

April 16, 1929.

F. KOHNLE

1,709,354

TAG PRICE MARKING MACHINE

Filed Nov. 29, 1926

3 Sheets-Sheet 1

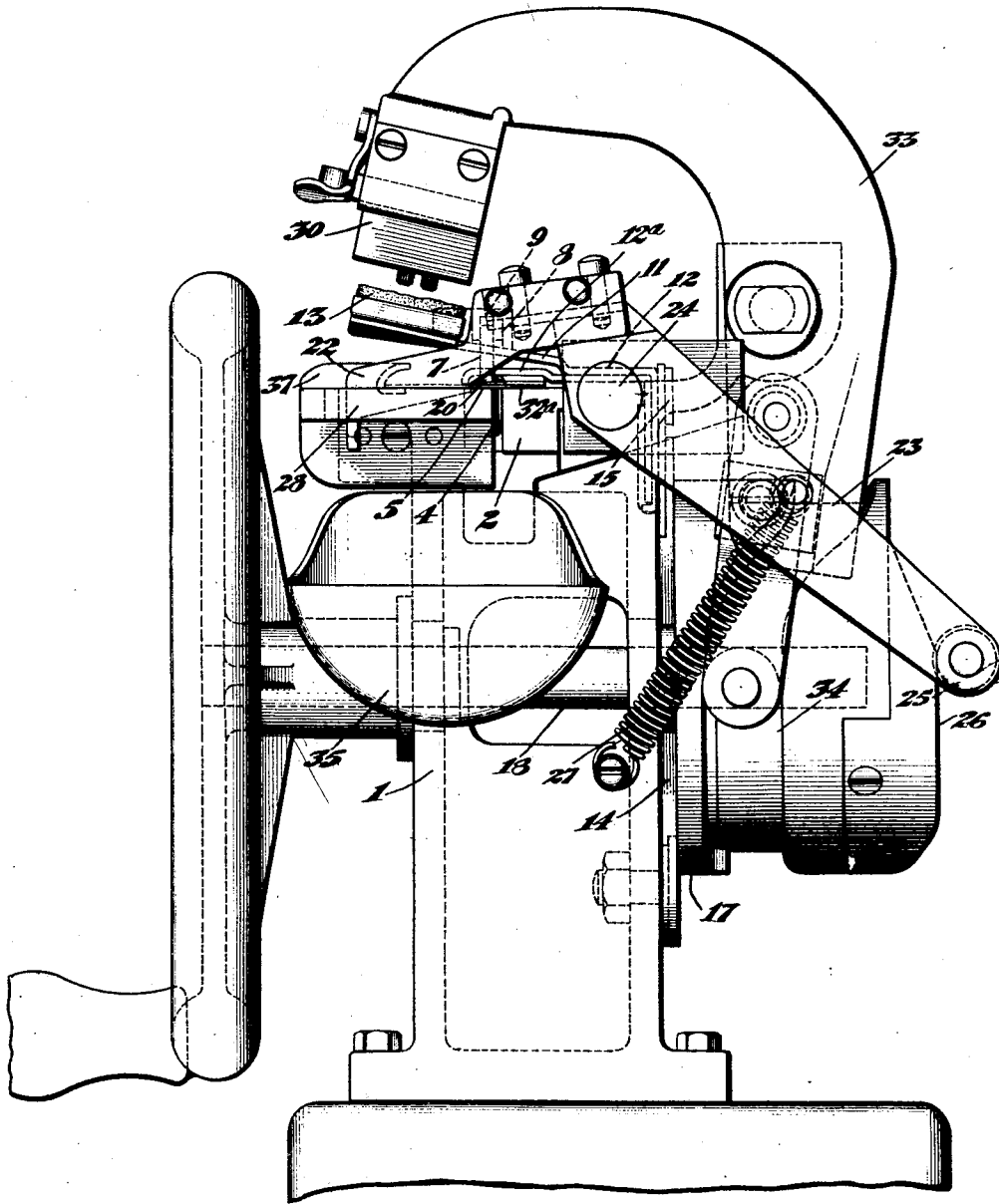


Fig. 1

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3 Sheets-Sheet 2

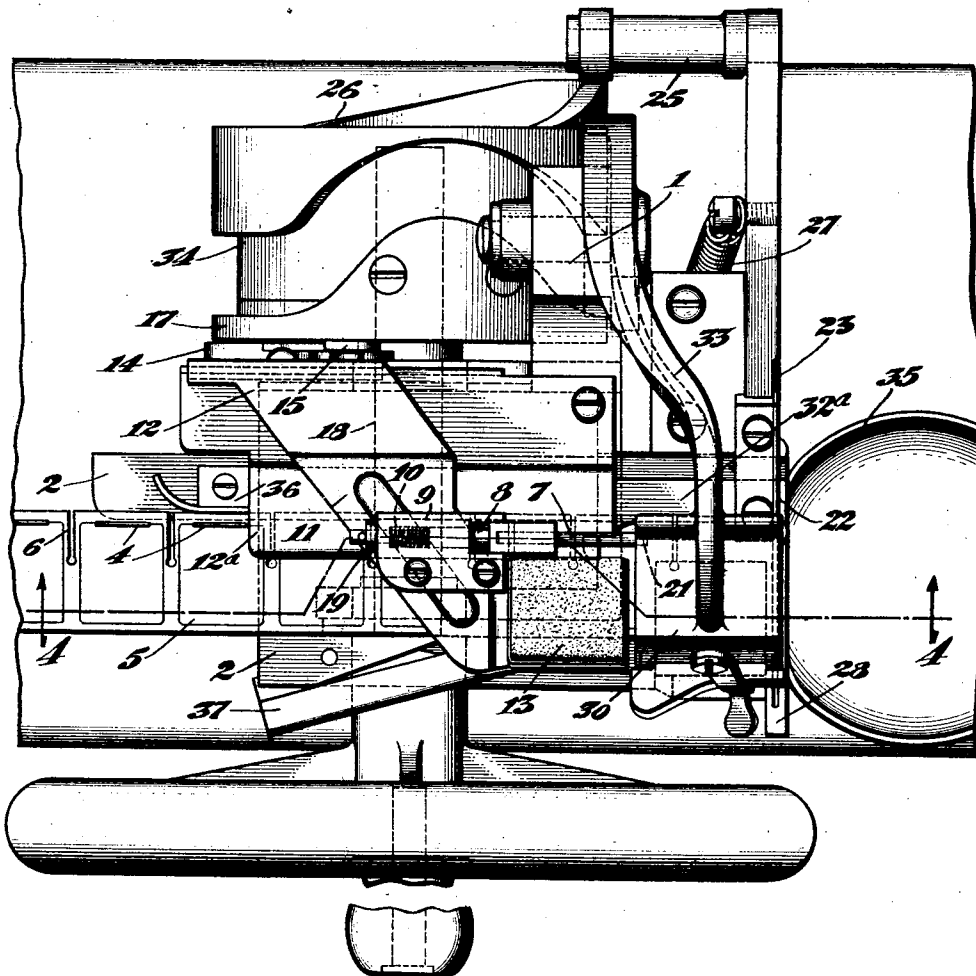


Fig. 2

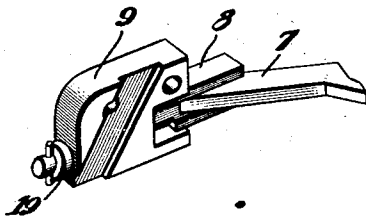


Fig. 3

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3 Sheets-Sheet 3

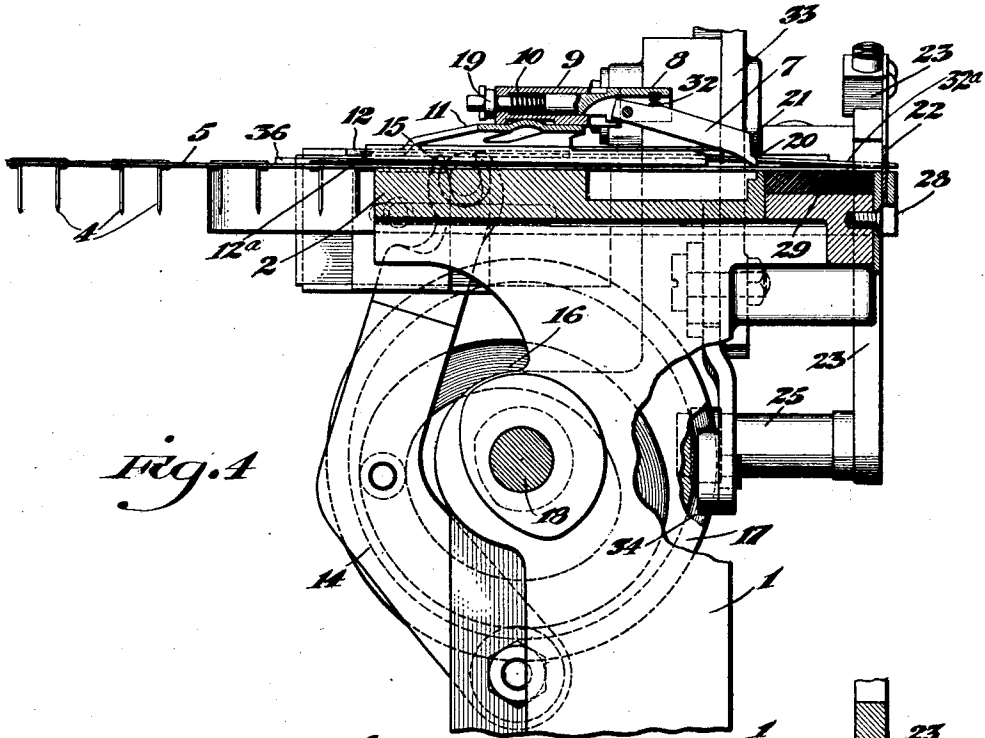


Fig. 4

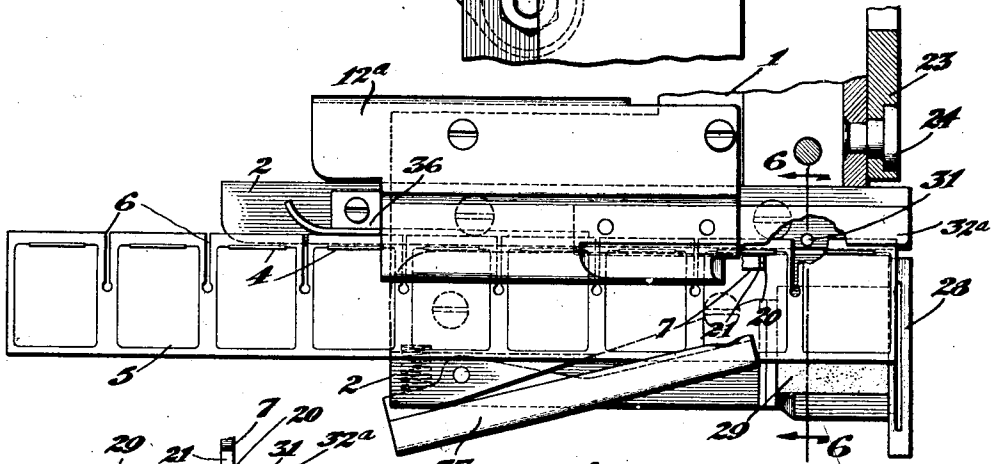


Fig. 5

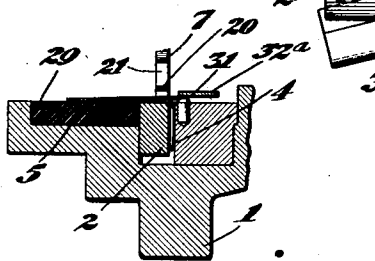


Fig. 6

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UNITED STATES PATENT OFFICE.

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TAG-PRICE-MARKING MACHINE.

Application filed November 29, 1926. Serial No. 151,580.

