

No. 891,521.

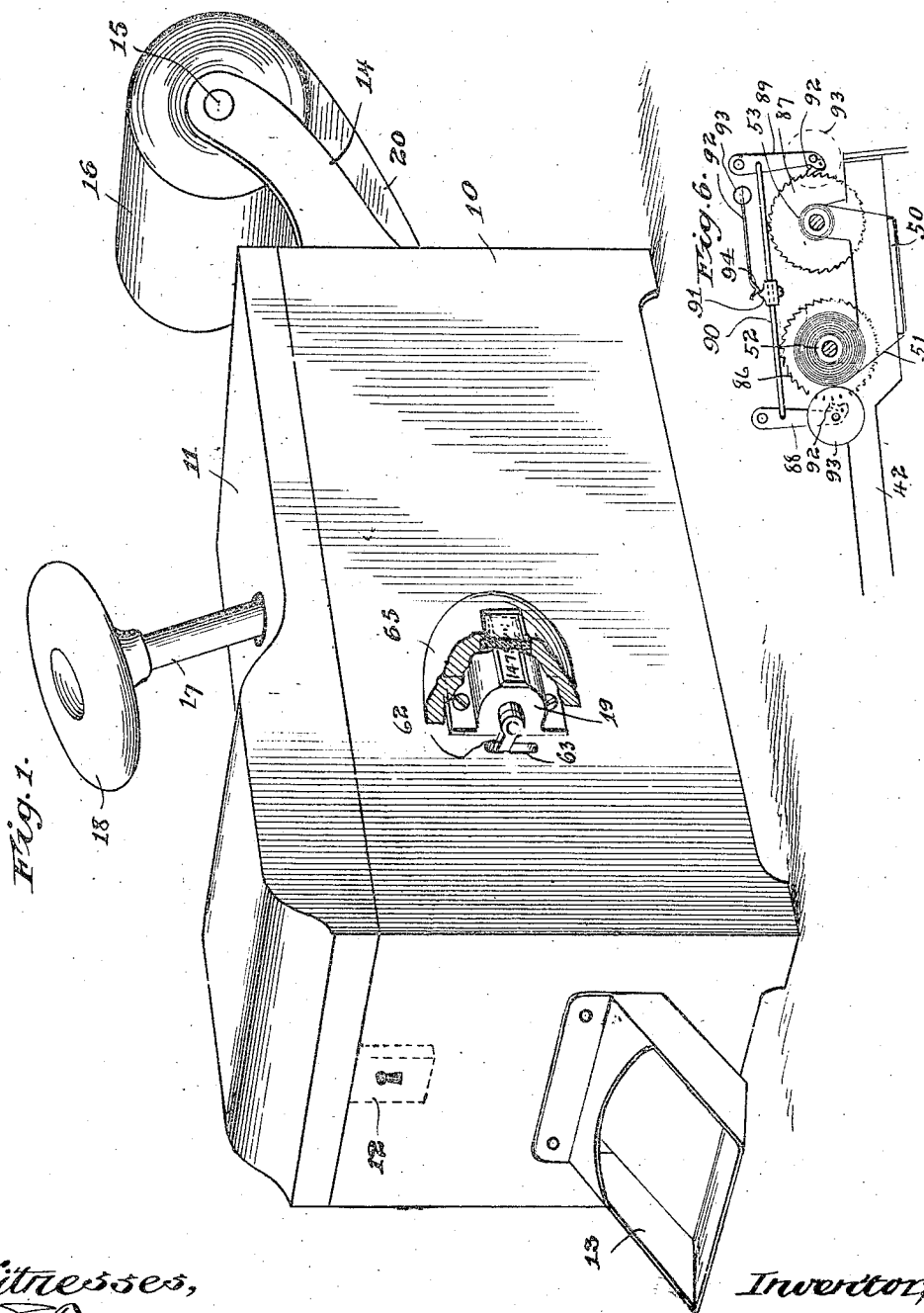
PATENTED JUNE 23, 1908.

O. A. BROWN.

TICKET PRINTER AND REGISTER.

APPLICATION FILED AUG. 8, 1906.

