Dec. 17, 1935. K. C. ALLISON 2,024,416

CABLE MARKING MACHINE

Filed March 8, 1935 3 Sheets-Sheet 1

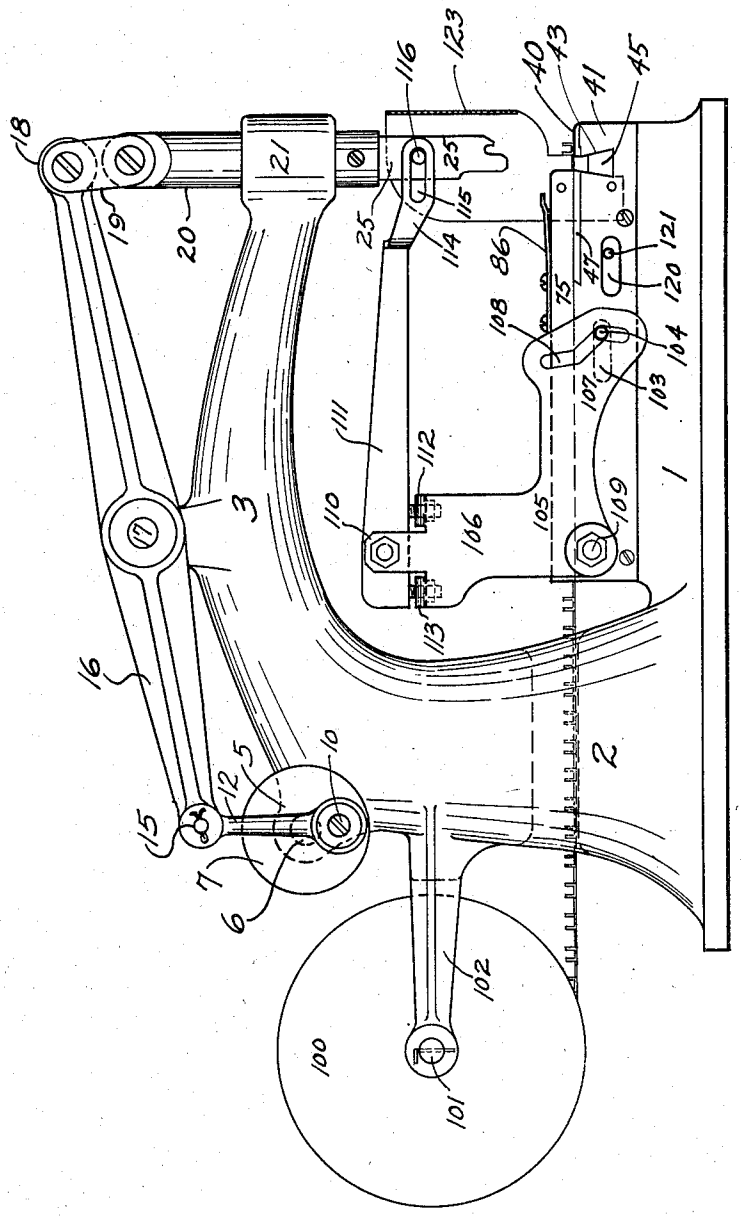

Fig. 1.

• Inventor •
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CABLE MARKING MACHINE

