

Sept. 20, 1932.

A. KLUGE ET AL

1,877,892

STOCK MAGAZINE

Filed Dec. 11, 1930

2 Sheets-Sheet 1

Fig. 1

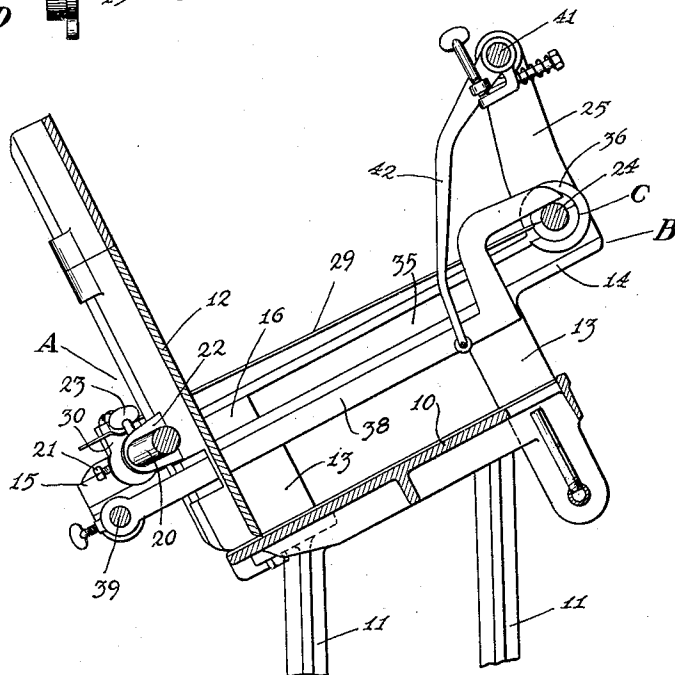
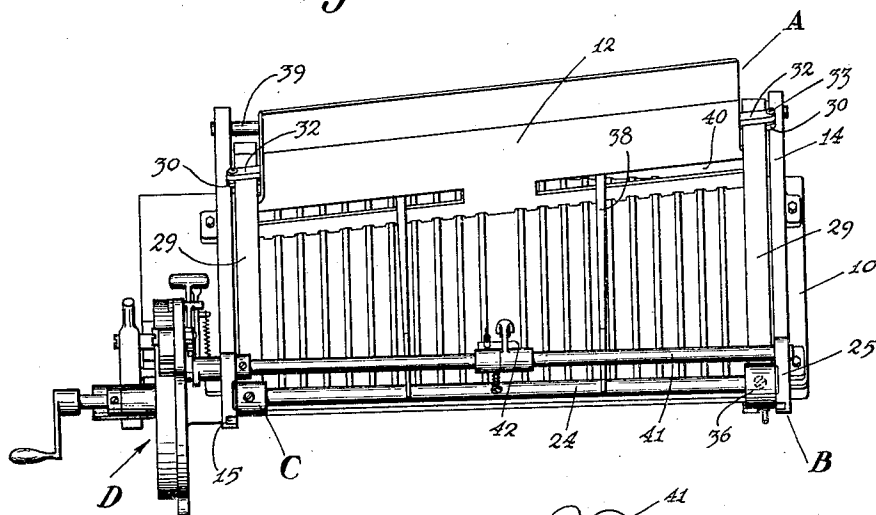


Fig. 2

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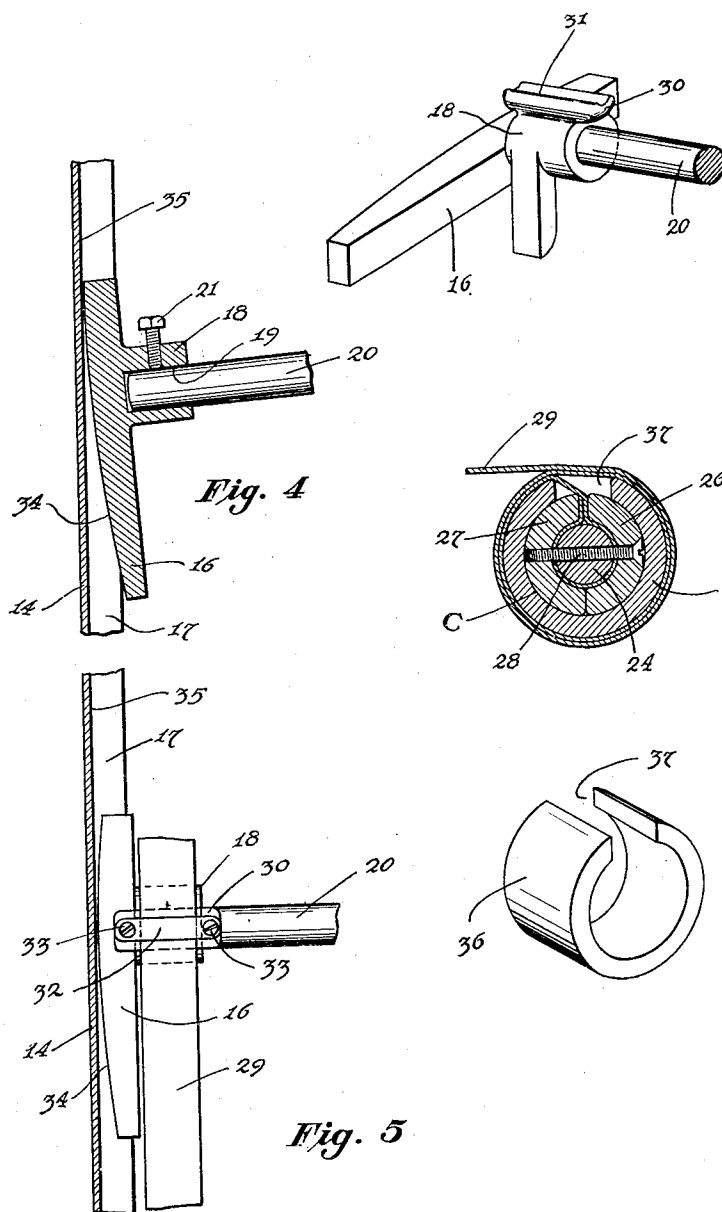


