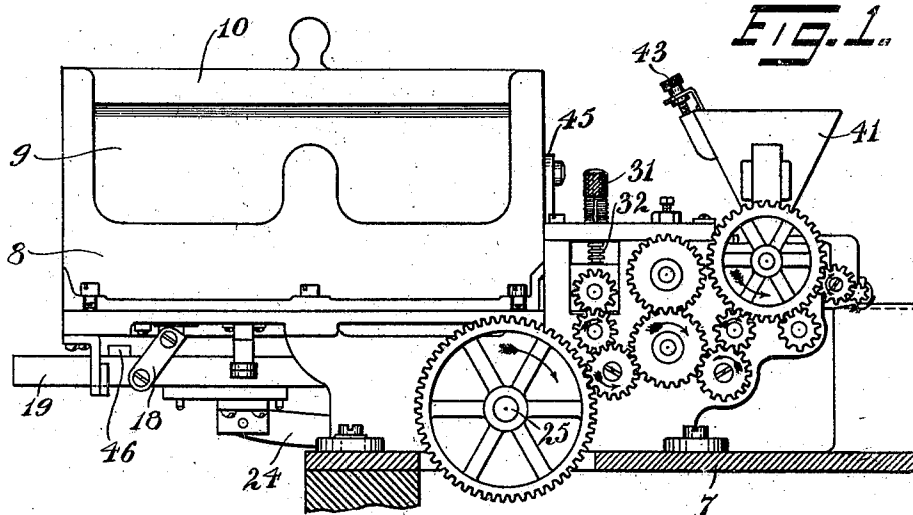
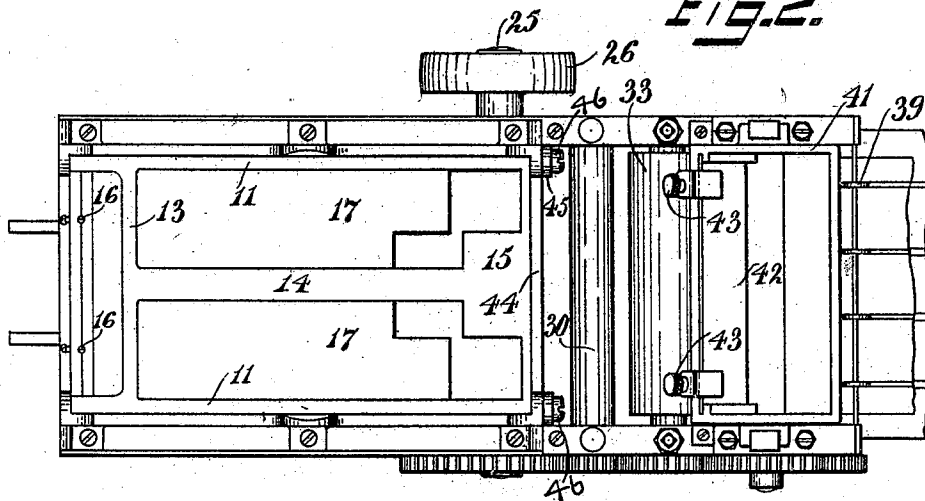


G. F. RUSS.
PAPER FEEDING MECHANISM.
APPLICATION FILED MAR. 13, 1910.

991,091.

Patented May 2, 1911.

2 SHEETS-SHEET 1.



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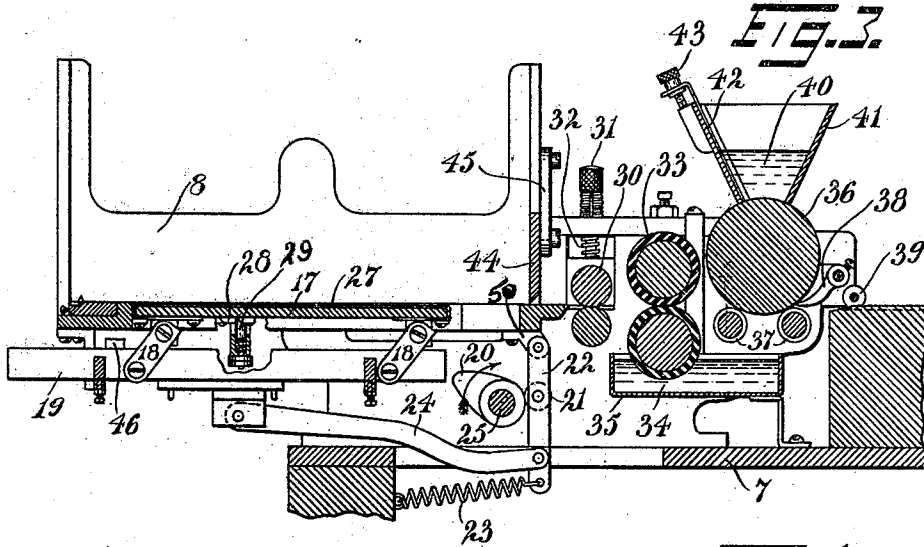


FIG. 4.