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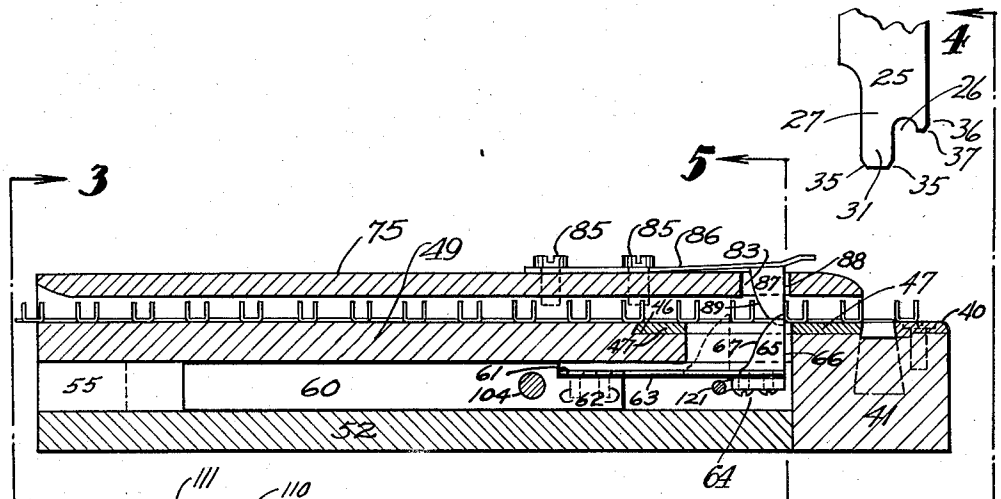

Fig. 2.

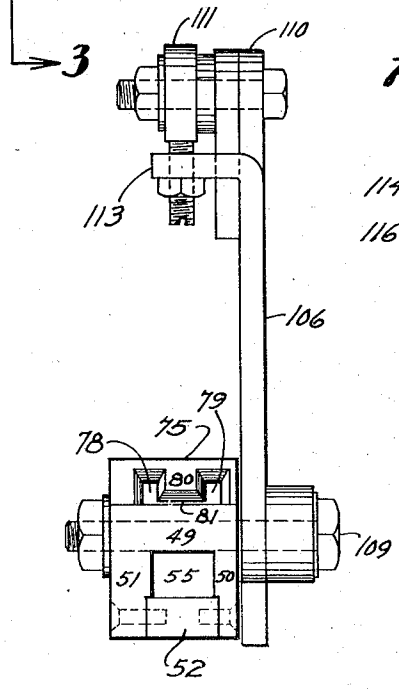

Fig. 3.

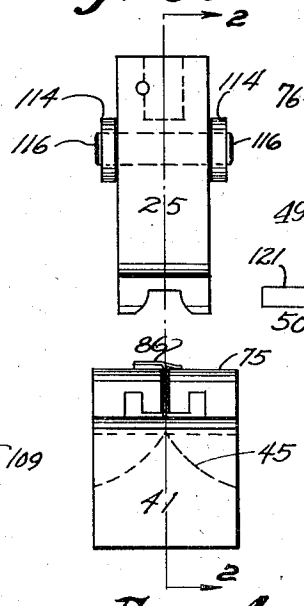

Fig. 4.

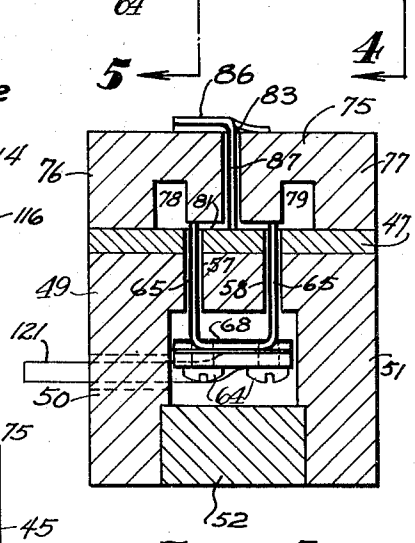

Fig. 5.

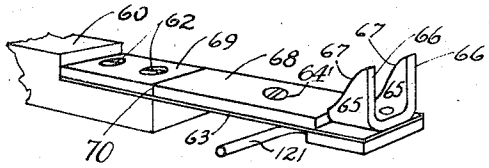

Fig. 12.

