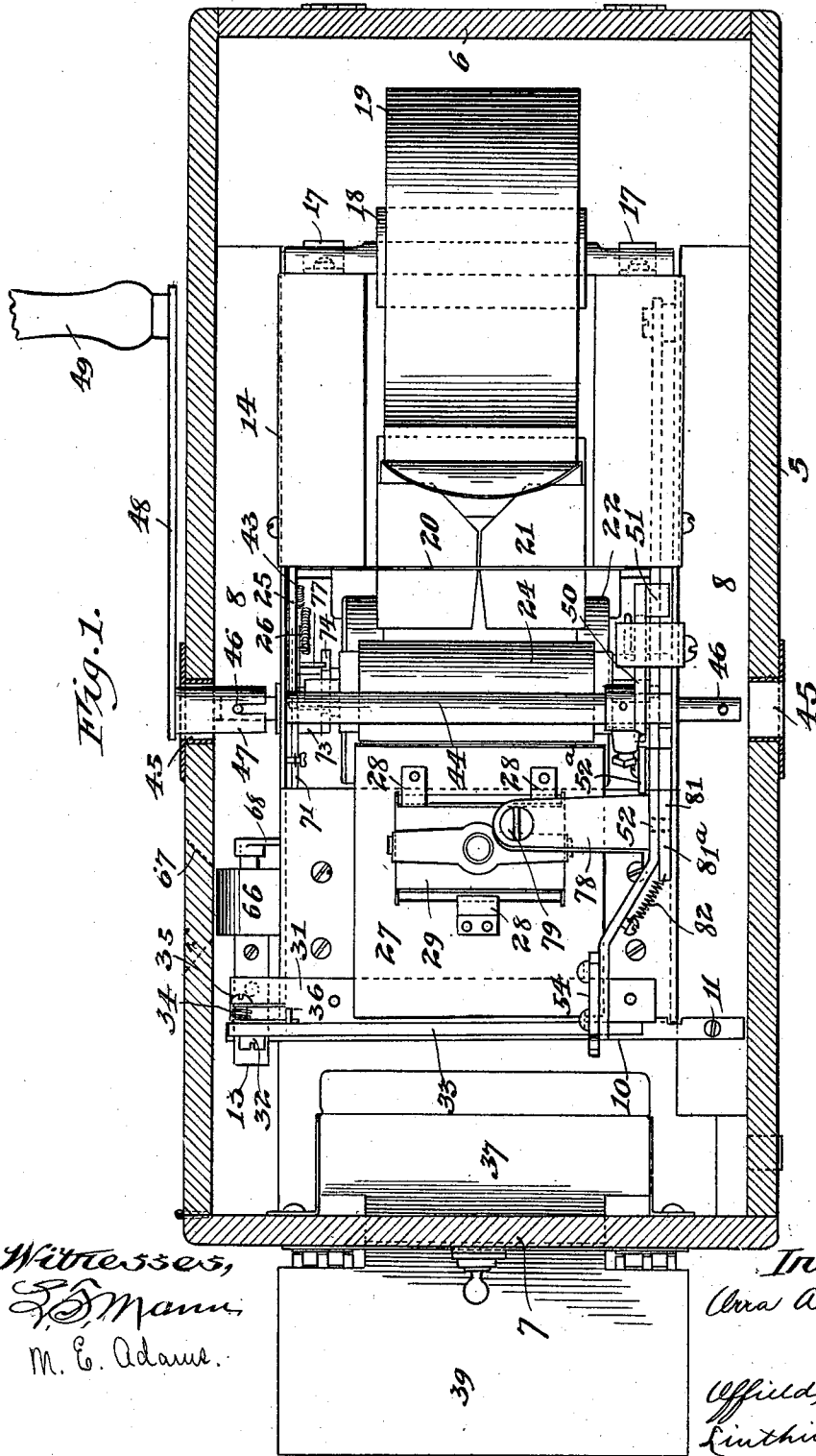


983,872.

