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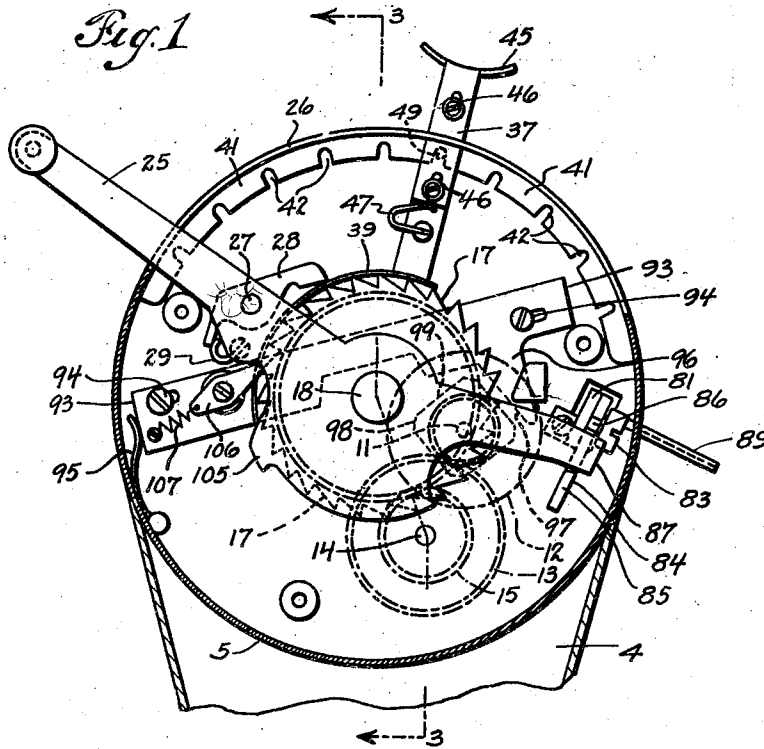
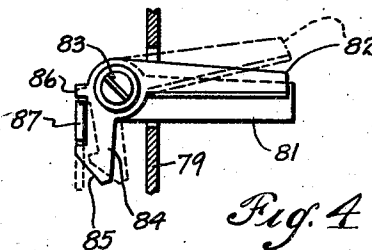
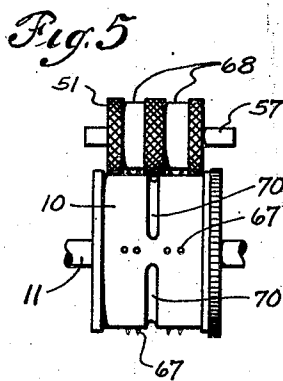
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STRIP DISPENSING MECHANISM

Filed Sept. 23, 1927

3 Sheets-Sheet 1



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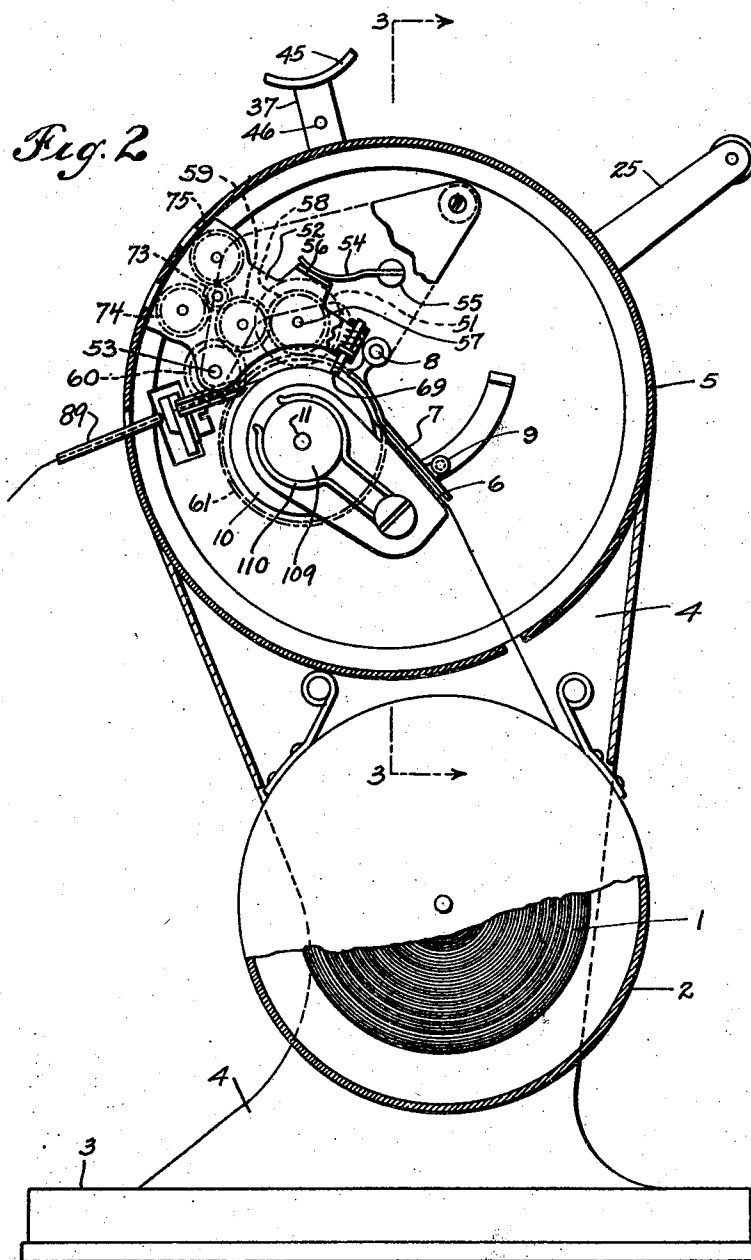
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STRIP DISPENSING MECHANISM