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CABLE MARKING MACHINE

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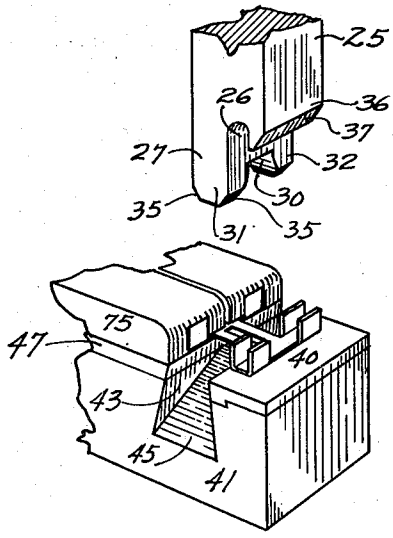

Fig. 6.

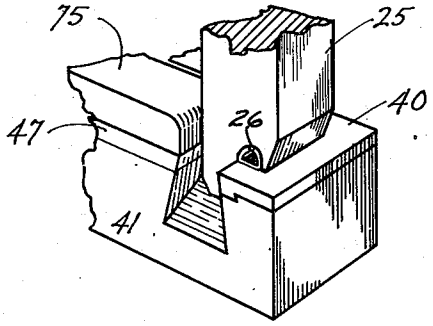

Fig. 7.

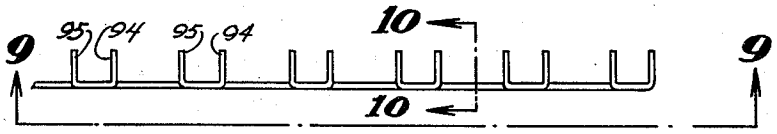

Fig. 8.

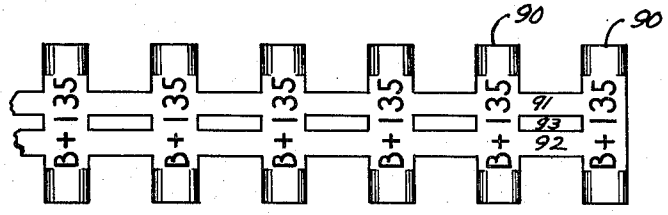

Fig. 9.

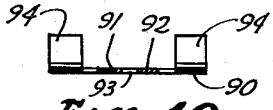

Fig. 10.

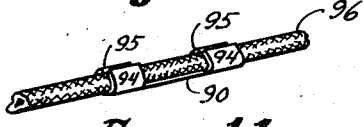

Fig. 11.

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Patented Dec. 17, 1935 2,024,416

UNITED STATES PATENT OFFICE

2,024,416

CABLE MARKING MACHINE

Kenneth C. Allison, Arlington Heights, Ill., assignor, by mesne assignments, to Cinch Manufacturing Corporation, Chicago, Ill., a corporation of Illinois

Application March 8, 1935, Serial No. 9,985

8 Claims. (Cl. 153—1)

This invention relates to cable marking machines and particularly to a machine for applying metal markers to wires, ropes and other similar articles. In many electrical devices, such as for example, radio receivers, it is necessary to mark wires for identification purposes such as the ground and antenna connections of a receiver. In such and similar cases, it is desirable to have a machine which will quickly and easily apply a marker to the wire. Because of the minor nature of such an operation, it is necessary that the machine be cheap, easy to operate and be simple enough so that no mechanical troubles may be experienced.

The machine hereinafter described fulfills the above requirements and is adapted to be used in conjunction with a standard eyeletting machine.

Referring to the drawings, Figure 1 is an elevation view of an eyeletting machine equipped with the attachment for applying markers to cables. Figure 2 is a sectional view of the attachment taken along 2—2 of Figure 4. Figure 3 is a rear view from 3—3 of Figure 2. Figure 4 is a front view of the attachment from 4—4 of Figure 2. Figure 5 is a sectional view along 5—5 of Figure 2 looking toward the rear. Figures 6 and 7 are details of the die and anvil in open and closed position respectively. Figure 8 is a detail of the marker strip. Figure 9 is a bottom view along 9—9 of Figure 8. Figure 10 is a sectional view along 10—10 of Figure 8. Figure 11 is a detail showing the marker applied to a cable. Figure 12 is a detail of the feed.

