Jan. 4, 1944. E. KOMUSIN 2,338,590

PRINTING APPARATUS

Filed July 21, 1939 4 Sheets-Sheet 1

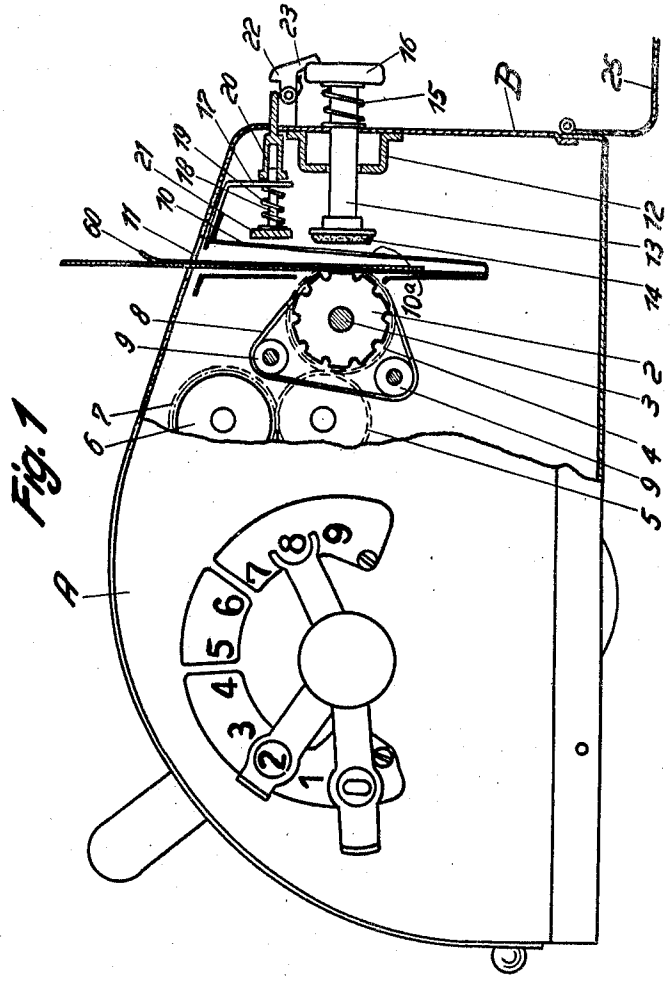


Fig. 1

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Fig. 3

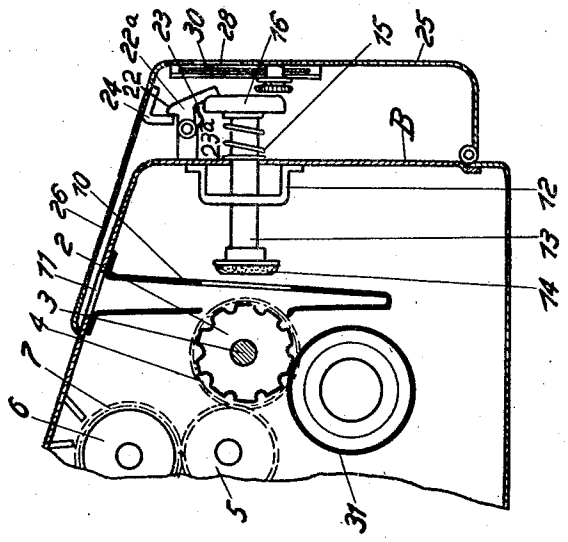
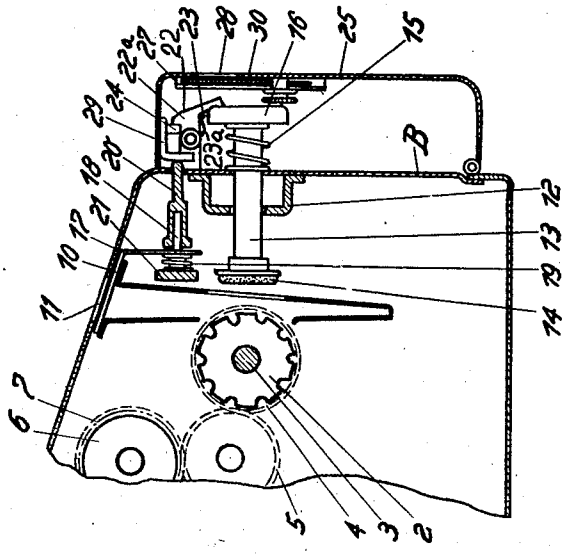


