

March 7, 1944.

F. KOHNLE ET AL

2,343,617

PRICE TAG DELIVERY MECHANISM

Filed June 24, 1940

3 Sheets-Sheet 1

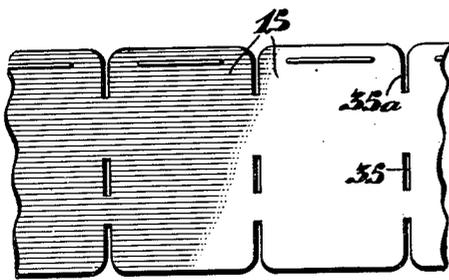


Fig. 1

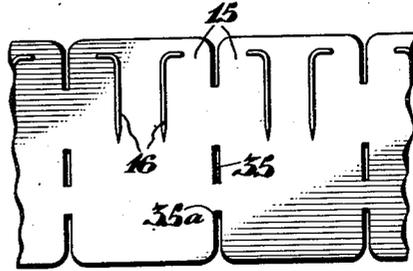


Fig. 2

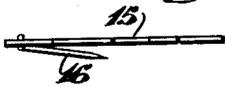


Fig. 3

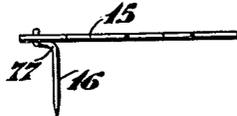


Fig. 4

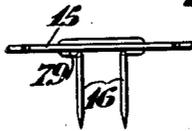


Fig. 5



Fig. 6

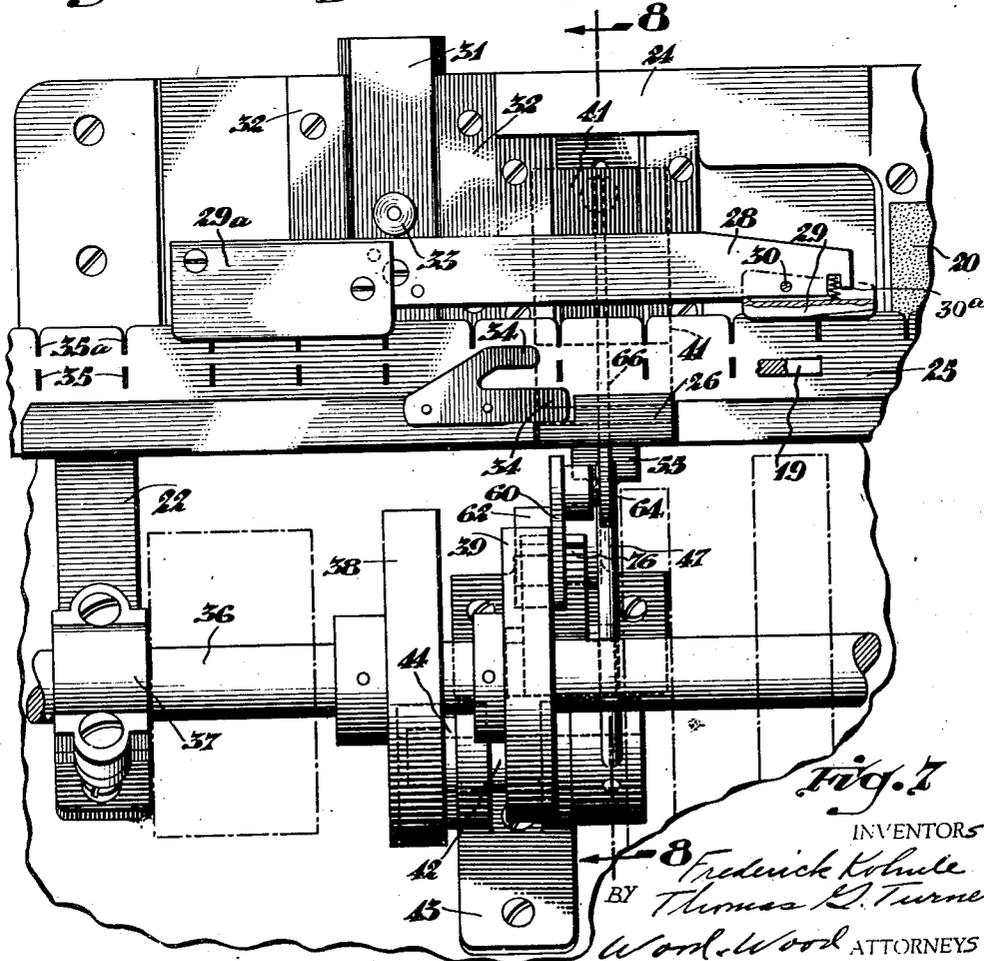


Fig. 7

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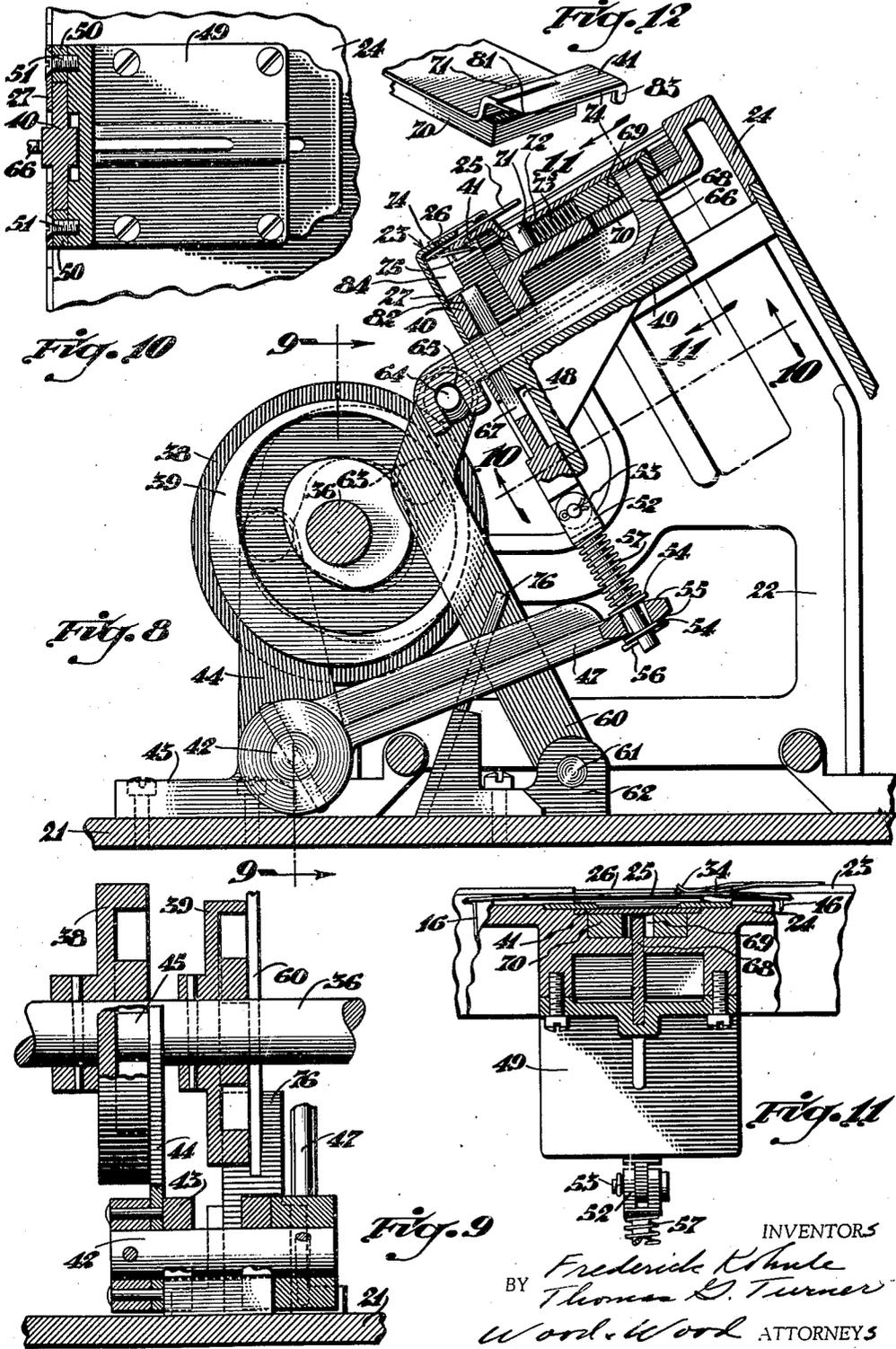
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3 Sheets-Sheet 2