O. A. BROWN.
TICKET PRINTER AND REGISTER.
APPLICATION FILED NOV. 14, 1908.

Patented Feb. 14, 1911.

3 SHEETS—SHEET 1.



Witnesses,
J. S. Mann,
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Inventor,
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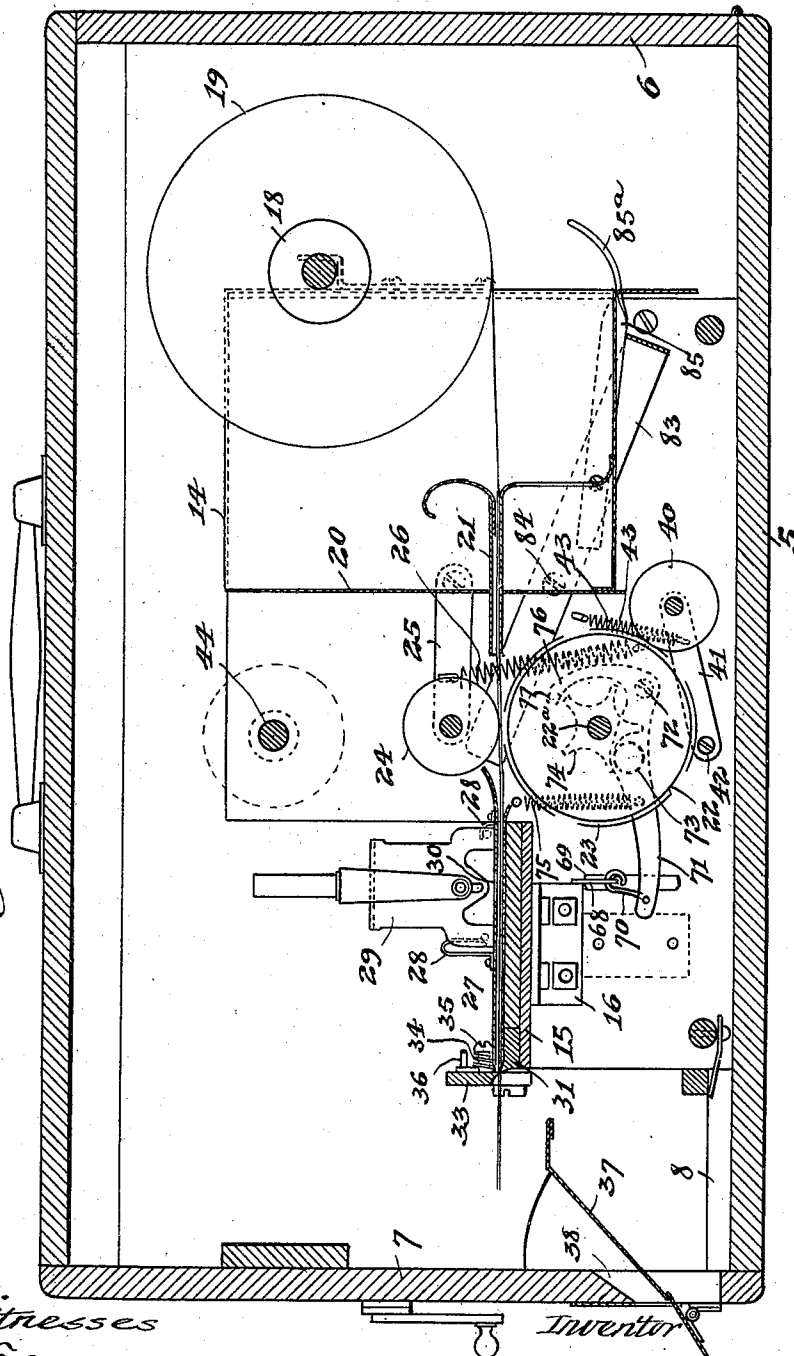
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3 SHEETS—SHEET 2.

Fig. 2.



Witnesses
G. M. Adams.
M. E. Adams.