Fig. 2



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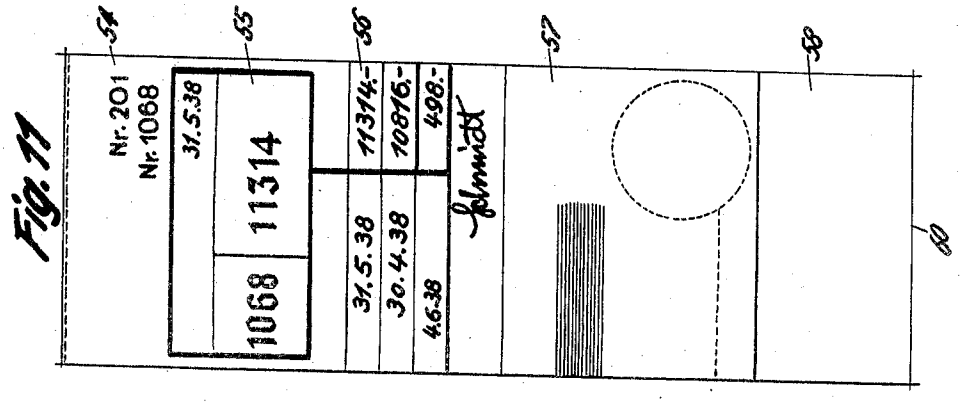