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3 Sheets-Sheet 3

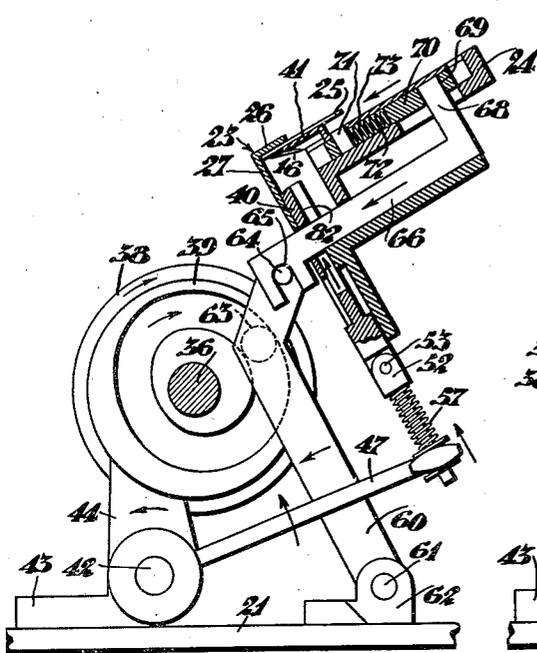


Fig. 15

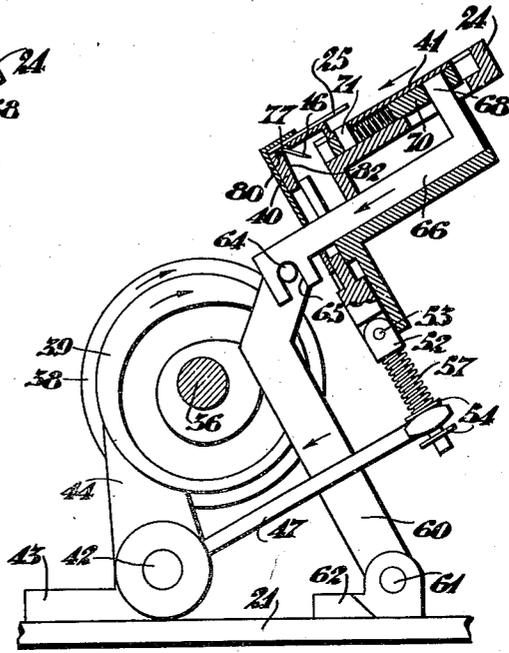


Fig. 14

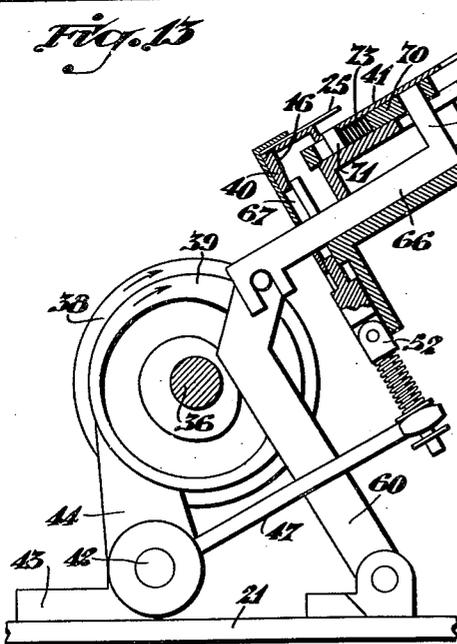


Fig. 13

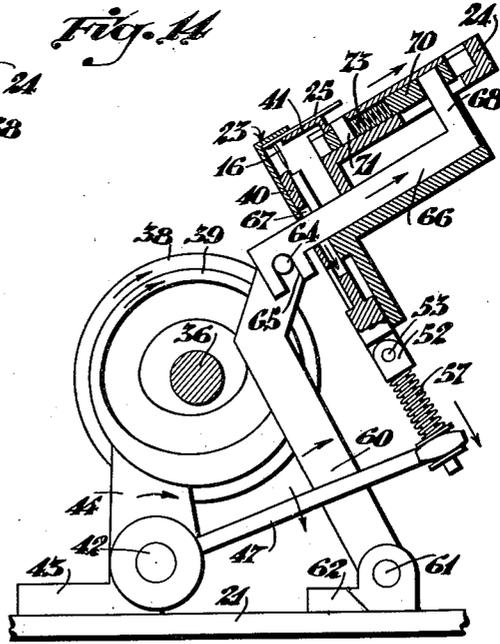


Fig. 16

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# UNITED STATES PATENT OFFICE

