Feb. 3, 1942. F. KOHNLE 2,271,840

PRICE TAG MARKING MACHINE

Filed June 5, 1939 3 Sheets-Sheet 1

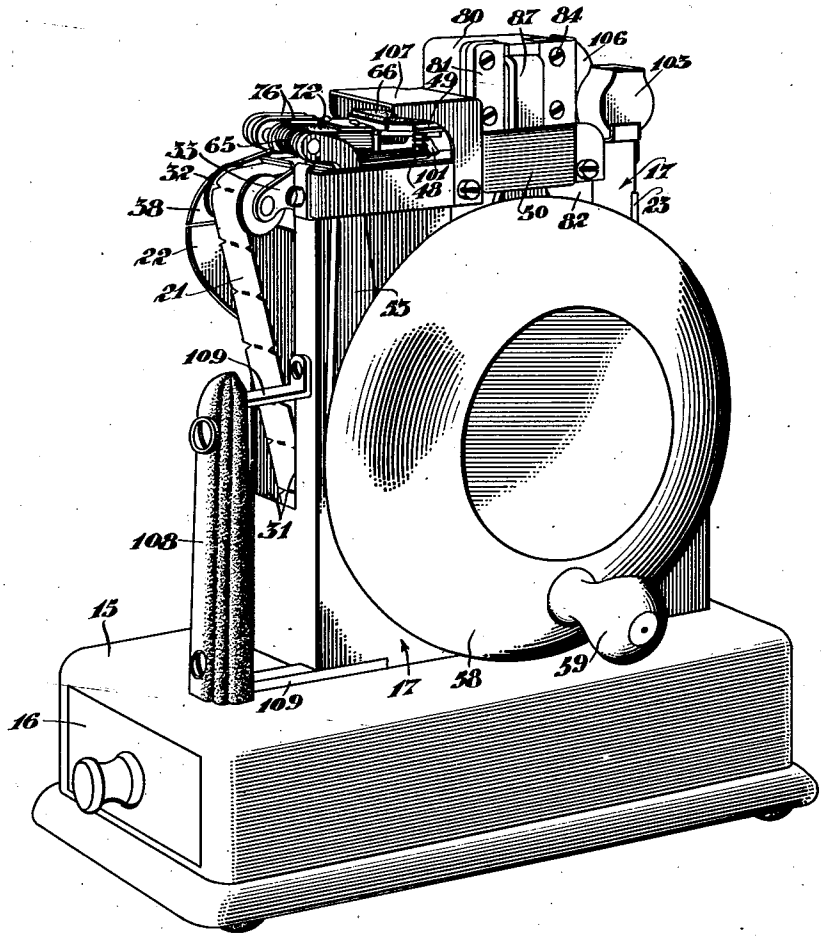



Fig. 1

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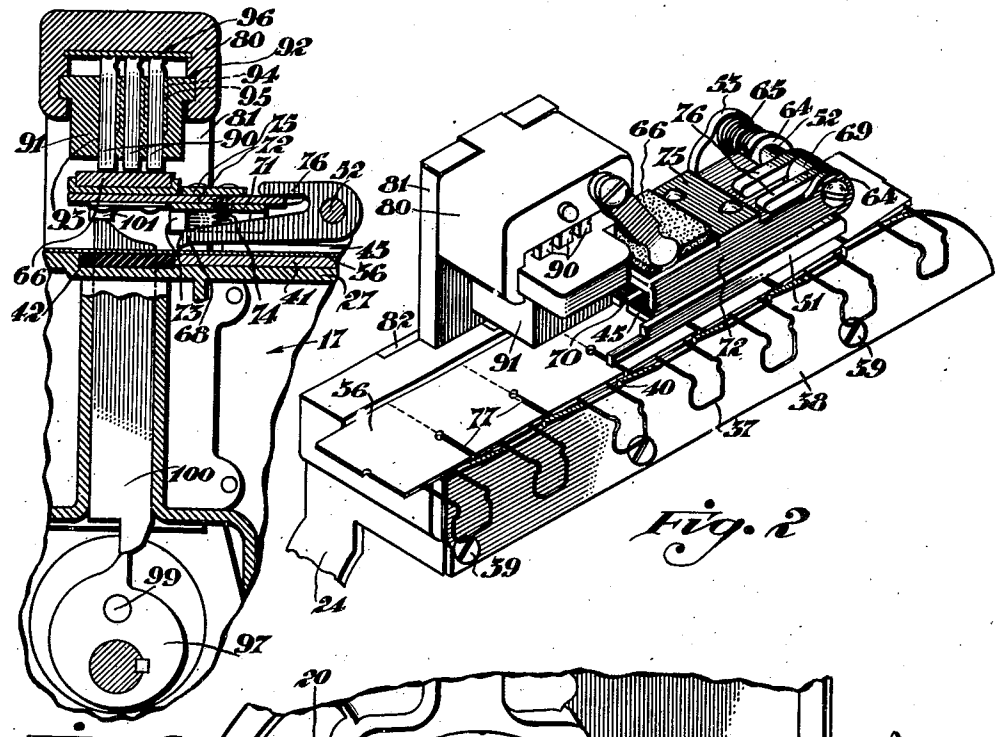