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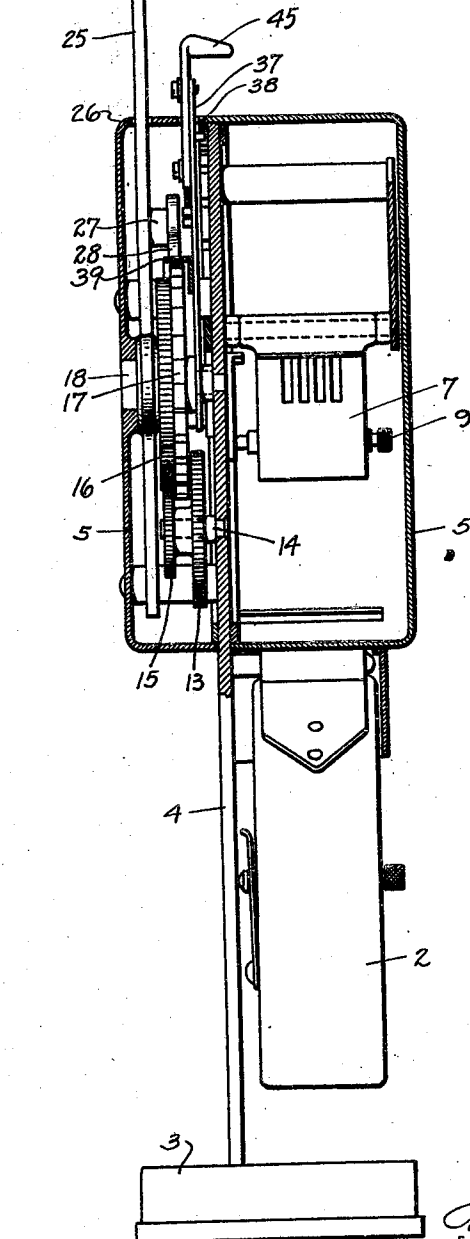
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Fig. 3



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STRIP-DISPENSING MECHANISM

Application filed September 23, 1927, Serial No. 221,485, and in Germany October 6, 1926.

The invention relates to a novel and useful mechanism for safely, reliably and automatically dispensing various predeterminable lengths of strip material, such as postage stamps, ticket strips and the like, and making an inaccessible record of the amount or quantity dispensed.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel parts, constructions, arrangements, combinations and improvements herein shown and described.

The accompanying drawings, referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:—

Fig. 1 is a fragmentary elevation of the upper part of the mechanism shown in Fig. 3 with the outer casing in section;

Fig. 2 is an elevation of the opposite side of the mechanism from Fig. 1 with the outer casing in section;

Fig. 3 is a transverse, vertical section taken substantially on the line 3—3 of Figs. 1 and 2, looking in the direction of the arrows;

Fig. 4 is a fragmentary detail of the strip cutting mechanism; and

Fig. 5 is a fragmentary elevation of the feeding rolls for the strip.

