

H. A. GIBBS.
MACHINE FOR FORMING EAVES TROUGH HANGERS.
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973,648.

Patented Oct. 25, 1910.

Fig. 1.

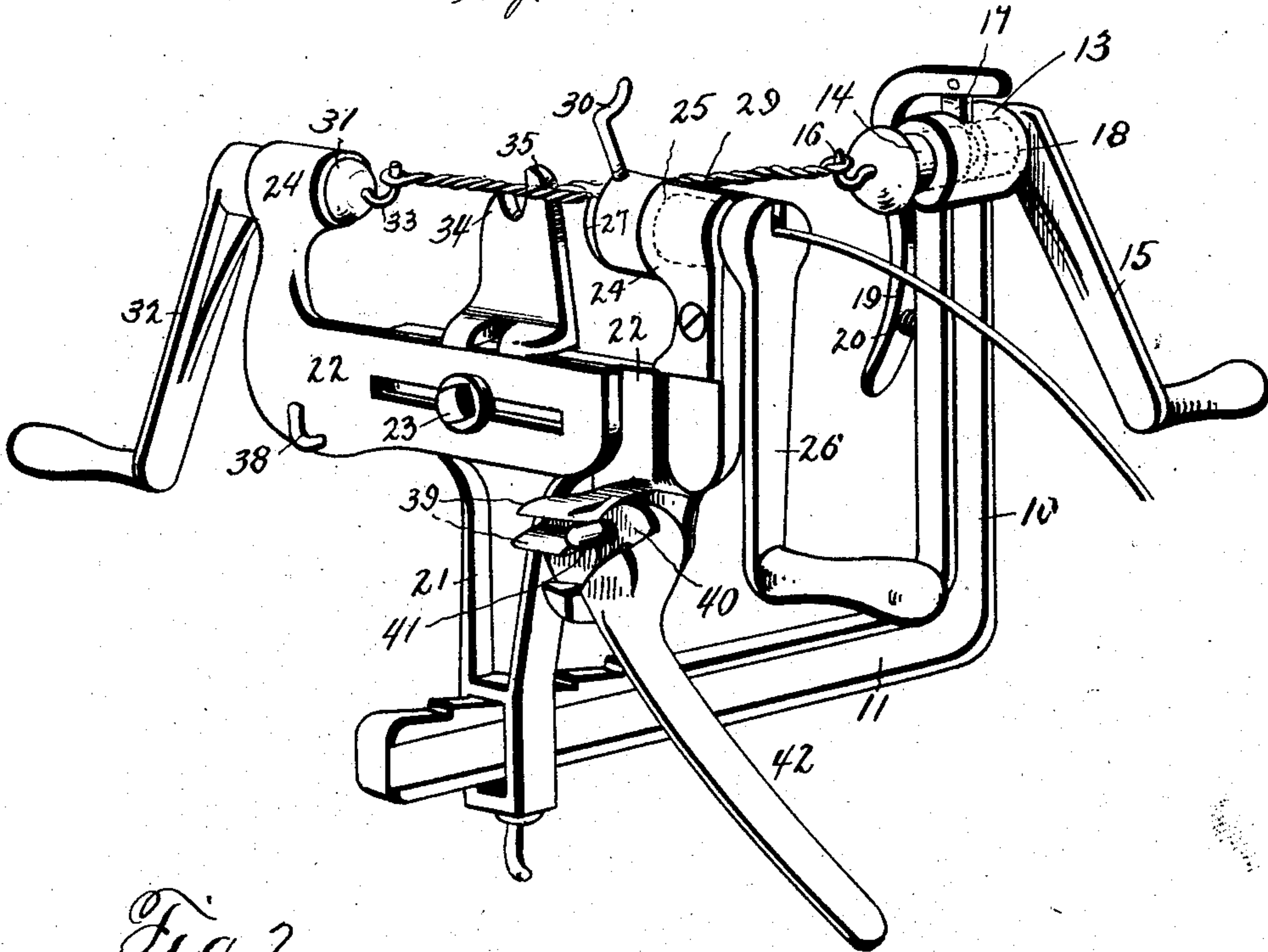


Fig. 2.