2,343,617

## PRICE TAG DELIVERY MECHANISM

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Application June 24, 1940, Serial No. 342,118

8 Claims. (Cl. 93—89)

This invention relates to price marking means and is particularly directed to apparatus operating on price tickets for disposing the attaching pins in position for attachment of the tag or ticket to the merchandise which is being price marked. More particularly, the apparatus disclosed herein is designed to receive and operate upon tags of the type disclosed in the previous Patent No. 2,112,627, granted to Frederick Kohnle March 29, 1938.

The patent referred to above discloses a rolled or coiled strip of pin tickets. Each ticket incorporates a wire staple providing a pair of prongs which are disposed in parallelism and adapted in use to extend perpendicularly from the face of the tag. In the patent, however, these prongs are arranged in position lying flat against the face of the tag whereby there is no interference with the rolling or coiling of the strip of tickets and furthermore wherein the sharp prongs are not in erect position where they would be apt to injure the person handling the strip. This arrangement makes a flat sided package for shipping purposes.

It is then, of course, necessary that the prongs be moved to an erect or perpendicular position and preferably in this operation that they be placed in such manner as to reinforce them, that is, to provide a better engagement thereof with the ticket so that they have a stable foundation or base on the ticket.

It has been the object of the present inventors to provide an apparatus adapted to receive the length of tickets from the coil with the prongs lying flat which will act upon the prongs for moving them to an erect or perpendicular position for attachment to the merchandise. This mechanism may be an attachment or adjunct of the same machine which price marks the tickets and is preferably provided in this environment. In other words, as the tickets are brought up to a printing and cut off mechanism, the pins are moved to perpendicular position.

It has been the further object of the present inventors to provide an apparatus which not only moves the prongs to perpendicular position but is effective for bending the major portions of the prongs at right angles to portions adjacent the attached portions of the prongs, whereby portions of the prongs constitute bases remaining flat against the ticket. More specifically, an embodiment of the invention consists of means which holds portions of the prongs against the face of the ticket while the balance of the prongs, that is, the pointed ends, are bent at right angles or

perpendicularly to the ticket. In the type of ticket shown, the clips are more or less U-shaped. An intermediate portion lies along one side of the ticket and the ends traverse the ticket. These ends are then reversely bent toward each other and bent into parallelism across the face of the ticket. When the apparatus of this invention has set them up, portions of the parallel prongs remain flat against the ticket and thus provide feet portions which are L-shaped in plan. By virtue of this arrangement the prongs do not rock or rotate in the paper but rather rest on these foot portions in a stable manner.

The method of attaching the tickets and the ticket as set up for attachment to the merchandise, form the subject matter of separate applications, respectively Serial No. 343,018, filed June 28, 1940, entitled "Method of forming price marking tags," and Serial No. 348,416, filed July 30, 1940, entitled "Price marking tag."

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

Figure 1 is a fragmentary top plan view of a portion of ticket length.

Figure 2 is a fragmentary plan view showing the other side of the strip length.

Figure 3 is a side edge view of a single ticket showing the prongs in position as they are in the coil.

Figure 4 is an edge view taken similar to Figure 3 but showing the prongs bent to perpendicular position.

Figure 5 is an end view of the ticket shown in Figure 4.

Figure 6 is a fragmentary plan view of the ticket strip taken similar to Figure 2 but showing the prongs erected.

Figure 7 is a top plan view of the apparatus into which the strip is fed for setting up the prongs.

Figure 8 is a sectional view taken on line 8—8, Figure 7 detailing the cams, levers, and actuating slides which set up the prongs.