Fig. 3

Fig. 4

Fig. 6

Fig. 7

Fig. 5

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UNITED STATES PATENT OFFICE

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STOCK MAGAZINE

Application filed December 11, 1930. Serial No. 501,534.

Our invention relates to improvements in stock magazines of the same general character as those disclosed in Patents Nos. 1,693,986 and 1,694,015, dated Dec. 4, 1928, which matured from prior applications filed by us.

Like our previously patented stock magazines, the present device accommodates a pack of sheets or other paper stock, on edge, and, by means of a movable back rest for the pack, automatically advances the diminishing pack, whereby the foremost sheet thereof is disposed in position to be received by such means as may be employed to take the sheets from the pack.

In the magazine disclosed in Patent No. 1,694,015, we have provided means for tilting the back rest as it is moved forwardly to advance the pack of stock. In thus tilting the back rest, an irregular pack of greater dimension at the bottom than at the top, or vice versa, and consisting of folded sheets or the like, is accommodated in the magazine, the first unit of the pack being always presented in a selected sheet receiving plane, while the succeeding units of the pack are more or less inclined with respect to said plane depending upon the nature of the stock.

In practice, we have found that it is sometimes desirable in a stock magazine to accommodate a pack which has a greater overall dimension at one side thereof than at the other. Such is the case, in the printing of paper sacks in an automatically fed job press, under circumstances which require the feeding of the sacks to the platen side edge foremost, rather than end edge foremost. And in such case, the sacks standing on their side edges in the magazine and differing in thickness at their ends, form a pack of unequal dimensions along the opposite sides thereof.

A feature of the present invention resides in forming the mounting for the back rest so that it need not be confined to a squarely forward movement, but, on the contrary allowed to assume different angular positions with one end thereof more or less in advance of the other end.

An object of the present invention is to provide means for advancing the back rest and at the same time changing the angular-

ity thereof progressively to bring the back rest substantially squarely into the sheet receiving plane at the end of its forward sweep.

A further object of the invention is to provide advancing mechanism for the back rest adapted to permit of the desired initial angular adjustments thereof and including means for advancing either end of the back rest more rapidly than the other, whereby said back rest may be brought squarely into the sheet receiving plane at the end of its forward sweep regardless of the angularity thereof initially assumed in the advancement of the pack.

With the foregoing and other objects in view, which will appear in the following description, the invention resides in the novel combination and arrangement of parts and in the details of construction hereinafter described and claimed.

In the drawings, Fig. 1 is a plan view of a stock magazine embodying our invention; Fig. 2 is a central sectional view taken transversely thereof; Fig. 3 is a perspective view in detail of one of the sliding blocks at one end of the back rest; Fig. 4 is a sectional view of said block and of a portion of the grooved side rail in which it slides; Fig. 5 illustrates said rail in section, as in Fig. 4 and includes an illustration, in plan, of the block and of the advancing tape secured thereto; Fig. 6 is a sectional view, in detail, showing the winding shaft and one of the tape winding drums thereon, together with an adapter applied to said drum, and Fig. 7 is a perspective view in detail of the adapter.

