J. W. JONES.

COUPON PRINTING AND DELIVERING APPARATUS.

APPLICATION FILED OCT. 14, 1908.

907,369. Patented Dec. 22, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

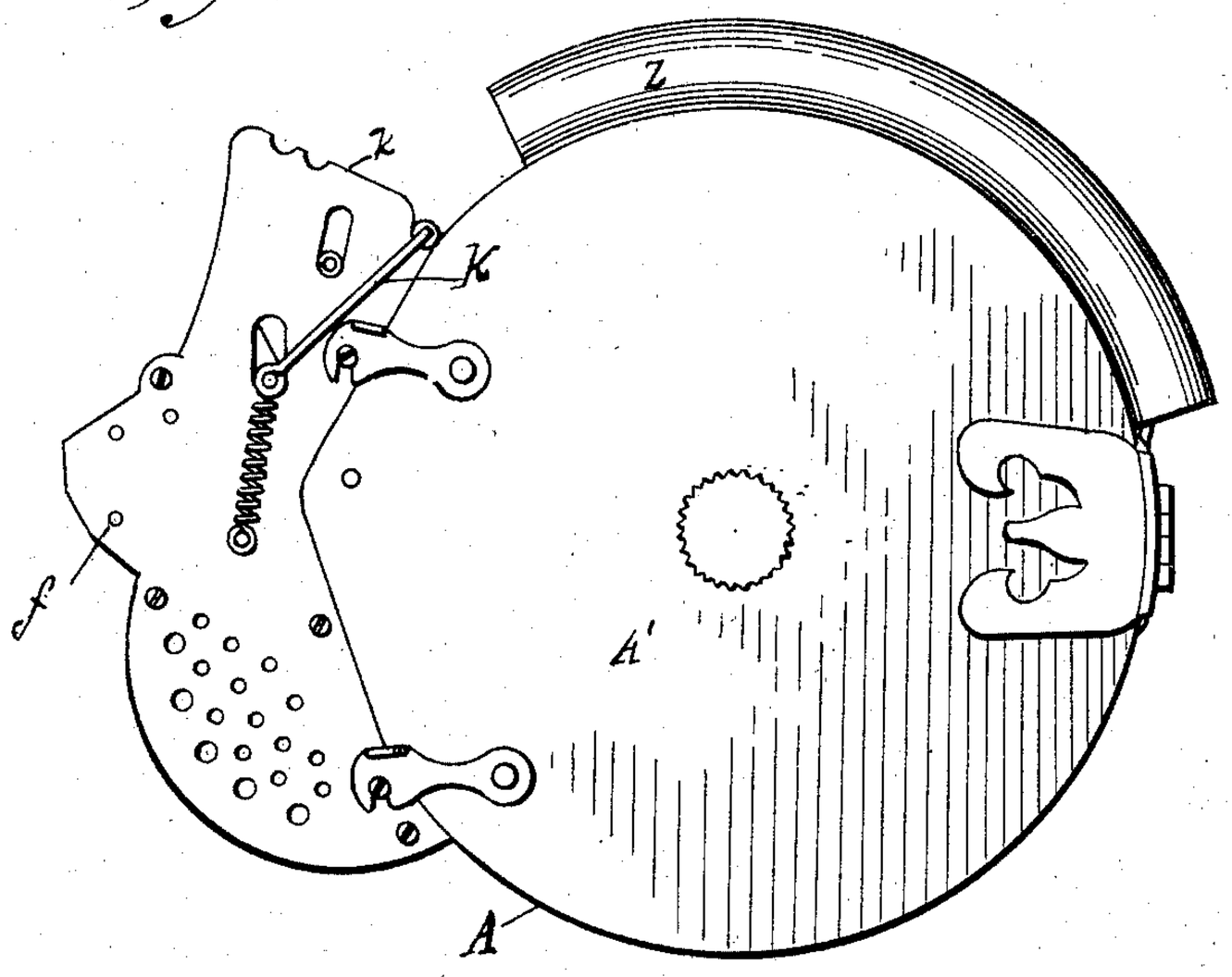


Fig. 8.