Fig. 11

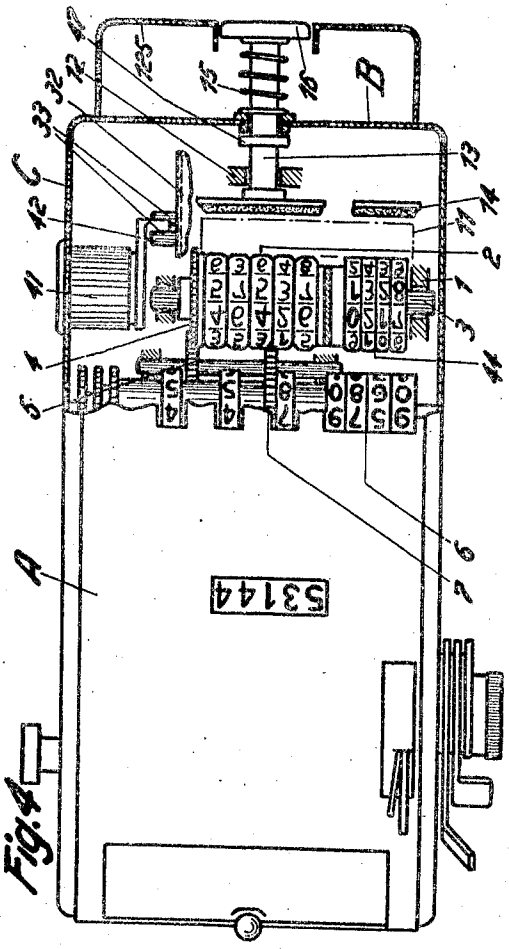


Fig. 4

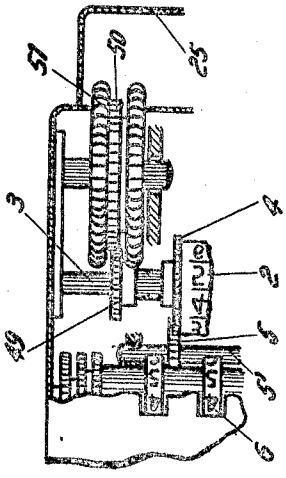


Fig. 5

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Fig. 9

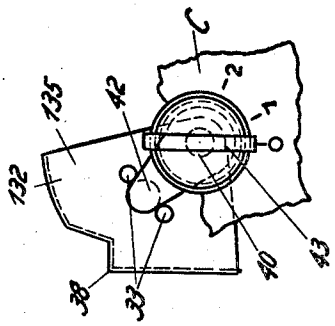


Fig. 7

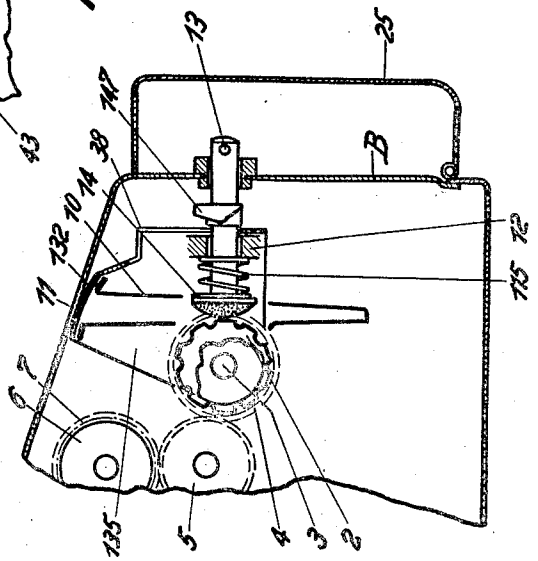


Fig. 8

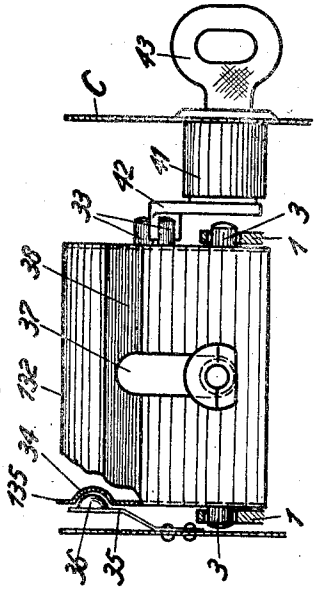


Fig. 6

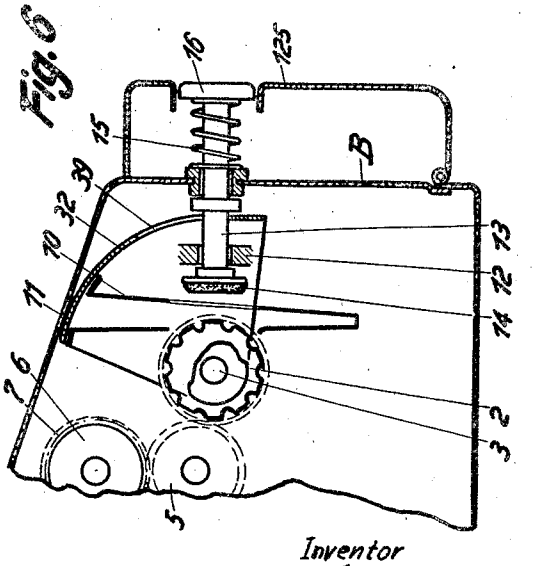
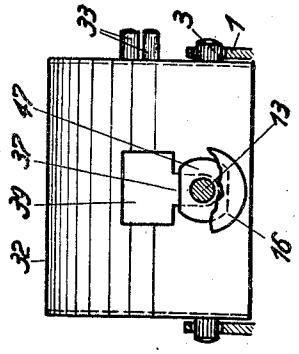


Fig. 5



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2,338,590

UNITED STATES PATENT OFFICE

2,338,590

PRINTING APPARATUS

Erich Komusin, Frankfurt-on-the-Main, Germany; vested in the Alien Property Custodian

Application July 21, 1939, Serial No. 285,684
In Germany July 30, 1938

3 Claims. (Cl. 101—100)

This invention relates to postage machines having a printing device, for example, machines which make an imprint on postal and other packets or the like indicating the postage or the amount of the carriage fee and in which the value of the imprint is adjustable by the user for each packet. Machines of this type are usually provided with a check-reading device from which the total expense incurred by the user can be ascertained. The invention is concerned with a novel and improved construction of the check-reading device of such a machine whereby the amount to be charged to the user is determined in a straightforward and simple manner and whereby fradulent operation of the mechanism is prevented.

According to the invention the franking machine is provided with a printing device controlled by a meter and having a channel for inserting a card or form to the register wheels of the printing device and a locking device for preventing both the insertion of a card or form in said channel and the actuation of the stamp of said printing device. A record indicating the total value of the imprints made can be obtained from the integrating mechanism after opening the locking device.

The locking device prevents any fraudulent operation of the mechanism on the part of the user, but allows an official who has an appropriate key to open the device at regular intervals of time and make out an account from the recorded readings. Alternatively, the readings can be recorded direct onto an appropriately designed account form from which the amount due may at once be determined and acknowledged by the signature of the user. By fixing a period for the settlement of the account, the risk carried by the authorities is lessened without the necessity for providing special locking devices to prevent further use of the machine after the amount owed by the user has reached a certain total.

In order that the invention may be properly understood and be more readily carried into effect, some examples of a franking machine in accordance therewith will now be described with reference to the accompanying drawings, in which:

Figures 1 and 2 show a franking machine with a check-reading device in different operating positions.

Figure 3 shows an alternative form of construction of a device for locking the check-reading device.

Figures 4, 5 and 6 show a further alternative form of construction of locking device in plan and in front and side elevation.

Figures 7, 8 and 9 show the locking mechanism of a check-reading device in which the stamp is automatically actuated.

