May 1, 1934. R. DILLINGHAM 1,956,756

WIRE BENDING APPLIANCE

Original Filed Aug. 4, 1931 4 Sheets-Sheet 1

Fig. 1.

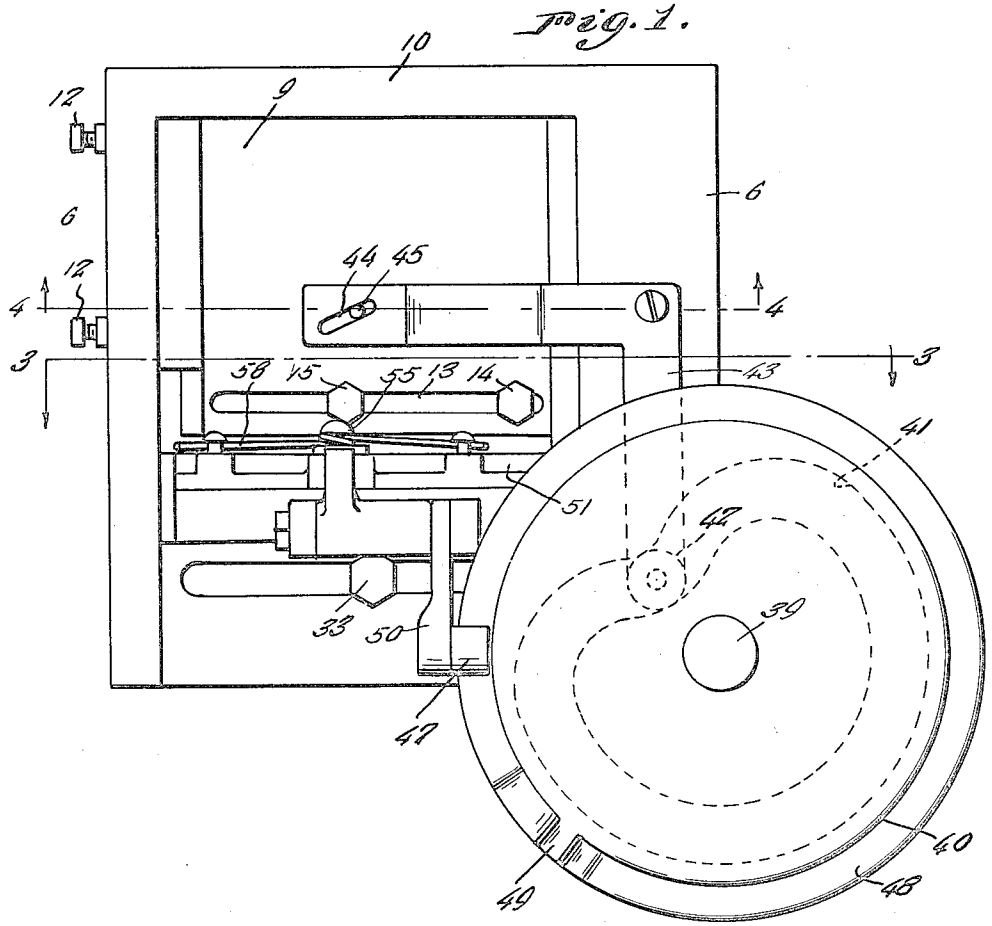
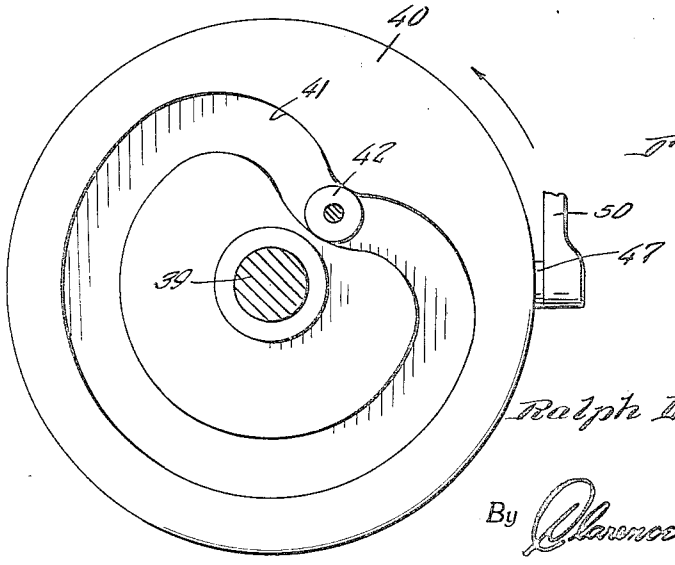


Fig. 7.