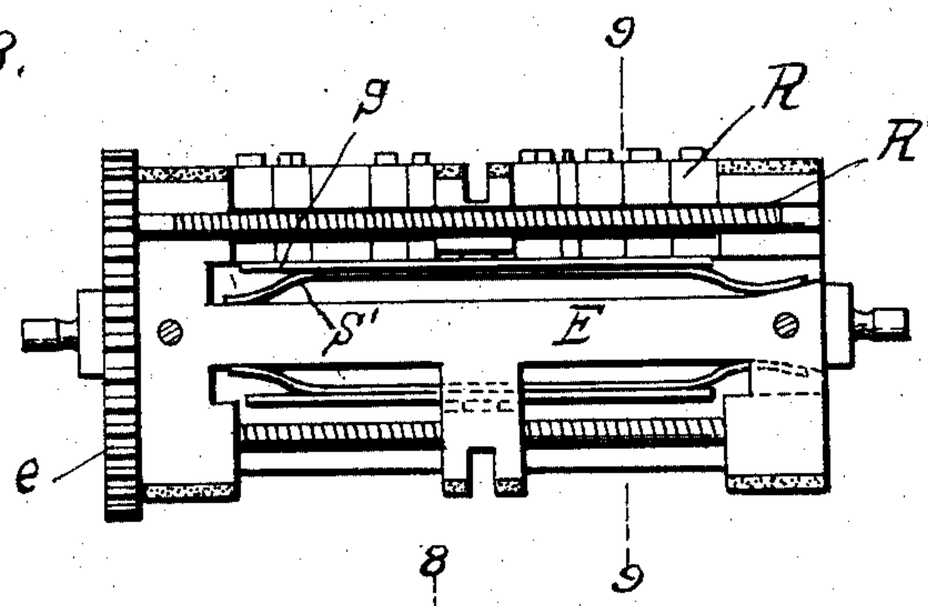
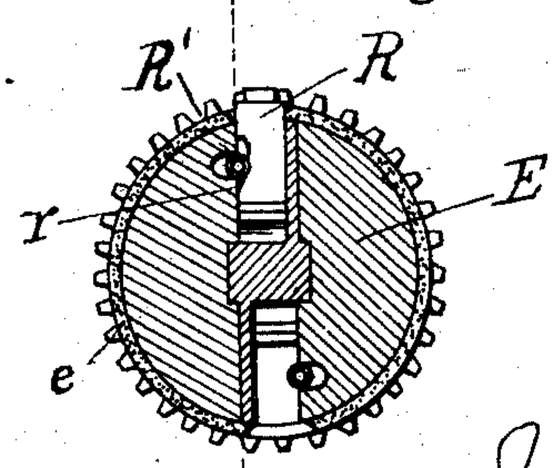


Fig. 9.



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2 SHEETS—SHEET 2.

Fig. 2.

