

Jan. 29, 1957

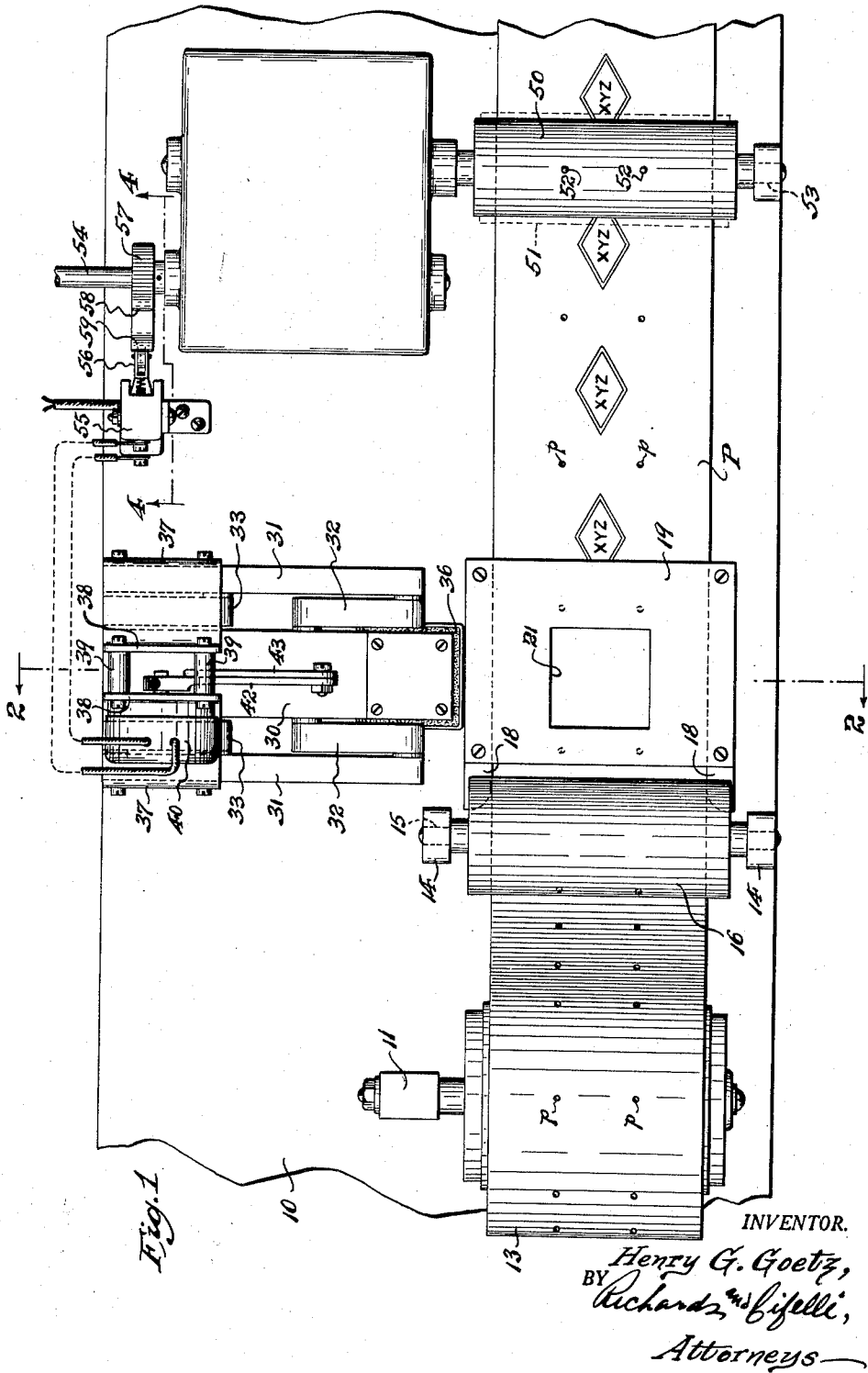
H. G. GOETZ

2,779,271

PHOTOGRAPHIC PRINT STAMPING APPARATUS

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2 Sheets-Sheet 1



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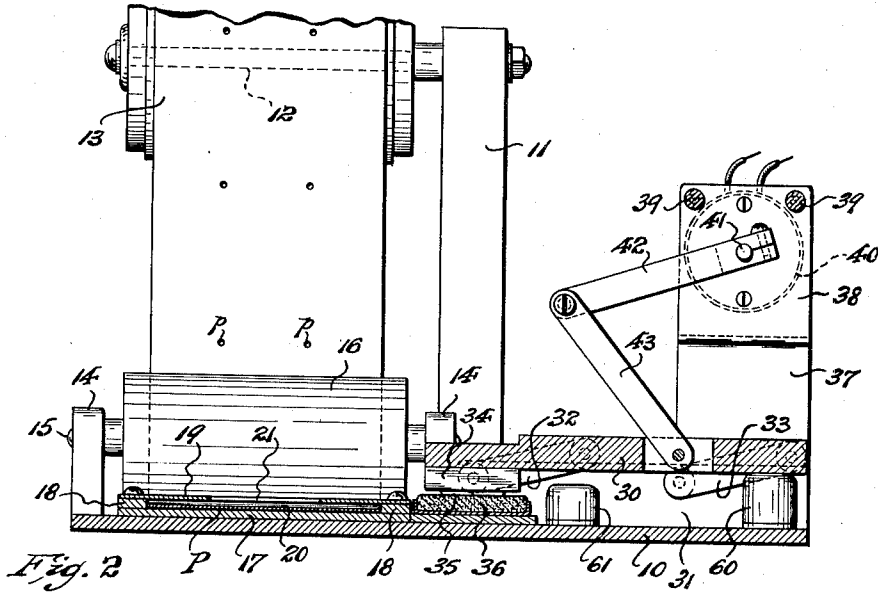
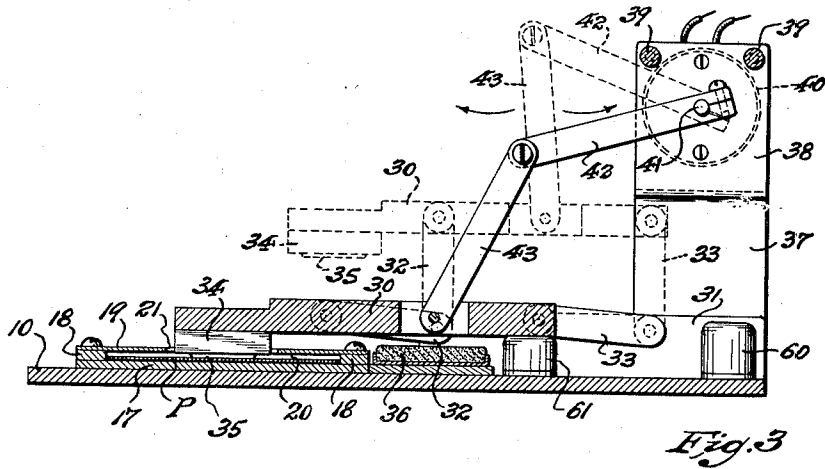
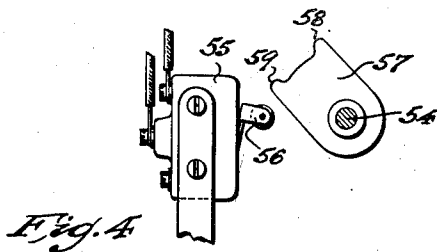
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2 Sheets-Sheet 2



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PHOTOGRAPHIC PRINT STAMPING APPARATUS

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8 Claims. (Cl. 101—291)

This invention relates to mechanism for stamping desired indicia upon photographic prints produced by photographic printers of the continuous strip type, such stamping being automatically effected prior to cutting away individual prints from the printed strip.

The developing of photographic film and the production of prints therefrom as a service to photographers, especially to amateur photographers, has become an active industry. Many concerns operate to provide such service and, in so doing, make use of photographic printers of the type in which a continuous strip of sensitized photographic paper is fed, length by length, across an apertured mask through which printing light, transmitted through a developed negative, is projected through the mask opening upon the photographic paper with printing effect. In such practice, a strip of photographic paper, having perforations intermediate the print receiving areas of the strip, is utilized, the perforations being adapted to cooperate with intermittently actuated strip feeding mechanism by which the strip is shifted, length by length, for printing thereon successive photographic prints. After the strip is thus printed, it is developed and dried, and then the individual prints are cut away from the strip, ready for delivery to the customer. Concerns providing such service frequently desire to stamp, upon the backs of the individual prints produced, indicia which identifies a given concern as the source from which the service and resulting prints is obtained. Heretofore, such indicia stamping operation has usually been performed by hand after individual prints have been cut away from the strip. Such hand stamping operation involves laborious and time consuming handling of the prints.