The invention is directed primarily to novel and useful mechanism for dispensing variably and predeterminable quantities or lengths of strip material, such as postage stamps, through settable and actuating means operable from the exterior of a closed or locked casing, for cutting off and emitting the set or predetermined quantity of the strip material, and making an inaccessible record or registry within the casing against the dispensing attendant. The invention is further directed toward effecting an always exact feeding, and dispensing of the units of

stripped material, and preventing inaccuracies of feed, and automatically locking the mechanism against operation in the event of tearing, exhaustion or other failure of the strip material to be dispensed. The invention is further directed, in connection with the foregoing and other objects, towards producing a simple, sturdy, compact, reliable and economically manufactured device of the kind described.

The embodied form of the mechanism comprises, broadly stated, a magazine supply of the strip material in the form of a roll, which is fed forward by rollers equipped with means for effecting an accurate and reliable lengthwise measuring or feeding of the strip material, with the feed always terminating in unit lengths of the strip. For this purpose, said cooperating feeding rollers are spring-pressed together, and the strip feed of variably predeterminable length is effected by a ratchet wheel, fixed to rotate with one of the strip feeding rollers, and rotated by a pawl-carrying lever of definite throw, operated from without the casing. Cooperating therewith is a shield interposed between the pawl and its ratchet wheel, and variably-positionable to determine the number of teeth of the ratchet wheel with which the pawl may engage when its lever is actuated, thereby correspondingly feeding the strip material. In connection therewith is a strip-cutting device, likewise automatically actuated by the pawl-carrying lever, and an automatically-actuated, spring-operated device for insuring the stopping of the strip feed at the end of a unit length of the strip, corresponding for instance, to the perforated line between two postage stamps. Within the casing, and connected with the mechanism just described, are two registers, one registering the total sales, the other register being settable from without the casing, as for instance, when there is a change of the clerk or other dispensing attendant.

It will be understood that the foregoing general summary of the present preferred embodiment and the following detailed description thereof as well, are illustrative and

exemplary of the invention but are not restrictive thereof.

Referring now in detail to the present preferred embodiment of the invention, illustrated by way of example in the accompanying drawings, a supply roll 1 of the strip material is mounted, loosely rotatable, within a protecting casing 2 mounted within the base of the machine, an exhausted roll being replaceable by a fresh supply roll by a proper person. The roll casing, and the general machine casing are connected and locked together, in any well-known or other suitable manner so as to prevent tampering with the mechanism by interested or unauthorized parties.

The general structure comprises a base 3 and a flat frame plate 4 vertically extending therefrom, the locked or otherwise protective casing 5 being of cylindrical form and consisting of two parts, one on either side of the flat frame plate 4. The various groups of mechanism are mounted on one side or the other of frame plate 4, with most of the actuating mechanism on one side and the strip and its feeding devices on the other side. The strip supply roll casing is connected in an enclosing and protecting relation to the main casing.

The strip is originally threaded into a guideway 6, consisting of an upper and lower member, the strip traveling between them. The upper member 7 is preferably pivoted at 8 and has a handle 9 extending through a slot to the outside of the casing. The member 7 may thus be raised to aid in guiding the lead end of a new strip into and through the mechanism without opening the casing. The strip thence passes over a main feeding roller 10, located within one of the casing compartments. Roller 10 is fixed on a shaft 11, projecting through the machine frame plate 4, into the casing compartment on the other side thereof. Fixed to the shaft 11 is a gear-wheel 12, which meshes with an idler gear 13 fixed on a shaft 14, journaled in the plate 4. An idler gear 15 is fixed to gear-wheel 13, and meshes with a gear-wheel 16, to which is fixed a ratchet wheel 17, the latter two integral wheels being loosely mounted on a shaft 18. It will be seen that feeding roller 10 will thus rotate in exact predetermined relation with the rotation of ratchet wheel 17, and that by variably predetermined actuations of the ratchet wheel, various desired feeds of the strip may be effected by the feed roll 10. The roll 10 is proportioned in connection with the actuating means to feed unit lengths of the strip, corresponding to the length of the tickets or stamps in the strip.

