Nov. 22, 1927.

1,650,556

G. E. WEBER

TICKET DELIVERING APPARATUS

Filed Nov. 23. 1925

3 Sheets-Sheet 1

Fig. 1.

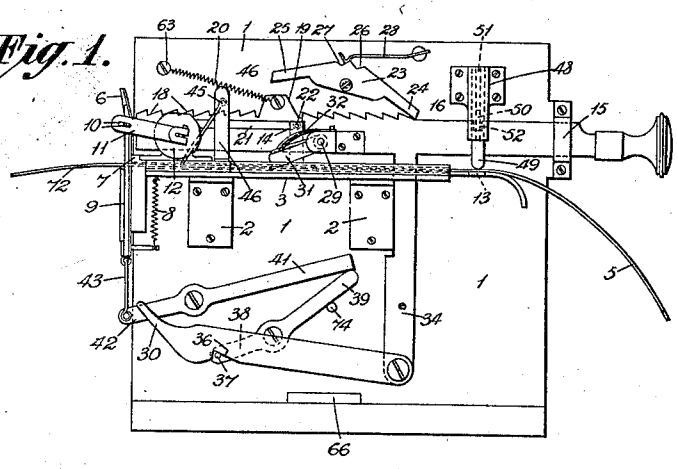


Fig. 2.

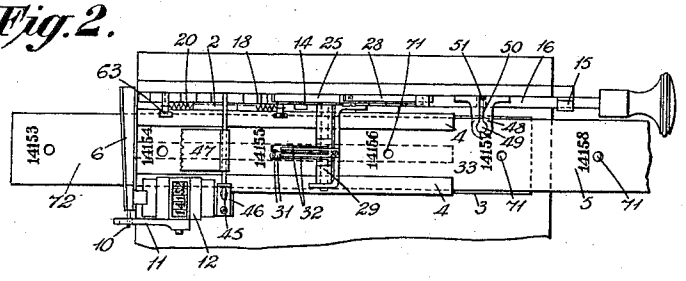
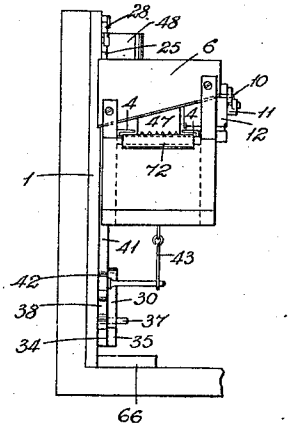


Fig. 3.



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3 Sheets-Sheet 2

Fig. 4.

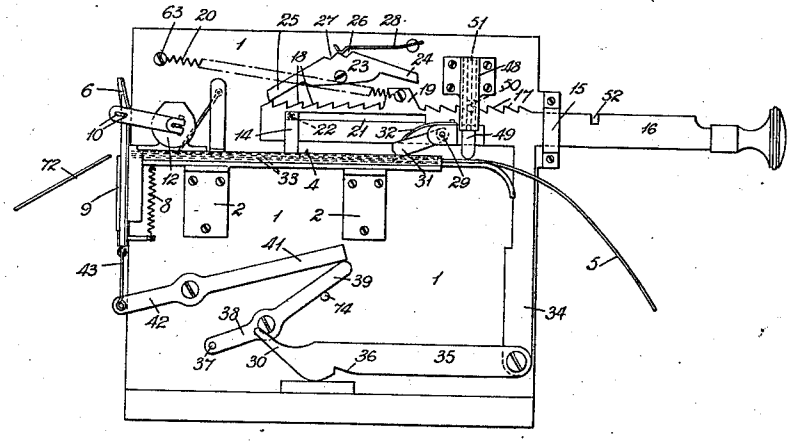
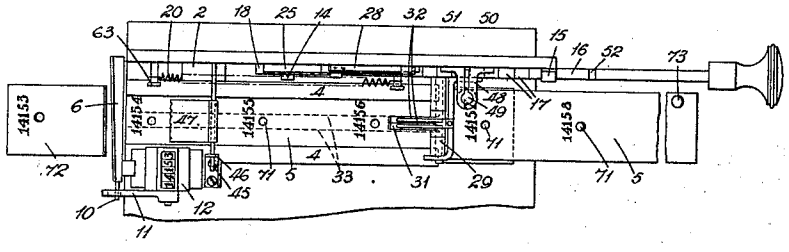


Fig. 5.