Fig. 2

Fig. 6

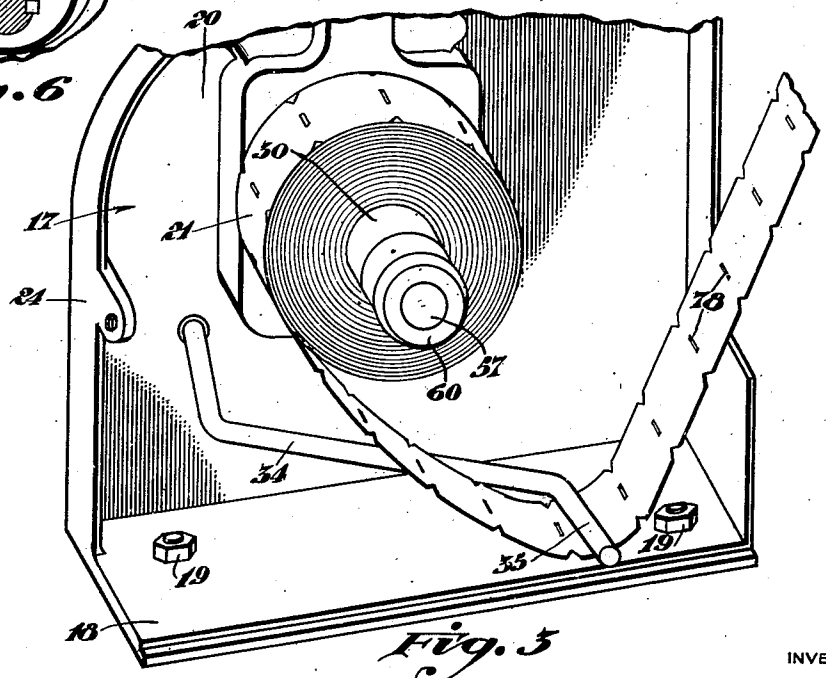



Fig. 3

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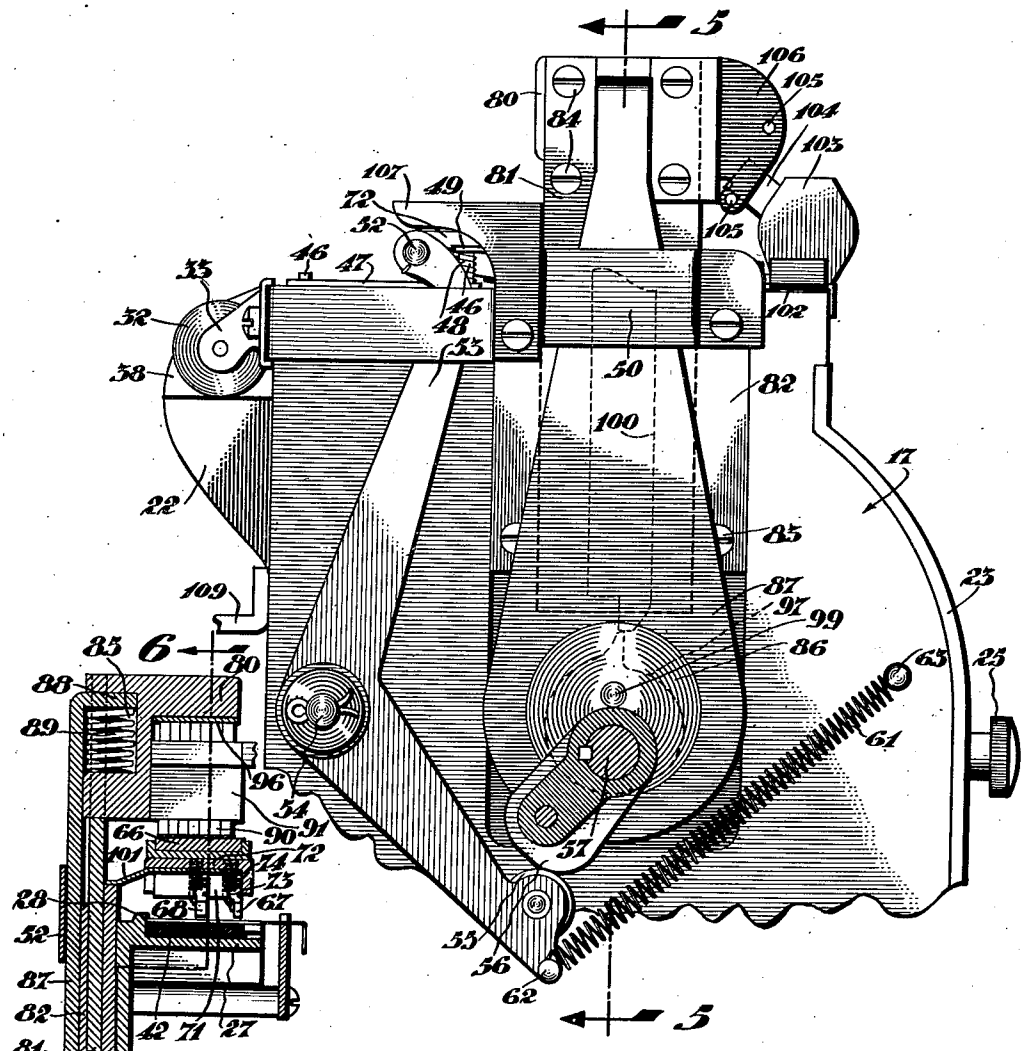



Fig. 4

Fig. 5

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# UNITED STATES PATENT OFFICE

2,271,840

## PRICE TAG MARKING MACHINE

Frederick Kohnle, Dayton, Ohio, assignor to The Monarch Marking System Company, Dayton, Ohio, a corporation of Ohio

Application June 5, 1939, Serial No. 277,363

9 Claims. (Cl. 101—292)

This invention relates to machines for marking price tags or tickets. More particularly, it relates to machines of the type designed for receiving and feeding rolls or strips of tickets and for presenting the tickets successively beneath a printing head.

There are a great many types of price marking tags or tickets on the market. Among these, for example, are those known as pin tickets, string tags, sew-on tags, foldover tickets, gum labels, button tags, and slip-fold tickets. It has been the broad object of the present inventor to provide a machine which will receive and price mark any of the above types of tickets or tags.

It is recognized that a great many patents have been issued on marking machines for price marking tickets or tags. These machines, however, in general have been large and the mechanism intricate. It has been the object of the present inventor to provide a machine, for price marking tags or tickets, which is extremely light and compact and which is easily carried about the department store. This accomplishment requires a complete reorganization of the operating parts in order that the movements may be fitted closely together within the narrow space provided in a slender casing having no lateral projections of any extent. This has been done in the present invention without loss of efficiency in the operation of the machine and without crowding the operation of price marking.

A machine of this character involves a guideway for the tickets, a feeding unit, a printing head and an inking pad. These parts must be operated in synchronism whereby the feeding unit feeds the strip a distance equal to the width of the ticket and delivers the tickets successively beneath the printing head. After each printing operation, the type should be re-inked. For this reason, the inking pad must be presented to the type. Thereupon the printing head descends and the printing operation takes place. These operations center at the region of the platen, upon which the tags are successively disposed for printing.