Inventor

Ralph Dillingham

By Clarence O'Brien

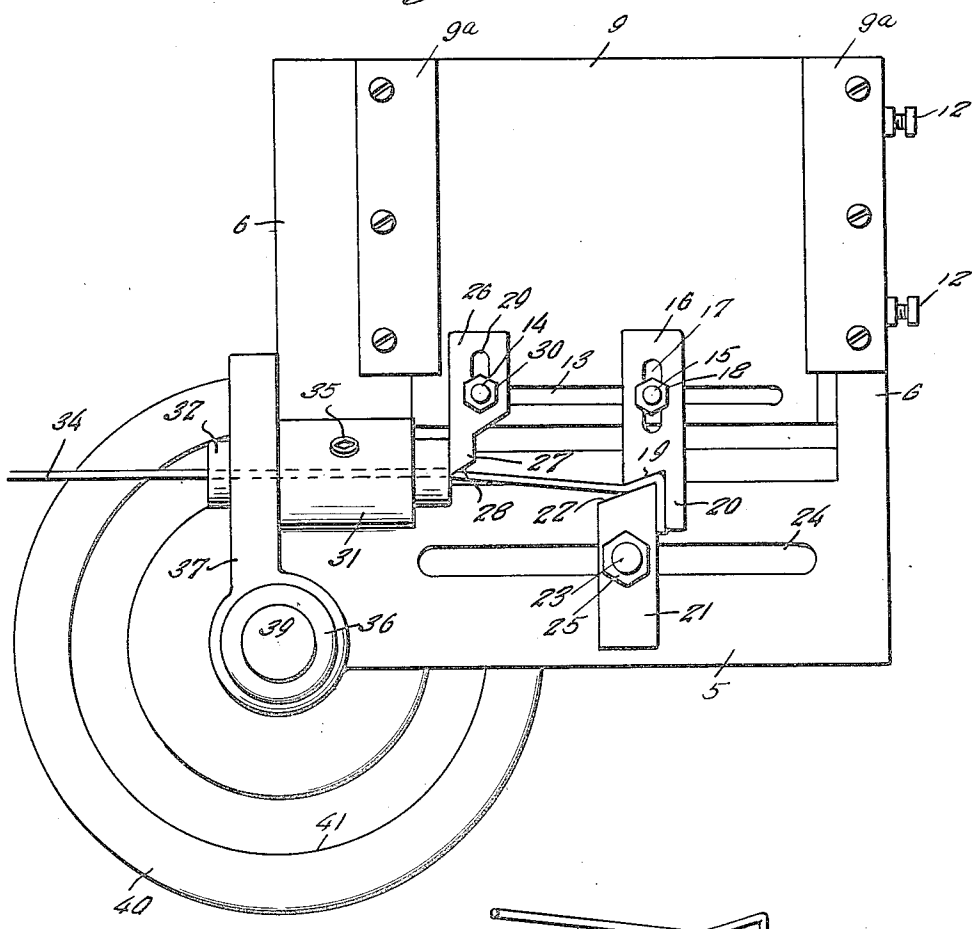
Attorney

May 1, 1934. R. DILLINGHAM 1,956,756

WIRE BENDING APPLIANCE

Original Filed Aug. 4, 1931 4 Sheets-Sheet 2

Fig. 2.



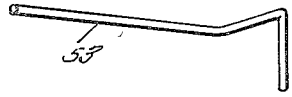


Fig. 9.

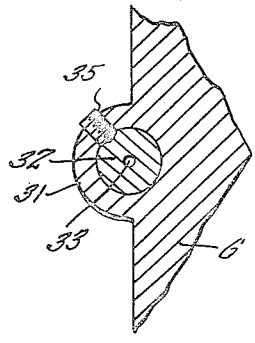


Fig. 8.