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3 Sheets-Sheet 3

Fig. 6.

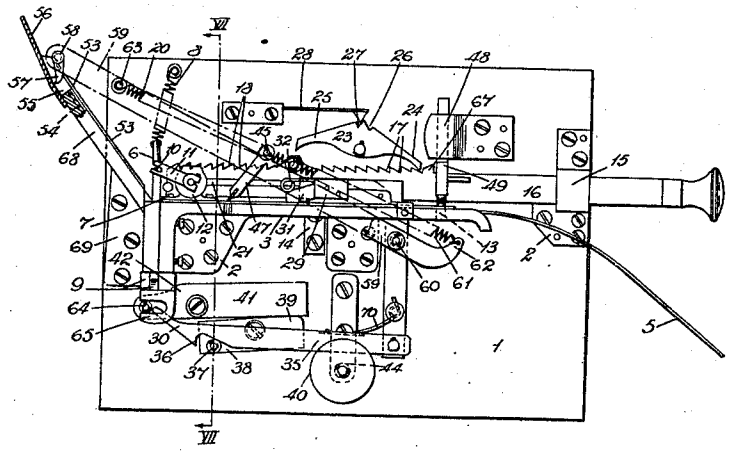


Fig. 7.

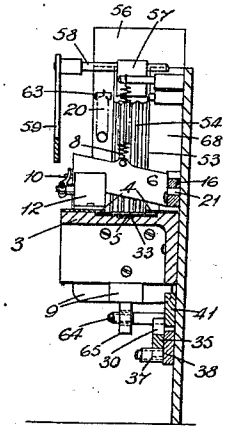
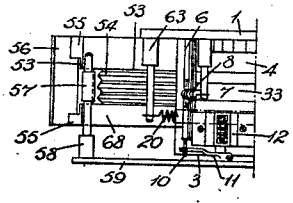


Fig. 8.



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UNITED STATES PATENT OFFICE.

GUSTAVUS ERNEST WEBER, OF WESTCLIFF-ON-SEA, ENGLAND.

TICKET-DELIVERING APPARATUS.

Application filed November 23, 1925, Serial No. 71,003, and in Great Britain January 17, 1925.

This invention has reference to apparatus for the delivery, one by one, of numbered tickets from a continuous strip or roll, and the present invention has for its object the improved construction, arrangement and working of an apparatus of the above nature whereby there is effected the positive feed of the strip a correct length to and between the cutters of the guillotine, the cutting of a ticket or tickets and the automatic return to normal position of the movable cutter of the guillotine, the locking of the operating rod of the apparatus at any point in the forward and rearward movement of said rod, the automatic forward movement of said operating rod, the automatic change in the number of the registering mechanism, means for preventing the rearward movement of the ticket strip, and means for locking said strip and said operating rod when the numbered tickets contained by said strip have been cut off, giving an indication that the strip is finished in a more efficient manner than at present obtains.

The invention also includes means for delivering a plurality of tickets stacked together in superimposed relation as they are cut off.

In order that the said invention may be more readily understood, reference is to be had to the following description and accompanying sheets of drawings illustrative of practical embodiments of the invention, and wherein:—

Figure 1 is a side elevation of one form of apparatus, the parts being in position ready for severing and delivering a single ticket,

Figure 2 is a plan view, and,

Figure 3 a front end view of said apparatus,

Figure 4 is a view similar to Figure 1, but showing the position for forward feed of ticket strip, and also a ticket severed from off said ticket strip.

Figure 5 is a plan view of the apparatus shown in Figure 4.

Figure 6 is a view similar to Figure 1 but of a modified form,

Figure 7 is a transverse section on the line VII—VII of Figure 6 looking to the left,

Figure 8 is a plan view of the left hand side of Figure 6 showing the delivery mouth employed in this embodiment.

In carrying out the invention and referring to the drawings, on a standard 1 of a convenient shape there is supported by brackets 2 a longitudinally and horizontally disposed platform 3 of convenient length, said platform 3 having inwardly returned edges 4 to form a guideway for the passage of the ticket strip 5.