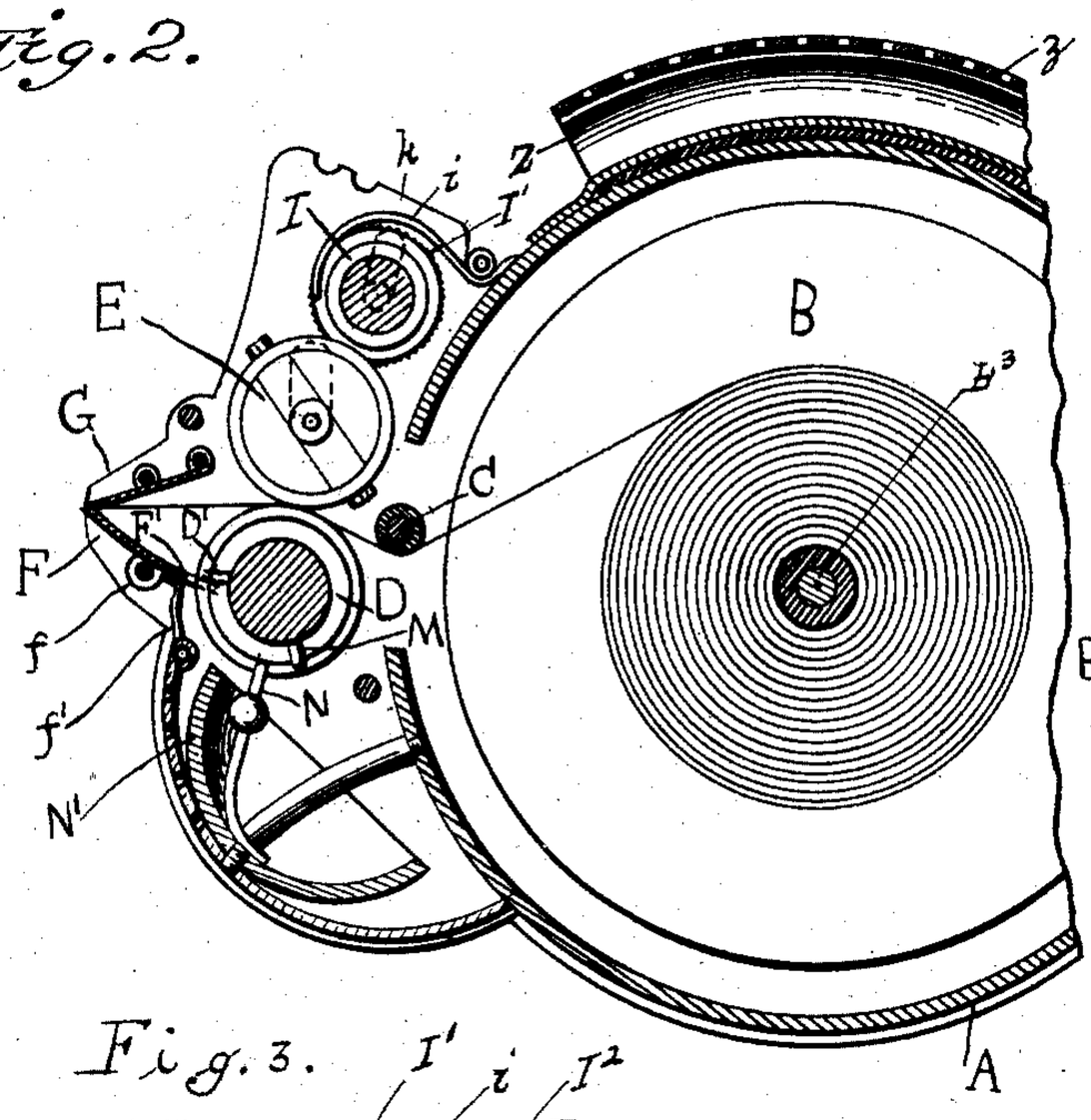


Fig. 4.