Accordingly, it has been, in the more detailed sense, the object of the present inventor to provide a mechanism in which the movements for these respective elements are compactly related. At the same time, it has been necessary to keep in mind the adaptability of the machine to all types of tags whether of strip or roll form. Accordingly, a machine has been provided which makes provision for the housing or mounting of rolls of tickets in the machine without materially increasing the size of the machine. The result has been a machine of unusually slender proportions and unusual compactness.

Also it has been provided that the movement for the inking of the type is exceedingly rapidly accomplished when the feeding unit, which bears the inking pad, is at the forward end of its stroke.

Other objects and certain advantages will be more fully apparent from a description of the drawings in which:

Figure 1 is a perspective view of the price marking machine of this invention looking toward the operating side.

Figure 2 is a perspective view of the table portion of the machine showing a strip of tickets of slip-fold type being fed through the guideway.

Figure 3 is a perspective view of the casing portion of the machine with the side plate removed showing a roll of gummed labels in position for feed through the machine.

Figure 4 is a fragmentary side view of the machine with the crank wheel removed for illustrating the operating means for the printing head and the feed unit.

Figure 5 is a sectional view taken on line 5—5, Figure 4, illustrating the operating mechanisms for the printing head and the inking pad.

Figure 6 is a sectional view taken on line 6—6, Figure 5, illustrating the details of the inking pad operating mechanism.

As shown in the drawings, the machine is mounted on a base 15. This base constitutes a cabinet in which a filing drawer 16 is mounted. This drawer provides compartments (not shown) in which a supply of type elements is contained. The frame or body 17 of the machine is in the form of a vertical plate, including a base flange 18, fixed to the cabinet by means of bolts 19. This element 17 constitutes one wall of a container 20 for a roll of tickets indicated at 21. The enclosure is completed by means of a side cover plate 22 constituting the other side wall and completing the end walls of the chamber. An end flange 23 of the cover plate overlies the end flange 24 of the frame plate. A screw 25 is engaged through these flanges for holding the cover plate in position.

The frame includes a horizontally disposed top flange, providing a table or guideway 27, across which the tickets are fed to the printing head. This table provides an inner longitudinal wall 28 for guiding one longitudinal edge of the ticket strip.

The machine is designed for price marking different types of tags. For example, as shown in

Figure 3, the gum type of label, wound in rolls 21, may be price marked by the machine. The roll of tickets is mounted within the chamber on a hub or sleeve 30 projecting from the frame. The forward wall of the chamber includes a clearance opening 31 and the length of tickets is fed from the roll through this opening. A flanged roller 32 is journalled on a bracket 33 fixed to the forward end of the delivery table. The top of the periphery of the roller is substantially in the same plane as the top of the table. The roller also serves as a guide for delivering the length of tickets to the table since the distance between its flanges is substantially equal to the width of the tickets. A drag element 34 is pivotally mounted in the frame wall. This element, made from a length of wire, is bent to extend downwardly from the pivotal point and includes a horizontally disposed portion 35 resting upon the strip as it leaves the reel and moves through the exit opening.

Straight strips 36 or lengths of tickets of the slip-fold type may also be fed through the machine, as shown in Figure 2. The wire clips 37 of the tickets extend from the side edges of the strip. A side rail 38 is fixed to the side of the table portion by means of screws 39. This rail engages and supports the clips as the strip moves along the table. The top edge of the rail is notched as at 40. The notches are spaced apart the length of the respective tickets. Each notch provides a flat supporting portion in the same plane with the table. Accordingly, the strip may rest, without interference, upon the flat table surface for printing, particularly at the platen beneath the printing head. At the same time, the guiding function of the rail is not impaired since a portion projects above the table surface.

That portion of the table, over which the ticket feeding mechanism operates, is provided with a wear plate 41 countersunk in the table top so as to dispose its top surface in the same plane with the delivery end portion of the table. This wear plate terminates or is cut out to provide a space, within which the platen 42, formed of rubber in this instance, is disposed. The removable wear plate is provided for the reason that the table wears, over a period of time, due to the drag of the feeding fingers across its surface.