4 SHEETS—SHEET 1.



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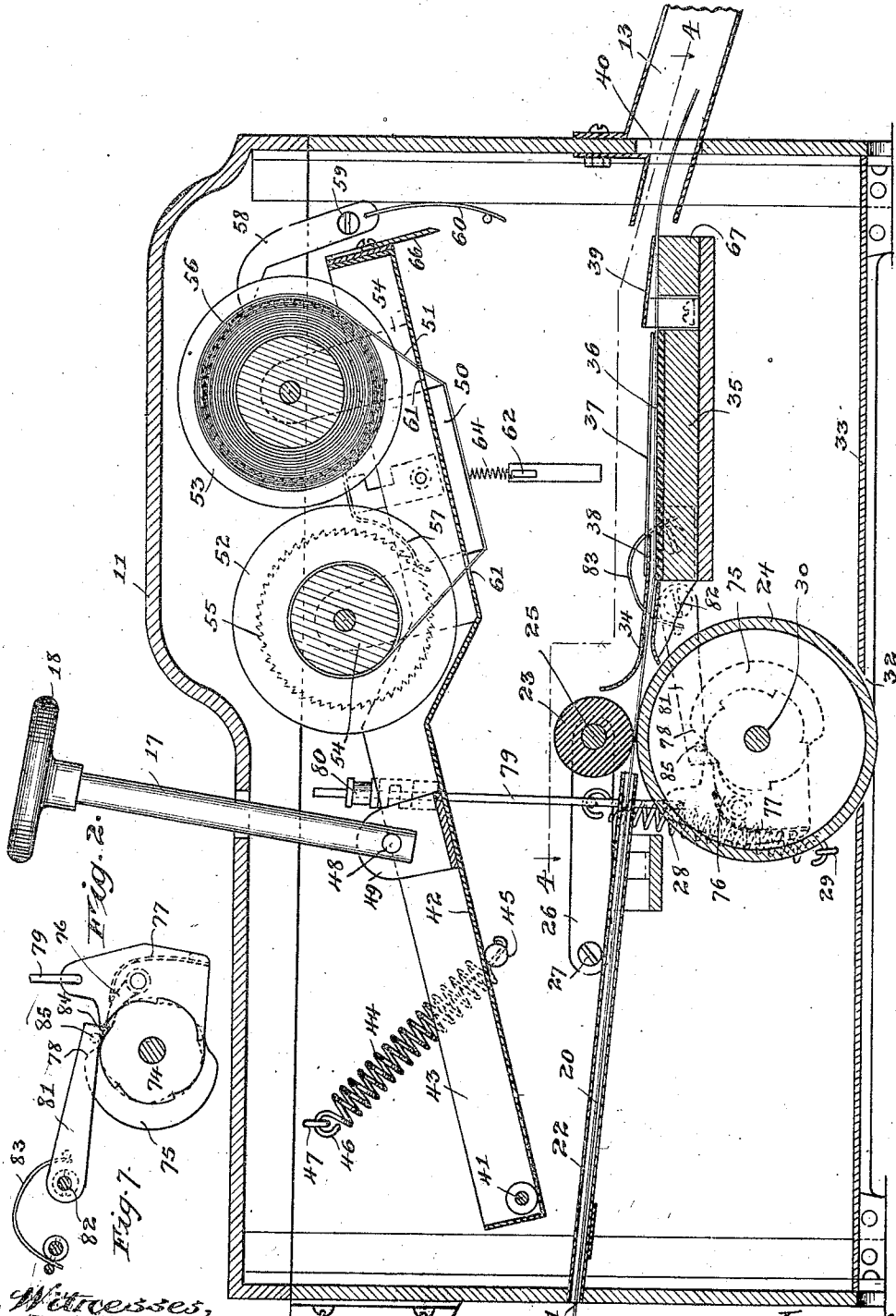