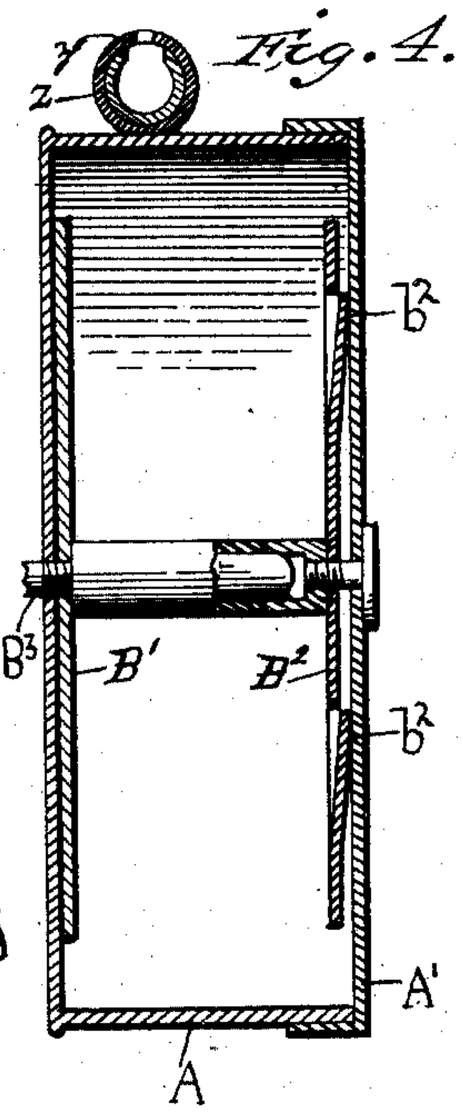


Fig. 3.

Fig. 5.

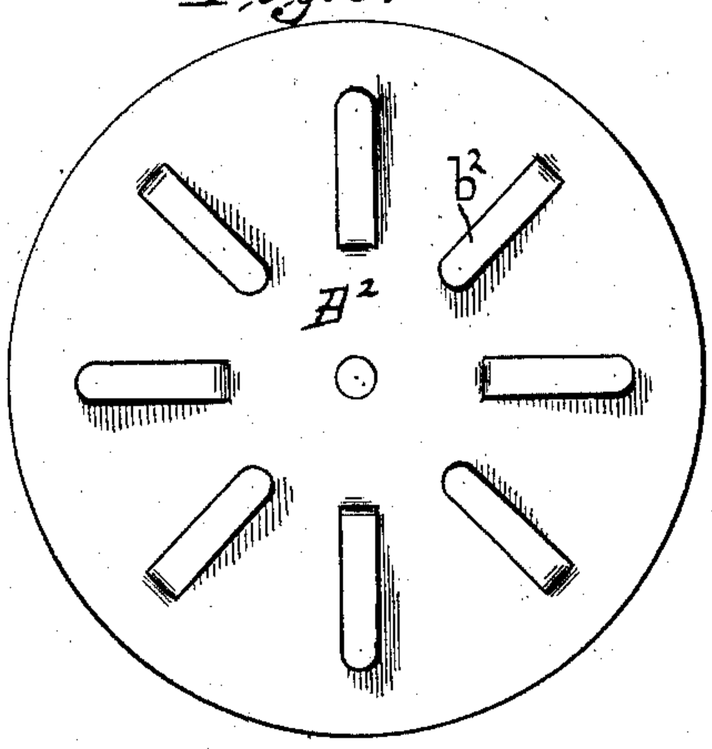


Fig. 6.

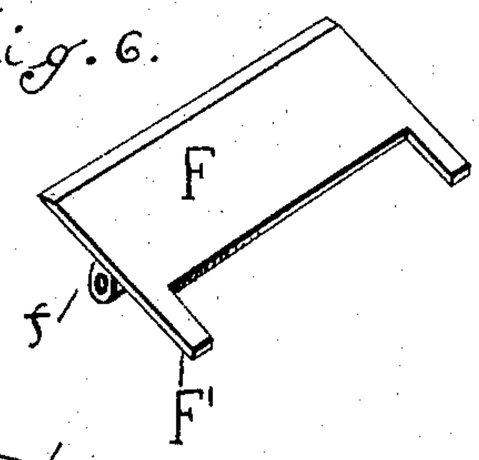
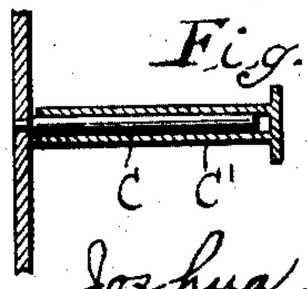


Fig. 7.



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UNITED STATES PATENT OFFICE.

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COUPON PRINTING AND DELIVERING APPARATUS.

No. 907,369. Specification of Letters Patent. Patented Dec. 22, 1908.

Application filed October 14, 1908. Serial No. 457,701.