Inventor

Ralph Dillingham

By Clarence A. O'Brien

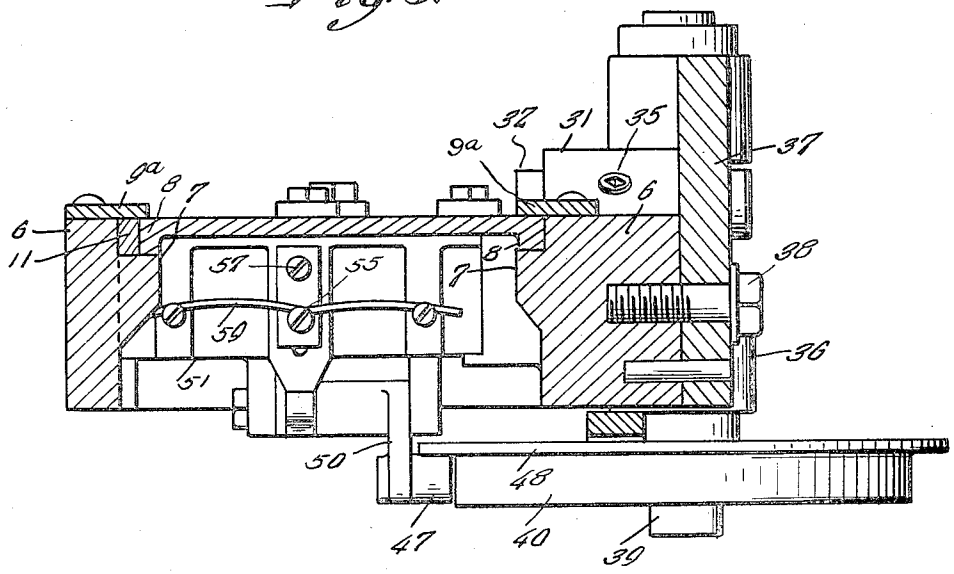
Attorney

May 1, 1934. R. DILLINGHAM 1,956,756

WIRE BENDING APPLIANCE

Original Filed Aug. 4, 1931 4 Sheets-Sheet 3

Fig. 3.



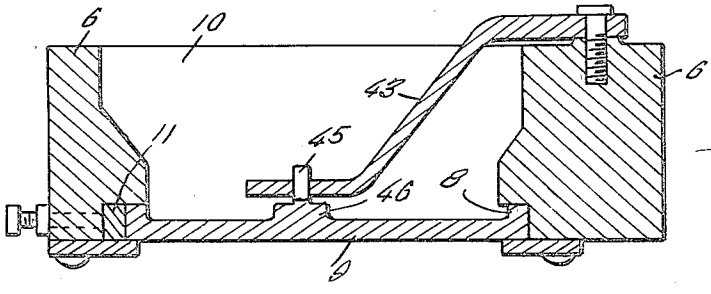


Fig. 4.



Fig. 10.

Inventor

Ralph Dillingham

By Clarence O'Brien

Attorney

May 1, 1934. R. DILLINGHAM 1,956,756

WIRE BENDING APPLIANCE

Original Filed Aug. 4, 1931 4 Sheets-Sheet 4

Fig. 5.