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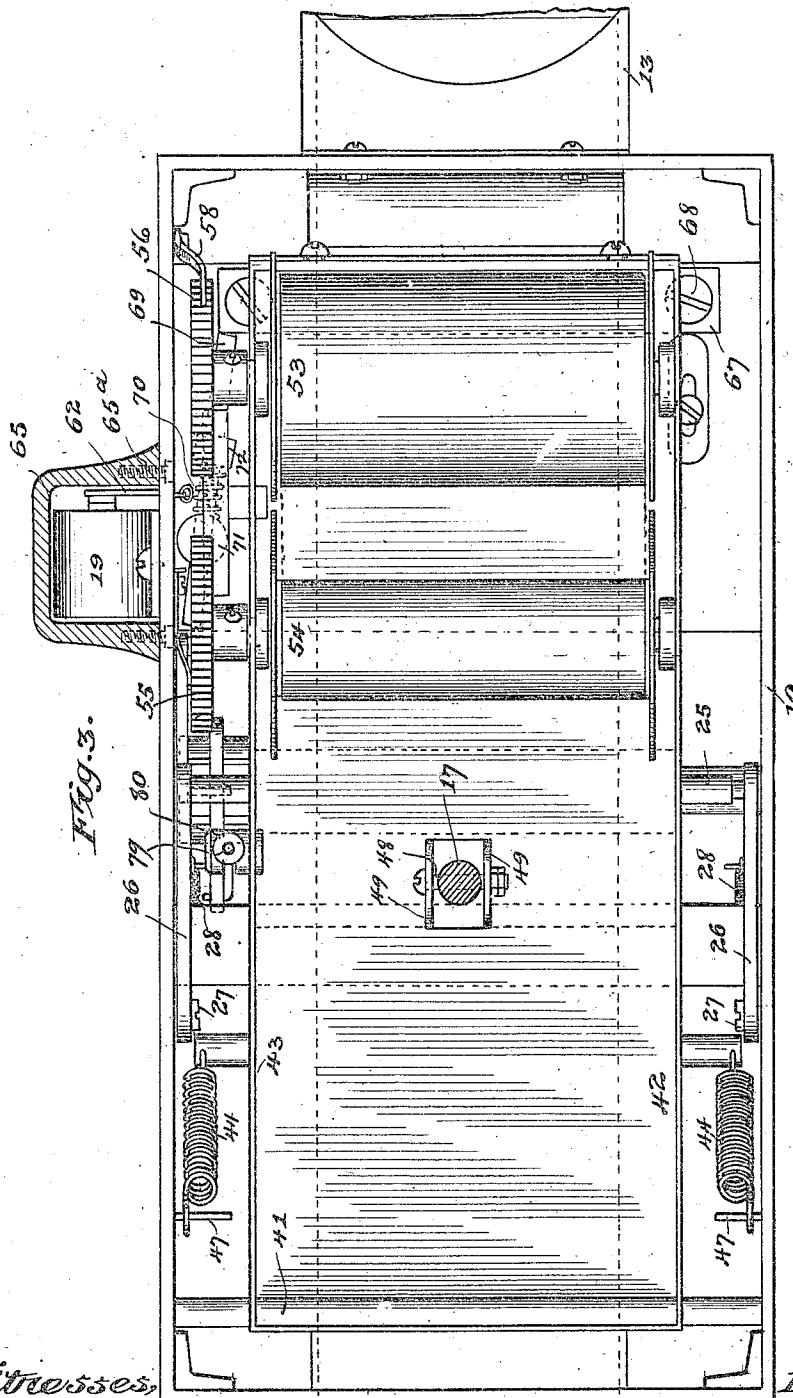