To all whom it may concern:

Be it known that I, JOSHUA W. JONES, a citizen of the United States, residing at Harrisburg, Dauphin county, Pennsylvania, have invented certain new and useful Improvements in Coupon Printing and Delivering Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

This invention relates to appliances for carrying into effect a system of street railway fare collection, whereby peculations of dishonest employees or fare collectors will be prevented by making the detection of such peculations more certain and in which it will be to the interest, protection and profit of the passenger to see to the leaving of a proper record of the fare collected by the conductor and that a proper receipt is given for the fare paid.

In the system wherein the appliances of the present invention are employed the conductor or fare collector is required to withdraw from a suitable holding and delivering device having an alarm, a paper coupon or check for presentation to each passenger paying a fare. The coupons are numbered consecutively and each is automatically printed as delivered with the conductor's number or designation and when desired, and particularly in case the coupons are to be used as transfers, with the date, time and transfer point. The coupons have a nominal value to the passenger, being redeemable either by the company or advertisers as they may elect. For instance the coupon may have a purchasing value offered by merchants who may use unoccupied space for advertising purposes, thus the usual lack of interest on the part of passengers as to whether or not a record is left of the fare collected is largely overcome, and to this extent each passenger becomes a coöperating factor in the aid of honest returns on the part of the employees.

In the accompanying drawings: Figure 1 is an elevation of a coupon holding and delivering device. Fig. 2 is a sectional elevation showing the construction and arrangement of the parts within the casing. Fig. 3 is a detail sectional elevation looking at the front of the delivering, printing and inking rolls. Fig. 4 is a section in a vertical plane extending through the coupon roll support. Fig. 5 is an elevation of the spring friction disk for holding the coupon roll. Fig. 6 is a perspective view of the movable clamping jaw. Fig. 7 is a detail section of the coupon strip guide. Fig. 8 is a longitudinal section through a preferred form of printing roll. Fig. 9 is a detail transverse section of the printing roll.

The holding, printing and delivering mechanism for the strip of coupons, as illustrated in the accompanying drawings, embodies a flat substantially cylindrical casing A, having a hinged cover A′ to facilitate the placing of the roll of coupons B within the same. The coupons are conveniently held between rotary disks B′, B^2, journaled on telescoping sections of a central spindle B^3, and in order to hold the roll B with sufficient friction the disk B^2 is provided with spring fingers b^2 adapted to contact with the cover A′ of the casing, while the body of the disk bears against one of the faces of the coupon roll.

The free end of the strip passes from the roll B beneath a guide pin or spindle C, preferably having a headed sleeve C′ thereon to give a reverse bend to the strip to straighten the same and thence between feeding and printing rolls D, E, finally passing out of the devices between the gripping edges of jaws F and G. The roll D is conveniently journaled in the casing in fixed bearings, and is covered with a rubber or other suitable elastic friction material for gripping the strip. The body of the roll E may be covered with a similar material, and this roll is provided with printing characters, preferably removably mounted in position, as will be hereinafter described, for printing suitable data or conductors' designations upon each coupon as the same passes between the rolls. Said printing roll E is connected with the roll D by gearing *d e*, Fig. 3, so as to insure the simultaneous rotation of the rolls and a proper registration of the printing characters with the blanks on the coupons. The roll E is mounted in bearings so as to move toward

and from the roll D, and is held advanced by spring pressure, usually by coiled springs H connecting the journals of the two rolls.

For operating the rolls to advance the coupons, a roll I is journaled loosely in the casing above and in position to contact with the periphery of the roll E, a portion I′ of the roll I constitutes a friction surface and exposed in position to be conveniently manipulated by the thumb or finger of the conductor and its ends I² pressed against the roll E at the same time that it is rotated by having the thumb or finger drawn over it. The body of the roll I constitutes the inking pad from which the ink is distributed to the printing characters of the roll E, and this inking pad is preferably protected by a guard *i* on each side of the friction surface I′. The guard is preferably mounted on a bail K journaled on the shaft of the roll E and adapted to ride up on the incline *k* of the casing when drawn forwardly so as to separate the rolls D and E and hold them separated a sufficient distance to permit of the insertion or withdrawal of the coupon strip when the latter is to be placed in or removed from the casing, or the positioning of the strip with relation to the printing characters on the roll.