Referring to the drawings and particularly to Figure 1, there is shown the actuating parts of an eyeletting machine comprising a base 1 from one end of which there arises a standard 2, terminating in an overhanging arm 3. Standard 2 has a bearing 5 in which is journaled a shaft 6 carrying a wheel 7 at one end thereof. Wheel 7 has a pin 10, offset from the center thereof, on which is journaled an arm 12. The free end of arm 12 is pivotally connected at 15 to the end of a lever 16 pivotally mounted at 17 on overhanging arm 3. The other end 18 of lever 16 is pivotally connected to a link 19, which connects to a push rod 20, mounted for vertical reciprocatory movement in a bearing 21, at the end of overhanging arm 3. Rod 20 has the bottom thereof suitably slotted and in this instance has inserted therein a die member 25.

Referring particularly to Figures 6 and 7, it will be noted that die 25 has a transverse slot 26, cut therethrough across the end. The rear portion 27, of die 25, extends downwardly for a distance and has a slot 30 therethrough, transverse to slot 26. Slot 30 divides portion 27 into tip portions 31 and 32. Both tips 31 and 32 preferably have their edges bevelled at 35 for reasons to be hereinafter explained. The other half, 36, of die 25, does not extend as far down as portion 27, and has its outer edge bevelled at 37.

Carried by base 1 is a base block 41 and an anvil 40. Base block 41 is provided with a transverse slotted portion 43, the bottom of which is formed by a V-shaped floor 45, the center of the V being at the high point as shown in Figure 4.

Abutting against block 41 is an enlongated inverted U-shaped block 49, having sides 50 and 51. This member is adapted to have the bottom space between the free ends of arms 50 and 51 closed by a small base block 52 to define an interior channel 55. The front portion of block 49 is cut away at 46 for an insert 47 of hard steel. As is clearly shown in Figure 2, this insert 47 is flush with the normal surface of block 49. The opposed edges of insert 47 and anvil 40 are hard cutting edges. The front member 49, as seen in Figure 5, has a pair of vertically disposed slots 57 and 58 therethrough at spaced positions, these same slots extending through insert 47.

Slidably mounted in channel 55 is an elongated rectangular block 60, the front of which is cut away at 61. The cut away portion 61 has mounted thereon by means of bolts 62, a spring blade 63, the front end of which carries a pair of spaced dogs 65 maintained by screws 64. These dogs are provided with a straight leading edge 66 and a curved trailing edge 67, and as shown in Figure 5 are adapted to fit in slots 57 and 58 and project upwardly through block 49 and insert 47. To prevent spring 63 from buckling, a pair of rigid strips 68 and 69, Figure 12, are provided, maintained in position by bolts 64' and 62 respectively. These strips overlie 63 and provide a narrow gap 70 where spring 63 flexes.

Overlying block 49 and a portion of insert 47, is a guide member 75, having a cross section in the form of an E as shown in Figures 3 and 5. The outer arms 76 and 77 of this guide member enclose a pair of spaced channels 78 and 79. These channels are separated by an interior projecting portion 80 of member 75, said portion 80, however, clearing insert 47 a short distance to define a channel 81. The forward

portion of member 75 has a transverse slot 83 therethrough at the center thereof as shown in Figures 2 and 5.

Bolted to the top of members 75 as by screws 85, is a leaf spring 86, carrying at its end a dog 87. This dog is adapted to project downwardly into slot 83. This dog 87, is similar in shape to dogs 65 and is provided with a straight leading edge 88 and a curved rear edge 89.

The marking strip shown in Figures 8 to 10, inclusive, comprises a plurality of transverse members 90, joined at their adjacent sides by a pair of connecting links 91 and 92. Between these links is a rectangular slot 93. Transverse members 90 are provided at their ends with upraised arms 94 and 95. As shown in Figure 11, a cable 96 has the portion 90 applied thereto and the arms 94 and 95 bent around the cable tightly to embrace the same. The link portions 91 and 92 are cut off from each side of transverse portion 90.

