

May 18, 1937.

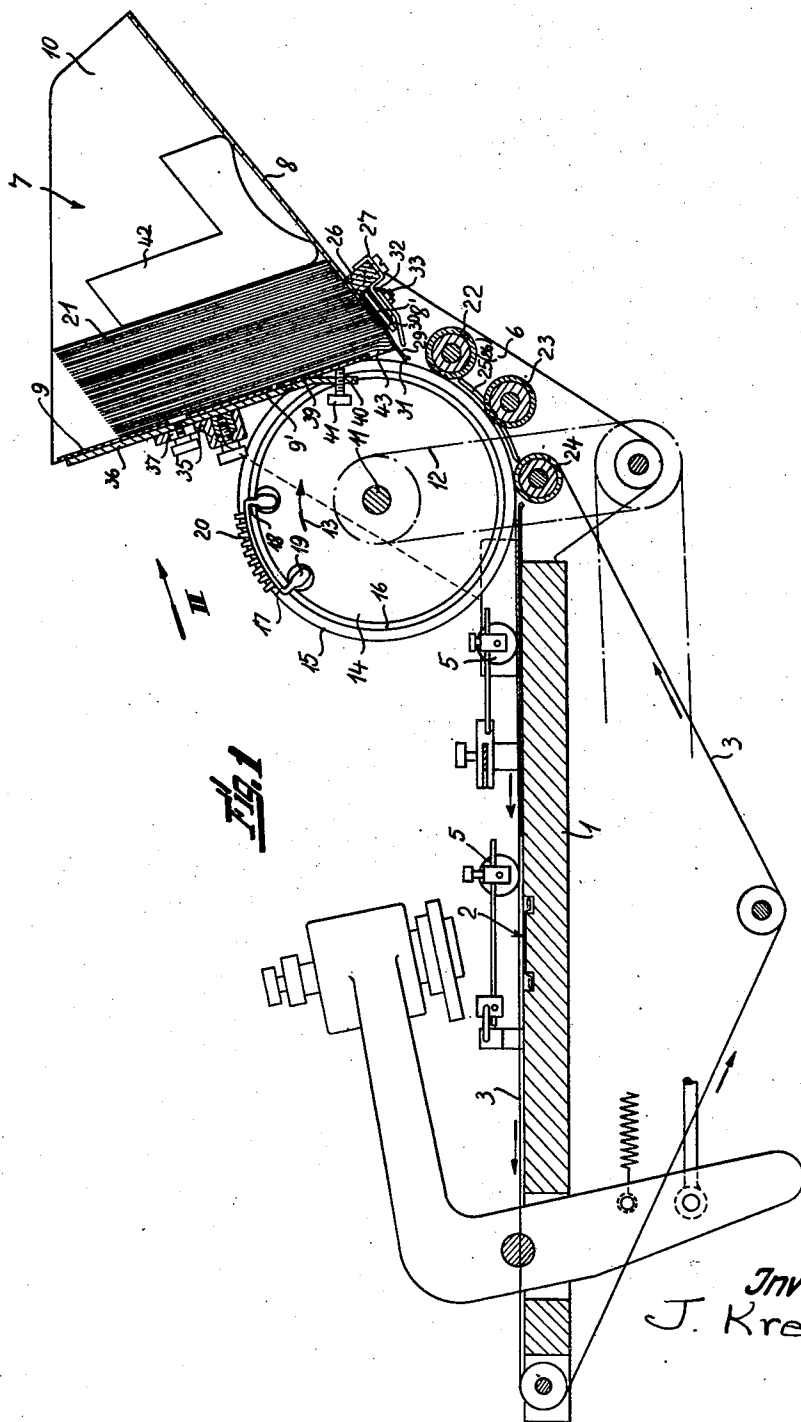
J. KRELL

2,080,968

AUTOMATIC FEEDING DEVICE

Filed Aug. 21, 1936

6 Sheets-Sheet 1



Inventor:
J. Krell

By: Glascock Downing & Co. Inc.
Attorneys

May 18, 1937.

