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W. FRIEDRICHS

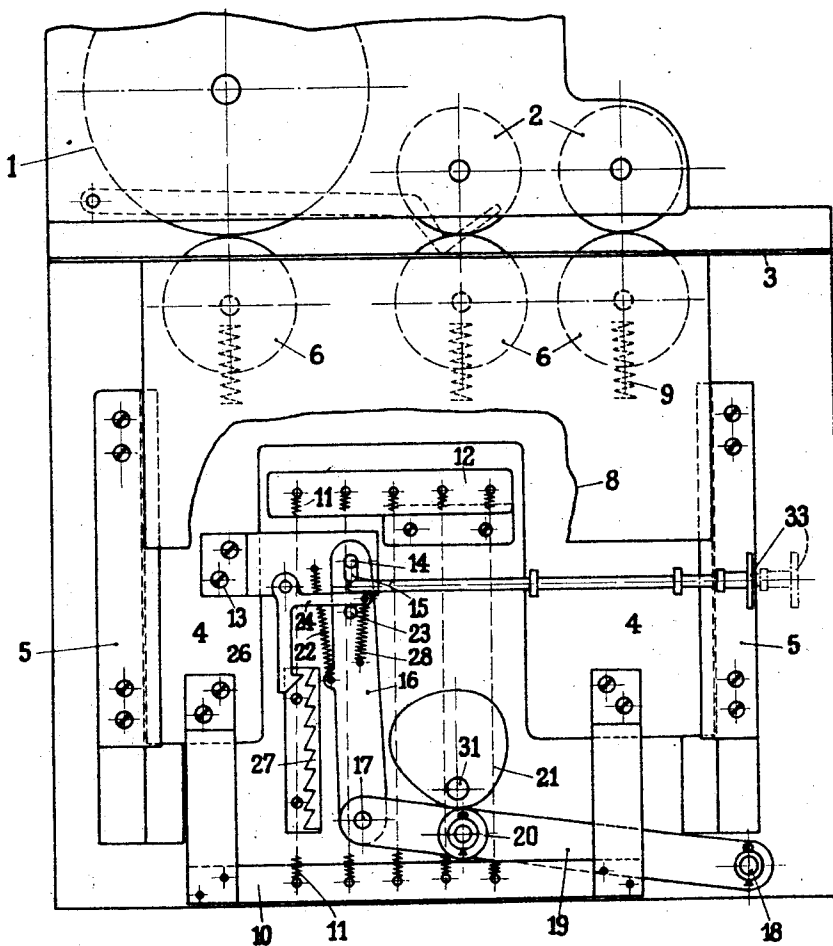
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MECHANISM FOR FEEDING LETTERS OR OTHER MAIL TO PREPAYMENT MACHINES

Filed April 10, 1924

2 Sheets-Sheet 1

Fig. 1.



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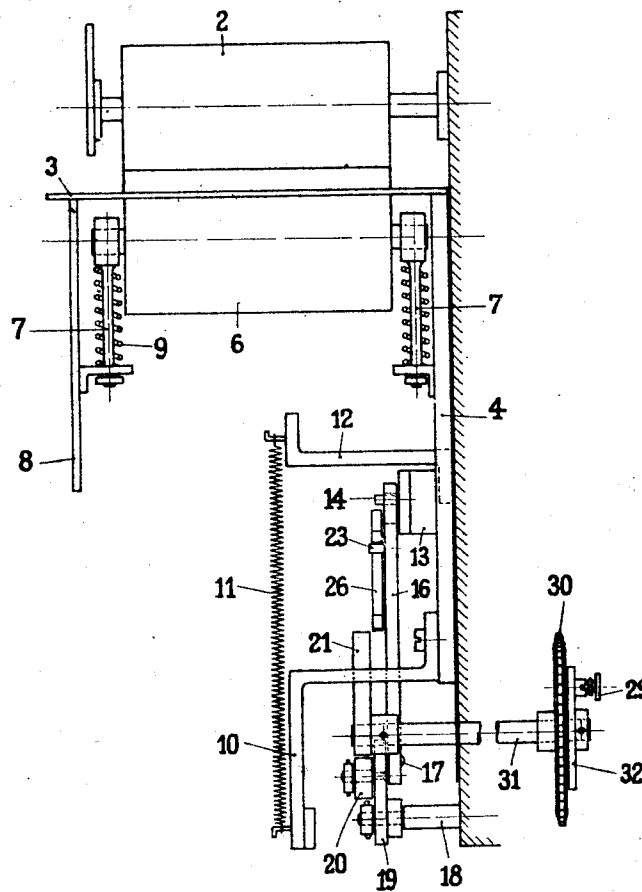
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2 Sheets-Sheet 2