Fig. 3.

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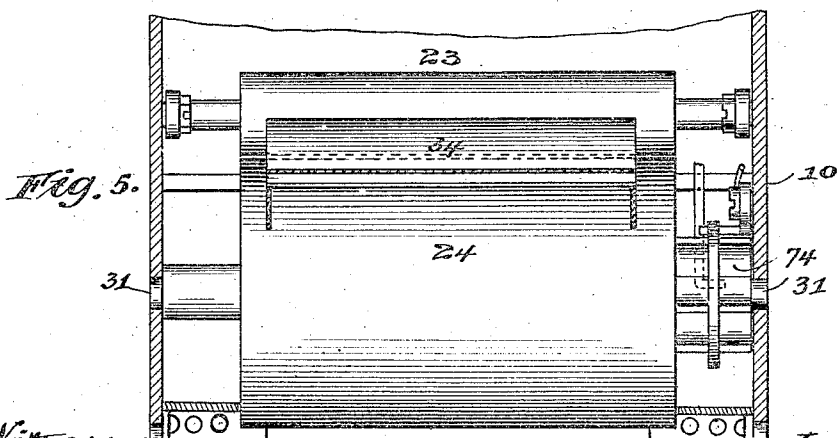
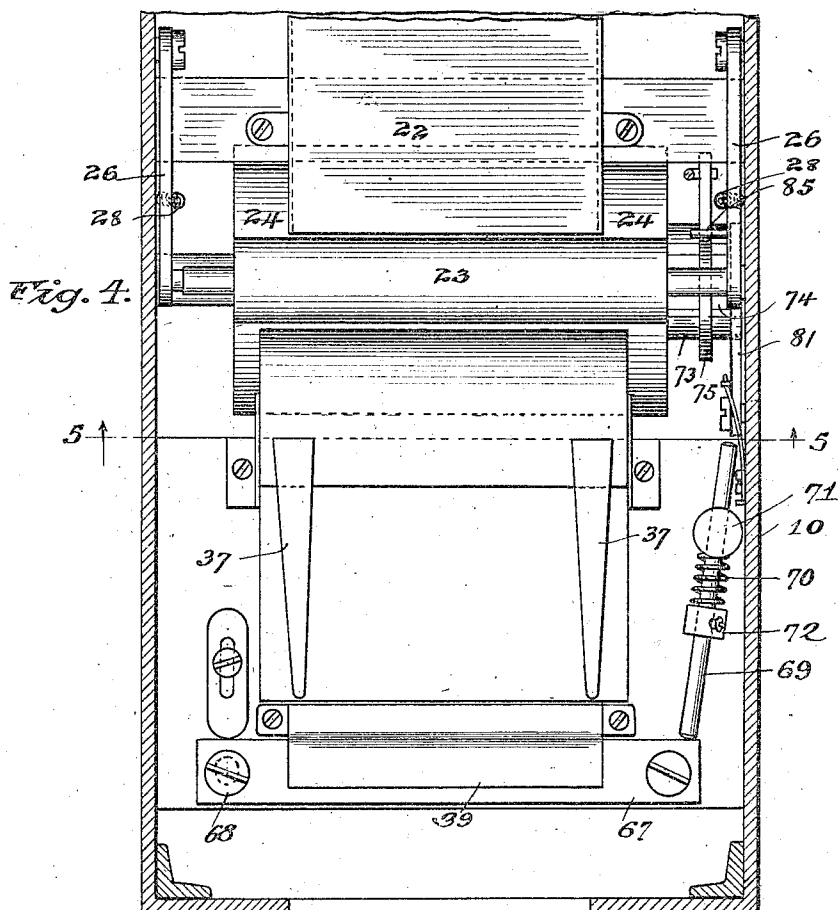
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UNITED STATES PATENT OFFICE.

ORRA A. BROWN, OF WICHITA, KANSAS.

TICKET PRINTER AND REGISTER.

No. 891,521.

Specification of Letters Patent.

Patented June 25, 1908.

Application filed August 8, 1906. Serial No. 329,733.

To all whom it may concern:

Be it known that I, ORRA A. BROWN, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Ticket Printers and Registers, of which the following is a specification.

My invention relates to a mechanism for simultaneously printing, registering, severing, and delivering, or simultaneously severing and delivering a ticket on a single actuation of an operating handle or foot-operated treadle.

My improved device is particularly intended for use in connection with theaters, circuses, street carnivals, and the like, enabling the ticket seller to manually print and register each ticket sold, the company being sure of securing the full receipts because of the impossibility of tampering with the device, especially the printing and registering mechanism.

Another object of the improvement is to make the machine as simple as possible and hence reduce the liability of derangement of the parts to a minimum.

By using my novel form of ticket printing and registering mechanism, it is impossible to print a ticket without at the same time registering the act, consequently an infallible check is had upon the number of tickets printed and sold.

On the accompanying drawings I have illustrated the preferred embodiments of my invention and therein like reference characters refer to the same parts throughout.