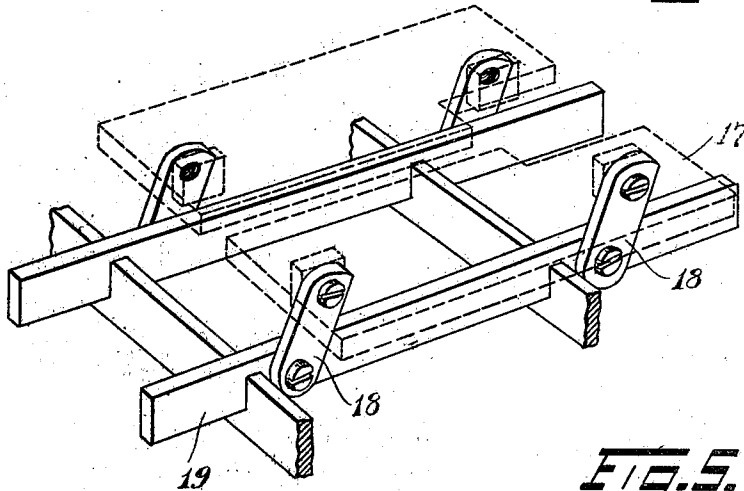
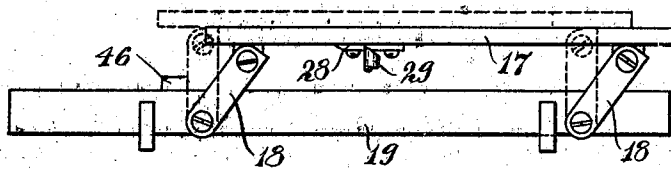


FIG. 5.



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UNITED STATES PATENT OFFICE.

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PAPER-FEEDING MECHANISM.

991,091.

Specification of Letters Patent.

Patented May 2, 1911.

Application filed March 12, 1910. Serial No. 548,795.

To all whom it may concern:

Be it known that I, GEORGE F. RUSS, a citizen of the United States, residing in Weehawken Heights, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Paper-Feeding Mechanism, of which the following is a specification.

This invention relates to paper feeding mechanism and has for an object to provide improved mechanism for feeding forward the lowermost sheet of a pile of sheets and passing the same on to the receiving position of some other mechanism, as for instance a can labeling machine.

In the drawings accompanying and forming a part of this specification, Figure 1 is a side view of a practicable embodiment of a form of my invention applied to a portion of a frame work of another machine indicated in cross section; Fig. 2 is a top plan view of the device illustrated in Fig. 1 except that in Fig. 1 a pile of sheets with a weighted follower is shown in position and in Fig. 2 the sheet receptacle is shown empty; Fig. 3 is a longitudinal section of the device; Fig. 4 is a perspective detail partly diagrammatic of the mechanism for moving the sheet engaging devices into their engaging position and for then moving them forward; Fig. 5 is a side view of the same portions of the mechanism.

This improvement although useful in many situations is particularly designed for employment in connection with a can labeling machine.

My present improvement embodies mechanism for accurately feeding forward the labels one at a time from the lower side of a pile in timed relation with the applying movement of the labeling machine. The frame work of the mechanism with which the feeding mechanism will cooperate is illustrated in section at 7. Although this present mechanism embodies a complete and operative organization in and by itself, yet it will in most instances be used in connection with some other mechanism which will perform work upon the sheets which are fed forward from it. A receptacle is illustrated at 8 for a pile of sheets 9 which are held in

position in the receptacle by a weighted follower 10. Rests 11, 11 are provided for the side edges of the pile of sheets. A rest 13 is provided for the rear end. Through the center there is provided a rest 14 which is enlarged in area at 15. Knives 16, either carried by a rearward extension of the rest 13 or some other part of the floor of the mechanism, will be provided for preventing the forward movement of the sheet which is above the bottom sheet when the bottom sheet is moved forward.