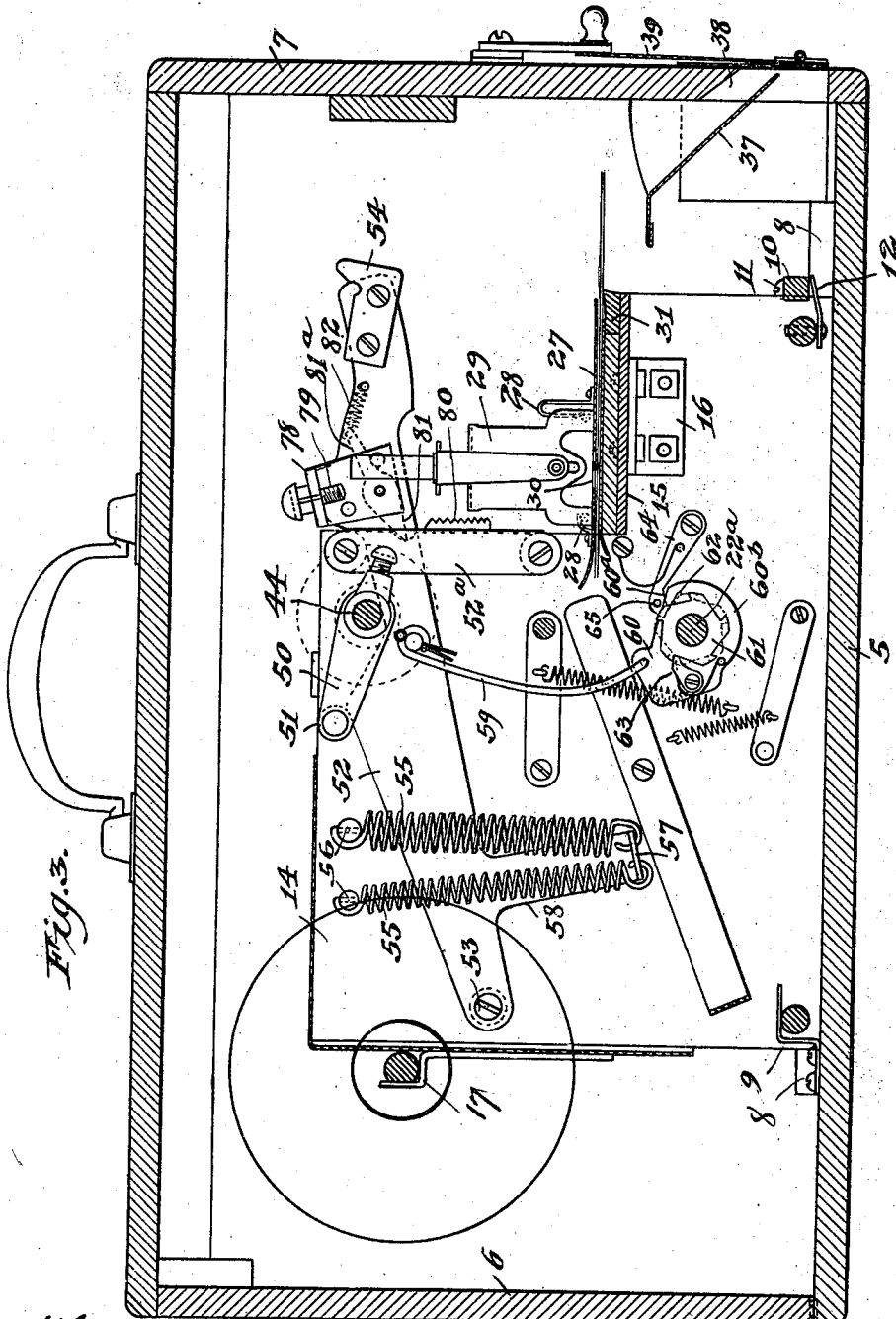
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ORRA A. BROWN, OF WICHITA, KANSAS.

TICKET PRINTER AND REGISTER.

983,872.

Specification of Letters Patent. Patented Feb. 14, 1911.