This invention relates to improvements in tag or ticket price marking machines, and particularly to the feeding or severing mechanism thereof, wherein tags in gang form are consecutively fed beneath a printing head for printing the price marking or other data thereon and the severance of the tags from one another, the tags in gang form constituting a strip of cardboard material having definitely spaced notches cut in from one edge of the strip, the notches utilized for obtaining an edge or shouldered engagement by the feeding mechanism, and the spacing of the notches usually determining the width of the individual tags.

In severing the tags from the strip it has been the practice to merely slit or shear-cut across the strip at the notches. This produces an offset or irregular edge, which detracts materially from the appearance of the product and also is objectionable in use, in that a bur-like point is produced at the offset which can be caught by the fibres of any fabric placed over the tag.

With the present invention, the tags are cut from the strip by a die cut corresponding in width to that of the notch, producing a flush cut edge for the ticket. This necessitates greater accuracy in feeding the strip to bring each notch into accurate registration with the cutting dies.

Therefore, it is an object of the invention to provide a reciprocating feeding mechanism for feeding a tag strip adapted to engage with notches in the strip for successively advancing the strip in degrees corresponding to or measuring with the notch spacing, and bring the notches in their order into registration and alignment with the cutting dies for cutting the strip at the notches, and in flush edge therewith to sever the tags from the strip.