J. KRELL

2,080,968

AUTOMATIC FEEDING DEVICE

Filed Aug. 21, 1936

6 Sheets-Sheet 2

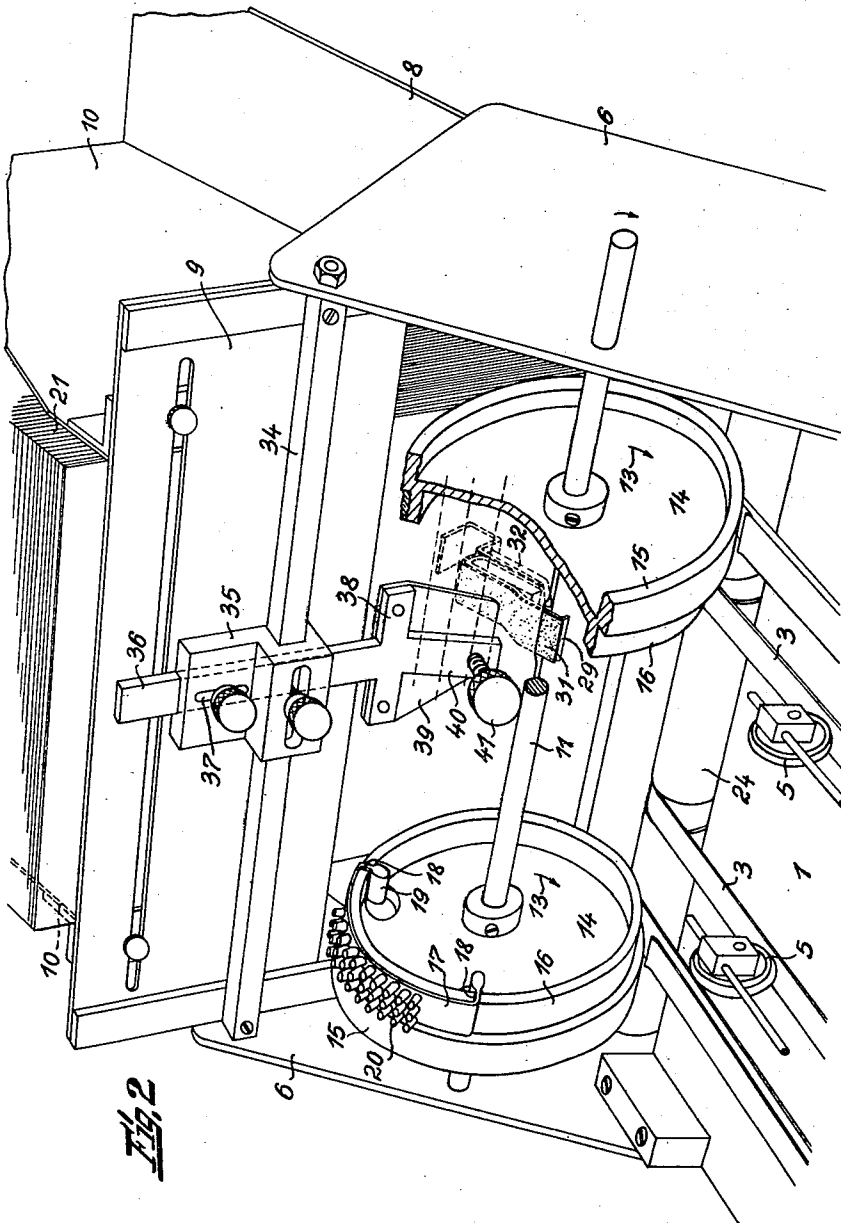


Fig. 2

Inventor:

J. Krell

Atty's:

By: *Glascock Downing & Seely*

May 18, 1937.

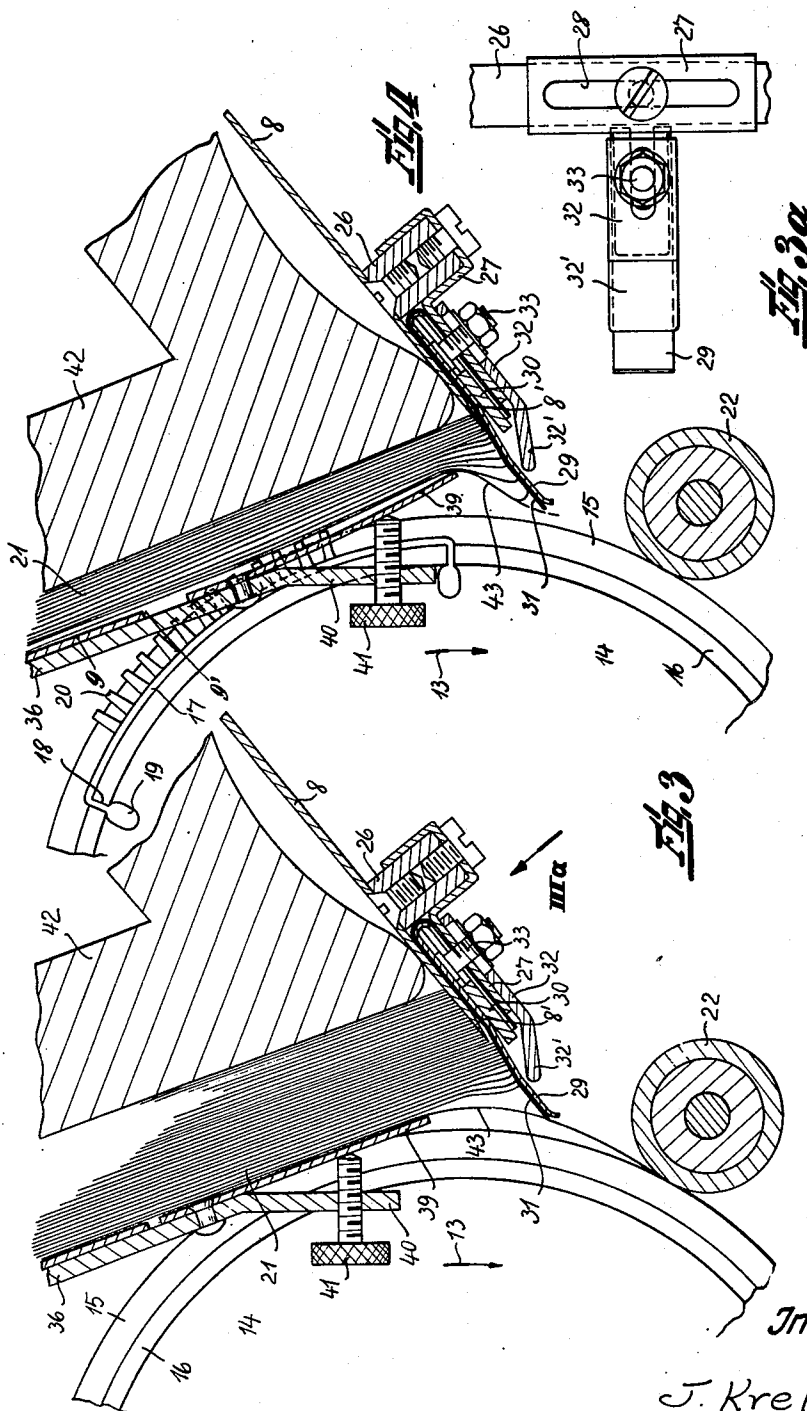
J. KRELL

2,080,968

AUTOMATIC FEEDING DEVICE

Filed Aug. 21, 1936

6 Sheets-Sheet 3



Inventor:

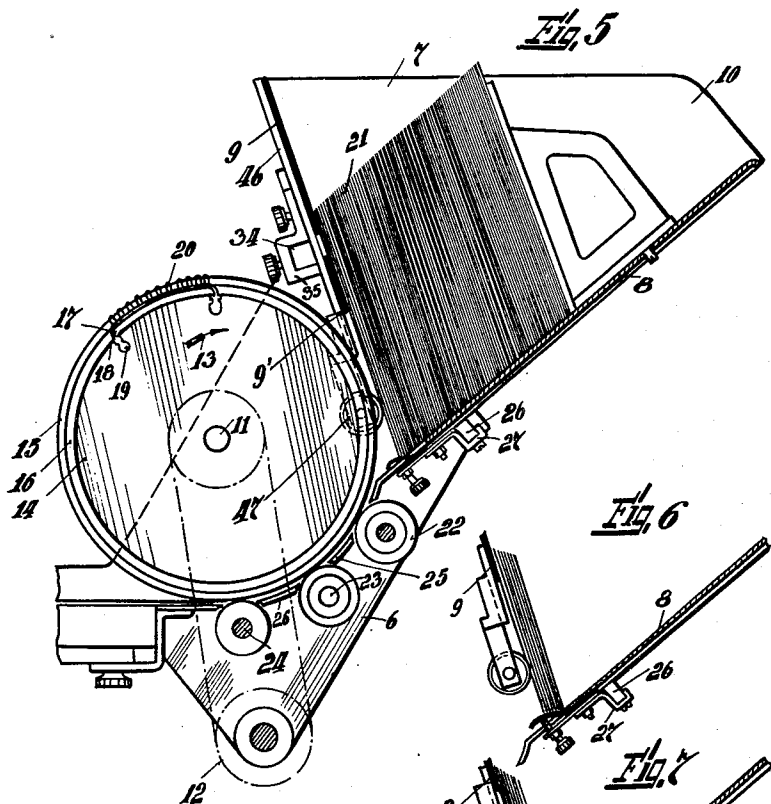
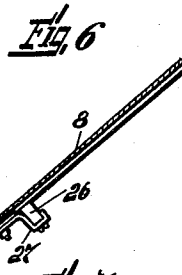
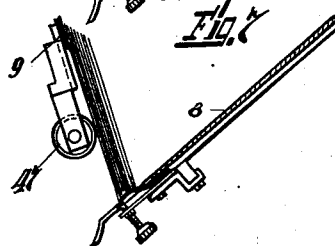
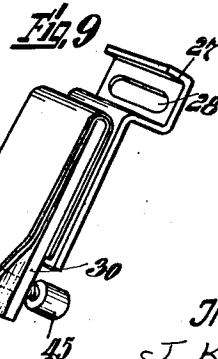
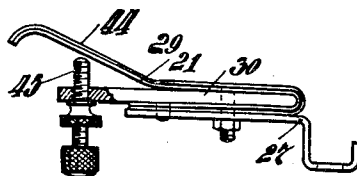
J. Krell
INVENTOR

By: Glascock Downing & Helbold
ATTYS.

J. KRELL

AUTOMATIC FEEDING DEVICE

6 Sheets-Sheet 4



Inventor:
J. Krell
Inventor

By: Glascok Downing Sec'd

May 18, 1937.

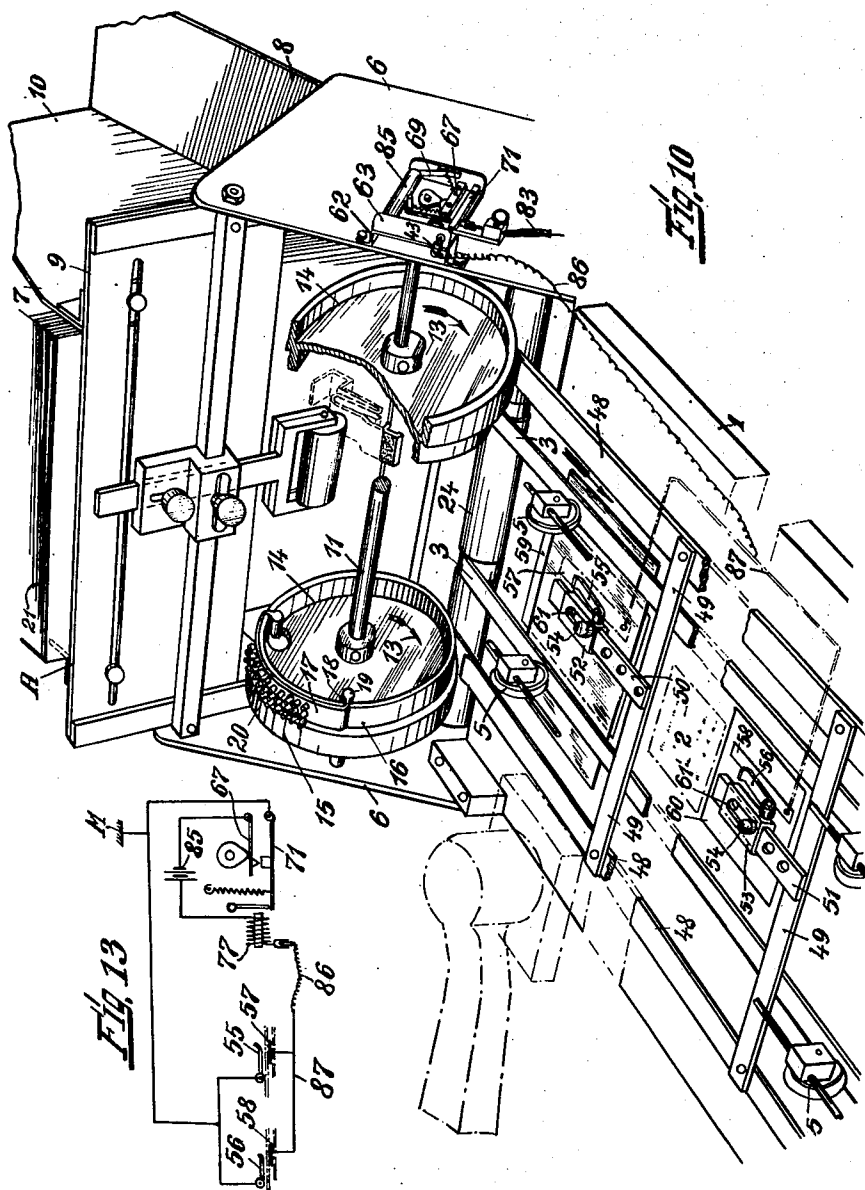
J. KRELL

2,080,968

AUTOMATIC FEEDING DEVICE

Filed Aug. 21, 1936

6 Sheets-Sheet 5



Inventor:
J. Krell

By: *Glavcock Downing & Lebold*
Attys.