Figure 9 is a sectional view taken on line 9—9, Figure 8 further detailing the cams and levers.

Figure 10 is a sectional view taken on line 10—10, Figure 8, further detailing the mechanism.

Figure 11 is a sectional view taken on line 11—11, Figure 8.

Figure 12 is a perspective view of the forward end of the slidable die which engages the prongs to move them to perpendicular position.

Figure 13 is a diagrammatic view taken similar

to Figure 8 showing the dies moving to prong bending and erecting position.

Figure 14 is a diagrammatic view taken similar to Figure 13 showing one die in position and the other acting to bend the prongs over the first die.

Figure 15 is a diagrammatic view taken similar to Figure 13 showing the dies in position, with the prongs fully bent to erect position.

Figure 16 is a diagrammatic view taken similar to Figure 13 showing the dies retreating leaving the prongs in erect position.

Generally described, the apparatus provides a guideway for the strip of tickets, a clamping die which successively engages the prongs of each ticket, and a bending die which engages under the prongs and bends them against the side of the clamping or holding die to erect position.

Referring to the drawings, it is pointed out that this apparatus constitutes a part of a price tag printing and cut-off machine. The printing platen is indicated at 20 at the right hand side of Figure 7.

The machine incorporates a base 21. A frame work 22 is fixed to the base and carries the guideway, indicated generally at 23. The element 24 constituting the guideway is fixed to the top of the frame work 22 in an angular position (Figure 8). The strip of tickets is indicated at 25 and is fed along and over the inner margin of the guideway element 24. The tickets are indicated at 15 and the prongs at 16. The inner edge margin of the ticket is overhung by the angular lip 26 of the guide plate 27 fastened to the inner side face of the element 24.

A bar 28, disposed longitudinally of the table or guide element 24, is adjustable crosswise of the table. This bar carries a presser foot 29 pivoted on a pin 30 at the inner end of the bar and pressed by means of a spring 30a against the outer edge of the strip of tickets. This bar also carries a guide 29a at its end opposite the presser foot 29. The bar is fixed to a slidably adjustable element 31 held in a dovetail guideway, disposed crosswise of the element 24 by means of gib plates 32. A knob 33, carried by the element 31 which mounts the bar, is fixed to a detent pin (not shown). When the knob is pulled outwardly, the detent pin is extracted from one of a series of holes in the bottom of the guide slot. These holes are spaced in accordance with the various widths of tickets so that the presser foot may be set according to any selected width. Spring fingers 34—34 are fixed to the lip 26 and engage the top of the strip of tickets for holding them down against the guide.

The feeding mechanism is not disclosed. It includes the conventional finger 19 which reciprocates longitudinally of the guideway and is adapted to engage in the feed notches 35 aligned with the separation notches 35a of the tickets.

A power driven shaft 36 is journaled in bearings mounted on the base 21, one of these bearings being shown at 37. The shaft is disposed parallel to the guideway below its inner edge and carries a pair of cams indicated at 38 and 39 respectively. The cam 38 operates the clamping die 40. The cam 39 operates the bending die 41.

The cams 38, 39 are pinned to the shaft. A pivot shaft 42 is journaled in a bracket 43 fixed to the base 21 below the main shaft 36. This shaft pivots a bell crank lever 44. One end of the lever includes a roller 45 engaged in the cam groove of the cam 38. The other arm 47 extends

under the guideway and is connected to the lower end of the reciprocating clamping die mechanism.

The clamping die is mounted for reciprocation in a guideway 48, formed vertically in the inner face of a bracket 49 secured to the underside of the guideway element 24. The guide plate 27 overhangs the outer face of the slidable die and is split into two parts for assembly purposes. Side guide strips 50 are secured between the plate 27 and the face of the bracket by means of screws 51 passing through the element 27, the elements 50, and into the bracket. Thus the die is confined against lateral and outward movement.