The marker strip, as shown in Figures 8 to 10, inclusive, is wound on a reel 100, rotatively supported at 101 at the end of a bracket 102, carried by standard 2. The marker strip, as shown in Figures 1 and 2, is fed along between guide member 75, and the top surface of block 49, so that the transverse portions 90 are perpendicular to the lengths of these members and with arms 94 and 95 extending upwardly in channels 78 and 79. Links 91 and 92, together with the intermediate portion of transverse marker 90 is adapted to ride in channel 81.

In order to actuate elongated member 60 and reciprocate it back and forth along its length, within channel 55, the sides 50 and 51 of member 49 are cut away to form an elongated slot 103. A pin 104, connected to block 60, projects through slot 103. Pivotally mounted at 109 at the rear of the entire attachment is a bell crank lever 105, having arms 106 and 107. Arm 107 is provided with a tortuous slot 108, in which pin 104 is adapted to ride. Arm 106 carries at its end a projecting member 110, to which is pivotally mounted a lever 111. On each side of the pivot point 110 arm 106 carries a pair of adjusting screws 112 and 113, which bear against lever 111. Lever 111 terminates in a fork 114, having a slot 115 in the end thereof, said slot engaging pins 116, carried by die member 25.

The operation of the machine is as follows: Shaft 6, being suitably rotated, forces die member 25 through the linkage system downwardly toward anvil 40. At the same time, forked end 114 and lever 111 is depressed, resulting in bell crank lever 105 turning in a clockwise direction on its pivot 109, as seen in Figure 1. Due to the shape of slot 108, the downward movement of arm 107 forces pin 104 back in slot 103. This causes elongated block 60 to be moved rearwardly a distance equal to the length of link members 91 and 92 and width of marker member 90. Dogs 65 slip under marker members 90, being on the outside of links 91 and 92. Assuming that a marker section is located on the anvil as shown in Figure 6, and that a cable 96 has been placed between arms 94 and 95 of the marker, the downward travel of die 25 will first sever links 91 and 92 from adjacent marker sections by means of cutting portions 31 and 32 of the die. The lowest position of the die as shown in Figure 7 finally forces arms 94 and 95 of the marker to be curved toward each other and embrace the cable. Upon the upward movement of die 25, block 60 is projected forwardly. Dogs 65 are thereupon moved from the dotted position shown in Figure 2 to the full line position shown in Figure 5. The tips of these dogs engage marker sections 90 and feed the strip forward sufficiently to place a new marker section on the anvil. The links 91 and 92 which have been completely severed, fall down channel 43. Upper dog 87, which engages slot 93 of the marker strip, yields upon the forward motion of the strip and serves to prevent the marker strip from being pulled backwardly during the retractive travel of dogs 65.

In order to release the feeding mechanism, a slot 120 is provided in the side of block 49. Projecting through this slot is a finger 121 attached to dog 65. By depressing finger 121, dogs 65 will yield to clear the marker strip. Spring 86 may be pulled upwardly at the same time, so that dog 87 clears the strip with the result that the strip may be fed forwardly or backwardly by hand as desired.

It has been found in practice that due to stretch or irregularities in the marker strip, a marker section is not always accurately located on anvil 40 so that links 91 and 92 are severed at the desired places. The curved edges 35 of die 25 are therefore provided. The strip is loose enough so that where the die first touches the marker strip, adjacent sections 90 bear against opposite sides of the die and center the strip.

What I claim is:

1. In a machine for applying a marker to a cable, said marker being supplied to said machine in continuous strip form and each marker comprising an elongated body adapted to lie against said cable, at least one pair of open arms for embracing said cable and adapted to be bent around it, adjacent markers being joined together by a transverse connecting link, the combination of an anvil adapted to support a marker with a cable positioned between the arms thereof, a die cooperating with said anvil, means for dropping said die on said anvil, said die being adapted on its down stroke to first sever said marker from its connecting link and thereafter bend said arms around said cable, and means adjacent said anvil and operated in conjunction with said die for progressively feeding said strip to said anvil and position a marker thereon upon the upward motion of said die.