May 18, 1937.

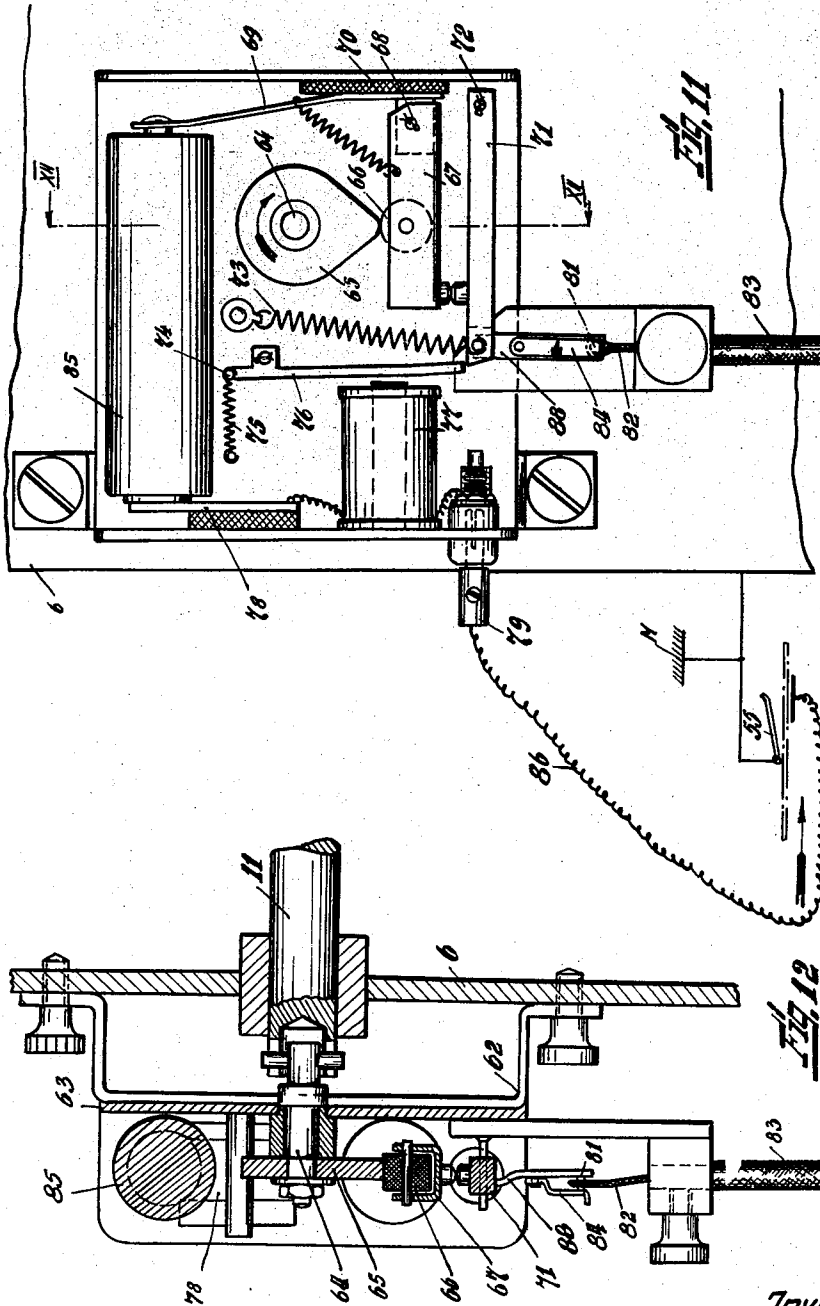
J. KRELL

2,080,968

AUTOMATIC FEEDING DEVICE

Filed Aug. 21, 1936

6 Sheets-Sheet 6



Inventor:
J. Krell

By: Mascock-Downing & Co. Attys.

UNITED STATES PATENT OFFICE

2,080,968

AUTOMATIC FEEDING DEVICE

Joseph Krell, Berlin-Zehlendorf, Germany

Application August 21, 1936, Serial No. 97,254

In Germany August 23, 1935

10 Claims. (Cl. 271—39)

The invention relates to automatic feeding devices of the kind known per se, more particularly for address-printing machines, in which the single sheets or the like are taken successively by means of rollers from a stack of sheets located edgewise in a magazine having an inclined bottom.

The feeding devices of this kind hitherto known, so far as the same operate at all in a satisfactory manner, are suitable only for use in conjunction with a certain kind of paper or envelope, so that in the known system it is impossible to use for example sheets of different thickness or also envelopes or cards with the one positioning device.

The invention resides in the provision of a feeding device, more particularly for address-printing machines, which on the one hand ensures a completely reliable separation of the uppermost sheet or the like from the stack of sheets, and with which on the other hand it is possible to employ both sheets of greatly varying thickness as well as envelopes of different thickness, post cards and other cards, it merely being necessary when varying the kind of paper to be positioned to adjust parts of the positioning device accordingly by very slight manipulation.

The essence of an automatic feeding device according to the invention consists in the fact that the front sheets or the like of the stack of sheets to be positioned rest on a resilient bar, which protrudes in the known systems it is impossible to use for the stack and is covered with sand paper or a similar material, such as rubber, and that further a stop is carried in such fashion by the front wall of the container terminating above the points of engagement of the rollers against the stack of sheets that this stop bears against the front face of the stack of sheets or the like between the two rollers below the lower bounding edge of the front wall of the container.

The height of this stop and also the position thereof in relation to the longitudinal direction of the front wall of the container, i. e., parallel to the axis of rotation of the two rollers, is adjustable within certain limits. In addition either the extent to which the resilient bar, on which the front sheets or the like rest, projects beyond the front wall of the container or magazine or the height of the front end of this bar may be variously adjusted.

By means of a corresponding adjustment of the stop and the bar it may be accomplished that the feeding device according to the invention reliably separates, with any desired thickness of paper or envelope, the front sheet, envelope, card

or the like from the stack of sheets, envelopes or the like without any alteration to the rollers or the remaining parts of the feeding device or without any variation in their rate of movement.