Another object of the invention is to provide a reciprocating feed finger for intermittently advancing or feeding a strip, the strip having apertures or notches there-through for finger engagement, and control the degree of advance with each reciprocation of the finger, the finger to yield in the direction of strip advance, permitting the same to be arrested by engaging a rigid abutment and thereby positively limit the advance of the strip, and bring an aperture or notch therein in registration with a sever-

ing device or dies for cutting the strip coincidentally with the notch or aperture.

Another object of the invention relates to the use of a movable cutter die as the means for arresting the feed movement of the feed finger.

Another object of the invention is to provide a feed finger with a projecting tang for engagement into a notch or aperture in the strip to feed the strip, and with a shoulder in an offset relation from the tang for engaging an abutment adapting the aperture or notch to be brought into definite relation with a cutting die or tool.

Another object of the invention is to provide means for canting a portion of the strip at the point of finger engagement therewith, to more advantageously present an edge or shoulder of the strip in an abutting position with the finger.

Other objects and certain advantages will be more fully set forth in the description of the accompanying drawings forming a part of this application, in which:

Figure 1 is a front elevation of a tag price marking machine containing the improve-

Figure 2 is a top plan view thereof.

Figure 3 is a perspective view taken from the lower side of the tag strip feed finger and its holder.

Figure 4 is a section on line 4-4 of Figure 2.

Figure 5 is a top plan view of the tag strip supporting table or track with the parts of the machine supported above the table omitted.

Figure 6 is a section on line 6-6, of Figure 5.

Referring to the drawings, 1 indicates a pedestal or frame upon which the various parts of the machine are supported or journaled. The head of the pedestal is provided with a table or track 2 represented as a plate arranged with a groove or channel longitudinally therein to receive the depending prongs of the metallic fasteners or staples 4, with which the tags of the strip 5 are provided. The tag strip 5 operated upon by the machine, is a commercial product comprising a strip of cardboard material combining a number of tags in gang form, the tags being designed or individualized by notches 6 cut laterally or extending into the strip from

a longitudinal edge thereof. The notches provide for successive tag strip engagement by a reciprocating feed finger for progressively advancing the strip upon the table in
 5 step degrees corresponding to the notch spacing, bringing the tags consecutively beneath a printing head for printing the desired price marking or other data upon the strip, and for positioning a previously
 10 printed tag to a delivery position for severance from the strip. The severing of the tag from the strip follows on a line with the notch.

It has been the practice in commercial
 15 machines of this character to sever the tags from the strip by a knife or cutter, producing a slit or shear cut approximately along a line centrally of the width of the notch which offsets the cut edge from the
 20 notch edge, presenting a tag edge which is detracting in its appearance and also objectionable, permitting the tag to catch into the goods ticketed, resulting in injury either to the goods or to the tag.

With the present invention, the severing is accomplished by a die cut corresponding to the width of the notch, producing a flush edge, and in the present capacity of the machine, the moving cutter cooperates with the
 30 feed finger to limit its feeding stroke and align or square the notch with the cutter die.

The tag strip is progressively advanced by a spring depressed feed finger 7 dependently and pivotally secured within a notch formed
 35 in a plunger 8 movably mounted within a holder 9. The plunger has its shank portion or stem counterturned and slidably engaged within a bore in the holder 9, and sustained under yielding pressure outwardly by a
 40 spring 10 within the bore of the holder. The spring is coiled about the stem providing a yielding mounting for the feed finger, permitting the same to engage against an abutment to arrest its advance or movement
 45 toward the forward limit of the feeding stroke of the finger. The holder 9 is mounted upon a horizontally extended arm 11 of a carriage 12 slidably mounted on a carriage slide member 12^a upon the machine
 50 frame 1. The arm 10 at its forward end also carries an ink pad 13 movable with the carriage beneath the printing head, for inking the type carried by the printing head.

The mechanism for reciprocating the carriage and for operating the printing head may be of any type of construction, the construction herein disclosed being similar to that now employed in machines of this character now in commercial use. In general,
 60 such carriage operating mechanism and printing mechanism comprises a lever 14, one end thereof being pivotally supported or mounted upon the frame 1 of the machine, with the opposite end forked to engage with
 65 a headed pin 15 carried by the carriage.

The lever 14 intermediately is provided with a roller extending into a cam groove 16 of a cam wheel 17. The cam wheel is fixed to a shaft 18 journaled in the frame 1, and rotated by a hand crank wheel. The machine herein disclosed is shown as hand
 70 operated but any form of power means may be employed for driving the shaft 18.