Figure 10 shows a check reading device which can be re-set to zero, and

Figure 11 shows an account form.

In the form of construction illustrated in Figures 1 and 2 the franking machine A is provided with register wheels 6 of a conventional integrating mechanism, which sums up the values of the individual imprints made at each operation. A gear wheel 7 is connected to one of the wheels 6, and drives a gear wheel 5 which engages with a gear wheel 4 connected to the first numeral or type drum 2 of a printer mechanism. The numeral drums 2 of the printer mechanism are mounted on a spindle 3, and are driven in step with the corresponding drums 6 of the integrating mechanism. They carry printing types which are inked by an ink ribbon 8 which runs over guide rolls 9. In front of the mechanism 2 is a pocket 10 into which a card or form 60 may be inserted through an opening 11 in the upper wall of the franking machine A. The side wall B of the franking machine carries a bracket 12, freely mounted in which is a rod 13 having a stamp 14 at one end and a press-button 16 at the other. A spring 15 which is wound round the pin 13 normally holds the stamp 14 out of contact with the type drum 2 of the printer mechanism. When the button 16 is depressed the stamp 14 passes through an appropriate aperture 10a in the pocket 10 and presses the form 60 against the type of the recording mechanism 2. A record is then obtained on the form 60 according to the sum indicated by the integrating mechanism 6.

The opening 11 is normally closed as shown in Figure 2 by a shutter 17. This shutter 17 slides on a rod 18 which is attached to a cross-bar 21. A sliding member 20 is also mounted on the rod 18 and normally holds the shutter 17 in the closed position against the action of a spring 19. This sliding member 20 is normally engaged or held in the position shown in Fig. 2 by a bracket 29 on a cover 25 which cover is attached by hinges to the side wall B. When the cover 25 is closed, an extension 24 of the cover 25 lies behind the nose 22 of a latch or locking lever 23 so that the cover cannot be opened, said latch being yieldably held in the position shown in Figures 1 and 2 by means of leaf spring 23a. When the cover is being closed the lower end of projection 24 strikes the beveled surface 22a of nose portion 22 and thus

rotates latch 23 in a clockwise manner in opposition to spring 23a until the projection is allowed to clear the nose portion, after which the latch snaps back to the latched position shown and the cover is locked. The cover has a perforation 28 in front of the locking lever 23, but this is normally closed by a seal 30 held in a frame 27 on the inside of the cover 25. It is thus impossible to open the cover 25 by pressure on the locking lever 23 without first breaking the seal 30. When the cover 25 is opened, the bracket 29 releases the sliding member 20 and the shutter 17 is forced along the rod 18 by the spring 19. The form 60 may now be inserted through the opening 11 into the pocket 10 and can then be pressed against the type drums of the recording mechanism 2 by actuation of the stamp 14. A record of the setting of the recording mechanism is thus obtained.

In the form of construction illustrated in Figure 3, which corresponds in other respects to that shown in Figures 1 and 2, the cover 25 has an extension 26 which covers the inlet aperture 11 in the closed position of the cover. The type drums 2 of the recording or printer mechanism 2 are inked by a roller 31 instead of by a ribbon.

In the form of construction illustrated in Figures 4 to 6 a lock 41 is mounted in the side wall C of the franking machine A. The lock 41 has an arm 42 which engages with two pins 33 on a hood 32. This hood 32 is freely mounted on the spindle 3 of the recording mechanism 2 and in the normal position (Figure 6) closes the opening 11. The rod 13 which carries the stamp 14 passes through a slot 37 in the hood 32. This slot 37 is however not wide enough to allow the passage of a collar 47 which is mounted on the rod 13; consequently so long as the hood is in the normal position the stamp 14 cannot be operated. When the lock 41 is turned by a suitable key, the arm 42 is pivoted and rotates the hood 32 about the spindle 3 so that it releases the opening 11. At the same time a broadened end 39 of the slot 37 comes opposite the collar 47 wide enough for the latter to pass through; consequently the stamp 14 is free to move when the button 16 is depressed. The button 16 is accessible through an opening in the cover 125. The form is inserted and an imprint obtained as described in connection with Figures 1 and 2.

A second recording or printer mechanism 44 is mounted on the same spindle 3, the type drums of which may be independently adjustable or alternatively connected to those of the printing mechanism 2. The stamp 14 is arranged to press the form against the recording mechanism 44 as well as the mechanism 2 (Figure 4) and the extra type drums are used for recording supplementary particulars.