Application filed November 14, 1908. Serial No. 462,697.

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.

This invention relates to a mechanism for printing, severing and delivering tickets from a single continuous roll of cardboard or similar stock, each ticket being printed, severed and delivered through a single actuation of an operating handle or lever; and in the most complete and preferred form of the invention as hereinafter described and shown in the drawings, the mechanism also includes a means for dating each ticket and for registering the total number of tickets issued by the device. The mechanism, which is of the same general character and designed for the same purpose as that disclosed in my prior Patent No. 891,521, granted June 23, 1908, embodies certain improvements upon the general mechanical features of the device of said patent which render the mechanism more simple, reliable and complete in its functions.

In its main features the mechanism of the present invention comprises means for feeding forward a strip of cardboard or paper constituting the stock from which the tickets are cut from a reel between a printing cylinder and a superposed pressure cylinder, which cylinders also constitute feed rolls for the strip, a platen in advance of said feed rolls which supports the strip in a position favorable for the application thereto of a dating stamp, a knife which shears off the tickets successively from the end of the strip, and a register mechanism which registers the total number of tickets printed and delivered. Other ancillary features which are of importance in rendering the mechanism proof against fraudulent manipulation consist of a mechanism which prevents anything less than a full actuation of the operating handle or lever, and mechanism which insures the actuation of the register simultaneously with the printing of each successive ticket.

My invention will be readily understood when considered in connection with the accompanying drawings which illustrate

one practical embodiment thereof, and in which,—

Figure 1 is a top plan view of the apparatus in horizontal section through its containing box or casing. Figs. 2 and 3 are longitudinal vertical sections through the apparatus and its containing box or casing viewed from opposite sides, each of said figures omitting some parts for the sake of greater clearness.

Referring to the drawings, 5 indicates the body of a containing box or casing of rectangular form, the same having preferably a rear closure 6 hinged along its bottom edge, and a front door or closure 7 hinged on one side thereof. On either side of the floor of the box are a pair of parallel strips 8 which constitute guides for the bottom of the metallic frame or casing of the mechanism. Secured to the floor of the box near the rear thereof is a bent stop 9, which limits at one end the position of the machine frame in the box at the same time that it holds said end down to the floor of the box. Near the forward end of the box is a strip 10 pivoted at 11 to the upper face of one of the guide-strips 8, said strip 10 swinging in a horizontal plane to permit the removal of the machine from the case or to confine the machine in the case through engagement of its other end with a spring foot 12 on the machine frame and a bent stop 13 (Fig. 1) similar in all respects to the stop 9.

Referring now to the construction of the machine proper, 14 designates as an entirety the generally rectangular frame having solid parallel side walls, which walls are of less height near the forward end of the frame and support a transverse platen 15 secured thereto by angle-brackets 16. In open bearings 17 on the rear end of the frame is journaled a reel 18 on which is wound a strip of paper, cardboard, or any other suitable ticket stock indicated at 19. In an intermediate transverse vertical partition 20 is rigidly mounted a flat sheet metal guide 21 for the strip, which guide delivers the strip into the nip of a pair of rolls the lower of which, designated by 22, is mounted on a shaft 22^a and is a rotatable printing cylinder having applied to its peripheral surface any suitable number of rubber, electrotype, or other form of type 23, while the upper roll, designated by 24, constitutes a pressure roll being mounted in and

between the free ends of a pair of arms 25 which latter are in turn pivoted to the side walls of the frame and are normally drawn down by coil springs 26. It will thus be seen that the rolls 22 and 24 have not only a printing function, but they also constitute feed rolls to advance the strip through the machine, as will be hereinafter more clearly brought out.