The plunger 8 is shouldered to engage one side of the holder while a washer 19 is confined upon the shank of the plunger at an opposite side of the holder, and movably secures the plunger upon the holder. The forward end of the feed finger 7 is provided with a tang 20 projecting beyond the squared
 80 forward end 21 of the finger at a distance corresponding to the width of the notches in the tag strip. The function for such finger construction is to permit the tang portion of the finger to engage into the notch
 85 and against the rear edge of the foremost ticket formed by the notch to feed the tag strip in the forward movement of the finger. The finger 7, mounted upon the end of the spring-pressed plunger 8 moving with the carriage, is arrested at the end of its forward feeding stroke by striking against an abutment, limiting the finger feeding stroke. The abutment in this instance, comprises a movable die or knife 22 extending
 95 transversely of the tag strip and in the path of the butt end of the finger above the projecting tang 20 thereof. The movable die, during the strip feeding interval, is raised sufficiently to allow the strip to pass beneath
 100 the die and also the tang portion of the finger engaged into the notch of the tag strip in shouldered contact with an edge of the strip formed by the notch. This aligns the notch in the tag strip with the dies and
 105 governs the length of strip feed. Yieldingly mounting the finger upon the carriage so as to be independently movable in the direction in line of the carriage traverse, accommodates for any increment in carriage movement over that of the finger when engaged with the abutment or movable die, eliminating accurate or micrometric adjustment of the carriage relative to a measured length of strip feed. The strip is accurately fed for
 115 measured lengths, governed and controlled by the definite spacing of the notches in the tag strip. The tang projection from the finger is gauged to the width of notch, so that when the butt end of the finger engages
 120 the movable die or abutment the notch engaged by the finger is always brought in registration and alignment with the dies. The rear portion of the movable die in its cutting stroke, clears the tang, the die cutting the strip forward of the notch along a line or lines contiguous with the notch or slit, so that the feeding finger can be at rest at the end of its forward feeding stroke during the cutting operation of the dies. With the
 130

notches of the tag strip consecutively brought into registration and alignment with the cutting dies, and the cutting dies making a cut corresponding to the width of the notch, the tag is cut from the strip to a flush or straight edge.

The movable die blade 22 extends laterally of the table and is removably connected upon an end of a lever 23 pivoted at 24 to the frame of the machine. The opposite end of the lever 23 has a lateral extension 25 having a roller engaging a cam groove 26 at the outside face of the cam wheel 17. The lever and its roller are yieldingly held in engagement with the cam by a spring 27, one end thereof being fixed upon the lever and the opposite end to the machine frame. The movable die blade cooperates with a stationary die 28 fixed to the frame in front of the table which is provided with a die slot corresponding to the width or thickness of the die blade.

The forward end of the die blade is provided with a depending tang which is out of reach of the tag strip and always engaged in the die slot for maintaining the alignment and registration of the die blade with the die slot. The tang being out of reach of the tag strip does not interfere with its feeding advance when the die blade is in a retracted or elevated position. The swinging motion of the die blade produces a shear action in cutting the strip and consequently produces a clean sharp cut edge without strain to the blade, increasing its life, and adapting the same to be used for a long period without grinding or attention.

In Figure 1 the machine is disclosed in its normal or rest position with the die blade fully engaged with the stationary die, serving as a stop for the tag strip in initially threading the strip into the machine. The strip is inserted or moved to bring the foremost tag of the strip into engagement with the blade, positioning the first tag upon the printing platen 29 and beneath the printing head 30. Thence, upon rotation of the hand wheel the die blade is retracted and the printing head is moved for an impression stroke printing the desired data upon the foremost tag. The various moving parts of the machine operate in a timed relation controlled by the configuration of the cams to effect ticket printing, strip feeding, and ticket severing operations in a single rotation or cycle of the hand wheel.

In the starting, the hand wheel is rotated for one or more times before the strip is inserted to ink the type so that the first ticket of the strip can be printed.

After the printing head has moved to its retracted position, the carriage with its inking pad and feed finger is moved forwardly bringing the pad beneath the type carried by the printing head, and permitting the en-

gagement of the feed finger with the tag strip into the first notch in order, to advance the strip, and bring a second ticket beneath the printing head and deliver the subsequently printed ticket to a delivery and severing position. The carriage has a slight dwell at the end of its forward stroke to sustain the inking pad beneath the type of the printing head for inking the type, the printing head at such interval being moved downwardly to an appropriate stroke degree to compressively bring the type upon the inking pad after which the printing head and carriage, with its pad and feed finger, are retracted and the die plate moved to sever the delivered and printed ticket from the strip.