In the form of construction illustrated in Figures 7 to 9 the movement of the stamp 14 is effected positively upon the movement of the hood 132. The hood 132 is stepped and has a sharp bend 38 (Figure 7). The rod 13 of the stamp 14 passes through a slot 37 in the hood 132. The collar 147 on the rod 13 has a V-shaped taper on the side adjacent to the hood 132. When the key 43 is turned in the lock 41 the arm 42 is pivoted and rotates the hood 132 about the spindle 3 so that the hood will not block the opening 11. At the same time the corner 38 comes into contact with the oblique or V-shaped surface of the collar 147 and displaces the pin 13 to the right against the pressure of the spring 115. A depression 34 in one side wall 135 of the hood 132 is engaged by a projection 36 under the pressure of a spring 35 so that a resistance is offered to further rotation of the hood. This position is further defined with reference to the position of the key 43 (Figure 9) by the numeral 1. The form is now inserted and the key 43 is rotated further. The corner 38 of the hood 132 releases the collar 147 and the stamp 14 strikes the form against the type drums of the recording mechanism under the action of the spring 115. The key 43 is rotated back through the same two positions; in the first of these the stamp 14 is withdrawn and the form can then be removed, and in the final position the opening 11 is re-closed.

In the form of construction illustrated in Figure 10 the gear wheel 4 of the printing mechanism 2 is connected to a gear wheel 49 which engages with a toothed wheel 50. The wheel 50 is connected to milled discs which are accessible after the removal of the cover 25. By rotating these milled discs after taking a check reading, the printing mechanism 2 can be re-set to zero. In this case the figure recorded by the printing mechanism will correspond to the value of the imprints made by the franking machine since the last check reading only.

The form 60, on which the official obtains the record from the recording mechanism 2, can at the same time be in the form of a statement of account. Such a form is shown in Figure 11. The spaces 54 and 58 of the form are filled in beforehand at the post office; they contain the number of the franking machine and the designation of the owner and user of the apparatus. The space 55 is for the record of the printing mechanism 2 and also that of the mechanism 44 if this is used. The latter may be adjusted to the number of the machine, as shown. The official enters the sum total printed by the mechanism 2 in the space 56 together with the date. The total printed at the previous check reading can already have been entered in this column so that the difference can be at once determined from the two entries. The owner of the apparatus acknowledges the correctness of the calculated amount by signing his name in the space 57 and the official gives a receipt upon payment of the amount due.

When the mechanism 2 has a device for resetting to zero (Figure 10) the space 56 need have only one line for the entry of the total charge, unless it is preferred to read off the totals from the register wheels 6 of the integrating mechanism which is visible from outside, and then enter these. A further check is then obtained since the difference of the two totals ought to agree with the amount recorded by the printing mechanism 2. One or more copying sheets can be bound with the account form and interleaved with carbon paper. Copies of the entries are thus obtained. Also the space 55 on the form can itself be covered with a flap of carbon paper, in which case the type drums of the recording mechanism 2, and 44 if used, do not have to be inked either by an inking ribbon 8 (Figure 1) or by an inking roller 31 (Figure 3).

Only the official entrusted by the postal authorities with the check reading has the key for operating the lock 41 (Figures 4–9) or the official may operate the apparatus by breaking the seal 30 (Figures 1–3). Since the opening 11 for insertion of the form 60 is normally shut, fraudulent tampering with the mechanism cannot be

successful, for should such an attempt be made either through breaking the seal **30** or through damaging the lock, it is at once ascertainable. Since no falsification of the charge is therefore possible, it is no longer necessary to provide the apparatus with special locking devices to prevent further use of the machine after the concellation of a certain prepaid amount or after lapse of a certain length of time.

I claim:

1. A postage machine of the character described, comprising in combination a casing, a pocket within said casing adapted to receive a card, printing wheels to print on said card and being disposed adjacent said pocket, a movable stamp cooperating with the printing wheels to effect a printing operation, said casing having a slot communicating with said pocket, a press button connected with said stamp and positioned exteriorly of the casing, a movable cover mounted on the casing to cover said press button, means coordinated with the movement of the cover for closing said slot, whereby when said cover is moved to cover the press button said slot is closed off.

2. A postage machine as set forth in claim 1 in which means are provided for locking said cover in place, and wherein said cover has an opening covered by frangible material, and said locking means is accessible through said opening when the frangible material is broken.

3. A postage machine of the character described, comprising in combination, a casing having a slot therein, a pocket within the casing behind the slot for receiving a card, printing wheels adjacent the pocket to print on said card, a movable stamp co-acting with the printing wheels to effect a printing operation, a press button connected with the stamp and positioned exteriorly of the casing and a cover movable to render said press button inaccessible, said cover having an extension for closing the slot in said casing when the press button is rendered inaccessible.

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