Above the platen 15 is mounted a hollow flat sheet metal guide 27 that receives the strip from the rolls 22 and 24 and guides it out through the forward end of the machine. Detachably secured to the top of the guide 27 as by suitable spring clips indicated at 28 is an ordinary vertically reciprocable dating stamp 29, herein indicated as of that well known type carrying manually adjustable type ribbons or bands, the printing faces of which are reciprocable between an inking pad on the under side of the top of the frame and the bottom of the frame, the type operating on the paper strip through an aperture 30 in the guide 27. On and parallel with the forward edge of the platen 15 is a stationary shear blade 31, to one end of which is hinged at 32 (Fig. 1) a swinging shear blade 33 that is normally urged upwardly by a torsion spring 34 embracing a fixed stud 35 on the hinged end of the blade, the ends of said spring bearing respectively on the top of the fixed blade 31 and beneath a pin 36 on the hinged blade.

To the inner side of the front door 7 of the box is secured a discharge trough 37 that guides the severed ticket out through a discharge aperture 38 in the door onto a hinged inclined delivery platform 39.

40 designates an inking roll for the printing cylinder 22, said roll being journaled in and between the free ends of a pair of arms 41 pivoted at 42 to the side walls of the frame and normally urged toward the printing cylinder by springs 43.

Referring next to the means for manually actuating the printing cylinder 22 whereby both the forward feed and the printing of the strip is accomplished, 44 designates a shaft journaled in and between the side walls of the frame near their upper edges, the extremities of said shaft being in line with holes 45 formed through the opposite side walls of the outer case, and having cross-pins 46 coöperating with a hollow cylindrical key 47 removably telescoping either end of the shaft and carrying an arm 48 and operating handle 49. Keyed on the shaft 44 just inside one of the side walls of the frame is an arm 50 carrying on its free end a roller 51 that engages the upper edge of an arm 52 that is pivoted at its rear end at 53 to the side wall of the frame and extends forwardly over the free end of the hinged shear blade 33, its forward end being inwardly offset to engage said shear blade, as

shown in Fig. 1 and preferably provided with a suitably disposed metal wear-piece 54, said arm being guided and confined laterally by a keeper strip 52^a secured to the inner face of one of the side walls of the frame. The arm 52 is normally urged upwardly by a pair of tension springs 55 that are anchored to a pair of studs 56 in the side wall of the frame and at their lower ends are attached to a toe 57 of a depending arm 58 of the main arm 52.

Connected to the arm 52 is a depending link 59, the lower end of which is pivotally attached to a plate 60 that is rotatably mounted on the shaft 22^a of the printing cylinder, fast on which shaft, on opposite sides of said plate, respectively, are oppositely facing ratchet disks 61 and 62. The plate 60 carries a spring-pressed pawl 63 engaging the ratchet-disk 61 and actuating the printing cylinder on each rising movement of the arm 52; while a spring-pressed detent 64 similarly engages the ratchet disk 62 to prevent overthrow of the printing cylinder. The detent 64 is raised so as to be out of the way when the cylinder is actuated by a cam surface 60^a on the plate 60 engaging a pin 65 carried by the detent, and is held out of engagement during such movement by a circular raised peripheral portion 60^b of the plate 60.

Secured to and externally of one side wall of the frame is an ordinary register indicated at 66 (Fig. 1), the indicating face of which is visible through an opening formed in the side wall of the outer casing. The shaft of this register has an actuating arm 68 that extends through a slot 69 in the side wall of the frame and is connected by a link 70 to the free end of a lever 71 that is pivoted at 72 to the side wall of the frame and carries a laterally projecting stud 73 that lies across the path of a star wheel 74 fast on the shaft 22^a, said lever 71 being normally urged upwardly by a spring 75. The lever 71 is formed with a tail-piece 76 carrying on its end an inwardly projecting pin 77 overlying the star wheel, the function of the latter being to prevent any possible actuation of the printing cylinder without a corresponding actuation of the register by holding down the lever 71, which action would carry the pin 77 into the path of the star wheel and thus prevent such possible fraudulent manipulation of the device.

As a means for actuating the dating stamp simultaneously with the actuation of the cutter, I secure to the inner side of the arm 52 a laterally projecting arm 78, the free end of which overlies the reciprocating yoke of the stamp and is preferably provided with an adjustable contact device which may consist of an ordinary screw 79 for engagement with the latter.