The jaws F and G are adapted to be operated so as to close tightly and grip the record strip at the time when a projected coupon is to be torn off or removed and to be opened at the instant when the said strip is to be projected by the rotation of the rolls D and E. To secure the proper timing of the movements of the jaws, the upper jaw G is preferably mounted in fixed position in the casing, while the lower jaw F is pivotally mounted on an axis *f* and in position for its rearwardly projecting arms F′ to contact with pins D′ on the roll D for closing the jaws firmly at the instant when the coupon has been projected in position for being removed.. The pins D′ move past and away from the arms F′ during the initial movement of the rolls D and E for advancing the coupon strip, thus leaving the jaw F free for being opened by a spring *f′*, whereby a passage is opened for the coupon being projected.

In order that the passenger may be notified of the fact that a coupon has been projected, or, in other words, that one of the consecutively numbered coupons is in position for removal and delivery to him, and consequently leaving a record for verification by officials of the company, the roll D is provided with a pin M, which is adapted to coöperate with the clapper or striker N of an alarm N′, the relation of the pin and clapper N being such that the latter is released at the instant when the jaws are closed for gripping the coupons.

Obviously, any suitable form of alarm device, such as a click or similar well known sounding mechanism, may be employed instead of the bell illustrated, and it is desirable where two or more of the devices are employed, one for delivering cash fare coupons, one for delivering transportation receipts, other than cash fares, (such as transfers, tickets, passes, etc.) and the other for delivering transfers, that distinguishing sound producing mechanism should be employed. In this connection it will be stated that these devices may be associated or connected together, and one arranged for the delivery of cash fare coupons, one for transportation receipts, and the other for the delivery of transfers, all of the devices being conveniently arranged on a belt or other similar supporting means whereby they are held in proper and convenient relation to the body of the conductor or fare collector. In Fig. 3 there is illustrated a clip O adapted to pass over a belt worn by the conductor for holding the device in place.

In the practical operation of a system wherein the devices of the present invention are employed, the devices each having a coupon roll therein are delivered to the conductors from the office of the company. The conductor sees to it that the printing mechanism is properly arranged to print his number or designation on the coupons, as delivered. Inasmuch as each conductor will have a number or designation, it is desirable that means should be provided for changing the printing characters, and this feature is also desirable where the printing mechanism is designed for printing other data upon the coupons, the time of delivery or transfer points, for instance. In Figs. 8 and 9 a handy and convenient arrangement is illustrated, whereby removable type or printing characters may be mounted in the printing roll, thus, as illustrated, the printed roll is slotted or recessed for the reception of the type R, and each type has in one side a concave recess or elongated nick *r* in which a coiled spring R′ held under tension in the roll is adapted to seat. This spring R′ will hold the type in place with sufficient security and permit them to move longitudinally. A flat supporting plate S is preferably located beneath the type and held outwardly by a spring S′ to yieldingly support the type in printing position.

The conductor returns the holding and delivering device to the office at the end of his tour of duty and the officials noting the number of the coupon remaining after the last one delivered and having already noted the number of the first coupon in the device when delivered to the conductor, can determine instantly the number of cash fares and transfers collected, and the number of transfers issued, and inasmuch as it is designed that the coupons shall have a redeemable value, either by the company itself, or by advertising patrons, the passengers will find it to their interest to see that a coupon is de-

livered for each fare paid. Each passenger thus becomes an agent of the company, and the conductor or fare collector who attempts dishonesty will find that detection is almost certain, and hence will desist from such practice.