The adjustment of the sandpaper-covered or rubber-faced resilient bar on the bottom of the magazine requires to be made in such fashion that the thinner and softer the paper employed the more the resilient bar requires to project beyond the front wall of the magazine or the more the front end of the bar requires to be elevated.

At the same time the stop below the front wall of the magazine requires to be adjusted in such fashion that the thinner or softer the sheets to be positioned the more the stop requires to be displaced towards the bottom of the magazine.

The invention also covers an embodiment of the feeding device in such fashion that if any error or stoppage occurs in the feed of the sheets to the printing point of the address-printing machine or in the passage of the sheets from the printing point of the address-printing machine to the container in which the sheets are deposited, the address-printing machine together with the feeding device is stopped automatically, whereby the operator is then enabled to correct the error in the feeding of the sheets before the address-printing machine together with the positioning device is again set into operation.

The essence of this arrangement consists in the fact that in front of and behind the printing point of the address-printing machine there are provided, extending into the path of the sheets or other articles, feeling levers which, if the same at a certain point of each working stroke of the address-printing machine do not bear against a sheet being fed to or conducted away from the printing point, complete a circuit which includes in addition to the feeling-lever switching means a switch, which is closed for a short time by the shaft of the rollers upon each revolution of the said shaft, and an electro-magnet, which upon its excitation causes the address-printing machine to be stopped automatically.

A possible form of embodiment of the invention is illustrated by way of example in the accompanying drawings.

Fig. 1 is a middle section through the feeding device as applied to an address-printing machine.

Fig. 2 is a perspective front view of the feeding device in the direction of the arrow 2 in Fig. 1.

Fig. 3 is a part-sectional view on enlarged scale taken through the feeding device and corresponding with Fig. 1.

Fig. 3a is a detail showing a part of Fig. 3 in the direction of the arrow 3a.

Fig. 4 is a corresponding part-sectional view with parts of the feeding device adjusted in different position.

Fig. 5 shows in a part-sectional view corresponding to Fig. 1 a somewhat modified embodiment of the feeding device, and

Figs. 6 and 7 show diagrammatically different adjustments of the parts of a feeding device according to Fig. 5.

Figs. 8 and 9 show in cross-section and in perspective view respectively a detail of a feeding device according to Fig. 5.

Fig. 10 is a perspective view of an embodiment of the feeding device with stopping means.

Fig. 11 is a view of the opened casing containing the principal parts of the stopping means.

Fig. 12 is a section taken along the line XII—XII in Fig. 11, and

Fig. 13 is a circuit diagram.

In all of the figures 1 is the table of an address-printing machine, which is constructed in any known fashion. For conducting the sheets or the like fed by the device through the address-printing machine past the printing point 2 there are employed known belt-conveying means 3, the upper lengths of which pass over the surface of the table 1 and convey the sheets fed to the belt-conveying means in the direction of the arrows.

For pressing the sheets against the upper lengths of the belt-conveying means there are employed weighted rollers 5 of the kind known per se.

At the front part of the table 1 of the address-printing machine there is secured the positioning device by means of a suitable frame 6. It possesses the magazine 7 for the sheets or the like having a bottom 8 which is inclined in relation to the table 1, a front wall 9 and the two side walls 10, which are adjustable along the front wall 9 and the spacing between which is also adjustable in accordance with the width of the sheets or the like.

The front wall 9 of the container 7 ceases at a certain distance from the bottom 8 at 9'.

In front of the container or magazine 7 there is rotatably mounted a shaft 11 which is driven by any suitable driving means 12 in the direction of the arrow 13, and on which there are mounted the two rollers or discs 14, the position of which on the shaft 11 is adjustable in accordance with the width of the sheets or the like being used. Each roller 14 possesses a set-off rim, in such fashion that the outwardly disposed parts 15 of the rim have a greater diameter than the inner parts 16 of the rim. Over a part of the rim 16 of each roller 14 there is placed a rubber band 17, the ends of the band 17 being passed through slots 18 in the rim portion 16 and thickened end portions 19 holding the rubber band 17 in position on the rim portion 16. A part of the surface of the band 17 is furnished with ribs or elevations or, as assumed in the embodiment shown, with rubber studs 20. The studs 20 or other elevations on the band 17 project to a slight extent beyond the outer face of the rim portion 15.

Upon the rotation of the rollers 14 in the direction of the arrows 13 the rim portions 15 bear against the front sheet of the stack 21 in the magazine 7, and during a part of the rotation of the rollers 14 the studs or the like 20 pass

along the front sheet in the manner described more concisely at a later point.

Against the outer faces of the portions 15 of the discs or rollers 14 there bear in front of the magazine 7 two rubber rollers 22, 23, and with the discs or rollers 14 there also co-operates the roller 24 of the belt-conveying drive 3 situated in front of the table 1 of the address-printing machine. Between the rollers 22, 23 and the rollers 23, 24 there are also provided the guide sheets 25, 26.

To the bottom 8 of the container 7 there is firmly screwed on a screwed on or cast on abutment 26, a strip of metal 27, which is made in cap-like form at the one end, the position of the strip 27 being adjustable in relation to the bottom 8 parallel to the direction of the shaft 11, for which purpose there is provided in the strip of metal 27 the elongated aperture 28.

The strip of metal 27 serves to carry a flat spring 29, which is placed about an intermediate member 30.

In the embodiment according to Figs. 1 to 4 the spring 29 is covered with a strip of sand paper 31, and from below there bears against the metallic strip 27 a stop 32, the front end 32' of which is situated in slight spacial disposal below the spring 29. A screw 33 on the intermediate member 30 serves to hold the parts 29, 30 and 32 on the metallic strip 27 or the bottom 8 of the magazine 7. The attachment of the spring 29 with the sand paper 31 and the stop 32 is such that the spring 29 may be secured projecting to a greater or smaller extent beyond the front edge 8' of the bottom 8.