In order to insure a complete and full

actuation of the mechanism at each stroke of the operating arm, I provide a pawl and ratchet mechanism, as follows: 80 designates a vertical ratchet that is secured to the vertical forward edge of one of the side walls of the frame, with which coöperates a pawl 81 that is pivoted to the outer side of the arm 52, this pawl having a tail 81^a to which is secured a controlling spring 82, which keeps the nose of the pawl normally pointed toward the ratchet, and the length of the pawl from its pivot to its nose is such, relatively to the distance from the pivot of the pawl to the teeth of the ratchet that, when said pawl is engaging the ratchet it is tilted or inclined; that is, its nose is either above or below a straight line connecting the pivot of the pawl with the pivot 53 of the arm carrying the pawl. From this it follows that when the arm 52 is depressed, the pawl, tilted in a direction the reverse of that shown in Fig. 3, rides idly over the ratchet 80, and any upward or return movement of the arm 52 before the pawl has completed its travel results in a dogging action of the pawl with the ratchet. When, however, the nose of the pawl has passed off the lower end of the ratchet, the arm 52 may rise freely, the pawl returning idly over the ratchet in the tilted position shown in Fig. 3.

In order to permit the insertion or extraction of the strip of paper without setting the machine in motion or disturbing the printing roll, when priming the machine, I provide a simple device for manually raising the upper or pressure roll 24, the same consisting of a bail 83 the sides of which are pivoted at 84 to the side walls of the frame, the free ends of the bail underlying the journals of the roll 24. To the bail is attached a tail-piece 85 the rear curved end 85^a of which projects beyond the rear of the frame and constitutes a handle which may be depressed by the thumb or finger of the operator so as to actuate the bail and thereby slightly raise the roll 24 sufficiently to permit the insertion of the paper without actuation of the registering mechanism.

The operation of the machine has to a considerable extent been explained in connection with the description of its various parts. Assuming that the machine has been primed by the insertion of the strip as shown in the drawings, the movement of the handle 49 in one direction actuates the arm 52 downwardly which applies the dating stamp and simultaneously cuts off a previously printed and dated ticket, this latter falling through the chute 37 onto the delivery plate 39. The return movement of the arm 52 under the impulse of the springs 55 actuates the printing cylinder and register mechanism, at the same time

feeding the strip forward a distance equal to the width of one ticket, and restoring the handle to starting position. The cam-controlled detent pawl prevents overthrow of the printing cylinder, while the tail-piece 76 and pin 77 of the register-actuating lever prevents actuation of the printing cylinder without corresponding actuation of the register, and the pawl 81 automatically prevents the return movement of the arm 52 until after it has been fully actuated.

It will be evident to those skilled in the art that the mechanism as shown and described might be considerably varied in respect to details without involving any departure from the principles involved or sacrificing any of the benefits of the invention. Hence I do not limit the latter to the precise mechanism shown, except to the extent clearly indicated in specific claims.

I claim:

1. In a mechanism of the character described, the combination of a frame, a reel mounted therein, a printing cylinder and pressure-roll adapted to feed between them a paper strip from said reel, a platen onto which said strip is fed from said printing cylinder, a vertically reciprocable dating-stamp mounted on said platen, a fixed shear-blade on the forward edge of said platen, a hinged shear-blade coöperating therewith, an operating handle, operating connections between the latter and said hinged shear-blade and said stamp, and spring-actuated mechanism tensioned by said operating handle for turning said printing cylinder and feeding forward said strip immediately after each actuation of said handle, substantially as described.

2. In a mechanism of the character described, the combination of a frame, a reel mounted therein, a printing cylinder and pressure-roll adapted to feed between them a paper strip from said reel, a fixed shear-blade in advance of said printing cylinder, a hinged shear-blade coöperating therewith, a spring normally tending to raise the latter, a pivoted arm overlying said hinged shear-blade, a spring normally tending to raise said arm, connections between said arm and said printing cylinder operating to turn the latter when the arm is raised, and a handle for depressing said arm, substantially as described.