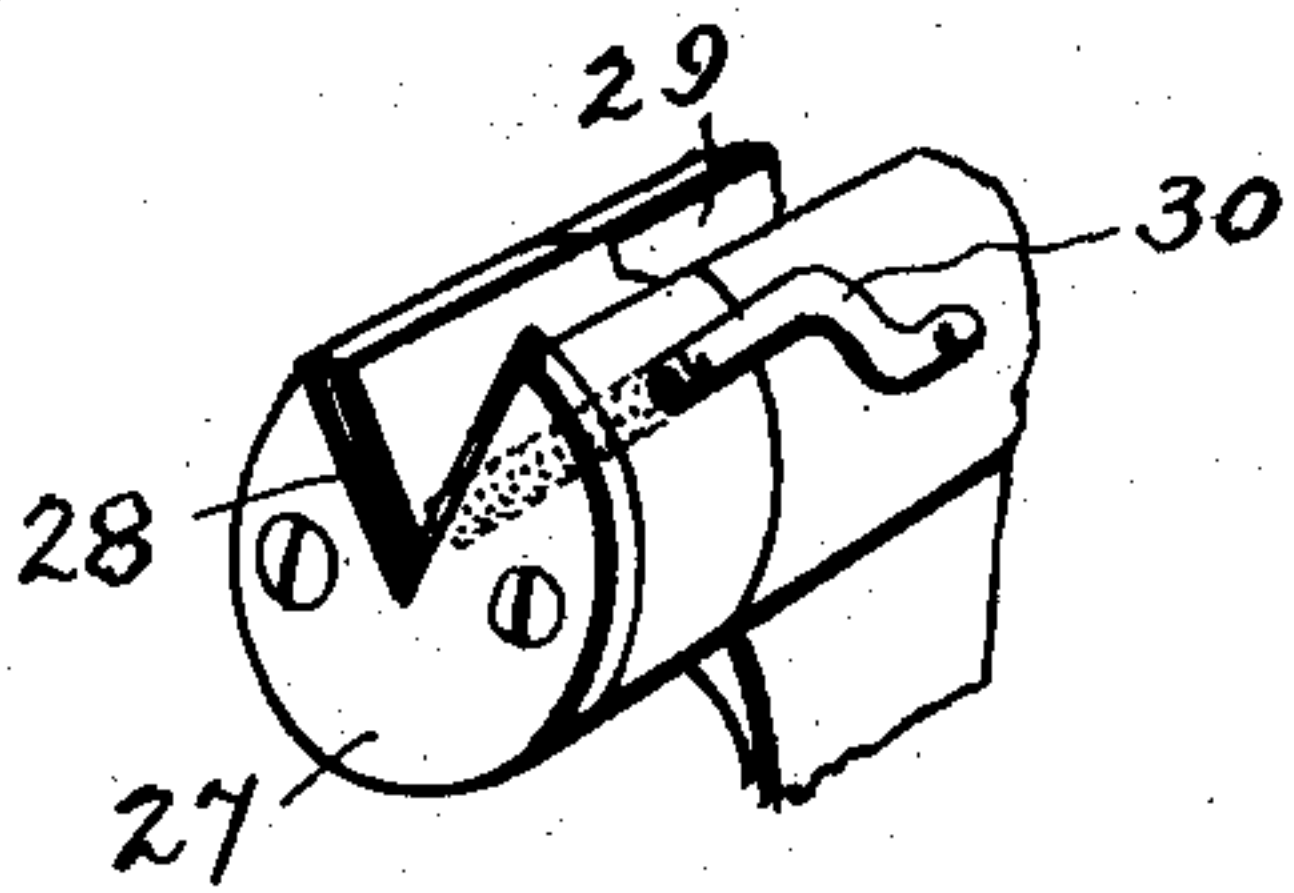
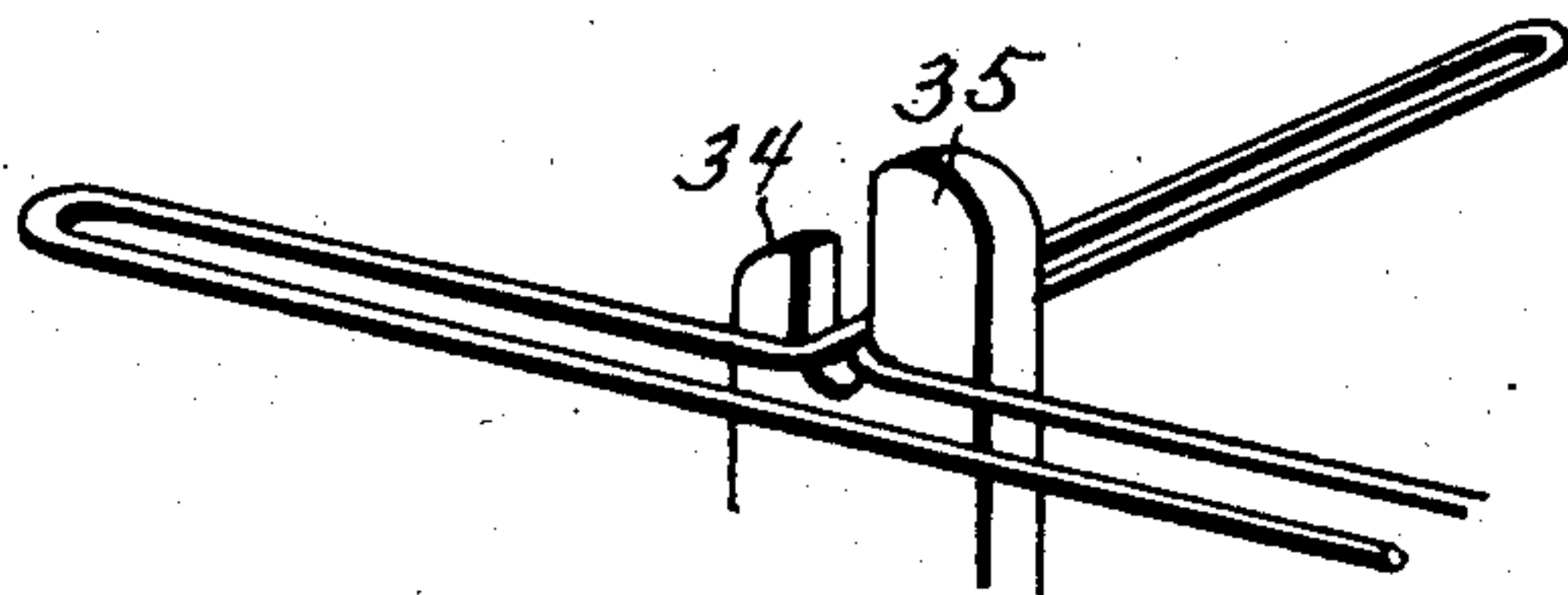