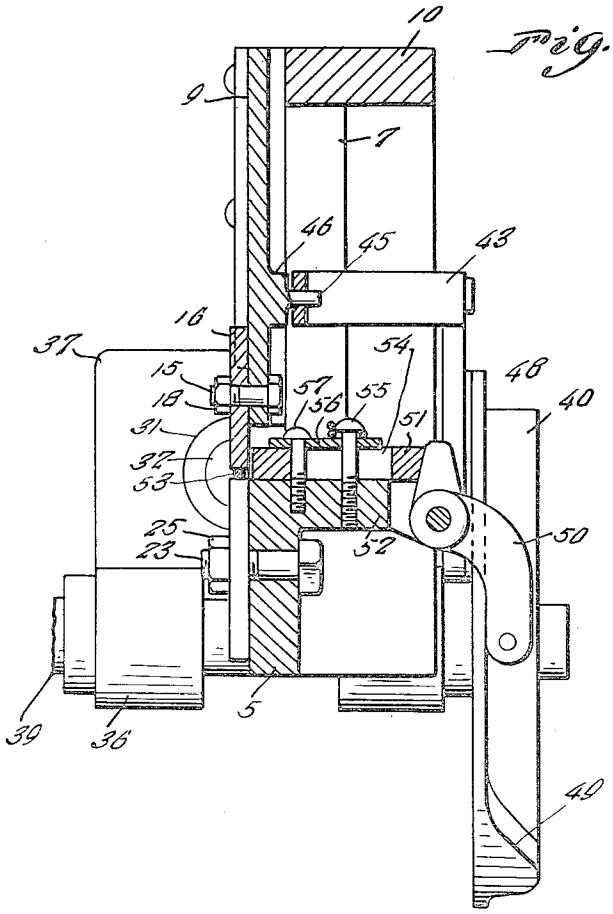
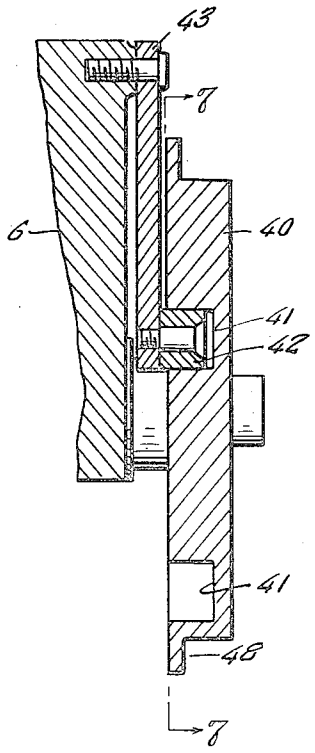


Fig. 6.



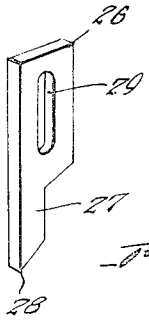


Fig. 11.

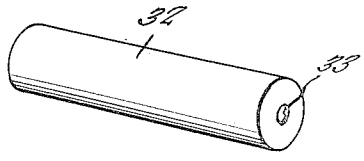


Fig. 12.

Inventor

Ralph Dillingham

By Clarence O'Brien

Attorney

Patented May 1, 1934 1,956,756

UNITED STATES PATENT OFFICE

1,956,756

WIRE BENDING APPLIANCE

Ralph Dillingham, Hart, Mich.

Application August 4, 1931, Serial No. 555,114
Renewed March 19, 1934

1 Claim. (Cl. 140—80)

This invention appertains to new and useful improvements in devices for bending and cutting wire.

The principal object of this invention is to provide a device for accurately forming wire and cutting the same into predetermined lengths.

Another important object of the invention is to provide a device particularly adapted for forming and cutting wire in an accurate and economical manner.

These and numerous other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:—

Figure 1 represents a rear elevational view of the appliance.

Fig. 2 is a front elevational view of the device.

Fig. 3 represents a horizontal sectional view taken substantially on the line 3—3 of Fig. 1.

Fig. 4 represents a horizontal sectional view taken substantially on the line 4—4 of Fig. 1.

Fig. 5 represents a vertical sectional view through the appliance.

Fig. 6 represents a fragmentary detailed sectional view through the eccentric means.

Fig. 7 represents a sectional view taken substantially on the line 7—7 of Fig. 6.

Fig. 8 represents a fragmentary detailed sectional view through the wire guide.

Fig. 9 represents a perspective view of a core support constructed by the device.

Fig. 10 represents a perspective view of one of the wire forming elements.

Fig. 11 represents a perspective view cutter.

Fig. 12 represents a perspective view of the wire guide.

Referring to the drawings wherein like numerals designate like parts, it can be seen that the numeral 5 represents a horizontally disposed elongated plate disposed with its longitudinal edge portions in a vertical plane, and being provided at each end with an upright 6. Each of these uprights at its inner side is provided adjacent one edge portion with a shoulder 7 against which the corresponding vertical rib 8 on the adjacent edge portion of the slidable plate 9 engages.

Secured to the adjacent edge portions of the uprights 6—6 are the guide strips 9a and obviously these in complement to the corresponding shoulder 7 provide guideways for the edge portions of the plate 9 so that the plate is vertically slidable.

The upper edge of the uprights 6—6 are connected to the bridge 10 and a pressure bar 11 is interposed between one vertical edge portion of the plate 9 and the opposed portion of the corresponding upright 6, and set screws 12 are threaded through this portion of the last-mentioned upright 6 for exerting pressure against the bar 11 which in turn exerts the proper friction against the plate 9, to prevent wobbling or loose motion of the plate when in operation.

