

Nov. 8, 1932.

A. W. HIGHTOWER

1,887,375

WIRE SPLICING MACHINE

Filed May 28, 1930

2 Sheets-Sheet 1

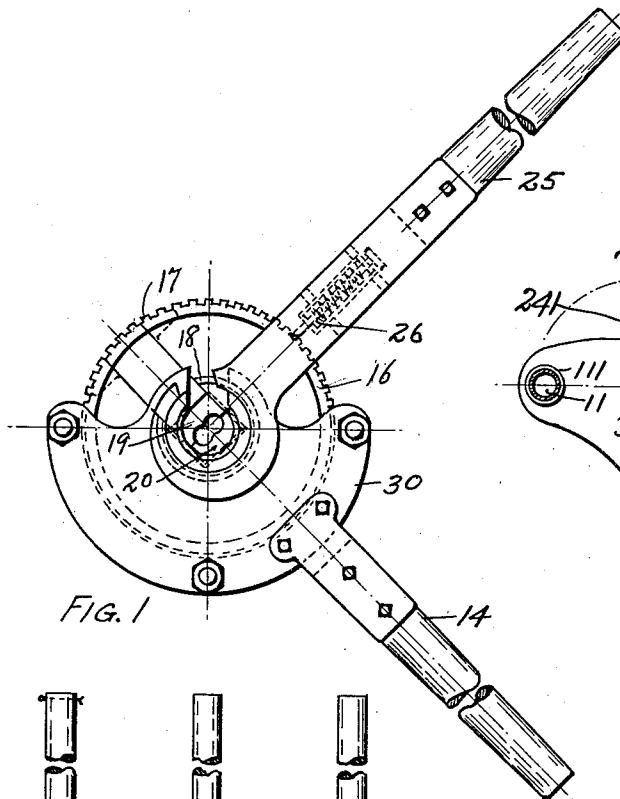


FIG. 1

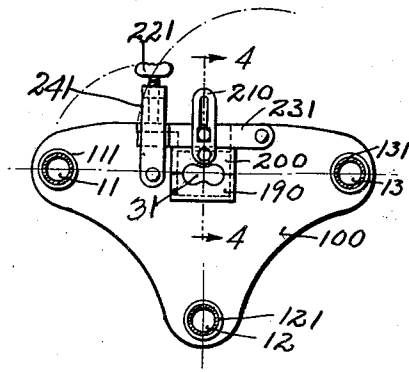


FIG. 3

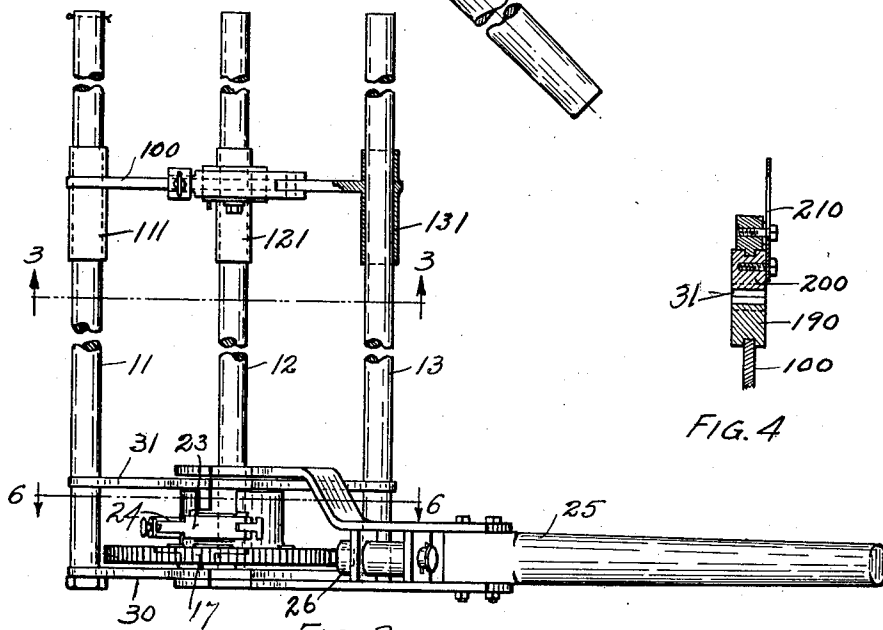


FIG. 2

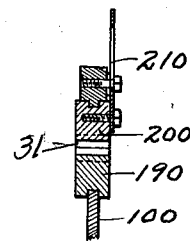


FIG. 4

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2 Sheets-Sheet 2

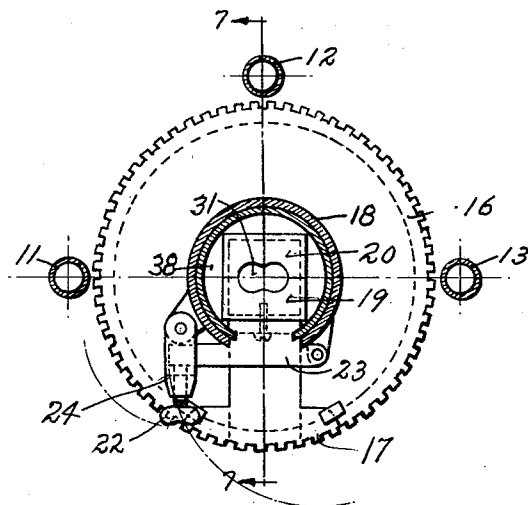


FIG. 6

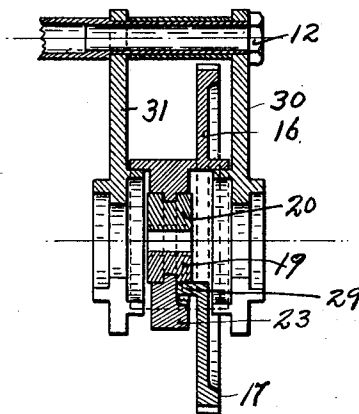


FIG. 7

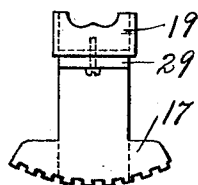


FIG. 5

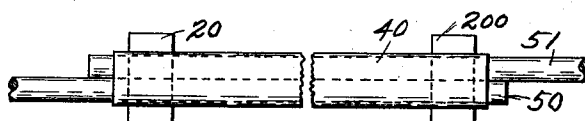


FIG. 8

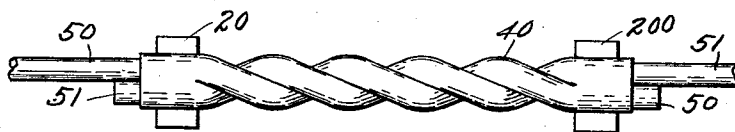


FIG. 9

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WIRE SPLICING MACHINE

Application filed May 28, 1930. Serial No. 456,602.

My invention relates to a wire splicing machine. More specifically it is intended for splicing wire, which may be used in conveying electric power, being of a diameter from approximately $\frac{3}{8}$ inch to $\frac{3}{4}$ inch, it being especially adapted for splicing wire which is stiff or springy as distinguished from wire which is soft and pliable, although my device is adapted for use for any kind of wire.

The objects I have accomplished is the construction of a wire splicing machine which can be operated by one man, the splices can be made uniformly, and in using splicing sleeves in connection with the splicing, the machine has features which compensate for the shrinking of the sleeve in the twisting of the wires and sleeves together. Other objects will be hereinafter disclosed.

Referring to the drawings herewith Fig. 1 is an end view of the device. Fig. 2 shows a side view. Fig. 3 is a sectional view of the device along the sectional line 3—3 in Fig. 2. Fig. 4 is a sectional view of the clamping means along the sectional line 4—4 in Fig. 3. Fig. 5 shows a removable segment of a ratchet wheel having one jaw of a clamp attached thereto. Fig. 6 is a sectional view along the section line 6—6 in Fig. 2. Fig. 7 is a sectional view along the section line 7—7 in Fig. 6. Fig. 8 shows a fractional view of the clamps having the splicing sleeve inserted therein with wires overlapping within the sleeve ready to be spliced. Fig. 9 shows the same parts disclosed in Fig. 8 when the splice is completed.

Referring to the drawings, a frame work is constructed with a base plate 30 having three rods, 11, 12, and 13, attached thereto at approximately right angles to the face of said base plate, and parallel to each other. A second plate 31 is attached to said posts on a parallel plane to the base plate for the purpose of strengthening the framework. In Fig. 3 the posts are shown as tubular. They can be formed solid if desired and other shape than tubular. A line drawn between the points of contact of the posts with the base plate will form a triangle. To the base and second plate is attached a handle 14.