Fig. 3.



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UNITED STATES PATENT OFFICE.

HARRY A. GIBBS, OF PRINCETON, ILLINOIS.

MACHINE FOR FORMING EAVES-TROUGH HANGERS.

973,648.

Specification of Letters Patent.

Patented Oct. 25, 1910.

Application filed November 30, 1908. Serial No. 465,240.

To all whom it may concern:

Be it known that I, HARRY A. GIBBS, of Princeton, in the county of Bureau and in the State of Illinois, have invented a certain new and useful Improvement in Machines for Forming Eaves-Trough Hangers, and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a machine embodying my invention; Fig. 2 is a detail view in perspective showing the chuck for holding the short end of the wire; and Fig. 3 is a perspective view showing the wire arranged just before being twisted.

The object of my invention is to provide a machine for making hangers for eaves-troughs; and more particularly my object is to improve the machine for which Letters Patent of the United States No. 827,229, issued to me the 31st day of July, 1906, to the end that the machine may be simpler in construction and more convenient of operation, and capable of a greater output; and to these ends my invention consists in the machine constructed substantially as hereinafter specified and claimed.

The particular form of hanger which the machine that forms the subject of my present invention is designed to make is that shown in my patent before mentioned, such hanger comprising a shank and cross-piece of twisted wire and a substantially semi-circular-curved simple wire, and as in the case of the machine of my former patent, I employ a support that has an L-form, one member, 10, being upright and the other member, 11, being horizontal. The upright member has at its upper end a journal 13 for a twister shaft 14, which at one end carries a crank 15, and at the opposite end is provided with a hook-form pin 16. The twister shaft is longitudinally movable, for a reason hereinafter specified, and it is held at one limit of its movement by a latch device that consists of a pin or bar 17 that engages at its inner end a circumferential groove 18 in the periphery of the shaft, a slot or hole being provided in the journal for the passage of said pin or bar, and at its outer end the pin or bar is connected to a hand lever 19 that is pivoted at one side of the upright 10, and is normally pressed by a spring 20 in a direction to yieldingly hold the pin or bar 17 in

engagement with the circumferential groove in the twister shaft.