The actuating means for ratchet wheel 17 comprises a hand lever 25, loosely mounted on the shaft 18, and projecting outwardly through an arcuate slot 26 formed in the top part of the cylindrical casing. Pivotaly

mounted on the lever 25 at 27 is a pawl 28 adapted to engage with the teeth of the ratchet wheel 17, and normally impelled into engagement therewith by a spring 29, mounted on the hand-lever and pressing against the tail of the pawl 28. The embodied means for determining the ratchet tooth which the pawl 28 shall engage on any given dispensing operation (and consequently the extent of rotation of the ratchet wheel 17 and feeding drum 10, and the length of strip thereby fed and emitted), comprises a hand-lever 37 projecting upwardly through an arcuate slot 38 formed in the top of the cylindrical casing, alongside of the slot 26. The lever 37 has fixed thereto an arcuate shield 39, which extends over the ratchet teeth of the wheel 17 (Figs. 1 and 3), and shields a greater or less number of the ratchet teeth from engagement by the pawl 28, dependent on the angular positioning of the lever 37.

The embodied means for positioning and holding the lever 37 comprises an arcuate strip 41, mounted within and projecting downwardly from the upper part of the cylindrical casing, and provided with a plurality of notches 42, spaced apart so as to correspond to the successive positions of the shield 39, so as to cover or uncover, one at a time, successive teeth of the ratchet wheel 17. Cooperating with these positioning means, there is mounted as the upper part of the lever 37 a hand piece 45, lying flat against the upper part of the lever and longitudinally, slidably connected thereto by pin and slot connections 46. The pins are impelled to the upper ends of their slots by means of a bent spring 47, mounted on the lever 37 and pressing against the flat upper strip 45 to resiliently hold it at its uppermost position. Fixed to the hand-piece 45 is a pin 49, which acts as a stop in cooperation with the notches 42. Pin 49 projects through a slot in the lever 37 and is adapted to engage by the action of the spring 47 with the strip 41 and to enter any one of the notches 42 when the hand-piece 45 is released, and to hold the lever 37 and therewith the shield 39 in any desired position within the range of the particular mechanism, to determine by permitting the pawl to engage with the desired ratchet tooth, the length of feed of the strip upon any actuation of the hand-lever 25 during that setting of the feed determining means.

Means are provided for cooperating with the feed roller 10 to effect an absolutely positive and accurate feed, and to prevent slippage of the strip with respect to the roller. This insures positive feed of the strip in connection with the positive feed of the feed roller provided by the mechanism. In the embodied form thereof, a cooperating roller 51, spring-pressing the strip against roller 10, is mounted in the side plates of a frame 52, which frame is pivotally mounted on a cross

shaft or rod 53 fixed in and projecting from the frame structure. A spring 54, mounted at 55 on the fixed frame structure presses against the part 56 of this pivoted frame, and thereby presses the roller 51 against the roller 10. In connection with the foregoing, means are preferably provided for likewise positively driving the roller 51 at the same peripheral speed with the roller 10. As embodied, there is fixed to the shaft 57 of the roller 51 a gear-wheel 58, which meshes with an idler gear 59, which in turn meshes with an idler gear 60, which meshes with a gear 61 fixed to and concentric with the roller 10.

Where the machine is used for feeding postage stamps, or other strip material which is perforated in units of length, the roller 10 may be provided with teeth 67, spaced apart about the periphery of the roller so as to engage with the perforations of the strip material. With this construction the roller 51 will be provided with cut-away portions 68 to avoid engagement of the roller with pins 67 of roller 10.

The embodied form of means for stopping the mechanism upon exhaustion, tearing or other failure of the normal feed of the strip material, comprises a spring-pressed pin 69, mounted in the frame 52, and which bears upon the strip material upon the roller 10. The periphery of the roller 10 is recessed or cut away, as shown in 70 in Fig. 5, in line with the spring-pressed pin 69, and in case of the failure of the material, the pin 69 is impelled into the slot 70 and will thus lock and prevent the actuating of the mechanism.

The registering mechanism as embodied is mounted in the pivoted frame 52, and as it may be of any suitable or known form is shown only conventionally. As shown, an idler gear 73 meshes with the gear 59 and likewise gears on the registering mechanisms 74 and 75. The indications of the registers are visible from without through openings in the casings in the usual manner. One of these registering mechanisms is settable from without the casing so that it may be optionally returned to a zero indication, as for instance when there is a change of attendant. In order to make the stamp strip accessible, the registers 74 and 75, and the frame camming roller 51 and its driving train, which frame is pivoted at 53 may be swung about said pivot outside the casing, thereby giving quick and easy connective or regulative access to an authorized attendant.