The lower end of the die is disposed between the arms of the bifurcated upper end of a linkage rod 52 and is held therein by means of a pin 53. The lower end of the linkage rod loosely traverses a bore in the outer end of the arm 47 of the bell crank 44. Washers 54 on the rod engage the respective upper and lower rounded faces 55 constituting the end of the arm 47. A cotter pin 56 holds the parts in assembly. A coil spring 57, under compression between the head of the pin and the upper washer, is provided for the purpose of causing the engagement of the upper end of the die with the prongs of the tag under spring pressure. Accordingly, the die engages against the clips at a constant pressure. The lever acts to compress the spring slightly as the die engages the clips. Thus the mechanism need not be set for a predetermined accurate stroke since any overthrow of the arm is taken up by the spring. The spring tension has been selected carefully so as to cause the die to engage the clips at the proper pressure so as not to cut or damage the clips. The die must hold them tightly against the tag and the tag against the lip 26 while the bending die is acting to bend the prongs.

A lever arm 60 is mounted on a pivot pin 61 in a bracket 62 fixed to the base. A roller 63 at an intermediate point of the lever arm engages the groove of the cam 39. The upper end of the lever arm carries a pin 64 traversing a slot 65 in the extended end of a slide element 66. The slot is vertical and thus permits swinging movement of the lever arm with respect to the lineal travel of the slide. The slide is guided in a guideway in the bracket 49 and passes through a vertical clearance slot 67 in the clamping die element. Its forward end includes an upward extension 68 engaging an opening 69 in the die carrying slide 70.

This die carrying slide 70 reciprocates in a transverse slot in the upper face of the element 24. The die 41 consists of a flat plate mounted on the top of the die carrying slide and movable with respect thereto. It operates in a counter-grooved portion forming a guideway slightly wider than the guideway of the die carrying slide (Figure 11). Guide strips are secured to the top of the element 24 and overlie the side margins of the die for retaining it in position.

The connection between the die carrying slide 65 and the die consists of a pin 71 fixed in and at right angles to the upper face of the die and extending into a longitudinal slot 72 in the die carrying slide. A coil spring 73, under compression, is disposed in the slot between the pin and that end of the slot toward the actuating means. Thus when the die carrying slide is moved to operating position, it carries the die with it and the die engages the prongs under spring pressure, that is yieldably, as in the case of the clamping die.

The forward end of the die, that is the end which engages under the clamp (Figure 8), has a feathered edge 74 for this purpose. More specifically, it engages under the prongs and bends them at right angles over the edge of the clamping die. The ticket is held down against this die by means of the spring fingers 34-34. Also, it may be noted that a rail 75, including an upturned flange, is disposed along the guide and terminates just short of the prong bending station. This rail forms a continuous support for the prongs until they are engaged by the die 41. Inasmuch as the lever arm 60 might tend to be deflected laterally, it is guided in a slotted guide piece 76 extending up from the bracket 62.

The inner face 82 of the holding die is inclined downwardly inwardly. Thus when the pins or prongs are bent against this surface, they are forced past a perpendicular position and will spring back to truly perpendicular position after release by the dies.

The ear 83 on the forming die is effective for forcing the prongs downwardly in the event that the die mechanism is not in operation and the ticket is forced through the guideway. The die 41 carrying the ear 83 is normally disposed in the position shown in Figure 8; that is to say, it is disposed in the line of travel of the tickets so as to engage between the tickets and the pins or prongs as they are delivered. Thus, the ear is effective in a camming action for displacing pins into the clearance 84. If the prongs were not displaced inwardly and downwardly so as to be forced into the clearance shown at 84 in Figure 8, they would drag across and score the top surface of the platen 20.

#### Operation of the machine

Referring to Figures 13-16 inclusive, it is pointed out that the dies are moved inwardly toward the prongs to be bent as illustrated in Figure 13. When the clamping die engages the prongs 15 and ticket 16, it comes in contact with the prongs at points 77 inwardly of the portions of the prongs which lie longitudinally of the strip. Thus the bends occur at the points 77 as shown in Figure 6. The length of the unbent portions 78 of the prongs is equal to the length of the reverse bent portions 79 lying longitudinally of the strip. As the die engages the prongs, it bends them over the corner 80 of the clamping die. Initially the forming die slides under the prongs as the tickets are moved longitudinally. It will be noted that the feathered edges of the die come to a sharp rounded feathered corner 81 facing the direction of feed of the strip whereby the ticket slides over the top of the die and the prongs slide under it.