Figure 1 is a perspective view of the ticket printer and register, with a part of the casing over the register broken away; Fig. 2 is a central longitudinal section of the device illustrated in Fig. 1; Fig. 3 is a horizontal section just beneath the top cover, the cap for the register being shown broken away; Fig. 4 is a substantially horizontal sectional view of a portion of the device on line 4—4 of Fig. 2; Fig. 5 is a vertical section on line 5—5 of Fig. 4, as viewed in the direction indicated by the arrows; Fig. 6 shows a means for automatically reversing the feed of the ribbon which passes beneath the printing plate; and Fig. 7 is a detail view of the ratchet mechanism for the feed rollers.

As illustrated in Fig. 1, my improved ticket printer and register includes a metallic casing 10, a cover 11 hinged thereto and adapted to be locked in closed position by the

lock 12 indicated in dotted lines. At its forward end, the casing 10 is equipped with a discharge chute or receptacle 13 which is adapted to receive the printed ticket, after it has been severed from a roll of paper on which the tickets are printed, and from which the purchaser receives the ticket. At the rear end of the device are two arms 14 having a removable rod or pin 15, on which is rotatably mounted a roll of paper 16, which constitutes the supply for the tickets, and projecting through an aperture in the top of the casing is a rod 17 having at its upper end an actuating handle or knob 18. On one side of the casing 10 there is provided a register 19, which will be fully described below.

The paper 20 as it is unwound from the roll 16 is passed through a slot 21 in the rear end of the casing and through a flat guiding tube 22 to a pair of feed rollers 23 and 24. The former is mounted upon an axle 25 which, in turn, is rotatably mounted at its ends in two arms 26 pivoted to the two inner sides of the casing at 27, the arms and roller being pulled down to operative position and into engagement with the top surface of the paper 20 by spiral springs 28 fastened at 29 to the sides of the casing. The lower feed roll 24 is fixed upon a shaft 30 rotatably mounted at 31 in apertures in the sides of the casing 10. As will be observed in Fig. 2, the lower portion of feed roller 24 extends slightly through a slot 32 in the bottom metallic plate 33 of the casing, the purpose of this construction being to permit the operator when he has placed a fresh supply roll of paper 16 on the spindle 15 to feed the same manually between the feed rollers to the printing and severing mechanism. Paper 20 upon leaving these feed rollers passes through a chute 34 and is guided on to a bed or base plate 35 faced on its upper surface with a rubber or other more or less soft pad 36, the paper being held firmly upon the plate 35 by a pair of spring fingers 37, one end of which is fixed at 38 to the top surface of the chute 34. Upon leaving this bed plate the paper passes through another guide 39 to the delivery receptacle 13, in so doing passing through an aperture 40 in the front end of the casing.

The printing mechanism comprises the following parts: At 41 is pivoted a broad lever 42 having up-turned edges 43, the lever being normally pulled upwardly by a pair of spiral springs 44 attached at their lower ends 45 to

the lever and at their upper ends 46 to pins 47 fixed on the inner sides of the casing. The lower end of the operating rod 17, mentioned above, is pivoted or hinged at 48 to a pair of up-standing ears or lugs 49 fixed to the upper surface of the lever. On the under surface of the lever 42 at its front downwardly bent end I provide a printing plate 50 having on its under surface any form of type, or the like, to print the tickets. In order to provide inking means for this plate, I use a ribbon 51, like those employed on typewriters, and a pair of spools 52 and 53, upon which the ribbon is wound and from which it is paid out. These spools are preferably rotatably mounted in the upwardly projecting ears 54 and at one end each spool has a ratchet wheel 55 and 56, respectively. To prevent a too rapid paying out or unwinding of the ribbon from spool 52, I use a flat spring 57 to bear upon the teeth of ratchet 55. To feed the ribbon forwardly so as to wind it upon spool 53 and unwind it from spool 52, I use a pawl 58 pivoted to the casing at 59 and spring pressed toward the ratchet wheel 56 by a flat spring 60, the inner end of the pawl engaging the teeth of ratchet wheel 56 so that, as the lever 42 is pushed downwardly by means of its operating handle, the ratchet wheel will be turned slightly so as to feed the ribbon a small amount, the latter passing over the face of the printing plate 50 and through slots 61 in the lever, as will be clearly apparent from an inspection of Fig. 2.