On a bar 34 passing beyond the front wall 9 of the container 7 there is provided, adjustable in the longitudinal direction of the bar 34, a casting 35, which is traversed in the embodiment according to Figs. 1 to 4 by the upper member 36 of a cross-like adjustment bar. The height of the member 36 on the front wall 9 is adjustable with the aid of the elongated aperture 37 provided in the casting 35. To the transverse member 38 of the supporting bar there is riveted a plate 39, and the lower member 40 of the cross-shaped supporting bar is bent outwards and carries a pressure screw 41, which bears with its end against the plate 39.

The modified embodiment of the feeding device shown in Figs. 5 to 9 differs only to little extent from that described in the above. In this embodiment the resilient bar 29 is furnished with a thin facing of rubber 44, and the front end of the bar 29 bears against an adjustment screw 45, which is arranged to be adjustable in the intermediate member 30 (compare more particularly Figs. 8 and 9). The resilient bar 29 rests in this embodiment in a recess in the forwardly extended bottom 8 of the magazine 7 for the stack of sheets. Further, in this form of embodiment, there is located at the end of an adjustment bar 46, which is mounted to be adjustable in the longitudinal direction in the casting 35, a rubber roller 47, or a metallic roller 47 having a rubber facing, which accordingly bears against the front face of the stack of sheets 21 below the lower bounding edge 8' of the front wall 9 of the magazine.

The operation of a feeding device according to the invention is as follows:

The stack of sheets or envelopes 21 to be positioned is placed edgewise in the magazine 7, in such fashion that the foremost sheet, envelope or the like rests against the front wall 9 of the con-

tainer 7. A weighted element 42 pressing against the rearmost sheet of the stack 21 and likewise resting on the inclined bottom 8 of the container 7 forces the stack continuously towards the front against the front wall 9 of the container.

If after introduction of the stack of sheets or the like the rollers or discs 14 are driven in the direction of the arrows 13, the parts 17 to 20, upon each revolution of the rollers or discs 14 corresponding with Fig. 4 or Fig. 5, wipe along the foremost sheet or envelope of the stack 21 and move the foremost sheet or envelope 43 at first into the position shown in full lines in Fig. 4, whereby the lower edge of the sheet or envelope 43 slides along the resilient bar 29. The sheets following the foremost sheet or envelope are also moved to a certain extent, but they are braked by the strip of sand paper 31 or the strip of rubber 44 on the resilient base 29, as shown clearly in Fig. 4.

Upon additional rotation of the rollers 14 the foremost sheet or envelope 43 reaches the position shown in dash-dotted lines in Fig. 4, in which it has slipped over the front edge of the strip of sand paper 31 or the strip of rubber 44 and is then no longer braked by the resilient bar 29, and it then reaches the position shown in Fig. 3 between the rollers 14 and the rollers 22, 23, whereby it is supported by the intermediate faces 25, 26 and is finally passed between the rollers 14 and the roller 24 to the belt-conveying means 3, which then additionally convey it through the address-printing machine in the known fashion.

Whilst the foremost sheet or envelope passes over the front edge of the resilient bar 29 the following sheets are braked by the bar 29 having the sand-paper or rubber facing, so that when the rollers 14 move past the stack 21 the foremost sheet or envelope is readily separated from this stack.

This is also accomplished quite particularly because in the embodiment according to Figs. 1 to 4 the extent to which the bar 29 having the sand paper projects beyond the front wall 9 of the container is capable of adjustment, so that this extent may always be so adjusted that only the foremost sheet or envelope 43 slips off from the resilient bar having the strip of sand paper 31.

In the arrangement according to Figs. 5 to 9 a reliable separation of the foremost sheet or envelope from the stack 21 is obtained particularly in view of the fact that the front end of the resilient bar 29 having the facing of rubber or other material may be adjusted to different heights, as shown by Figs. 6 and 7.

In the embodiment according to Figs. 1 to 4 a correct operation of the device is also assisted by the plate 39, and in the embodiment according to Figs. 5 to 9 by the rubber roller 47. In both cases there may be variously adjusted the height of the stop 39 or 47, i. e., the spacing of this stop from the bottom 8 of the magazine.

In the embodiment having the plate 39 the latter may be pressed to a greater or smaller extent against the stack of sheets or envelopes by the screw 41.

The extent of the downward movement of the spring 29 is limited in the embodiment according to Figs. 1 to 4 by the stop 32.

If the sheets to be positioned consist of thin or soft paper, it is necessary in the embodiment according to Figs. 1 to 4 for the spring 29 having the sand-paper covering 31 to be so adjusted that it projects to a comparatively large extent

beyond the front edge 8' of the magazine bottom 8, and at the same time, in accordance with Fig. 4, the plate 39 must be pressed sharply against the stack 21 by means of the screw 41. In addition it is necessary in the case of thin paper that the plate 39 be locked in a position approaching the bar 29. In a position of the parts of this kind the sheet to be separated from the stack must cover with its lower edge a comparatively large distance until it passes over the front edge of the strip of sand paper.

The thicker the sheets or envelopes to be positioned the more the bar 29 with the strip of sand paper 31 requires to be displaced towards the rear below the bottom 8 of the magazine, and the more the screw 41 requires to be loosened and the plate 39 displaced upwards.

In an embodiment according to Figs. 5 to 9 the front end of the resilient bar 29 furnished with the facing of rubber or other material must, if the sheets are composed of soft or thin paper, be lifted in accordance with Fig. 6 by the adjustment screw 45, whilst when other papers are employed the front end of the resilient bar 29 is adjusted in a lower position in accordance with Fig. 7.

The rubber roller 46, if the positioning device is intended for hard paper or cardboard, must be adjusted at a greater distance from the bottom 8 of the magazine 7 than if soft or thin paper is employed.

Finally, it is necessary in both forms of embodiment in the case of adjustment of the rollers or discs 14 on the shaft 11 or adjustment of the side walls 10 of the magazine 7 for the stop 30 or 47 and the resilient bar 29 always to be so adjusted in the direction of the shaft 11 that these parts are always located at the centre between the two rollers or discs.