The plate 9 is provided adjacent its lower edge with a horizontally disposed slot 13 in which the bolts 14 and 15 are adjusted. The numeral 16 represents a wire forming element which is provided with an elongated slot 17 at the intermediate portion through which the bolt 15 also passes.

It can be observed in Fig. 2, that this bolt 15 is also provided with a nut 18 whereby the element 16 can be firmly secured to the plate 9 at any point along the slot 13. The lower end of this element 16 as represented in Fig. 2 is provided with an inwardly beveled portion 19 which merges with the elongated finger 20. This element 16 is complemental to the element 21 which is provided with a beveled end portion 22 at its upper end portion. When the elements 16 and 21 are properly adjusted, a space will exist between the elements of a size to accommodate a given gauge wire, regardless of the disposition of the space to produce the predetermined wire formation.

The element 21 has a bolt 23 disposed therethrough and through the horizontal slot 24 in the lower portion of the plate 5 for carrying the element 21 to any desired adjusted position along the slot 24. A nut 25 is provided on the bolt 24 obviously, to firmly secure the element 21 against the plate 5.

Numeral 26 represents the cutter plate which is provided with a reduced extension 27 at its lower end terminating in a beveled cutting edge 28. The upper portion of this blade 26 is provided with a vertically extending slot 29 for receiving the bolt 14 which is provided with the nut 30. Obviously, this blade 26 can be adjusted to any desired position along the slot 13, depending upon the length of the wire, which has been determined.

Numeral 31 represents a barrel formed at one side of one of the uprights 6, the same being disposed horizontally to receive the cylindrical guide 32 which is provided with a bore 33 extending longitudinally therethrough to receive the wire 34 which is fed therethrough, and through the elements 16 and 21 and the cutter blade 26. This guide 32 can be adjusted in the barrel 31 by setting the set screw 35 against the same to secure the guide always in a position so that the cutter

blade 26 will ride against the inner end of the guide so that the proper severing action can take place.

Numeral 36 represents a bearing carried by the block 37, which block is secured to the last-mentioned upright 6 by a screw or screws 38. Journalled through this bearing 36 is the drive shaft 39 which can be connected to any suitable power source (not shown in the drawings).

On this shaft 39 is a cam disk 40 which is provided with the cam slot 41 therein in which the roller 42 rides. This roller 42 is on one end of the bell crank 43, the upper end portion of which is disposed inwardly as shown in Figs. 1 and 4, and obliquely slotted as at 44, to receive the pintle 45 projecting from the boss 46 on the rear side of the slide plate 9.

Obviously, when the roller 42 reaches the offset in the cam slot 41, of the cam disk 40, the bell crank 43 will be operated to permit the plate 9 to gravitate against the wire 34 so that the element 16 urging the wire 34 against the elements 21 will form the wire to the desired shape, while the cutter blade 26 is severing the wire at the desired length. It is to be understood, that the wire 34 is intermittently fed through the guide 32 to the cutter and bending elements and when the blade 9 is returned to elevated position, a second roller 47 operating against the cam flange 48 on the aforementioned cam disk 40 will, when the roller engages the offset 49 on the flange 48, cause the bell crank 50 to swing so that the upper end portion thereof will bear against the dispensing plate 51, resting on the flange 52 of the plate 51 so as to force this plate 51 against the formed article 53 so as to discharge the same from the position in which the same is resting.

Numeral 54 represents a slot transversely in the plate 51 and through this slot is disposed the screw 55 which is threaded into the flange 52. This screw 55 is also disposed through the plate 56 which is secured to the flange 52 by the screws 57. There may be several of these slots and screws to guide the plate 51 and as is clearly shown in Fig. 3, a wire string 58 is employed to return the plate 51 always to the position shown in Fig. 5 when the roller 47 is not in engagement with the offset portion 49 of the cam flange 48.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having thus described my invention, what I claim as new is:—

A device of the character described comprising a frame, a slide plate mounted in the frame, a stationary wire forming element on the frame, a complementary forming element on the plate, a cam, a connection between the cam and the plate whereby the plate is reciprocated in the frame, and a formed article dispenser and means between the said cam and dispenser for operating the latter.

RALPH DILLINGHAM.