The register 19, which may be of any of the usual types, is mounted on the outer surface of one side of the casing 10 and has an arm 62 passing through a slot 63 in the side of the interior where it is pushed downwardly by the printing lever when the latter is operated by its handle 18, the arm 62 being normally pulled upwardly by this spring 64. To prevent the operator of the machine from having access to the register, I preferably cover it with a casing 65 having a window to display the numbers on the register, the casing or cover being fastened to the main casing 10 by screws 65^a which are capable of manipulation or unscrewing only from the inside of the large casing 10, so that the register is entirely within the control of the holder of the key to the casing's lock. At the front end of printing lever 42 is fastened a knife blade 66, its lower edge being preferably inclined, and to cooperate with this knife blade I mount on block 35 a cutting member or cooperating blade 67, the latter being pivoted at 68 and forced to its outermost position at its opposite end by a rod 69 pushed forwardly by a spring 70 abutting at one end against a fixed stop 71 and at its other end against a collar 72 on the rod, the latter having a sliding movement in stop 71. When the printing lever is pushed downwardly, the end of blade 66 nearest the pivot 68 is first brought

into contact with the cutting edge of member 67 and further downward movement of the blade 66 causes a shearing action, whereby a ticket is cut off, the other end of block 67 moving in slightly against the action of spring 70.

In order to turn the lower feed roll upon the upward movement of printing lever 42 I affix to the shaft 30 of roller 24 two spaced ratchet wheels with oppositely disposed teeth 73 and 74, respectively. Mounted to turn on shaft 30 between these two ratchet wheels is an actuating member 75 having pivoted thereto a pawl 76 spring pressed by the spring 77. This actuating member 75 also has a cam or inclined surface 78, the function of which is explained below. To operate this actuating member 75 from the printing lever, I connect the two by a link 79, the length of which may readily be adjusted by the thumb nut 80. A lever 81 is pivoted at 82 to the side of the casing and is pressed downwardly by a leaf spring 83, the free end of the lever having a tooth 84 adapted to cooperate with the teeth of ratchet 74, the free end of lever 81 also having a transverse pin 85 co-acting with the inclined or cam surface 78 of the actuating member 75.

The operation of this device is as follows: Assuming a roll of paper has been placed on the spindle 15 and threaded between the feeding rollers on to the bed plate, by pressing upon the handle 18 and pushing the printing lever 42 down, the ribbon is first fed forwardly a small amount, the pawl 58 engaging the teeth of ratchet 56 and turning the same slightly. Continued downward movement of the printing lever causes an impression to be made upon the top surface of the strip of paper 20, the actuation of the register through lever 62, and the cutting off or severing of a previously printed ticket by means of the co-acting knife edges of the parts 66 and 67, this previously printed ticket dropping into the receptacle 13 from which it may be taken by the purchaser. It will thus be apparent that the purchaser does not secure the ticket which is printed at the time he pays his money and when the operator presses handle 18, but this is of no account as long as he secures a ticket. When the handle 18 is released, the printing lever and attached parts move upwardly under the influence of springs 44 and in so doing, the actuating member 75 feeds the roller 24 around a definite amount, its pawl 76 having ridden over one or more of the teeth of ratchet 73 during the downward movement of the printing lever. In this manner, the strip of paper is fed forwardly ready for another actuation of the printing, registering, and severing mechanism. In order to prevent the wheel 24 from turning except at the proper time, the tooth 84 of the lever 81 engages the teeth of ratchet 74, and it will be

obvious that this tooth must be disengaged before the roller 24 can be turned forwardly, this disengagement being accomplished by the inclined surface 78 of the actuating member 75 riding under the pin 85 of lever 81 so as to raise the tooth 84 during the downward movement of the printing lever.