In order automatically to stop the feeding device and the address-printing machine in the case of incorrect operation of the positioning device, an additional embodiment of the latter is necessary in accordance with Figs. 10 to 13. In this embodiment of the apparatus there are carried by two bars 48 extending over the table 1 of the address-printing machine in the longitudinal direction of the table two transverse bars 49, to each of which there is secured a bar 50 in front of the printing point 2 and a bar 51 behind the printing point 2 of the address-printing machine. The bars 50 and 51 are each furnished with a plurality of threaded apertures, which serve for the attachment of small slides 52, 53 by means of screws 54. The slides 52, 53 are shiftable in the longitudinal direction of the bars 50 and 51 and are capable of being locked at different points on the bars 50 and 51 by means of the screws 54 and carry small oscillatory feeling levers 55, 56 which, when the address-printing machine is not in operation, rest permanently on metal bars 57, 58, which are arranged in plates 59, 60 of insulating material secured to the table of the address-printing machine. For fine adjustment of the position of the feeling levers 55, 56, i. e., for exact adjustment of the distance of the feeling levers 55, 56 from the printing point, the attachment screws 54 for the slides 52, 53 pass through elongated apertures 61 in the slide covers.

To the one side wall of the frame 6 for attachment of the feeding device there is secured by means of a stirrup 62 a metallic casing 63, in such fashion that a shaft stub 64 mounted to be rotatable in the casing 63 is situated in a line with the

shaft 11 for the discs or rollers 14 (compare more particularly Fig. 12). In applying the casing 63 to the wall of the frame 6 the shaft stub 64 is coupled in any suitable fashion with the shaft 11. On the shaft stub 64 there is located a cam 65 which acts against a roller 66 composed of insulating material mounted in a contact lever 67. The contact lever is mounted in insulated fashion about the pin 68 in the casing 63 and is electrically connected with a contact spring 69, which is situated in the casing and is insulated in relation to the wall of the casing by the intermediate strip 70. Below the contact lever 67 there is mounted rotatably in the casing 63 about the pin 72 a second contact lever 71, which a spring 73 tends continuously to draw upwards. Normally the upward movement of the contact lever 71 is prevented by a pawl 76, which is likewise rotatably mounted in the casing at 14 and is acted upon by the spring 75. The lever 76 forms the armature of an electromagnet 77, which is arranged in insulated fashion in the casing 63 and is conductively connected on the one hand with a contact spring 78 and on the other hand with a plug switch 79.

On the lever 71 there is located a rod 80 having a transverse pin 81, over which there is suspended the wire core of a Bowden control which leads to a disengaging device for the address-printing machine, which device may be constructed in any known fashion.

In order to prevent an accidental release of the wire core 82 of the Bowden control from the transverse pin 81 there is rotatably mounted on the rod 80 a holding plate 84, which is situated in front of the end of the core 82 in the position shown in Figs. 11 and 12.

Between the two contact springs 69 and 78 there is fitted in the embodiment shown a flash-lamp battery 85.

The current passes from the one pole of this battery 85 by way of the contact spring 78 to the electro-magnet 77 and from there to the plug switch 79, which is connected by a plug lead 86 with a line 87, which in turn is connected with the two contact bars 57 and 58. The circuit passes further from the feeling levers 55, 56 to the mass of the machine, which in the circuit diagram (Fig. 13) is designated M, and this mass is also in conductive connection with the casing 63 and accordingly with the contact lever 71, the counter-lever 67 of which is in conductive connection by way of the contact spring 69 with the other pole of the flash-lamp battery 85.

The operation of the device is as follows:

If the electro-magnet 77 is not excited, the armature 76, which assumes the position shown in Fig. 11, prevents the contact lever 71 from rocking upwards and accordingly a stopping of the address-printing machine by the Bowden control 82, 83.

For closing the circuit traversing the electro-magnet 77 it is necessary for both the contact levers 67, 71 to be in contact with each other as well as for at least one of the feeling levers 55, 56 to bear against the bar 57 or 58 of conductive material. A closing of the contact 67, 71 only takes place during a short period upon each revolution of the shaft 11 for the rollers or discs 14 by way of the cam 65. This period is so selected that normally at this moment a sheet passing through the address-printing machine is always situated between the feeling lever 55 and the contact bar 57 and a further sheet between the feel-

ing lever 56 and the contact bar 58, so that the circuit is interrupted at these points and the electro-magnet 77 is not excited. By displacement of the small slides 52, 53, which carry the feeling levers 55, 56, along the bars 50 and 51 there is obtained a corresponding adjustment of the feeling levers 55, 56.

If now owing to any irregularity in the operation of the feeding device or also in the sheet conveying device through the address-printing machine there is no sheet either between the feeling lever 55 and the contact bar 57 or between the feeling lever 56 and the contact bar 58 at the moment at which the switch 67, 71 is closed, the circuit passing through the electro-magnet 77 is at this moment completed. In consequence the armature 76 is attracted and immediately the cam 65 has moved past the contact lever 67 the two contact levers 67, 71 are rocked upwards by the spring 73, causing a pull to be exerted on the wire core of the Bowden control and accordingly a stopping of the address-printing machine in the known manner.

After the address-printing machine has again been set into operation the pair of contact levers 67, 71 are again rocked upwards upon the next revolution of the shaft 11 into the position according to Fig. 11, and in this upper position the contact lever 71 is held by the armature 76 of the electro-magnet, which after the excitation of the electro-magnet 77 ceases is again withdrawn by the spring 75 into the position shown in Fig. 11.

If it is desired to dispense with the automatic stopping means, it is merely necessary to release the Bowden control 82, 83 from the apparatus, to withdraw the plug from the socket 79 and to remove from the frame 6 the entire casing 63, which naturally is preferably furnished with a cover towards the outside; it may, however, also be allowed to remain in position and the entire stopping means placed out of action by interrupting the current at the contact 79. The slides 50, 51 with the feeling levers may, if desired, also be readily removed from their supporting bars.