The device does away with the necessity of employing registers and will effect a material saving in keeping the individual accounts of the conductor correct, inasmuch as the entire auditing work may be performed by a small clerical force, who have only to keep track of the numbers of the coupons or transfers delivered to the conductors and the numbers of the coupons and transfers returned by the conductors at the end of each tour of duty or at such other times as may be found most convenient.

Obviously, individual type or logotype may be employed in the printing roller, and for convenience the devices may be provided with holders for type not in use for instance in the device illustrated a type holder Z, having apertures with elastic walls *z* is mounted on the top of the device.

It will be understood that the terms "coupon strip" and "coupons" as used in the appended claims are intended to embrace either the coupons or transfers hereinbefore referred to, inasmuch as it is not desired to limit the invention to apparatus for handling only coupons having a redeemable value.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a device such as described for delivering and automatically printing consecutively numbered coupons from a coupon strip, the combination with the casing having strip roll supporting means, and gripping jaws for gripping the strip in rear of the projected coupon, of feeding rolls between which the strip passes to said jaws, and means for simultaneously operating said rolls and jaws to release and advance the strip; substantially as described.

2. In a coupon strip holding and delivering device, the combination with the casing having means for holding a coupon roll, of gripping jaws for gripping the strip in rear of the projected coupon, a feeding roll for said strip and coöperating projections on one of said jaws and the feeding roll, whereby the jaw is moved into its closed and gripping position when the feeding roll is at rest and is released by a movement of the feeding roll in a direction to advance the strip.

3. In a coupon holding and delivering device, the combination with the casing having means for supporting a roll of coupons and gripping jaws for gripping the strip in rear of the projected coupon, of means for advancing or feeding said coupons, and for operating said jaws, embodying a pair of rolls geared together and between which the coupon strip passes to the jaws, projections on one of said jaws and one of said rolls respectively, for closing the jaws to grip the strip, and an operating mechanism for said rolls embodying a roll having an exposed concentric surface adapted for engagement by the thumb.

4. In a coupon strip holding and delivering device such as described, the combination with the casing embodying means for holding a coupon roll and gripping jaws for gripping the strip in rear of the projected coupon, of a feeding mechanism emobdying a pair of rolls geared together and between which the strip passes to the jaws, means for releasing said jaws from engagement with the strip, a printing mechanism carried by one of said rolls, and an operating mechanism for the rolls embodying a roll having an exposed concentric surface for engagement by the thumb; substantially as described.

5. In a coupon strip holding and delivering device, the combination with the casing having a hinged cover, the disks journaled in the casing and on the cover respectively and between which the coupon roll is held, and converging gripping jaws between which the end of the strip is projected, of a feeding mechanism for the strip embodying spring pressed rolls geared together and between which the strip is passed to the jaws, and means for operating said jaws controlled by one of said rolls; substantially as described.

6. In a coupon holding and delivering device, the combination with the casing embodying means for supporting a coupon roll and a pair of converging gripping jaws for engaging the strip in rear of the projected coupon, of a pair of rolls between which the strip passes to the jaws, gearing connecting said rolls, a projection on one of said rolls coöperating with one of the jaws for closing the jaws to grip the strip, an alarm device operated by the movement of said rolls as the jaws are closed, and a friction roll for imparting motion to said feeding rolls, substantially as described.

7. In a coupon feeding and delivering device, the combination with the casing having means for supporting a roll of coupons, a fixed jaw mounted in said casing, and a pivoted jaw for coöperation therewith, of feeding rolls between which the strip passes to the jaws, projections on one of said rolls and jaws respectively, for closing the jaws, and a spring for opening the jaws when the projections are out of engagement, substantially as described.

8. In a coupon holding and delivering device, the combination with the casing having means for supporting a roll of cou-

pons, and spring pressed feeding rolls between which the strip is passed, one of said rolls being provided with printing characters, of an operating and inking roll adapted to contact with one of the printing and feeding rolls, a guard covering said operating and inking roll, and a concentric surface on the roll adapted to project beyond the guard for engagement by the thumb; substantially as described.

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