

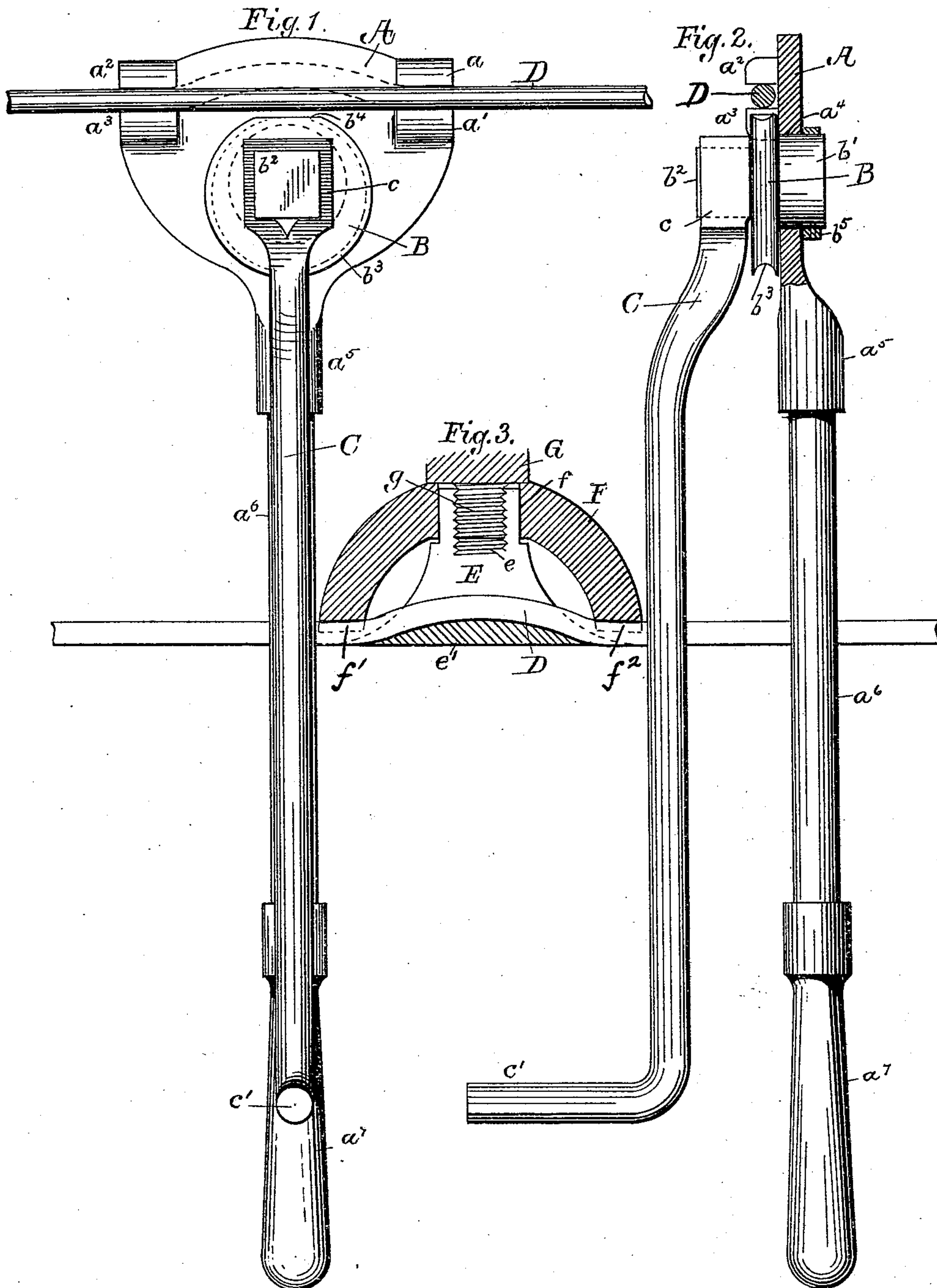
(No Model.)

H. D. WINTON.

DEVICE FOR BENDING ELECTRIC TROLLEY WIRES.

No. 475,261.