As stated, both dies have cushioned strokes so that their engagement with the prongs is not too severe, that is so that there is no cutting action on the prongs. There is no feed of the strip while the bending of the prongs is taking place. In other words, the ticket with its prongs is slid into position as described and the dies then come to the position shown in Figure 15. The prongs are then disposed directly upright or perpendicular to the tag. They now include a base portion in each instance which is L-shaped (see Figure 6). The dies then retreat as shown in Figure 16. The strip is then fed to bring the next ticket into position for setting up the prongs.

Having described our invention, we claim:

1. In a machine for setting up the prongs of a price ticket of the type including the prongs 75

lying flat against the face thereof, a table providing a guide slot for the tickets, a forming die adapted to be reciprocated upwardly against the underside of the ticket for clamping those portions of the prongs, adjacent the attached portions, in the slot, a reciprocable die element disposed for movement transversely of the guide slot at right angles to the first die, said last named die including a feathered forward edge insertable between the prongs and the ticket, and means for moving said dies in synchronism so that the ticket and prongs are concurrently gripped and bent for erecting the prongs.

2. A mechanism for setting up the prongs of a pin ticket of the type wherein the prongs are lying flat against the face of the tag comprising; a guideway including an overhanging lip, a clamping die adapted to engage and clamp those portions of the prongs, adjacent the attached portions of the prongs, against the lip, and a forming die engageable under the prongs and movable toward the first die for bending the prongs over the edge of and against the flat side of the clamping die, whereby the prongs are disposed in perpendicular position.

3. In a machine for setting up the pin of a price ticket of the type including the pin normally bent into position flat against the face of the ticket; a table providing a guide slot for the tickets, a forming die reciprocating upwardly against the underside of the ticket, a reciprocable die element disposed for movement on the table at right angles to the first die and crosswise to the feed of the ticket through the guide slot, said last named die including an edge insertable between the pin and the ticket, and means for moving said dies in synchronism so that the ticket and pin are gripped and the pin is bent for erecting the pin.

4. In a machine for setting up the prongs of a ticket of the type including prongs lying flat against the face of the tag; a guide table including an overhanging lip, a holding die disposed for sliding movement toward the underside of the lip and against the tag, means for reciprocating said die, a compressible connection between the means and the die, a reciprocable forming die having a feathered forward edge disposed within the path of feed of the tag including its prongs whereby the prongs are normally disposed below said forming die and the ticket above it as the ticket is delivered, means for reciprocating said forming die, and a compressible connection between said last means and the die whereby movement of the forming die toward the holding die bends the prongs into an erect position except for those portions held in clamped position by the holding die.

5. A mechanism for setting up the pin of a pin ticket of the type wherein the pin is lying flat against the face of the tag comprising: a guideway including an overhanging lip, a clamping die adapted to engage and hold flat the attached portion of the pin against said lip, and a forming die engageable under the pin for bending the pin against an adjacent side of the clamping die whereby the pin is disposed in perpendicular position.

6. In a machine for setting up the pin of a tag of the type including the pin lying flat against the face of the tag; a guideway for the tags, a holding die disposed for movement against the tag, means for reciprocating said die, a compressible connection between the means and the

die, a reciprocable forming die having its edge disposed within the path of feed of the tags including its pin whereby the pin is disposed below the forming die and the ticket above it, means for reciprocating said forming die, a compressible connection between said last means and the forming die whereby movement of the forming die toward the holding die bends the pin into an erect position except for that portion held in clamped position by the clamping die.

7. A machine for setting up the pins of a ticket of the type having the pins attached thereto but lying flat against one face of the ticket, comprising; a guide means, means for feeding the tickets through the guide means, and a die for erecting the pins, said die disposed so as to engage between the pins and ticket as they are fed and movable after assuming this position for erecting the pins.

8. In a machine for erecting the pins of tickets of the type having the pins attached thereto but laying flat against the tickets; a ticket supporting guideway through which the tickets may be fed, means for feeding the tickets through the guideway, means disposed in the path of feed of the tickets and adapted to engage between the pins and the surface of the tickets as the tickets are fed and prior to erecting movement, and means effective for operating the second-named means for forcing the pins into erect positions, said guideway including a clearance parallel thereto into which said pins are disposed when erected.

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