restricted exclusively to the reciprocating frame by which the individual cards are fed from the box or hopper containing them to the point at which the connection aforesaid is made.

The object of the present invention is to, first, construct a feed which will insure uniformity of length of stroke, this being possible by the special rigid connection between the reciprocating frame and the feed-block after the latter is once adjusted on said frame; second, to so mount the feed-block as to avoid catching a card in its return or back stroke; third, to insure the retention of the frame in the same plane of reciprocation at all times, so that the feed-block will at the proper moment seize the bottom card of the series and advance the same to its full limit, and, fourth, to construct a feed possessing further and other advantages better apparent from a detailed description of the invention, which is as follows:

Referring to the drawings, M represents the upper portion of the framework of a conventional paper-box machine provided with an adjustable hopper for holding a series of cards C for delivery to the upper ends of the side walls of the incomplete box B, as fully understood in the art. Adapted to oscillate a pitman P is an engine E, the end of the pitman being coupled to a connecting-rod *a*, which in turn is pivotally secured to the reciprocating oblong frame 1, forming the subject-matter of the present invention. The frame is provided with basal lateral flanges 2 2, operating in corresponding ways or grooves on the bed of the machine-frame. The inner faces of the side walls of the frame are racked—that is, provided with ribs, corrugations, or teeth 3—for a purpose presently to appear. The pivotal pin 4 serves as the connection between the back end of the frame and the connecting-rod *a*. Adapted to be locked along the frame at any convenient point is the plate or block 5, to whose upper face is attached the bevel strip or wedge 6, whose forward edge projects a slight distance above the surface of the block 5, the rear edge virtually merging or being flush with said surface, which is in the plane of the upper surface of the frame. The projecting edge of the strip 6 seizes the edge of the bottom card C of the series and with each forward stroke of the frame 1 delivers it to the dotted position shown in Fig. 1. On its return stroke of course the strip 6 cannot disturb the cards, since being flush with the block 6 on that side no edge comes in contact with the card. The under surface of the block is provided with a plate 7, (more or less resilient,) whose ends bear against the adjacent or lower ends of the ribs 3 on oppo-

site sides of the frame, thus preventing accidental vertical displacement of the block upward, it being held against downward displacement by the supporting-teeth 3 and against displacement longitudinally of the frame 1 by the teeth 8, depending from two opposite edges of the block and interlocking with the ribs or teeth 3 of the frame, Fig. 5. To adjust the block to any position on the frame, the locking-plate 7 is first detached by removing the securing-screws therefor, and the block is then inserted into position between the ribs 3 of the frame, (the precise position being indicated by the scale S on the side of the frame,) after which the plate is secured to the bottom of the block, the ends of the plate bearing against the bases of the ribs 3, serving to retain the block against displacement vertically, as already stated.

In the modification shown in Fig. 9 the locking-plate 7′ is oblong and when turned to the dotted position therein shown—that is to say, parallel to the opening of the frame—the block can be removed without detaching the plate 7′, for in that position the said plate readily passes through the frame-opening. While this modification may possess advantage in this respect, yet it might under successive impacts of the block against the cards and under the jars incident to the reciprocations of the frame tend to turn or shift from its locked position and in this particular might be less desirable than the plate 7, which when once in place cannot turn under any circumstances.

In order to insure the seizure of the bottom card by the catch edge of the strip 6 at all times, I preferably, as shown, weight or distribute an excess of metal at the outer or rear end of the frame 1, (the end directly coupled to the rod *a*,) such weighted end tending when the frame is drawn out beyond the edge of its supporting-bed, Fig. 1, to tilt the inner end of the frame upward or, what amounts to the same thing, to keep it from sinking down, and thereby causing the catch edge of said strip 6 to release the card. The weighted end thus insures a reciprocation for the frame 1 in a constant plane, thus insuring the seizure and advance of a card with each forward stroke of the frame or forward oscillation of the pitman P.

In the event a thicker card is operated on than would correspond to the thickness of the projecting edge of the strip 6 the latter can be raised to conform to such thickness by first loosening the screws which secure it to the block and inserting a strip of paper of the proper thickness under the strip 6, the combined thickness of the paper and strip 6 being availed of under the circumstances.

It is of course apparent that I may depart in a measure from the details here shown without affecting the nature or spirit of my invention. Thus the ribs or teeth 3 may not necessarily be spaced apart for their full depth, but only to a depth sufficient to receive the interlocking teeth 8 of the block 5. So, too, may the frame 1 be modified as seems best to the skilled mechanic. The teeth 3 may of course may be disposed only on one side of the frame, as is obvious.

Having described my invention, what I claim is—

1. A feed attachment comprising a suitable frame having a longitudinally-racked surface, and a movable block adapted to be adjusted along said surface, said block having an advancing edge for engaging the card to be fed upon the movement of the frame in one direction, substantially as set forth.

2. A feed attachment comprising a suitable frame having a weighted rear end, an inner longitudinally-racked surface formed on said frame, and a movable block adapted to be adjusted along the rack, said block having an advancing edge for engaging the card to be fed, substantially as set forth.

3. A feed attachment comprising a suitable frame, having a longitudinally-racked surface, a block having interlocking teeth for engaging said racked surface, and a strip on said block having an advancing edge for seizing the card to be fed, substantially as set forth.

4. A feed attachment comprising a suitable frame having a longitudinally-racked surface, a block having interlocking teeth for engaging said racked surface, and a strip on said block having an advancing edge projecting beyond the surface of the block and a rear edge merging with said surface, substantially as set forth.

5. A feed attachment comprising a suitable frame, a series of teeth or ribs disposed along the inner faces of the sides of said frame, a block having teeth for interlocking with said ribs, a card-advancing edge on the upper face of the block, and a plate secured to the under surface of the block and engaging the lower ends of the ribs for preventing upward displacement of the block, substantially as set forth.

6. A feed attachment comprising a suitable frame, a series of teeth or ribs disposed along the inner faces of the sides of said frame, a block having teeth for interlocking with said ribs, a card-advancing edge on the upper face of the block, and an oblong plate secured to the under surface of the block and adapted to span the space between the racked surfaces and engage the lower ends of the ribs thereof, the plate being adapted to be turned to a disengaged position to permit the removal of the block from the frame, substantially as set forth.

7. A feed attachment comprising an oblong frame, a block having an upper face flush with the corresponding surface of the frame, teeth on the block adapted to engage a corresponding toothed surface on the frame, and an edge

on the advancing side of the block for seizing the card to be fed, substantially as set forth.

8. A feed attachment comprising an oblong frame, a block having an upper face flush with the corresponding surface of the frame, teeth on the block adapted to engage a corresponding toothed surface on the frame, means for retaining the block against displacement vertically upward, and an edge on the advancing side of the block for seizing the card to be fed, said edge merging with the surface of the block on the opposite side, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES SHUMAN.

Witnesses:
EMIL STAREK,
G. L. BELFRY.