Adjacent the front end of the platform 3 there is slidably mounted in vertically disposed guideways the movable member 6 of the guillotine, the blade of said member 6 being maintained normally in raised position above the fixed cutter blade 7 by means of a spring 8 connecting the platform 3 and vertical member 9 carrying the movable blade 6 as in Figures 1 to 5 or to the standard 1 and to the top of the guillotine member 6 as in Figures 6 to 8. Said movable cutter 6 has a pin and slot connection 10 with the operating arm 11 of the registering mechanism 12 which is mounted on the platform 3. Said platform 3 at its rearward curved end has, offset from the longitudinal central line of said platform, a hole 13 therein for the purpose hereinafter set forth.

Slidably mounted against the standard 1 and in and between brackets 14 and 15 is a flat longitudinally and horizontally disposed operating rod 16 which, on its upper edge and towards the front part thereof, is provided with two oppositely disposed toothed racks 17 and 18 respectively, separated by an upstanding cone-shaped block 19 on said rod 16. To said block 19 is connected one end of a strong coil spring 20, which, by its other end, is anchored to the fixed pin 63 of the standard 1 aforesaid. Further, the operating rod 16 is, at its front part, provided with a longitudinally and horizontally disposed slot 21 and in which is located a pin 22 fixed to the bracket 14 (Figures 1 to 5) or fixed to the base 1 (Figures 6 to 8, the pin 22 not being seen here) to assist in guiding said rod 16 in its movement to and fro and to limit the backward movement of said rod 16.

Pivotally mounted on the standard 1 and above the rack portions 17 and 18 of the rod 16 is the locking member for said rod, said locking member consisting of a pawl 23 with two arms 24 and 25 respectively, adapted to engage the racks 17 and 18 as and when said rod 16 is moved. Said pawl 23 in its upper part is formed with two notches respectively 26 and 27, with which is adapted to engage the catch end of a blade spring 28 according as said pawl 23 is thrown over in

the manner hereinafter set forth, said spring 28 being fixed to the standard 1 aforesaid.

Pivotally mounted on a carrier 29 carried by the front face of the operating rod 16 and facing towards the front end of the platform 3, are one, two, or it may be more, pawls 31 downwardly pressed by springs 32 affixed by one end to the carrier 29 aforesaid, the lower front edges of said pawls 31 normally resting on a centrally and longitudinally disposed groove 33 in the top face of the platform 3.

Formed in with the rod 16, or affixed thereto in any suitable manner, and depending vertically from the lower edge thereof, is an arm 34, to the lower end of which is pivotally connected an arm 35 which, towards its front end and in its lower edge, is formed with a notch 36, said arm 35 terminating in an upward and forwardly inclined nose 30.

The notch 36 aforesaid is adapted to engage a pin 37 carried by the arm 38 of a two-arm lever fulcrum on the standard 1, the other arm 39 of said two-arm lever engaging the end of the inner arm 41 of a second two-arm lever, also fulcrumed on the standard 1. A stop pin 74 as in Figures 1 and 4 may be employed for the arm 39. The end of the outer arm 42 of said second two-arm lever is pivotally connected by means of a link 43 (as in Figures 1 to 5) or by a pin 64 and slotted lug 65 to the lower end of the movable member 9 which carries the movable cutter 6 of the guillotine aforesaid.

Further, on the base portion of the standard 1 there is provided a stop 66 (Figures 1 to 5) or a flanged roller 44 (40 being the flange) as in Figures 6 to 8 for the purpose hereinafter set forth; and, further, pivotally mounted by a spindle 45 located forward of the platform 3 and carried on the standard 1 is a forwardly depending gravity-acting blade 47 provided with a notched or serrated lower edge. In Figures 6 to 8 the support 46 for the projecting end of the spindle 45 is not employed.

At a convenient distance, and rear of the two-arm pawl 23, and above the operating rod 16, there is affixed to the standard 1 a vertically disposed socket-like member 48 for the slidable reception therein of a gravity plunger 49, which is in vertical alignment with the hole 13 in the rear end of the platform 3, said plunger 49 being provided (as in Figures 1 to 5) with a rearwardly extending catch piece 50 slidable in a slot 51 in the socket member 48, and adapted, when said plunger falls, to engage in a slot 52 formed in the upper edge of the operating rod 16. A slight modification is shown in Figures 6 to 8 wherein the rearwardly extending catch pieces (not seen) slidable in the slot of the member 48 is adapted, when said plunger falls, to engage a stop-piece 67 formed on the upper edge of the operating rod 16 aforesaid.

So far, excepting for minor structural alterations and arrangements of the various components (levers, springs, guillotine mechanism and so forth), the two embodiments, i. e. Figures 1 to 5 and Figures 6 to 8 are similar, and the foregoing description is general.