Slidably mounted on the horizontal bar 11, so that it may be moved toward and from the upright bar 10, is an arm or bracket 21, the horizontal bar 11 being provided with ratchet teeth to hold said bracket in the desired position. Slidably clamped to the bracket 21 are two oppositely extending bars 22 that are provided with horizontal slots through which a clamping bolt 23 passes to secure them to the bracket, the said bars being adjustable horizontally and in a direction at right angles to the axis of the twister shaft 14. Each of said adjustable bars has at its outer end a vertical extension which is provided with a journal or box 24, and in one of said journals is pivoted a shaft 25 that at its outer end has a crank 26 and at its inner end a wire-holding chuck consisting of a disk-form plate 27, with a V-shaped slot 28 extending from its center outward, the inner edges of the sides of the slot being sharpened so that when a wire is placed therein, the sharpened or knife edges will bite into the wire, firmly holding it from longitudinal movement in one direction, such direction being that in which the wire is pulled in the twisting operation, as hereinafter described. The V-shaped slot of the chuck alines with a radial slot 29 in the shaft 25, and in the hub of the crank 26, so that the wire may be passed to the center of the twister shaft and into engagement with the V-shaped jaws of the chuck, where it is securely held by a quick-moving radially-arranged screw 30 that engages a threaded opening in the shaft. In the journal of the other horizontally adjustable bar is placed a twister shaft 31 whose axis alines with the axis of the chuck-carrying shaft 25, and at its outer end said twister shaft 31 has a crank arm 32 and at its inner end a hook-form wire-engaging pin 33, similar to that of the twister shaft 14. On the upper end of the bracket 21 at the angle formed by the intersection of a line passing the axes of the twister shaft 14 and the two twister shafts 25 and 31, there are two fingers 34 and 35, one being longer than the other, and the longer finger being toward the chuck-carrying shaft.

In the operation of the machine constructed as thus far described, the end of the wire is secured in the chuck as I have before de-

scribed, and the wire then carried or bent around the higher finger 35, and thence to the pin of the twister 14 about which it is bent and then carried parallel with itself to the shorter finger, and being bent at a right angle about the latter, is carried to the pin 33 of the twister 31, and after being folded about the latter, is carried back toward the chuck and passed through the radial slot in the chuck-carrying shaft and the crank thereof. Each of the three cranks being revolved, it will be seen that the desired twisting of the wire to form the hanger will take place. In order to release the tension and to free the shank member of the hanger from the twister 14, the lever 19 is operated to lift the pin or bar 17 from the circumferential groove of the twister shaft 14.

Where the semi-circular curved portion of the hanger joins the twisted cross member, a bead or bend is formed, and to enable this to be readily or conveniently made upon my machine, I provide on one of the horizontally adjustable bars 22 a vertical pin 38, and on the other horizontally adjustable bar I provide a pair of lugs or fingers 39, one above the other, contiguous to which is pivoted a disk 40 having an eccentric pin 41, and a handle 42, so that by placing the eye at one end of the twisted cross piece, over said vertical pin 38, and laying the opposite end of the twisted cross piece between the lugs or fingers 39, with the disk 40 rocked to lower its eccentric pin, and then by pressing downward upon the handle 42, the eccentric pin will engage the contiguous untwisted or plain portion of the wire and bend it to form the desired bead. It will be observed that by mounting the pin 38, and the supporting and bending means, on the respective horizontally adjustable bars, that these parts are always in a proper relation according to the adjustment of the horizontally adjustable bars for hangers whose twisted cross pieces are of different lengths.

It will be evident that the entire operation of forming the hanger, excepting that of producing the bend or bead, is formed with one placing of the wire in the machine, so that the operation of making hangers can be done very expeditiously indeed, and yet the machine embodying my invention is extremely simple in construction.

It is to be understood that while I prefer

the precise construction illustrated and described, I do not restrict the scope of my invention thereto, as changes may be made which will involve no departure from the scope of my invention.

Having thus described my invention, what I claim is—

1. In a wire twisting machine, the combination of twisters arranged with their axes in lines that intersect, a chuck in line with one of said twisters, and a wire-engaging device arranged at the points of intersection of the twister axes.

2. In a wire twisting machine, the combination of twisters arranged with their axes in lines that intersect, each twister having its own rotating means, a chuck in line with one of said twisters, and a wire-engaging device arranged at the points of intersection of the twister axes.

3. In a wire twisting machine, the combination of twisters arranged with their axes in lines that intersect, a rotatable chuck in line with one of said twisters, and a wire-engaging device about which the wire may be bent arranged at the points of intersection of the twister axes.

4. In a wire twisting machine, the combination of twisters arranged with their axes in lines that intersect, two of said twisters having each a wire-engaging pin, and a third twister having a wire-holding chuck.

5. In a wire twisting machine, the combination of twisters arranged with their axes in lines that intersect, two of said twisters being mounted on adjustable supports, a wire-engaging pin on one of said supports, and a wire-bending device on the other support.

6. In a wire twisting machine, the combination of twisters arranged with their axes in lines that intersect, a chuck in line with one of said twisters, and a wire-engaging device arranged at the points of intersection of the twister axes, the twister not alining with the chuck being longitudinally movable.

In testimony that I claim the foregoing I have hereunto set my hand.

HARRY A. GIBBS.

Witnesses:

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