In the drawings, wherein similar reference characters are employed to designate similar parts throughout the several views, we have illustrated an embodiment of our invention. This form of the invention includes an inclined table 10 supported by legs 11 in such position with respect to the sheet feeding mechanism with which the magazine is to be associated that the sheet feeding member of such mechanism may grasp from the pack, within the magazine, the foremost unit thereof at a given receiving plane. The units of the pack stand edge-

wise on the table 10, the pack being supported at the rear by means of a back rest A, which includes a supporting plate 12. This plate 12 is slidably mounted in frame members B disposed at the opposite ends of the table 10, each frame member consisting of front and rear posts 13 and a side rail 14 cast integrally with said posts. Each side rail 14 is formed with a groove or guideway 15 along its inner side to receive a bearing block 16, the lower surface 17 of the guideway providing a seat upon which the lower surface of the block 16 slidably bears. As will be noted in the detailed views of one of the bearing blocks 16, Figs. 3 and 4, each block includes an offset boss 18 formed with an axial bore 19 therein. A carrier shaft 20 is received at its ends in the opposed bosses 18 of the two blocks 16 and is secured with respect to said bosses 18 by set screws 21. This carrier shaft 20 supports the plate 12 of the back rest, said plate being provided with lugs 22 at the rear thereof formed with bores to receive said shaft and provided with thumb-screws 23 adapted to be turned down against the shaft 20 for securing the plate with respect thereto.

A winding shaft 24, revolubly mounted at the forward ends of the frame members B in upright extensions 25 thereof, is employed in advancing the back rest A. To this winding shaft 24 are secured a pair of drums C, each consisting of two semi-cylindrical members 26 and 27 (Fig. 6) adapted to fit around the shaft 24. In each drum, a clamping screw 28, free to turn in a bore in the member 26 and in a bore in the winding shaft 24, is threaded to fit a threaded bore in the member 27. For each drum C, we provide a tape 29, which is adapted to be wound thereon, the forward end of said tape being secured with respect to the drum by clamping the tape between the shaft 24 and the clamping members 26 and 27 constituting said drum. In this connection, it will be seen that Fig. 6 clearly shows one of the tapes 29 clamped about the winding shaft 20 and extending from the clamping members 26 and 27, forming the drum, in a manner to be wound on the drum upon the rotation of the winding shaft. These tapes 29 extend rearwardly from their respective drums C, each being adjustably connected with one of the bearing blocks 16. The boss 18 of each bearing block 16 is formed at the upper side thereof with a saddle-like clamping member 30 having a concave upper surface or seat 31. Complementing this seat is a clamping strap 32 which is gripped against the clamping member 30 by means of screws 33 passing through said strap and threaded in said member 30. In making each connection between tape and block the rear portion of the tape is inserted between the clamping member 30 and the strap 32. Upon loosening

the screws 33, the block 16 may be shifted along the tape to bring the connection between block and tape nearer to or farther from the point of connection between the front end of the tape and its respective winding drum C as may be desired, it being understood, of course, that in turning down the screws 33 a secure connection is made between tape and block at the point desired. The adjustable connections between the tapes 29 and blocks 16 provide for variously positioning the back rest A angularly within the magazine. To permit of such angular dispositions of the back rest A and at the same time prevent end play thereof in the magazine, the blocks 16 are curved at their outer edges 34, said curved edges providing abutting surfaces which bear against the vertical surfaces 35 of the guideways 15 in rails 14.

To accommodate a pack of units differing in depth at the ends of the pack, one end of the back rest must be retracted farther than the other to bring the foremost unit of the pack squarely into the unit receiving plane at the head of the magazine. The appropriate angular adjustment of the back rest is secured, as above indicated, by adjusting the connections between the tapes 29 and bearing blocks 16. Regardless of the disposition taken by the back rest A in the initial angular adjustment thereof for a given pack, it remains that the back rest, at the end of its forward sweep, must arrive at a position corresponding with the plane from which the foremost units of the pack are taken. Accordingly, the lagging end of the back rest will be moved relatively faster than the other end thereof so that the back rest will progressively approach parallelism with the unit receiving plane. To accomplish this, we employ a number of adapter rings 36 for the drums C. These rings, vary in outside diameter, but each is like the other in that it is mutilated or slit, as at 37, in order that it may receive and be passed over the winding shaft 24. Each of the various rings 36 is adapted to fit snugly over either of the drums C and in such relation with respect to the drum to which it is applied that the tape 29 secured to the drum may extend through the slit 37 therein.

According to the degree of angularity assumed by the back rest A in the initial adjustment thereof, an adapter ring 36 of appropriate diameter is selected and applied to the drum C which has the longest length of tape to wind in. This adapter has the effect of suitably increasing the diameter of the drum to which it is applied and causes the end of the back rest farthest retracted to be moved progressively faster than the other end with the result that the back rest is brought into parallelism with the unit receiving plane at the end of its forward sweep. Thus, the foremost unit of a diminishing pack is always pre-

sented in the proper position to be taken by the associated feeding element, regardless of the degree of irregularity of the pack resulting in the assembly of units varying in thickness at their opposite ends.