In Fig. 6 I have illustrated an automatic mechanism for reversing the feed of the ribbon when practically all of it has accumulated on one of the spools. In this modification I employ the printing lever 42, the printing plate 50, ribbon 51, the two spools 52 and 53, and two ratchet wheels 86 and 87. I also employ the pair of levers 88 and 89 joined by a rod 90 having affixed to its central part a V-shaped wedge 91, with which coöperates a spring 92 affixed to the side of the casing at 93 and having its free end 94 V-shaped, as shown, and adapted to co-act with the correspondingly shaped block 91. At its lower end each one of these levers 88 and 89 has a pivoted pawl 92 and a roller 93. When one of these pawls is in engagement with its ratchet wheel, the other pawl clears the teeth of its ratchet wheel, the parts being held in such position by the end 94 of spring 92 engaging one face of the wedge block 91. As the printing lever 42 is moved upwardly and downwardly, the ribbon will be fed along, as will be readily understood, and when sufficient ribbon has accumulated on the spool 53, for example, the roller 93 which rides on the surface of the ribbon, is pushed outwardly sufficient to cause the block 91, together with the two levers and connecting rod, to pass to the other side of the V-shaped end 94 of spring 92 so that the pawl of lever 88 is thrown into engagement with its ratchet wheel and the pawl of lever 89 is pushed out of engagement with its wheel, whereupon the feeding of the ribbon is reversed when the printing plate and lever are removed upwardly and downwardly.

It is obvious from the foregoing description that my invention is not limited to a device that prints, registers, severs, and delivers a ticket, but is equally efficient where only severing and delivering of the ticket is required, and therefore when a continuous strip of printed tickets is used and each ticket is provided with a number the printing and registering mechanism of my device may be entirely omitted and the device constructed with simply the cutting and delivering parts; with the possible exception of the use of the register in case the printed tickets are not numbered.

To those skilled in the art it will be apparent that various mechanical changes may be made in the structure described without departing from the substance of my invention as set forth in the following claims.

I claim:

1. In a device of the character described, the combination of an inclosing casing having an aperture therethrough, a lever, means to actuate said lever, a printing plate on said lever, an inking ribbon on said lever, rollers or spools for said ribbon, means to feed one of said rollers or spools to turn the same a small amount on each actuation of said lever to advance the ribbon, a bed or base plate, feed rollers to operate on a strip of paper, means to actuate said feed rollers, and means to sever the strip into tickets, whereby on each actuation of said lever a ticket is printed and a previously-printed ticket delivered through said aperture substantially as described.

2. In a device of the character described, the combination of an inclosing casing having an aperture therethrough, a lever, means to actuate said lever, a printing plate on said lever, an inking ribbon for said printing plate, rollers or spools for said ribbon, means to feed one of said rollers or spools to turn the same a small amount on each actuation of said lever to advance the ribbon, a bed or base plate, feed rollers to operate on a strip of paper, means to actuate said feed rollers, means to sever the strip of paper into tickets, and means to register each printing operation of said printing plate, whereby on each actuation of said lever a ticket is printed and a previously-printed ticket delivered through said aperture substantially as described.

3. In a device of the character described, the combination of an inclosing casing having an aperture therethrough, a printing plate, a bed or base plate, means to actuate said printing plate toward and from said bed or base plate, an inking ribbon passing over the face of said printing plate, rollers or spools for said ribbon, means to feed one of said rollers or spools to turn the same a small amount on each actuation of said printing plate, means to control the operation of said spools whereby when the one being fed has been filled with the ribbon the controlling means, will shift the feeding mechanism to advance the other spool step by step, feed rollers to operate on a strip of paper, means to actuate said feed rollers, and means to sever the strip of paper into tickets, whereby on each actuation of said lever a ticket is printed and a previously-printed ticket delivered through said aperture.

4. In a device of the character described, the combination of a printing plate, a bed or base plate, means to actuate said printing plate toward and from said bed or base plate, an inking ribbon passing over the face of said printing plate, a pair of rotatable rollers or spools for said ribbon, a ratchet wheel fixed to and rotatable with each of said rollers or spools, a pair of levers, a pawl connected

with each of said levers, a rod connecting said levers, a beveled member on said rod, and a beveled spring coöperating with said beveled member whereby when one of said
5 rollers or spools has been filled with said ribbon the operation of the ribbon-feeding mechanism is reversed, substantially as described.

10 5. In a device of the character described, the combination of a lever, a printing plate on said lever, a pair of feed rollers for a strip

of paper, a casing for the said parts, said casing having an aperture through which a portion of one of said feed rollers protrudes so that it may be manually turned from the exterior of said casing to feed in or advance a
15 strip of paper, substantially as described.

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Witnesses:

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