Now, referring particularly to Figures 6 to 8, on the delivery side of the guillotine, a ticket-delivering slideway 68 is rigidly mounted on the standard 1 by means of the bracket casting 69. This has inturned flanges 53 (similar in effect to the lips 4 of the main platform 3) under which the severed tickets lie; the base of the slide-groove is longitudinally serrated at 54. The slideway 68 at its outer mouth abruptly terminates, whilst the sides 55, and lips 53, continue, thereby constituting (with the thin base-plate 56) a recessed part or pocket. Thus severed tickets which are moved up the slideway 68 are deposited in superimposed or stacked fashion in the said pocket. To move the tickets, as and when severed, into the pocket, there is employed a ticket-traveller claw 57 fixedly carried on a rod 58 rigidly extending from a lever 59 pivoted to a spindle 60. The latter spindle projects from the arm 34 of the operating rod 16. The claw 57 is kept down to its work during its reciprocal movement to and from the pocket (53, 55, 56) over the grooved base 54 by means of the slight pivotal movement of the lever 59 about its spindle 60, and the tension spring 61 anchored at one end to the cone 19 of the rod 16, and at the other to the up-turned finger 62 of the lever 59. The claw has projections which fit in the grooves 54.

The working of the apparatus is as follows:—

Register is set to agree with the numbers printed on the ticket strip 5. The plunger 49 is raised, and the free end of the ticket strip 5, which strip is in roll or folded form, is passed under said plunger which is then allowed to drop and rest on the top surface of the ticket strip 5. The strip 5 is then pushed into the guideways 4 and along the platform 3 under the spring controlled pawls 31, raising the front edges thereof out of the groove 33 of said platform 3. The strip 5 is then led to and under the serrated or notched gravity blade 47 till the free end of said strip 5 rests on the fixed blade 7 of the guillotine. The operating rod 16 is then pulled backwards the requisite distance, against the action of the spring 20, the arm 24 of the pawl 23, under the action of the spring 28, clicking over the rack portion 17 of the operating rod 16 till such time as said arm 24 engages against the cone-shaped block 19 of the rod 16 and is thrown over, the spring 28 snapping into the notch 26 in the pawl

23 so that the arm 25 rests on the rack portion 18 of the rod 16, as shown in Figure 4.

At the same time as the rod 16 is pulled backwards the arm 38 of the two-arm lever 38—39 is, by the engagement of the notch 36 of the arm 35, pulled backwards and downwards as said arm 35 in its backward movement pivots downwardly by gravity or the light spring 70. This forces up the arm 41 of the two-arm lever 41—42, with the result that the downward movement of the arm 42 of said lever 41—42 exerts, through the link 43 (Figures 1 to 5) or the pin-and-slot connection 64—65 (Figures 6 to 8), an idle downward stroke of the cutter member 6 against the action of the spring 8.

As the cutter 6 aforesaid reaches the end of its downward stroke, the lower edge of the arm 35 engages against and rides on the stop 66 (Figures 1 to 5) or roller 44 (Figures 6 to 8) so that the notch 36 of the arm 35 slips the pin 37 carried by the arm 38 of the two-arm lever 38—39, and said pin 37, as the arm 35 moves further backwards, slips the nose 30, whereupon the cutter 6, under the action of the spring 8, automatically rises to its normal position. In so doing, it automatically returns (through the intermediary of the connection 43 or 64—65), the two-arm levers 42—41 and 38—39 to their original positions, the arm 41 of the lever 42—41 pressing the arm 39 of the lever 38—39 downwardly, leaving the rod 16 in its full backward position, as shown in Figures 4 and 5.

In this position, the spring-controlled pawls 31, which pawls 31 ride freely on the surface of the ticket strip 5 during the backward movement of the rod 16, are clear back of one of a series of centrally disposed holes 71 punched in the ticket strip 5, a hole for each ticket length to be severed from said strip 5, as shown in Figure 5.

On releasing the operating rod 16, the same moves forward under the action of the spring 20, so that the pawls 31 or one or some of them engage, under the action of their springs 32, by their front lower edges in a strip hole 71 and carry the strip 5 forward a ticket length beyond the guillotine as shown in Figures 1 and 2, backward slip of said strip 5 being prevented by reason of the serrated or notched gravity blade 47 engaging in the strip 5. Meanwhile, the arm 25 of the pawl 23, under the action of the spring 28, slips over the rack 18 of the operating rod 16 till said pawl 23 is thrown over by engaging with the cone block 19 of the rod 16, the spring 28 at the same time snapping into the notch 27 of the pawl 23, bringing the arm 24 thereof to a position resting on the rack 17 of the operating rod 16.