Having the above in view, it is an object of this invention to provide an automatic indicia stamping apparatus through which the perforate strip of developed prints can be passed, whereby to stamp upon the back of each successive print the desired service identifying indicia prior to separating the individual prints from the strip, thus avoiding necessity for expenditure of time and labor involved in hand stamping.

The invention has for a further object to provide apparatus including strip feeding means to intermittently advance the strip print by print, a stamping mechanism, means to actuate the stamping mechanism, and means to time the operation of the actuating means relative to the strip feeding means, so that operation of the former is effected with respect to successive individual prints while the strip is momentarily at rest during the step by step advance thereof by the feeding means.

The above and other objects will become apparent from a reading of the following detailed description of an illustrative embodiment of this invention in connection with the accompanying drawings, in which:

Fig. 1 is a plan view of a photographic print stamping apparatus embodying the principles of this invention; Fig. 2 is a transverse vertical sectional view, taken on line 2—2 in Fig. 1, and showing the print stamping means in retracted normal initial position; Fig. 3 is a view similar to that of Fig. 2, but showing the print stamping means in advanced operating position; and Fig. 4 is a fragmentary vertical longitudinal sectional view, taken on line 4—4 in Fig. 1.

Referring to the drawings, in which like characters of reference denote corresponding parts, the reference character 10 indicates the base plate or platform of the print

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stamping apparatus, which can be suitably mounted on a supporting framework (not shown), or supported in any other convenient manner. Mounted on the base plate or platform 10, adjacent to one end thereof, is a standard 11 having a laterally projecting arbor 12. A continuous perforate strip of photographically printed paper P is fed to the apparatus from a roll 13 thereof which is rotatably supported on the arbor 12. Also mounted on the base plate or platform 10 are laterally spaced apart bearing posts 14 in and between which is journaled the shaft 15 of a rotatable guide roller 16. This guide roller is located forwardly of the supply roll 13, so that the printed strip P, descending from the latter, can be passed beneath the same for forward extension therefrom.

Suitably fixed upon the base plate or platform 10, adjacent to the guide roller 16, is a strip backing and guide means over which the printed strip P is caused to pass. An illustrative form of this strip backing and guide means, as shown, comprises a bed plate 17 of suitable width and length, the same being provided along its longitudinal marginal portions with superposed guide ribs or bars 18, which are spaced apart correspondingly to the width of the printed strip P. Supported by said ribs or bars 18, so as to bridge across the same, in upwardly spaced relation to the bed plate 17, is a cover plate 19. Said ribs or bars 18 and cover plate 19 define a printed strip passageway 20 above the bed plate 17. The printed strip P, as it descends from the supply roll 13, passes beneath the guide roller 16, by which it is positioned for horizontal forward movement through the passageway 20 and over the bed plate 17. The cover plate 19 is provided with a stamp die admission opening 21 of suitable peripheral shape and dimensions.

Mounted on the base plate or platform 10, in transversely aligned relation to the strip backing and guide means, is the stamping mechanism. This stamping mechanism comprises an oscillatable stamp carrier 30 in the form of a rectangular body of suitable width and length, and which is disposed in alignment with the stamp die admission opening 21 of the cover plate 19 of said strip backing and guide means. The stamp carrier body 30 is supported by parallel linkage between stationary bearing members 31 which are affixed upon the base plate or platform to upstand therefrom. Said parallel linkage comprises a pair of forward links 32 and a pair of rearward links 33. These links are respectively pivotally connected by their lower ends to said bearing members 31 and are respectively pivotally connected by their upper ends to the sides of the stamp carrier body 30, so that the parallel linkage formed thereby support the stamp carrier block for parallel motion during the forward or advancing and the rearward or retracting phases of oscillatory movement transmitted thereto.

Suitably affixed to the underside of the forward end portion of the stamp carrier block 30 is a stamping die 34 having on its exterior bottom surface a type or stamp face 35 adapted to produce the indicia imprint which is desired to be stamped upon the backs of the successive photographic prints of the printed strip P.