The embodied form of strip-severing means comprises a shearing device (Figs. 1 and 4), having a fixed blade 81 mounted on the frame member 79 just beneath the path of the fed strip, and a cooperating shear-blade 82, pivoted at 83. Due to the substantial thickness of the knife 82 and the angular cutting edge, the strip will be fed slightly forward immediately after being cut and will

be emitted through guideway 89. Thus when a single unit length is fed by the machine, it can be more easily removed from the machine. This blade has an angularly disposed tail 84, which is provided with a beveled head 85, and a shears actuating lug 86, with which the actuating device is adapted to cooperate. The shearing device as embodied is operated by the hand-lever 25, upon its return to initial position after a feeding operation. For this purpose the hand-lever 25 is provided beyond its pivot point with an outwardly-extending arm 87. When the hand-lever 25 is moved forwardly during the strip-feeding operation, the arm 87 will move downwardly in Fig. 4, and will swing the shear blade 82 into the dotted line position, and arm 87 will pass the notched head 85. As the actuating arm 87 is returned to initial position after the predetermined and measured feed of the strip it will engage the beveled face 85 and will again rock the pivoted shear blade 82 to the broken line position of Fig. 4, but when the arm 87, continuing its movement, engages the notch 86, it will move the blade 82 to the cutting position, that is, the full line position in Fig. 4, and will cut off from the strip a measured or predetermined set length of the strip, corresponding to one or more unit lengths thereof. The strip was fed forward prior to cutting through guideway 89 and the cut-off portion is emitted therefrom.

Means are provided by the invention for insuring an absolutely accurate feed of the strip in terms or dimensions of the unit lengths thereof. As embodied, a bar 93 is mounted for longitudinal reciprocation, by means of pin and slot connections 94 near either end thereof, and the bar is impelled to extreme position toward the right hand in Fig. 1 by a flat spring 95, mounted within the frame and pressing against the end of the bar. Near the other end of the bar is a transversely projecting arm 96 having a face 97, with which cooperates a plate 98 fixed upon the shaft 11 of the feed roller 10. The plate 98 has a plurality of consecutive straight edges 99, in substantial polygonal relation about the shaft of the feed roller 10, and corresponding in number to the number of unit lengths of the strip material corresponding to the length of the periphery of the feed roller 10. The means for actuating bar 93 comprises a projection 105 on the curved, central, plate-like part of the hand-lever 25. With this cooperates a dog 106, pivotally mounted on the rear end of bar 93 and acted on by a spring 107. As actuating hand-lever 25 is moved backwardly and is nearly to initial position (at the left in Fig. 1), tooth 105 engages dog 106 and tends to rotate it about its pivot, but the parts are so shaped and proportioned that in order for the tooth 105 to pass the dog 106, bar 93 is moved to the left in Fig. 1, against its spring 95, and

arm 96 engages a face 99 of plate 98. This insures the feed roller 10 stopping at the end of a unit length of feed of the strip, and immediately thereafter arm 87 of lever 25 actuates the shears to cut off the predetermined dispensed length of the strip precisely at a unit length thereof.

If desired, a drag brake may be used on the feed roller 10, and such a device is shown, comprising a circular plate 109 fixed on the shaft 11 of feed roller 10, and engaging therewith is a spring friction brake 110. This device may be precautionally used to aid in precise feeding, but usually is not necessary.

The operations of the various groups of mechanism has been given in connection with the description of the construction thereof, and a resumé is unnecessary, as the entire operation will be clear from the foregoing.

The invention in its broader aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its advantages.

What we claim is:

1. A mechanism for dispensing strip material including in combination strip feeding means, actuating means therefor including a ratchet wheel proportioned to unit lengths of the strip, a pawl therefor, and a shield interposed between the pawl and ratchet and settable correspondingly to the strip units, means for actuating the pawl, and strip-severing means actuated by the pawl actuating means.

2. A mechanism for dispensing strip material including in combination strip feeding means, actuating means therefor including a ratchet wheel proportioned to unit lengths of the strip, a pawl therefor, a shield interposed between the pawl and ratchet and settable correspondingly to the strip units, means for actuating the pawl, means for actuating the strip severing means by the pawl actuating means, and means for preventing operation of the mechanism on failure of the strip.

3. A mechanism for dispensing strip material including in combination strip feeding means, actuating means therefor including a ratchet wheel proportioned to unit lengths of the strip, a pawl therefor, a shield interposed between the pawl and ratchet and settable corresponding to the strip units, a lever for actuating the pawl, a knife actuated by the lever to sever the strip, and means acting on the feeding means to insure exact feed of unit lengths of the strip.

In testimony whereof, we have signed our names to this specification.

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