As in our previous invention (Patent No. 1,694,015), the present device includes side guides 38 for a pack within the magazine, said guides being adjustably mounted at their rear ends on a tie-shaft 39 between the frame members B and being extended forwardly of the magazine through slits 40 in the plate 12 of the back rest A. Likewise, mechanism, indicated in its entirety by the reference letter D, Fig. 1, is provided to turn the winding shaft 24 step by step, the operation of said mechanism being controlled through means actuated by the pack and including a rock-shaft 41 and gauge 42, said rock-shaft 41 being mounted at its ends in the frame extensions 25 and the gauge 42 being suspended from said rock-shaft.

From the foregoing, it will be understood that we have, in the present invention, provided for an initial angular disposition of the back rest within the magazine structure, whereby any given irregular pack made up of units of greater thickness at one end thereof than at the other may be accommodated and that provision is made whereby the mechanism for moving the back rest is employed to bring it into parallelism with the unit receiving plane, as the back rest is advanced to maintain in that plane the foremost sheet of the diminishing pack.

Changes in the specific form of our invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of our invention.

Having described our invention, what we claim as new and desire to protect by Letters Patent is:

1. In a stock feeding magazine for units varying in thickness at their ends and, in stacked relation, forming a pack deeper at one end thereof than at the other, a movable rest for advancing a pack of such units, and mechanism for shifting the rest to advance one end thereof relatively faster than the other end.

2. In a stock feeding magazine for units varying in thickness at their ends and, in stacked relation, forming a pack deeper at one end thereof than at the other, a movable rest, mechanism for moving the rest to advance the pack, and means cooperating with said mechanism to cause the same to move one end of said rest relatively faster than the other end thereof.

3. In a stock magazine for advancing a diminishing pack of units and maintaining the foremost unit thereof in a given receiving plane, a rest for the pack and means for shifting the rest to advance one end thereof relatively faster than the other end, said means

providing for angularly adjusting the rest initially with one end more or less in advance of the other to accommodate the pack upon its introduction to the magazine.

4. In a stock magazine, a movable rest for a pack from which units are to be taken successively from the top, and winding means for shifting the rest and maintaining the foremost unit of the diminishing pack in a given receiving plane, said means being adjustably connected with said rest to provide for an initial angular disposition of the rest with respect to said plane in conformity with the pack upon its introduction to the magazine, said means being adapted to bring the rest progressively into parallelism with said plane during the advancement of the rest.

5. In a stock feeding magazine, a frame a pack rest slidable in said frame and movable to advance a pack of units, said rest being angularly shiftable in said frame, a revoluble element, independent connections attached to said rest and adapted to be wound in by said revoluble element, and means providing for the winding in of one connection faster than that of the other.

6. In a stock feeding magazine, a frame, a pack rest slidable in said frame and movable to advance a pack of units, said rest being angularly shiftable in said frame, independent connections attached to said rest, and revoluble means adapted to wind in said connections, one faster than the other.

7. In a stock feeding magazine, a frame, a pack rest slidable in said frame and movable to advance a pack of units, said rest being angularly shiftable in said frame, independent connections attached to said rest, revoluble means adapted to wind in said connections, and adapters interchangeably applicable to said means providing for the winding in of one connection variably faster than that of the other.

8. In a stock feeding magazine, a frame formed with guides thereon, a pack rest movable to advance a pack of units within the magazine, supporting means carrying said rest and cooperating with said guides for slidably supporting the rest on the frame, said means providing for the shifting of said rest angularly within said frame, tapes adjustably connected with said supporting means at the opposite ends of the rest, and winding means for winding in said tapes, one more rapidly than the other.

9. In a stock feeding magazine, a frame having side rails formed with facing guideways therein, a pack rest movable between said rails to advance a pack of units in the magazine, supporting blocks for said rest disposed at the ends thereof, said blocks being slidably mounted in said guideways and cooperating with said rails to prevent endwise movement of the rest therebetween and being formed with curved surfaces to provide for

the relative movement of the blocks within said ways, whereby the rest may be moved angularly between said rails and mechanism for shifting the rest to advance one end thereof relatively faster than the other end.

10. In a stock feeding magazine, a frame having rails at the sides thereof, a pack rest movable between said rails to advance a pack of units in the magazine, supporting blocks for said rest disposed at the ends thereof, each block having a supporting surface slidably bearing upon one of the rails and having an abutment surface cooperating with its respective rail to prevent endwise movement of the rest in the direction of said rail, said abutment surfaces being curved so that the rest may assume different angular positions between the rails, and mechanism for shifting the rest to advance one end thereof relatively faster than the other.

In testimony whereof we affix our signatures.

ABEL KLUGE.
ENEVAL KLUGE.

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