Fig. 2.



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UNITED STATES PATENT OFFICE.

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MECHANISM FOR FEEDING LETTERS OR OTHER MAIL TO PREPAYMENT MACHINES.

Application filed April 10, 1924, Serial No. 705,641, and in Germany April 19, 1923.

This invention relates to a mechanism for feeding letters or other mail to the pre-payment machines. When mail of very different thicknesses is fed to the pre-payment machines the inconvenience makes itself felt that the machine no longer works perfectly—according to the original adjusting of the machine—when the letters or other mail are too thick or too thin. In order to avoid this inconvenience the table or head of the machine is, according to the invention, periodically raised or lowered automatically for an extent determined by the thickness of the mail so that the degree of opening of the mouth in the working position corresponds to the thickness of the mail. This periodical movement is executed in pre-payment machines, which work with printing stamps moved up and down, additionally to the periodical movement of the stamp.

The table plate may for instance be raised or lowered in opposition to the action of springs by an eccentric or by a crank. When a letter is put on, the driving element, which is fitted with free wheel movement so that, after the raising of the letter has been completed it can continue to move for a determined distance, makes a pawl come in gear with a rack or the like. This pawl locks the table plate in such a manner that it is prevented from ascending prior to its next descending movement even if the letter has come out from between the stamping rolls or if the thickness of the letter decreases suddenly. The locking prevents however only the upward movement while the downward movement is not impeded at all in the case that the rear part of the letter be considerably thicker than the front part of the same. In order to insure, notwithstanding this locking, for letters which are of irregular thickness and become for instance gradually thinner, a friction between the printing and feeding rolls which is sufficiently strong to push the letter after the stamping completely out of the pre-payment machine, the counter-pressure rolls could be elastically mounted in the table plate.

One embodiment of the invention is shown by way of example on the accompanying drawing, in which:

Fig. 1 is a side elevation of the apparatus, the lateral cover plate being partly broken away.

Fig. 2 is a front elevation of Fig. 1 seen from the right.

In the machine frame the stamping roll 1 and the feeding rolls 2 are pivotally mounted. Below these rolls the machine table 3 is arranged which is fixed on a plate 4 adapted to be vertically displaced in guides 5 of the machine frame. The table has apertures through which the counter-pressure rolls 6 project. These counter-pressure rolls are mounted on the base plate 4 and in the front cover plate 8 so that they may be moved in vertical direction. Springs 9 serve to hold said counter-pressure rolls in the upper position; the counter-pressure rolls are adapted to yield in downward direction in opposition to the action of said springs.

A frame 10 connected with the lower edge of the base plate 4 is connected by springs 11 with a bracket 12 fixed in the machine frame so that the springs 11 have the tendency to pull the base plate 4 and with it the table 3 and the counter-pressure rolls 6 in upward direction. An angular piece 13 fixed on the base plate 4 carries a bolt 14 over which a slot 15 of the pull rod 16 is placed. With this pull rod 16 a lever 19 is hingedly connected by means of a bolt 17, said lever, pivotally mounted on the pivot pin 18, projecting from the machine frame. An eccentric 21, acting upon the roller 20 of lever 19 presses this lever and consequently the pull rod 16, the base plate 4 and the table 3 downward in overcoming the action of the springs 11 so that the distance between the rolls 1 and 2 on the one hand and the counter-pressure rolls 6 on the other hand corresponds with the greatest thickness of letters to be stamped by the machine.