On each side of the center member 14 there is provided a forwarding device 17. Each of the forwarding devices 17 is supported by a pair of links 18, 18, which are pivoted to it at its front and its rear ends respectively. The links 18 are pivoted to a frame work 19 which is supported below the receptacle for longitudinal movement. The longitudinal movement of the frame is effected by means of a cam 20 which engages a roll 21 carried by a lever 22 pivoted on the receptacle frame at 50. The roll is held in engagement with the cam by means of an extension spring 23. The lever 22 is connected by means of a pitman 24 with the sliding frame 19 for reciprocating this. The shaft 25 which carries the cam 20 will be driven in timed relation to the mechanism which is to be fed by some suitable means as for instance the pulley 26 which will be belted up to some convenient portion of the fed mechanism.

I have found in practice that a suitable contacting surface for the forwarding devices 17 may be provided by emery paper 27 carefully applied.

The normal position of the links 18 and of the forwarding devices 17 is illustrated in Figs. 3 and 5. In this position the contacting surface 27 is below the surface of the lowermost sheet of the pile. Upon rotation of the shaft 25 the cam 20 will move in the direction of the arrow and press the lever 22 and pitman 24 forward thereby drawing the frame 19 forward. The forwarding members 17 are during the first portion of the movement of the frame 19 held from forward movement by means of lugs 28 engaging spring pressed detents 29. The toggle

action of the links 18 will, owing to the fact that the frame 19 is constrained to move in a horizontal plane and that the forwarding members 17 are held from forward movement, cause them to assume a vertical position and thereby raise the forwarding members until their contacting faces firmly engage the lowermost sheet of the pile. Upon a sufficient elevation of the forwarding members to engage the lowermost sheet the lug 28 will have moved out of engagement with the detent 29. At this position the links will engage the back stop 46. The weight of the pile of sheets and the follower will then tend to hold the parts in the elevated position and further rotation of the shaft 25 and further advance of the frame 19 will move the forwarding devices 17 forward and will move the lowermost sheet into a position to be engaged by the first feed rollers 30. The tension of the feed rollers will be adjusted by a suitable adjusting device 31 and compression spring 32. When the cam 20 assumes such position that the spring 23 will inaugurate the return movement of the frame 19, the weight of the paper and the follower will depress the forwarding devices which will be drawn idly back to initial position. The chamfered end of the spring pressed detent 29 will permit the detent to be depressed sufficiently to permit the return movement without effecting an elevation of the forwarding devices. The delivery opening from the receptacle 8 is controlled by the slide 44 adjustably held in position by links 45 and set screws 46.

Having thus described my invention, I claim:

1. The combination with a forwarding device, of a slide, toggles connecting the forwarding device and the slide, a detent for detaining the forwarding device and coöperatively with the toggles translating the movement delivered to the forwarding device upon the reciprocation of the slide into movement in a path transverse to the path of movement of the slide during the straightening of the toggles and then advancing the forwarding device with the slide.

2. The combination of a sheet receptacle, the bottom of such receptacle constituting a rest for the front, rear and side edges and the center of the pile of sheets, a forwarding device located on each side of the center rest and adapted to reciprocate longitudinally thereof, a frame reciprocatory below the receptacle, links pivoted to the frame and to the forwarding devices, means of interengagement between the forwarding devices and the frame and located in position for interengagement after the toggle action of the links has raised the engaging face of the forwarding devices above the level of the rests for the sheets.

3. The combination with a receptacle for a pile of sheets, of means for receiving the sheets from such receptacle, an adjustable gate at the delivery end of the receptacle, the receptacle being provided at its bottom with rests for the edges of the sheets at the front, the rear and the sides, and with a centrally disposed longitudinal rest, such centrally disposed longitudinal rest being of enlarged area adjacent to its connection with the front rest, a shiftable bottom member located upon each side of said centrally disposed rest and having an engaging surface, a frame reciprocating below such receptacle, means for reciprocating the frame, links in the nature of toggles connected to the shiftable bottom members and to the frame, a lug carried by the lower portion of each bottom member, a chamfered spring pressed detent for engaging said lug upon the forward movement of the bottom member and detaining the same from advance movement with the frame for straightening the links and raising the bottom member into engagement with the lowermost sheet of the pile, the straightening of the links being effective for disengaging the lug and detent, a back stop for engaging the links when in their straightened position, the chamfered detent permitting the lug to pass by it upon the return or backward movement of the bottom member, and knives carried by the bottom portion of the receptacle for engaging the rear ends of the sheets for preventing the advance movement of the next to the bottom sheet of the pile.

4. The combination of a frame, a slide supported to reciprocate on the frame in a fixed path, a forwarding member movably supported on the reciprocating member to swing upward, and means for causing the forwarding member to swing upward and rearward on the slide at the initial part of advance movement of the slide.