3. In a mechanism of the character described, the combination of a frame, a reel mounted therein, a printing cylinder and pressure-roll adapted to feed between them a paper strip from said reel, a platen onto which said strip is fed from said printing cylinder, a vertically reciprocable dating stamp mounted on said platen, a fixed shear-blade on the forward edge of said platen, a hinged shear-blade coöperating therewith, a spring normally tending to raise the latter,

a pivoted arm overlying said hinged shear-blade and stamp, a spring normally tending to raise said arm, connections between said arm and said printing cylinder operating
5 to turn the latter when the arm is raised, and a handle for depressing said arm, substantially as described.

4. In a mechanism of the character described, the combination of a frame, a reel
10 mounted therein, a printing cylinder and pressure-roll adapted to feed between them a paper strip from said reel, a fixed shear-blade in advance of said printing cylinder, a hinged shear-blade cooperating therewith, a
15 pivoted shear-blade-actuating arm, a spring normally tending to raise the latter, an oscillatory handle for depressing said arm, and means for preventing the upward or return swing of said arm until after it has been
20 fully depressed, substantially as described.

5. In a mechanism of the character described, the combination of a frame, a reel mounted therein, a printing cylinder and pressure-roll adapted to feed between them a
25 paper strip from said reel, a fixed shear-blade in advance of said printing cylinder, a hinged shear-blade cooperating therewith, a pivoted shear-blade-actuating arm, a spring normally tending to raise the latter, an oscillatory handle for depressing said arm, and a
30 pawl and ratchet mechanism for preventing the upward or return swing of said arm until after it has been fully depressed, substantially as described.

35 6. In a mechanism of the character described, the combination of a frame, a reel mounted therein, a printing cylinder and pressure-roll adapted to feed between them a paper strip from said reel, shear mechanism in advance of said printing cylinder, a
40 shear blade actuating arm pivoted at one end on said frame, a spring normally tending to raise said arm, a handle for depressing said arm, a ratchet-bar secured on said
45 frame, and a spring-actuated pawl mounted on said arm and cooperating with said ratchet-bar to prevent the upward or return movement of said arm until after it has been fully depressed, substantially as described.

50 7. In a mechanism of the character described, the combination of a frame, a print-

ing cylinder and pressure roll mounted in said frame and adapted to feed between them a strip to be printed, a shear mechanism having a pivoted shear-blade mounted
55 in advance of said printing cylinder, a shear-blade actuating arm pivoted at one end on said frame, a spring normally tending to raise said arm, a rock-shaft mounted in said frame, and an arm fast on said rock-shaft
60 and engaging said shear-blade actuating arm to effect the working stroke of the latter, substantially as described.

8. In a mechanism of the character described, the combination of a frame, a reel
65 mounted therein, a printing cylinder and pressure-roll adapted to feed between them a paper strip from said reel, a shear-mechanism having a pivoted shear-blade mounted in advance of said printing cylinder, a ver-
70 tically reciprocable dating-stamp mounted between said printing cylinder and said shear-mechanism, an arm pivoted at one end on said frame and adapted on its downward movement to actuate said shear-blade and
75 dating-stamp, a spring normally tending to raise said arm, a rock-shaft mounted in said frame, and an arm fast on said rock-shaft and engaging said first named arm to effect a depression of the latter, substantially as
80 described.

9. In a mechanism of the character described, the combination of a frame, a reel mounted therein, a printing cylinder and pressure roll adapted to feed between them a
85 paper strip from said reel, a register mounted on said frame, means for actuating said printing cylinder, an actuating arm for said register, a star wheel on the shaft of said
90 printing cylinder, a lever actuated by said star wheel and connected to said actuating arm of the register, and a device carried by said lever adapted to cooperate with said star wheel to prevent the rotation of said
95 printing cylinder independently of the actuation of the register, substantially as described.

ORRA A. BROWN.

Witnesses:

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JAMES R. OFFIELD.