With the above arrangement of pawl 23 and spring 28 and opposed racks 17 and 18, any partial movement forward or backward of the rod 16 is prevented according to which of the arms 24 and 25 of the pawl 23 is in engagement with its rack, thus ensuring a correct working stroke of the operating rod 16 in either direction.

The operating rod 16 is now pulled fully backwards again, and the first described action of the various parts again takes place, the movable cutter 6 in this case making a power or cutting stroke, severing off in the present case a single ticket 72 from the ticket strip 5 which falls as shown in Figures 4 and 5 or as in Figures 6 to 8 enters the slideway 68 for delivery, the movement of the cutter 6 shifting the register one figure, and so on to the end of the strip.

By the provision of one, two or more of the spring-controlled pawls 31, there is ensured the positive picking up and feeding of the strip 5 each time the operating rod 16 moves forward, even if, and as is often the case, the holes 71 of the strip 5 are not in central alignment, as one or other of said side-by-side pawls 31 will engage the displaced hole, according to which side of the central line it is displaced, and feed the strip 5 forward.

As the end of the ticket strip 5 is reached, a hole 73 is formed offset from the central line of said strip 5, which comes under the socket 48 and into alignment with the offset hole 13 in the platform 3, whereupon the plunger 49 drops into said holes 73 and 13 allowing the catch piece of said plunger 49 to engage in the slot 52 (Figures 1 to 5) or the stop 67 on the upper edge of the operating rod 16, the same being in its forward position, with the result that said rod 16 is locked against movement in a backward direction, thus giving, as said rod cannot be moved, an indication of the finish of the ticket strip.

Referring to the working of the ticket-stacking device seen in Figures 6 to 8, when the rod 16 is pulled backwards, the claw 57 (through lever 59) is pulled down the slideway 54, riding over its abrupt end, and hooks over the lower end of a severed ticket already deposited in the slideway. On the return movement of the rod 16, the claw 57 moves up the slideway, carrying the ticket, which falls into the pocket on the top. A repetition of the movement will stack the tickets one on top of the other in said pocket. The pocket is located under a delivery slot in a table top of the apparatus, and the stacked tickets project through said slot.

I claim:—

1. In a ticket delivery apparatus of the class described, an upright supporting member, a longitudinally and horizontally mounted platform supported by said member, guideways carried by said platform for the passage therethrough of a ticket strip, means for moving a ticket strip forward over said platform a ticket length, including

an operating rod, a guillotine located adjacent the front end of the platform for severing the ticket strips, a vertically depending arm carried by said operating rod, means operatively connecting said arm with the movable cutter of said guillotine to effect on the backward movement of the operating rod the downward stroke of said movable cutter to cut off a ticket from the ticket strip and permit the automatic return of the cutter, said operating means comprising a two-armed lever pivoted to said upright, the outer arm of said lever being pivotally connected to the movable cutter frame, another two-armed lever fulcrumed on said upright and engaging the inner arm of the first mentioned lever, a pin carried by said second lever, an arm pivotally connected to the lower end of the depending arm, a notch in the lower edge of said pivoted arm to normally engage said pin, a stop carried by said upright, said pivoted arm having a curved portion in its lower edge adjacent the notch therein and an upwardly and forwardly inclined nose.

2. Ticket delivering apparatus as claimed in claim 1, characterized by oppositely disposed racks on the upper edge of the operating rod and separated by an upstanding cone-shaped block on said rod, a spring anchored to said block and to said upright, a two-armed pawl pivoted to said upright above said rack, said pawl having notches in its upper face, a blade spring to engage one or the other of said notches according to the position occupied by the pawl.

3. A ticket delivering apparatus comprising a guillotine, a ticket delivery slideway extending therefrom, means for advancing tickets along said slideway after the same have been severed, said slideway being provided with a ticket receiving pocket, and an operating claw synchronized with said mechanism to deposit said severed tickets in said pocket.

In testimony whereof I have affixed my signature hereto this 3rd day of November, 1925.

GUSTAVUS ERNEST WEBER.