5. The combination of a frame, a slide supported to reciprocate on the frame, a forwarding member movably supported on the reciprocating member, a spring catch carried by the frame arranged to engage a notched portion on the forwarding member and in the normal position of the slide and member, said parts being arranged whereby upon initial advance of the slide the detent will prevent forward movement of the advancing member but cause it to rise, and upon further advance of the slide the detent will disengage the notched member permitting advance of the forwarding member with the slide.

6. The combination of a frame, a slide supported to reciprocate on the frame, a forwarding member, links by which the forwarding member is pivotally supported on the reciprocating member, means for reciprocating the slide, and a detent on the frame

engaging the forwarding member to prevent its forward movement at the initial movement of the slide.

7. The combination of a frame, a slide supported to reciprocate on the frame in a fixed path, a forwarding member, links by which the forwarding member is pivotally supported on the reciprocating member, means for reciprocating the slide, and means for causing the forwarding member to swing upward and rearward relative to the slide at the initial advance movement of the slide.

8. The combination of a frame, a slide supported to reciprocate on the frame, a forwarding member, links by which the forwarding member is pivotally supported above the reciprocating member, means for reciprocating the slide, a spring catch carried by the frame arranged to engage a notched portion on the forwarding member and in the normal position of the slide and member, said parts being arranged whereby upon initial advance of the slide the detent will prevent forward movement of the advancing member thereby causing it to swing on the links and rise, and upon further advance of the slide the detent will disengage the notched member permitting advance of the forwarding member with the slide.

9. The combination with a frame, of a slide mounted to reciprocate on the frame, a forwarding member, links by which the forwarding member is supported on the slide, said members being constructed and arranged whereby the links can swing from a vertical position with the member at a maximum distance above the slide to a position in which the links are inclined and the forwarding member is at a less distance removed from the slide, a detent carried by the frame and arranged to engage the forwarding member to prevent advance of the member at the initial forward movement of the slide whereby the member will be first elevated and thereupon caused to advance with the slide.

10. The combination with a frame, of a slide mounted to reciprocate on the frame, a forwarding member, links by which the forwarding member is supported on the slide, said members being constructed and arranged whereby the links can swing from a vertical position with the member at a maximum distance above the slide to position in which the links are inclined and the forwarding member is at a less distance removed from the slide, a detent carried by the frame and arranged to engage the forwarding member to prevent advance of the member at the initial forward movement of the slide whereby the member will be first elevated and thereupon caused to advance with the slide, and an abutment on the slide to limit the rearward movement of the advancing member relatively to the slide.

11. The combination of a receptacle for sheets having a bottom member containing openings, a forwarding device located in the open portions of the bottom member to engage portions of a pile of sheets resting on the bottom member, a slide mounted to reciprocate below the bottom member, links by which the forwarding member is connected with and supported upon the slide, said links in the normal position of the slide being inclined to the vertical to support the forwarding member at or below the level of the bottom member, and a detent carried by the frame engaging the forwarding member in its normal lowered position to prevent its advance with the slide upon the initial movement of the slide, thereby causing the forwarding member to be first elevated through said openings to engage the bottom sheet, the forwarding member being thereupon disengaged from the detent and advanced with the slide during the remainder of its forward movement.

12. The combination of a receptacle for sheets having a bottom member containing openings, a forwarding device located in the open portions of the bottom member to engage portions of a pile of sheets resting on the bottom member, a slide mounted to reciprocate below the bottom member, links by which the forwarding member is connected with and supported upon the slide, said links in the normal position of the slide being inclined to the vertical to support the forwarding member at or below the level of the bottom member, and a detent carried by the frame engaging the forwarding member in its normal lowered position to prevent its advance with the slide upon the initial movement of the slide thereby causing the forwarding member to be first elevated through said openings beyond the level of the receptacle bottom to engage the bottom sheet, the forwarding member being thereupon disengaged from the detent and advanced with the slide during the remainder of its forward movement, and an abutment carried by the slide to connect with the forwarding member after disengagement of the detent at the initial movement whereby the forwarding member is advanced by the slide during the remainder of its forward movement.

13. The combination of a receptacle for sheets having a bottom member containing openings, a forwarding device located in the open portions of the bottom member to engage portions of a pile of sheets resting on the bottom member, a slide mounted to reciprocate below the bottom member, the forwarding member being movably connected with and supported upon the slide, and in the normal position of the slide being at or below the level of the bottom member, and means for preventing advance of the for-

warding member with the slide upon the initial movement of the slide thereby causing the forwarding device to be first elevated through said openings beyond the level of the receptacle bottom to engage a sheet, the forwarding member being thereupon disengaged from a detent and ad-

vanced with the slide during the remainder of its forward movement.

GEORGE F. RUSS.

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