Mounted between the base plate and the sec-

ond plate is a ratchet wheel 16, a sector 17 of which can be removed therefrom. The hub 18 of the ratchet wheel is hollow, or has a recess therein to hold a device for clamping the sleeve and the wire so that they will turn with the ratchet wheel. The clamp is preferably formed in two parts, one part 19 being attached to the segment 17, and the other part 20 being attached to the hub. The two parts have the adjacent faces of the jaws formed to receive and hold a sleeve and are positioned with respect to each other so that when a sleeve and wire is inserted between the jaws of the clamp, by means of a screw 22, or other equivalent, the jaws can be forced together with the result that the object between the jaws is clamped.

The means for clamping shown consists of a lever 23 pivotally attached at one end to a lug on the hub, having a saddle 24 also pivotally attached to a lug on the hub, and adapted to pass over the free end of lever 23. By screwing thumb screw 22 against the free end of lever 23 the jaw 19 is forced toward jaw 20. Thumb screw 22 is the means with which this compression is had. Lever 23 also holds in place the sector 17 when positioned with the wheel as shown in Fig. 6.

A hand lever 25 is pivotally attached at one end to base plate 30 and second plate 31. This lever is provided with a ratchet 26 which is adapted to cooperate with ratchet wheel 16, to rotate it together with the clamp attached to the hub.

Three sleeves, 111, 121, and 131, are adapted to slide on rods 11, 12, and 13. To these sleeves is rigidly attached a plate 100. The combined plate and sleeves are slidably mounted on said rods. Plate 100 has mounted thereon, clamping means which is a duplicate of the clamp attached to hub 18. It consists of a jaw 200 and a cooperating jaw 190 which is positioned with the faces of the jaws toward each other, both of which are attached to plate 100. The jaws are moved toward each other by means of lever 231 which is pivotally attached at one end to plate 100, a saddle 241 adapted to fit over the free end of lever 231, and a thumb screw 221 which is adapted to force the lever 231 against the jaws and to

push the jaws toward each other. The openings of the two clamps should be on a common line which should preferably be approximately parallel to the rods. Opening 38 should be made through base plate 30 and second plate 31 in line with said clamp openings. The slotted member 210 is adapted to hold one jaw, 20, of the clamp to the lever 231.

In using this device reference is had to Figs. 8 and 9. The metal sleeve 40 is placed in the machine so that one end is firmly held within the clamp in hub 18, and the other end is held by the clamp positioned in plate 100. The two wires 50 and 51 which are to be spliced are pushed through the tube from opposite ends. The ratchet is then manipulated to rotate the ratchet wheel and clamp attached thereto, which rotary movement twists the combined wires and sleeve as shown in Fig. 9, the result being a rigid twisted splice. It will be noted that the sleeve is shortened as it is twisted but this shortening is compensated for by the plate 100 sliding toward the hub clamping means on sleeves 111, 121, and 131. The device can be used for short or long sleeves, the limit being fixed by the length of the posts.

It is also noted that the faces of the clamps have recesses 31 therein to fit the ends of the tube. These recesses can be adapted for sleeves and wires of different diameters. I prefer to have the clamping jaws removable, so that clamps adapted for the selected size of wire to be spliced can be inserted. It is also noted that the device can easily be operated by one man, as the leverage secured by the wheel and ratchet can be adapted to splice and twist wires up to $\frac{3}{4}$ inch in diameter.

Having described my invention I claim:

A device for splicing wire consisting of a base, rods positioned parallel to each other and adapted as slideways, said rods being rigidly attached at one end to said base, a ratchet wheel rotatably mounted on said base, a face of said ratchet wheel being on a plane at an approximate right angle to said rods, a clamp attached to the center portion of the ratchet wheel and adapted to be rotated therewith, a second clamp slidably attached to said rods, the two clamps being positioned so that the opening in the jaws is aligned and adapted to hold either end of a tubular member, said tubular member being adapted to hold two overlapping wires within said tubular member, means adapted to rotate said ratchet wheel and to twist the overlapping wires within the tube and with the tubular member.

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