What I claim as new and desire to secure by Letters Patent is:

1. In an automatic feeding device for sheets of paper and like material, a magazine adapted to receive the stacked sheets edgewise, an inclined bottom to the said magazine, rollers for withdrawing the sheets from the said magazine, a front wall to the said magazine terminating above the points of engagement of the said rollers against the said sheets, a resilient bar extending beyond the said front wall and adapted to support the foremost sheets of the stack, a facing to the said bar, and a stop on the front wall of the magazine so disposed that it bears between the said rollers, above said resilient bar and below the lower edge of the said front wall against the front surface of the stack of sheets.

2. In an automatic feeding device for sheets of paper and like material, a magazine adapted to receive the stacked sheets edgewise, an inclined bottom to the said magazine, rollers for withdrawing the sheets from the said magazine, a front wall to the said magazine terminating above the points of engagement of the said rollers against the said sheets, a resilient bar extending beyond the said front wall and adapted to support the foremost sheets of the stack, a facing to the said bar, and a stop on the front wall of the magazine so disposed that it bears between

the said rollers, above said resilient bar and below the lower edge of the said front wall against the front surface of the stack of sheets, the spacing between the said stop and the bottom of the said magazine being adjustable.

3. In an automatic feeding device for sheets of paper and like material, a magazine adapted to receive the stacked sheets edgewise, an inclined bottom to the said magazine, rollers for withdrawing the sheets from the said magazine, a front wall to the said magazine terminating above the points of engagement of the said rollers against the said sheets, a resilient bar extending beyond the said front wall and adapted to support the foremost sheets of the stack, a facing to the said bar, and a stop on the front wall of the magazine so disposed that it bears between the said rollers below the lower edge of the said front wall against the front surface of the stack of sheets, the position of the said stop being adjustable within certain limits in a direction parallel to the axis of rotation of the said rollers.

4. In an automatic feeding device for sheets of paper and like material, a magazine adapted to receive the stacked sheets edgewise, an inclined bottom to the said magazine, rollers for withdrawing the sheets from the said magazine, a front wall to the said magazine terminating above the points of engagement of the said rollers against the said sheets, a resilient bar extending beyond the said front wall and adapted to support the foremost sheets of the stack, a facing to the said bar, a bar mounted on the front wall of the said magazine, a casting mounted to be adjustable on the said second bar in the longitudinal direction thereof, a third bar mounted to be longitudinally shiftable in the said casting, and a stop mounted on the said third bar.

5. In an automatic feeding device for sheets of paper and like material, a magazine adapted to receive the stacked sheets edgewise, an inclined bottom to the said magazine, rollers for withdrawing the sheets from the said magazine, a front wall to the said magazine terminating above the points of engagement of the said rollers against the said sheets, a resilient bar extending beyond the said front wall and adapted to support the foremost sheets of the stack, a stop constituted by a presser plate, a cross-shaped member for supporting the said plate with its transverse portion and having a long upper portion and a short lower portion, the long upper portion serving for adjustable connection of the said plate to the said front wall and the shorter lower portion being bent, and a pressure screw on the said shorter portion bearing against the said plate for adjusting the latter relative to said magazine.

6. In an automatic feeding device for sheets of paper and like material, a magazine adapted to receive the stacked sheets edgewise, an inclined bottom to the said magazine, rollers for withdrawing the sheets from the said magazine, a front wall to the said magazine terminating above the points of engagement of the said rollers against the said sheets, a resilient bar extending beyond the said front wall and adapted to support the foremost sheets of the stack, a facing to the said bar, a bar mounted on the front wall of the said magazine, a casting mounted to be adjustable on the said second bar in the longitudinal direction thereof, a third bar mounted to be longitudinally shiftable in the said

casting, and a rubber roller mounted to be rotatable at the end of the said third bar.

7. In an automatic feeding device for sheets of paper and like material, a magazine adapted to receive the stacked sheets edgewise, an inclined bottom to the said magazine, rollers for withdrawing the sheets from the said magazine, a front wall to the said magazine terminating above the points of engagement of the said rollers against the said sheets, a resilient bar extending beyond the said front wall and adapted to support the foremost sheets of the stack, means for varying the extent to which the said bar projects beyond the said wall, a facing to the said bar, and a stop on the front wall of the magazine so disposed that it bears between the said rollers below the lower edge of the front wall against the front surface of the stack of sheets.

8. In an automatic feeding device for sheets of paper and like material, a magazine adapted to receive the stacked sheets edgewise, an inclined bottom to the said magazine, rollers for withdrawing the sheets from the said magazine, a front wall to the said magazine terminating above the points of engagement of the said rollers against the said sheets, a resilient bar extending beyond the said front wall and adapted to support the foremost sheets of the stack, an abutment provided on the bottom of the said magazine, an adjustment screw in the said abutment bearing against the free end of the said bar for adjusting the height of the latter, a facing to the said bar, and a stop on the front wall of the magazine so disposed that it bears between the said rollers below the lower edge of the said front wall against the front surface of the stack of sheets.

9. In an automatic feeding device for sheets of paper and like material, a magazine adapted to receive the stacked sheets edgewise, an inclined bottom to the said magazine, rollers for withdrawing the sheets from the said magazine, a front wall to the said magazine terminating above the points of engagement of the said rollers against the said sheets, a resilient bar extending beyond the said front wall and adapted to support the foremost sheets of the stack, a facing to the said bar, a stop mounted below the front end of the said bar for limiting the downward movement thereof, and a stop on the front wall of the magazine so disposed that it bears between the said rollers below the lower edge of the front wall against the front surface of the stack of sheets.

10. In an automatic feeding device for sheets of paper and like material, a magazine adapted to receive the stacked sheets edgewise, an inclined bottom to the said magazine, rollers for withdrawing the sheets from the said magazine, a belt-conveying means for additional conveyance of the sheets, additional rollers for passing the sheets from the said first rollers to the said conveying means, a front wall to the said magazine terminating above the points of engagement of the said first rollers against the said sheets, a resilient bar extending beyond the said front wall and adapted to support the foremost sheets of the stack, a facing to the said bar, and a stop on the front wall of the magazine so disposed that it bears between the said rollers below the lower edge of the said front wall against the front surface of the stack of sheets.