A pressure plate 45 is mounted above and along the table loosely upon a pair of pins 46. A side flange portion 47 of the plate engages these pins. The plate is held down by a coil spring 48 under compression, around one of the pins, between the flange portion of the guide plate and a flange 49 of a guide plate 50. The end of the plate 45 adjacent the roller 32 is turned upwardly to provide a flared entrance for the strip of tickets as it comes from the roller. Also, the outer side edge of the plate is turned upwardly to provide a side flange 51. This flange extends ahead of the plate in contact with the guideway and thereby provides an outside guiding edge for the gummed strip. When the wider or slip fold strip is being fed, the flange 51 rides on top of the strip.

The feeding and inking unit is mounted for reciprocation above the pressure plate and along the table on a stud 52 projecting from the upper end of an actuating lever 53. The actuating lever is of bell crank form. It is mounted on the pivot pin 54, projecting from the outer face of the frame. A cotter pin and washer hold the lever on the pin. The lower end of one arm of the bell crank carries a roller 55, which is engaged by a cam 56 fixed to the drive shaft 57, journalled in the reel supporting hub 30 previously mentioned.

A crank wheel 58 is fixed to the forward end of the shaft and includes a crank arm providing a loosely rotating manipulating knob 59. The wheel houses and conceals the actuating parts for the various movements of the machine. The collar 60 is fixed on the inner end of the shaft. Thus the shaft assembly is maintained.

A coil spring 61, under tension between a pin 62 on the actuating arm of the levers 53 and a fixed pin 63 on the frame, holds the roller against the cam and thus returns the feeding unit. The lever 53 lies against the outer face of the frame. Its upper end is maintained against the face by means of the retaining or guide plate 50 fixed to the outer face of the frame. This plate is pressed to provide a guideway within which the arm may swing.

One end of the feeding unit is provided with side lugs 64, which are traversed by the supporting stud 52 of the lever. The unit extends forwardly over the pressure plate. It is normally held downwardly by means of a coil spring 65 wound around the stud, having one end fixed thereto and the other end hooked over a lug 64 of the unit for exerting a rotating tension. This forwardly projecting unit carries an inking pad 66 on its forward end.

The feed fingers 67 and 68 have their rear ends pivotally mounted on the support stud and are spaced apart by means of a sleeve 69 interposed therebetween on the stud. They include downwardly pointed sharp forward ends sliding in contact with the surface of the wear plate of the table through clearance slots 70 in the pressure plate 45. A spring mounting and guide block 71 is fixed to the underside of the body 72 of the feeding unit. This block includes slots 73 in its underside, in which the fingers are disposed. Coil springs 74, under compression are provided between the fingers 67, 68 and a plate 75 fixed to the top of the unit through bores in the block and body of the unit.

After the unit has moved to its forward position, its forward end is lifted by means of a mechanism, hereinafter described, which is effective for inking the type and for lifting the feeding fingers clear of the ticket strip. This lifting action brings about a lifting action on the fingers. For this purpose, the fingers include forward extensions 76 lying upon the top of the main element of the feeding unit. Appropriate clearance is afforded between the extensions 76 and the fingers 67, 68 so that the fingers are free to move or drop into feeding engagement with the strip under the influence of the springs. However, as the feeding unit is swung upwardly, it engages these extensions and raises the fingers to clear the notches in the tag strips. When the unit returns to its rear limit of travel, the fingers are raised by engagement with the pressure plate, as they leave the ends of the clearance slots.

Each strip is provided with notches or slots 77 defining the tag portions and providing the means for engagement by the feeding fingers. In the instance of the slip-fold type, the notches are along one side edge, whereas, in the strip of gummed labels, cross slots 78 are provided centrally of the width of the strip on the lines of separation of the tickets. Thus, when the slip-fold type of ticket is being fed, the outer finger 67 engages the notches 77, whereas, when

the strip of gummed labels is being fed, the inner finger 68 engages the central notches 78.