The machine is capable of operating at a high rate of speed, and therefore, to insure a substantial engagement of the feed finger with the notch or edge shoulder formed by the notch, and to prevent the finger from passing the notch, the ticket at its finger engaging end is slightly elevated above the plane of the table by a conical headed pin 31 as disclosed in Figures 5 and 6. The notching of the strip permits the tags to be raised slightly above the plane of the strip as they ride over the pin, thus bringing the edge of the ticket more prominently into an engaging position with the tang end of the finger, which is held depressed by a spring 32 inserted between the finger and holder, and without seriously raising the tag as to cause it to be injured or interfered with in printing. A flat spring 32^a is secured to the carriage slide member and extends out over the tag being printed, resiliently engaging the margin of the tag strip beyond the staples 4. The spring maintains the tag strip firmly against the printing platen thereby providing a firmly held tag surface to be printed by the descending printing head.

The printing mechanism in detail of construction follows substantially as is now employed in machines of this class, and comprises a lever 33 suitably pivoted to the frame of the machine and of arcuate form to bring the same forwardly over the table and printing platen thereof, the forward end or printing head of the lever being provided with a removable type chase in which the type bars are removably carried. The lever 33 is provided with a link which at its lower end carries a roller engaged in the cam groove 34 in the periphery of the cam wheel 17. The link provides means for adjusting the lever throw, likewise heretofore employed in machines of this class.

A receptacle 35 is attached to the frame adjacent the discharge end of the machine for receiving the severed tags which drop from the die edge.

The tag strip is guided by means of what

may be termed an extensible guideway, of the following construction: A stationary inner guiding plate 36 having an upwardly turned edge disposed to engage along the inner edge of the tag strip is secured upon the table 2. The outer guiding edge consists of a spring urged pivoted plate 37 for maintaining the tag strip against the inner guideway. The plate 37 is pivoted to the table 2 at the rear thereof, with the forward edge of said plate held in engagement with the tag strip outer longitudinal edge by means of a coil spring. The movable guide member swings in a depression or cut out portion of the table 2 with the pivoted or attaching end thereof secured in a slot in the table. Various widths of tag strips can thus be fed through, the guiding instrumentality accommodating itself to the particular tag width.

Having described my invention, I claim:

1. In a machine of the class described, means for supporting and guiding a tag strip, the strip being notched at definitely spaced intervals longitudinally for feed finger engagement therewith, a reciprocating strip feeding finger having a blunt end with a tang extending therefrom, the tang adapted for engagement into a notch in the strip during the finger feeding stroke to advance the strip and a movable die blade intercepting the blunt end of the finger to limit the finger movement when the engaged notch is in registry with said blade, said blade being movable for severing the strip coincidentally with the notch after the retreat of the finger.

2. In a machine of the class described, means for supporting and guiding a tag strip, the strip being notched at definitely spaced intervals longitudinally for feed finger engagement therewith, a reciprocating strip feeding finger for engagement into a notch in the strip during the finger feeding stroke to advance the strip, and a

movable die blade intercepting the finger to limit the finger movement when a notch is in registry with said blade, said blade being movable for severing the strip coincidentally with the notch after the retreat of the finger.

3. In a machine of the class described, means for supporting and guiding a tag strip, the strip being notched at definitely spaced intervals longitudinally for feed finger engagement therewith, a carriage reciprocating longitudinally with the strip, a feed finger longitudinally yieldingly mounted upon the carriage and moving therewith, said finger being depressed for engagement with a notch in the strip during the finger feeding stroke to advance the strip, and a movable die blade intercepting the finger to limit the finger movement when a notch is in registry with said blade, said blade being movable for severing the strip coincidentally with the notch after a retreat of the finger.

4. In a machine of the class described, means for supporting and guiding a tag strip, the strip being notched at definitely spaced intervals longitudinally for feed finger engagement therewith, a carriage reciprocating longitudinally with the strip, a feed finger longitudinally yieldingly mounted upon the carriage and moving therewith, said finger being depressed for engagement with a notch in the strip during the finger feeding stroke to advance the strip, a movable die blade intercepting the finger to limit the finger movement when a notch is in registry with said blade, said blade being movable for severing the strip coincidentally with the notch after a retreat of the finger, and means for operating said carriage and die blade in timed relation.

In witness whereof, I hereunto subscribe my name.

FREDERICK KOHNLE.