Mounted on the base plate or platform 10 in position to be engaged by the type or stamp face 35 of the stamping die 34, when the stamp carrier block 30 is disposed in its normal initial retracted position (see Fig. 2) is an inking pad 36.

Secured to the rearward end portions of the bearing members 31, to extend upwardly therefrom, are opposed frame plates 37 having inwardly offset upper end portions 38, which are suitably spaced apart by interposed interconnecting spacer members 39. Mounted upon the upper end portion 38 of one of the frame plates 37 is a solenoid 40 of the rotary armature type, the armature being affixed

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to a pivot shaft 41 which projects through the end portion 38 of said frame plate 37. Secured to the outer end of the pivot shaft 41 of the solenoid is a lever member 42, which extends forwardly in overhanging relation to the underlying stamp carrier body 30. Pivotaly connected by its lower end, with the stamp carrier body 30, at a point thereof intermediate the forward and rearward pairs of parallel links 32 and 33, by which said stamp carrier body is supported for oscillatory parallel motion, is a connecting link 43, the upper end of which is pivotally connected with the outer free end of the lever member 42.

Beyond the strip backing and guide means is located a strip feeding mechanism which, as illustratively shown, includes an intermittently driven feed roller 50 and an underlying cooperative bed roller 51, between which the printed strip P passes so as to be propulsively engaged thereby. Said feed roller is provided about its periphery with radially projecting printed strip engaging pins 52. The diametric size of the feed roller 50 and the circumferential spacing of its strip engaging pins 52 is selected to correspond to the longitudinal spacing of the perforations *p* with which the printed strip P is provided intermediate print containing areas thereof. Feed rollers of various diametric size and strip engaging pin spacing can be provided for interchangeable mounting upon the feed roller actuating shaft 53.

The feed roller 50 is adapted to be intermittently actuated so as to shift the printed strip P, print by print, subject to momentary dwell of successive prints thereof for reception of indicia desired to be applied thereto by the stamping mechanism. To this end, from a continuously rotating drive shaft 54 the feed roller shaft 53 can be actuated by means of any suitable intermittent action transmission means (not shown) known to the art, so that e. g. each rotation of the drive shaft 54 will produce a phase of strip propulsion movement of the feed roller 50 followed by a period of arrested movement constituting a strip stop phase of its cycle of operation.

The solenoid 40 for actuating the stamping mechanism is suitably connected in an electric power source circuit which includes a switch member 55 for making and breaking said circuit. Said switch member is preferably of the self-opening type, and is provided with a lever arm 56 which is movable to close the same. To effect operation of the stamping mechanism, the switch member 55 must be closed and opened to momentarily energize the solenoid to cause forwardly projected stamping movement of the stamp carrier body 30, and then immediately thereafter be again closed and opened to again momentarily energize the solenoid to cause retraction of the stamp carrier body 30 to normal initial withdrawn position, which successive operations are timed to occur during the periods when advancing movement of the printed strip P is arrested; all as will subsequently herein be more fully explained. To so operate the switch member 55, a cooperative actuating cam 57 can be mounted on the drive shaft 54 so as to be rotated thereby, and so positioned thereon that it makes passing engagement with the switch lever arm 56 while the feed roller 50 movement is arrested. Said cam 57 is suitably shaped to make two successive switch closing engagements with the switch lever arm 56. For example, as shown by way of illustration (see Fig. 4), the cam, the rotation of which is in clockwise direction, is provided with a first or leading cam nosing 58 and a second or trailing cam nosing 59; said nosings being spaced apart so as to suitably time the interval between the successive moments of solenoid energization.

As shown in Figs. 1 and 2, when the stamp carrier body 30 occupies its normal initial retracted position, the rearward end portion thereof will rest upon a buffer member 60, which preferably comprises resilient material such as rubber or the like, while the forward end portion thereof will be disposed to engage the stamping die 34 carried thereby with the inking pad 36, whereby to ink the type

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or stamp face 35 of said stamping die. It will also be noted that, in the retracted position of the stamp carrier body 30, the solenoid controlled lever member 42 is disposed in an initial down swung position, and that the connecting link 43 inclines downwardly and rearwardly from said lever member 42 to the stamp carrier body.