A printing head 80 is vertically slidably mounted on the frame. The face of the frame is vertically grooved. A slide 81 carrying the head 80 is mounted for reciprocation in the guideway and is held in place by means of a plate 82 fixed in a countersunk portion of the frame by means of screws 83. The back of the printing head is vertically notched to receive the bifurcated upper end of the slide plate. Screws 84 fix the head to the bifurcations of the plate. Thus the plate end straddles a lug portion of the head. This lug portion is crossnotched to provide a spring chamber 85.

The shaft 57 carries a crank disc 86. This disc is disposed in the bore of a crank arm 87 lying against the outer face of the frame. The upper end of the crank arm includes an inwardly turned portion 88 disposed at the upper end of the recess in the back of the head. A heavy coil spring 89 is disposed under compression between the base of the spring socket and this inwardly turned portion of the crank arm.

Thus, a flexible connection is provided between the actuating means and the head. The crank arm may swing back and forth as it is actuated by the eccentric but the printing head moves in a directly vertical line. Moreover, the type elements 90, mounted in the printing head, yieldably engage the ticket in the printing operation so that the printing is uniform and the type does not cut into the tag.

A type chase 91 of previously disclosed form, is slid into the printing head and is supported on ways 92 formed therein. The type chase provides type supporting sockets 93, which have vertical grooves 94 in their side walls, terminating short of the bottom of the chase. The type elements include fins 95, engaged in these grooves and are thereby suspended in the sockets. As the type elements engage the ticket, they move upwardly into engagement with the adjacent surface 96 of the printing head for positive abutment in the printing operation.

The inking of the type is performed by means of a cam 97 fixed alongside of the crank disc between the crank disc and the frame. Spacer discs 98 are interposed along the shaft between the crank disc and the cam, just mentioned for taking up the space resulting because of the thickness of the slide 81 of the printing head and its retainer plate 82. A pin 99 holds these parts, that is, the crank disc, the cam and the spacers, for unitary rotation.

The cam 97 actuates a vertically mounted slide 100, the upper end of which engages a downwardly extended spring clip 101 on the base wall of the feeding unit. This cam has an abrupt shoulder to permit quick lowering motion of the pad. Thus, when the feeding unit is at forward position, this mechanism will urge it upwardly, moving the inking pad against the type.

As accessories to the machine, a cover 102 overhangs the forward part of the guide. The strip of tickets is delivered between this cover and the guideway. A counting device 103 may be mounted at the forward end of the guideway and actuated by the movement of the printing head. The lever 104 of the counting device is disposed between a pair of actuating pins 105 carried by a bracket 106, fixed to the printing head. A cover plate 107 is fixed to the side of the frame and overhangs the inking pad when it is in return position, thus preventing contact of any sort with the pad or the deposit of dirt thereon. The machine may be carried by means of a handle 108 consisting of a vertically disposed element attached to the forward face of the frame by means of arms 109.

*Operation*

It will be assumed that the mechanism is in position with the feeding unit drawn back. The strip of tickets is inserted sufficiently to place its first notch in front of the feed fingers. The crank is then operated and the appropriate feed finger engages the notch or slit of the ticket strip. The strip is then fed forwardly through the guide the width of the ticket. As it comes to rest, the inking pad is raised against the type. This same motion disengages the fingers by a slight lifting action. The feeding unit then drops down as the slide retreats or moves back under the influence of the spring. As soon as the feed unit is clear of the printing head, the printing head moves down and effects the printing of the ticket resting on the platen. This cycle of operation may be continuous each time a ticket is delivered forwardly and another ticket brought up for printing.

The subject matter of this application concerned with the structure of the strip feed mechanism per se, is disclosed and claimed in the copending application of Frederick Kohnle, filed January 16, 1940, Serial No. 314,116, and entitled "Price tag marking machine."

Having described my invention, I claim:

1. In a price marking machine, a frame, a printing head slidably mounted in said frame, a guideway, feeding means for successively feeding tickets to position beneath said printing head, an inking pad pivotally mounted on said feeding means for lifting movement against the face of the type supported in said printing head, a slide resiliently engaging the inking pad, and a cam for actuating said slide, said cam providing an abrupt shoulder to permit rapid release of said inking pad from said type, prior to return movement of said feeding means.