2. The structure of claim 1 wherein means are provided for locking said marker strip in position during the downward travel of said die.

3. In a machine of the character described the combination of an elongated block adapted to support perforated strip material, said block being provided with a slot therethrough in line with the perforations of said strip, a catch member positioned in said slot for feeding said strip, said catch member being adapted to engage said strip in the perforations thereof, means for reciprocating said catch member back and forth for feeding said strip along said block, an anvil disposed adjacent said elongated block and adapted to support a terminal section of said strip a die cooperating with said anvil to sever a section of said strip and perform an operation thereon, and means cooperating with said reciprocating means to reciprocate said die to and from said anvil in timed relation with said catch member.

4. The structure of claim 3 wherein said catch member is mounted on a resilient support and said member is so shaped as to slip relative to

the strip material on a backward stroke and engage said strip on the forward stroke.

5. In a machine of the character described the combination of an elongated block adapted to support a strip material provided with regularly spaced perforations, subject to accidental variation, means for intermittently feeding said strip along said block for a distance involving the distance between adjacent perforations as an element thereof, an anvil adapted to support a terminal section of said strip preparatory to severance and operating thereon, a die cooperating with said anvil and means for reciprocating said die in timed relation to said feeding means, said die being provided with curved edges cooperating with edges of said strip for centering the same on the anvil to compensate for said variations in perforations.

6. In a machine of the character described, an elongated U-shaped block means for supporting said block along the open arms of the U, with the bight thereof at the top, whereby an interior channel is formed, means on said U-shaped block to define a feeding channel therealong, an anvil at the end of said feeding channel, said feeding channel being adapted to have a perforated strip therein with the terminal section of said strip resting on said anvil, a member slidably disposed within the interior channel defined by said U-shaped member, a spring strip having one end secured to said member and carrying at least one dog at the other end thereof, a pair of rigid strips overlying said spring and having a narrow gap therebetween to define a region for flexure, means for rigidly connecting said rigid strips to each end of said spring strip, said dog being adapted to engage said material at said perforations, said dog being so shaped that upon a forward movement thereof, said dog engages said material to fit the same, and upon a reverse movement said dog yields and slips by said material, a die co-operating with said anvil for severing and operating upon a section of said material and means for actuating said die and said feeding member in timed relation to each other.

7. A machine of the character described comprising an elongated block having a feeding channel above said block and an additional channel below said block, said block being provided with at least one slot passing therethrough from said additional channel to said feeding channel, an anvil adjacent said block, said feeding channel and anvil being adapted to support a perforated metal strip, means including a resiliently mounted dog extending from said additional channel through the slot in said block to said feeding channel adapted to engage said perforated strip material for feeding the same, said dog being adapted to engage said material upon the forward motion thereof and to slip by said material upon the retractive movement thereof, and a die co-operating with said anvil for severing and operating on said strip material, said die having rounded corners in the direction of the feed of said material, whereby when said die contacts said strip preliminarily to severing, said strip will be centered on said anvil.

8. A machine for attaching markers to cables, comprising an elongated, inverted U-shaped block, said block having at least one slot passing therethrough, an E-shaped block disposed on said first block, said E-shaped block defining a pair of spaced, parallel channels joined by a shallow channel connecting said spaced channels, said channels being adapted to pass marker material in strip form, a member mounted within said U, and carrying a dog passing through said slot, means for reciprocating said member and dog, an anvil disposed adjacent said U-shaped member and adapted to receive a terminal section of said strip, a die mounted for co-operation with said anvil and means for reciprocating said die and said member equipped with said dog in timed relation for severing and applying a marker.

KENNETH C. ALLISON.