The driving speed of the eccentric is selected in such a manner that, during one revolution of the eccentric, the circumference of the stamp roll 1 has travelled over a distance which is approximately equal to the length of a letter of folio size.

At one complete revolution of the eccentric 21 the table is at first moved downward and later on upward again by the action of the springs 11. Shortly after the table or the counter-pressure rolls 6 have come in contact with the letter the upward movement ceases, the pull rod 16 continuing however to move upward under the action of the spring 22 for the length of slot 15.

At this additional movement of rod 16 the bolt 23 of the pull rod acts upon the arm 24 of the elbow lever 25 so that the arm 26 of the lever, which is hooked-shaped, comes

in engagement with a space between teeth of the rack 27. The table 3 is thus locked against further movement in upward direction during this working period even if the letter should get thinner or if a thicker, shorter letter should have left the machine before the termination of this working period. This locking prevents therefore any irregular working of the machine or rattling of the same and a hard striking upon one of the printing- and counter-pressure rolls. The arm 24 is maintained by spring 28 in contact with the above mentioned bolt 23.

As soon as the eccentric 21 makes the base plate 4 and consequently the table 3 move downward again in order to prepare the machine for the next following working period the pull rod 16 moves back so that the bolt 14 gets to the upper end of slot 15 and the pawl 26 is disengaged from rack 27 through the action of spring 28.

When a great number of thin letters have to be stamped successively the mechanism for adapting the machine to the thickness of the letters may be stopped by pulling the coupling pin 29, which connects the driving disk 30 for the eccentric 21 with the disk 32 keyed on the shaft 31 of the eccentric, out of disk 20 and in securing the same in the uncoupling position by turning it 180°. The rod 33 can at the same time be brought from the position shown in dash lines into the position shown in full lines in order to prevent by its end the pawl 25 from coming in engagement with rack 27.

If the rod 33 remains in the position shown in dash lines the table can be brought, by simply pressing on its plate, into a position which corresponds to the thickness of the letters, if for instance a great number of letters of the same size but of greater thickness than before are to be stamped.

I claim:—

1. Mechanism for feeding mail matter to a pre-payment machine, comprising stamping means, a table beneath said stamping

means, means for vertically reciprocating said table, and means for arresting the upward movement of the table in dependence upon the thickness of the matter to be stamped.

2. Mechanism for feeding mail matter to a pre-payment machine, comprising stamping means, a vertically reciprocable table beneath said stamping means, a pull rod for moving said table downwardly, and means for moving said table upwardly, the upward travel being limited in accordance with the thickness of the matter to be fed, a pawl on said table, a rack fixed relative to the main frame of the machine, and means forcing said pawl into engagement with said rack when said table reaches its upper limit for locking said table against further upward travel.

3. Mechanism for feeding mail matter to a pre-payment machine, comprising stamping means, a vertically reciprocable table beneath said stamping means, a pull rod for moving said table downwardly, a lost motion connection between said pull rod and said table, means for moving said table upwardly, the upward travel being limited in accordance with the thickness of the matter to be fed, a pawl pivoted to said table, a rack fixed relative to said table, means for imparting further movement to said pull rod upon the arrival of said table in its upper position, said further movement being permitted by said lost motion connection, and means actuated upon said further movement for engaging said pawl with said rack for preventing a further upward travel of said table.

4. Mechanism according to claim 1 wherein means are provided for rendering the reciprocating means inoperative.

5. Mechanism according to claim 2 wherein means are provided for rendering the pawl inoperative.

In testimony whereof I affix my signature.

WILHELM FRIEDRICH.