2. In a price marking machine of the type including a frame including a guideway through which a strip of tickets is adapted to be fed, and means for intermittently feeding said strip of tickets, said guideway including a platen upon which the tickets are successively disposed; a slide carrying a printing head and slidably mounted in the frame, a link disposed in the frame alongside of and flush with the slide of the head and having a flexible connection with the head, and means for actuating said link longitudinally of the slide for actuating the slide.

3. In a price marking machine, a frame including a guideway for a strip of tickets to be successively price marked, a feeding slide traversing said guideway, an inking pad mounted on the slide, a printing head including a slide element, an actuating link having a flexible connection to the head, a slide for moving the inking pad upwardly into engagement with the type of the printing head, said frame including a second guideway at right angles to the first, said printing head slide, said actuating link, and said inking pad actuating slide lying in laminated relationship in the guideway, and means for actuating said head slide and inking pad slide in the proper sequence.

4. A price marking machine for receiving and successively marking the tickets of a strip of tickets, comprising a frame including a guideway,

a strip feeding unit reciprocably mounted relative to said guideway, said unit carrying an inking pad, a printing head carried on a slide mounted for vertical reciprocation in the frame above the guideway, said feeding unit adapted to move said inking pad under said printing head, a vertically reciprocably mounted slide adapted to move said inking pad upwardly against the type in said printing head when disposed beneath the printing head, said printing head slide and said last named slide disposed in adjacent planes and a drive shaft including actuating means for said slide and printing head respectively.

5. In a price marking machine, a frame including a guideway for a strip of tickets to be successively price marked, a feeding slide traversing said guideway, an inking pad mounted on the slide, a printing head including a slide element, an actuating link having a flexible connection to the head, a slide for moving the inking pad upwardly into engagement with the type of the printing head, said frame including a second guideway at right angles to said first named guideway, said printing head slide, said actuating link, and said inking pad actuating slide lying in laminated relationship in said second guideway, a shaft traversing the lower portion of the frame, a crank disc for the actuating link and a cam for the inking pad slide fixed on the shaft, said crank disc and cam disposed respectively in the same plane with the link and slide which they actuate, discs interposed between said crank disc and cam for spacing the same, and a pin traversing the crank disc, spacer discs and cam for locking them together, and means for rotating said shaft.

6. In a price marking machine, a frame including a guideway for receiving a strip of tickets, a feeding unit including fingers engaging the strip and reciprocably mounted in the guideway, an inking pad mounted for vertical movement relative to the feeding unit, a printing head including type disposed over the guideway, means for reciprocating said printing head, and actuating means adapted to engage under the inking pad when disposed beneath the printing head for engaging the pad against the type in the printing head.

7. In a price marking machine for receiving and successively marking the tickets of a strip of tickets, comprising a frame including a guideway, a strip feeding unit reciprocably mounted in said guideway, said unit carrying an inking pad, a printing head mounted for vertical reciprocation in the frame above the guideway, said inking pad adapted to be moved under said printing head, a vertically reciprocably mounted slide adapted to lift said inking pad against the type of the printing head, and a drive shaft including actuating means for said slide and printing head respectively.

8. In a price marking machine, a frame including a guideway for receiving a strip of tickets, means for advancing the strip in the guideway, an inking pad mounted for upward movement, a printing head including type disposed over the guideway, means for moving said inking pad under said head, and means adapted to engage under the inking pad when disposed beneath the printing head for engaging the pad against the type in the printing head.

9. A price marking machine of the type including a frame incorporating a guideway through which a strip of tickets is adapted to be fed, and means for intermittently feeding said strip of tickets, said guideway including a platen upon which the tickets of the strip are successively disposed comprising; a slide carrying a printing head, said slide mounted for vertical reciprocation in the frame and adapted to engage the printing head upon the tickets disposed on the platen, a link disposed in the frame along side of and flush with the slide, said link having a flexible connection with the head, and crank means engaging the link for reciprocating the link and the slide.

FREDERICK KOHNLE.