In the operation of the stamping mechanism, the printed strip P is fed, printed face downward, through the passage 20 of the strip backing and guide means, and by the intermittent feeding mechanism, a printed area of the strip is brought to rest over the bed plate 17, with the back face of said area exposed through the stamp die admission opening 21 of the cover plate 19. After the strip P is thus positioned at rest, the rotation of the cam 57 carries the first or leading cam nosing 58 into and out of engagement with the switch closing arm 56, thereby momentarily closing the switch 55 so as to energize the solenoid 40 to cause operation thereof. By its operation, the solenoid swings upward the lever member 42, whereby to transmit, through the connecting link 43, up swinging forward motion to the stamp carrier body 30 about its supporting parallel linkage. By the time the peak of such up swinging forward motion of the stamp carrier body is reached (see broken line showing in Fig. 3), the first or leading cam nosing 58 has disengaged the switch arm 56, so that the switch 55 opens to deenergize the solenoid 40. Due however to the inertia of its forward motion, the forward movement of the stamp carrier body 30 continues in a down swinging path, whereby to carry the stamping die 34 to and through the die admission opening 21 of the cover plate 19, and so as to cause the type or stamp face 35 to contact the back of the arrested strip P with indicia stamping effect. Upon completion of the operative forward movement of the stamp carrier body, the rear end portion thereof will abut a second buffer member 61, thus assuring level disposition of the stamp carrier body and the stamping die 34 for proper contact of the type or stamp face 35 of the latter with the strip P.

By the time the above described indicia stamping operation is completed, continued rotation of the cam 57 carries the second or trailing cam nosing 59 into and out of engagement with the closing arm 56 of switch 55, thereby again momentarily closing the switch so as to energize the solenoid 40 a second time. This second operation of the solenoid again swings upward the lever member 42, whereby to transmit, through the connecting link 43, up swinging rearward motion to the stamp carrier body 30 about its supporting parallel linkage. By the time the peak of such up swinging rearward motion of the stamp carrier body is reached, said second or trailing cam nosing 59 releases the switch closing arm 56, so that the switch 55 again opens to deenergize the solenoid. Due however to the inertia of its rearward motion, the rearward movement of the stamp carrier body 30 continues with accompanying down swinging movement, whereby to carry the stamp carrier body 30 and stamp die 34 back to normal initial retracted position.

After each indicia stamping operation of the stamping mechanism is completed, the printed strip P is advanced and again brought to rest to position a succeeding printed area thereof ready for stamping, whereupon the cycle of stamping operations is repeated.

Although I have described the stamping mechanism as applied for use in stamping desired indicia upon the backs of printed areas of a continuous photographically printed strip, it will nevertheless be understood that the same, per se, is as well adapted to stamp individual photographic prints successively supplied, subject to operation of the same, in any suitable manner. It will also be understood that the stamping mechanism, per se, is well adapted to stamp subject materials of many kinds other than photographically printed material.

Having now described my invention, I claim:

1. Apparatus for stamping indicia upon subject material comprising means to position the material to receive

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stamping action, a stamp carrier body pivotally supported by parallel linkage for movement to and from stamping contact with the subject material, a solenoid, a lever member adapted to be actuated by said solenoid, a connecting link to operatively couple the stamp carrier body with said lever member, a switch to make and break the power supply circuit serving said solenoid, and means to effect a first and second closing and opening operation of said switch, the first closing and opening of the switch being adapted to momentarily energize the solenoid for actuation of said lever member to initiate up swinging forward motion of the stamp carrier body about its supporting parallel linkage, the inertia of which completes the forward movement of the stamp carrier body to stamping position upon deenergization of the solenoid, and the second closing and opening of the switch being adapted to again momentarily energize the solenoid and again actuate said lever member to initiate up swinging rearward motion of the stamp carrier body about its supporting parallel linkage, the inertia of which completes the rearward movement of the stamp carrier body back to normal initial retracted position upon deenergization of the solenoid.

2. Apparatus for stamping indicia upon subject material comprising means to position the material to receive a stamped imprint, a carrier body, a stamping die mounted on the carrier body, parallel linkage to pivotally support the carrier body for movement adapted to carry the stamping die to and from stamping contact with the subject material, an inking pad engageable by the stamping die when the carrier body is disposed in normal initial retracted position, a solenoid of the rotary armature type, a lever member adapted to be actuated by the solenoid armature, a connecting link to operatively couple the carrier body with said lever member, a switch to make and break the power supply circuit serving said solenoid, and means to effect a first and second closing and opening operation of said switch, the first closing and opening of the switch being adapted to momentarily energize the solenoid for actuation of said lever member to initiate up swinging forward motion of the carrier body about its supporting parallel linkage, the inertia of which completes the forward movement of the carrier body and stamping die to stamping position upon deenergization of the solenoid, and the second closing and opening of the switch being adapted to again momentarily energize the solenoid and again actuate said lever member to initiate up swinging rearward motion of the carrier body about its supporting parallel linkage, the inertia of which completes the rearward movement of the carrier body and stamping die back to normal initial retracted position upon deenergization of the solenoid.

3. Apparatus for stamping indicia upon subject material as defined in claim 2, further including a buffer member engageable by the rearward end portion of the carrier body when the latter is disposed in normal initial retracted position, and a second buffer member engageable by the rearward end portion of the carrier body when the same is projected to stamping position.

4. Apparatus for stamping indicia upon subject material as defined in claim 2, wherein the means to effect the closing and opening operations of the switch comprises a switch control lever arm, and a rotated cam, said cam having spaced cam nosings to successively engage and operate said switch control lever arm.

5. In apparatus for stamping indicia upon subject material wherein said material comprises a continuous photographically printed strip containing successive prints, means to guide and back the printed strip, strip feeding means to intermittently advance the strip, printed face down, print by print to the guiding and backing means whereby successive prints are caused to dwell at the guiding and backing means for reception of stamped indicia, a stamp carrier body aligned with the strip guiding and backing means, parallel linkage to pivotally support the

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stamp carrier body for movement to and from stamping contact with a print arrested at the guiding and backing means, a solenoid, a lever member adapted to be actuated by said solenoid, a connecting link to operatively couple the stamp carrier body with said lever member, a switch to make and break the power supply circuit serving said solenoid, and means operating coordinately with said strip feeding means adapted to effect a first and second closing and opening operation of said switch, the first closing and opening of the switch being adapted to momentarily energize the solenoid for actuation of said lever member to initiate up swinging forward motion of the stamp carrier body about its supporting parallel linkage, the inertia of which completes the forward movement of the stamp carrier body to stamping position upon deenergization of the solenoid, and the second closing and opening of the switch being adapted to again momentarily energize the solenoid and again actuate said lever member to initiate up swinging rearward motion of the stamp carrier body about its supporting parallel linkage, the inertia of which completes the rearward movement of the stamp carrier body back to initial retracted position upon deenergization of the solenoid.

6. In apparatus for stamping indicia upon subject material wherein said material comprises a continuous photographically printed strip containing successive prints, means to guide and back the printed strip, strip feeding means to intermittently advance the strip, printed face down, print by print to the guiding and backing means, whereby successive prints are caused to dwell at the guiding and backing means for reception of stamped indicia, a carrier body, a stamping die mounted on the carrier body, parallel linkage to pivotally support the carrier body for movement adapted to carry the stamping die to and from stamping contact with a print arrested at the guiding and backing means, an inking pad engageable by the stamping die when the carrier body is disposed in normal initial retracted position, a solenoid of the rotary armature type, a lever member adapted to be actuated by the solenoid armature, a connecting link to operatively couple the carrier body with said lever member, a switch to make and break the power supply circuit serving said solenoid, and means operating coordinately with said strip feeding means adapted to effect a first and second closing and opening operation of said switch, the first closing and opening operation of said switch being adapted to momentarily energize the solenoid for actuation of said lever member to initiate up swinging forward motion of the carrier body about its supporting parallel linkage, the inertia of which completes the forward movement of the carrier body and stamping die to stamping position upon deenergization of the solenoid, and the second closing and opening operation of said switch being adapted to again momentarily energize the solenoid and again actuate said lever arm to initiate up swinging rearward motion of the carrier body about its supporting parallel linkage, the inertia of which completes the rearward movement of the carrier body and stamping die back to normal initial retracted position upon deenergization of the solenoid.

7. In apparatus for stamping indicia upon subject material according to claim 6, wherein the means to effect the closing and opening operations of the switch comprises a switch control lever arm, and a rotated cam, said cam having spaced cam nosings to successively engage and operate said switch control lever arm.

8. In apparatus for stamping indicia upon subject material according to claim 6, a buffer member engageable by the rearward end portion of the carrier body when the latter is disposed in normal initial retracted position, and a second buffer member engageable by the rearward end portion of the carrier body when the same is projected to stamping position.