Patented May 17, 1892.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

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## DEVICE FOR BENDING ELECTRIC TROLLEY-WIRES.

SPECIFICATION forming part of Letters Patent No. 475,261, dated May 17, 1892.

Application filed October 26, 1891. Serial No. 409,837. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY D. WINTON, a citizen of the United States, and a resident of Wellesley, in the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Machines for Bending Electric Trolley-Wires, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

This invention relates to an improvement in wire-bending machines for bending or kinking trolley-wires where it is intended to secure the attaching-clamp which holds the trolley-wire to the supporting-insulator.

The improvement consists of a device which can be carried along the line and hooked over the trolley-wire at such points as it is desired to place a supporting-insulator, and by holding it firmly in one hand and turning a lever forming part of a cam the wire is given the proper-shaped kink by a single turn of the lever, so that the clamping-ears can be attached to the wire.

Referring to the drawings, Figure 1 is a front view of the machine. Fig. 2 is a side view of the same. Fig. 3 is a sectional view of the wire-clamp, showing the wire secured within it.

Referring to Figs. 1 and 2, A is a casting forming the main body portion of the machine. This casting is provided with two projecting ears on each side, having slots in the center the size of the diameter of the wire to be kinked. These ears are shown at  $a$   $a'$   $a^2$   $a^3$ . The lower part of the casting at  $a^5$  is hub-shaped, so that a rod  $a^6$  can be driven into it, at the extremity of which there is a handle  $a^7$ . It will be seen that this main casting with the handle can be hung by means of the ears upon the trolley-wire. In the center portion of the main body-casting is a hole  $a^4$ , which forms a bearing for an eccentric cam B, which is constructed as follows: The portion  $b'$  of the cam, being round, is made to fit the bearing in the body-casting, so that it will turn freely. The circular portion of the cam B is provided with a groove, as shown at  $b^3$ , corresponding in shape to the wire which is to be kinked. On the front of this eccen-

tric cam is a square projecting piece  $b^2$ , suitable to receive a wrench. This whole eccentric cam is mounted in the bearing  $a^4$  upon the main casting and held therein by a collar  $b^5$ , and in such relation to the slots in the ears that when the cam is set at its lowest point the wire can slip into the slots without coming in contact with the cam. To economize space, I flatten a place on the cam, as shown at  $b^4$ , and, having fitted a wrench upon the square-shaped portion  $b^2$ , it will be seen that by twisting this around after the wire has been placed in the slots the cam will engage with the wire and bend it to conform with it. It will assume a form shown by the dotted lines in Fig. 1. In order that this wire may be very easily kinked, I make the rod  $a^6$ , which forms a portion of the handle, of considerable length, and also the wrench C, which is provided with a bend, (shown at  $c'$ ), so that I obtain considerable leverage.

To operate this machine, it is only necessary to hang it upon the trolley-wire after it has been supported at certain points upon the line by means of the slotted ears, and giving one turn of the handle it will produce the kink or bend of the wire indicated by the dotted lines. This kink or bend of course can be changed in shape by the amount of eccentricity given the cam and the distance between the ears and may be varied to suit the circumstances. The groove  $b^3$  (shown upon the cam) is for the purpose of holding the wire as the cam is turned so that it cannot get out of the slotted ears—that is, if the cam were made perfectly flat the tendency would be to crowd it one way or another and it would not operate perfectly; but by means of the groove when once the cam is engaged with the wire it is impossible for the wire to come out of the slotted ears until it has received its full bend. Having turned the wrench a complete turn, the machine may be rapped off the wire and the wire is then ready for a clamp, a sectional view of which is shown in Fig. 3. It consists of a clamp portion E, which is a casting split in two portions, excepting at the bottom, where it has a sectional shape, (shown at  $e'$ .) It is provided with threads  $e$ , formed partially in each portion of the clamp, and a yoke F, which is formed to fit over the split



end, thereby preventing it from spreading, and at the same time extended portions of the yoke are formed with grooves  $f' f^2$  to fit over the wire.

5 G represents a stud or the extremity of an insulator, which is screwed into the slotted thread and which when forced down tightly binds the yoke upon the two extremities of the wire, which, having been kinked and  
10 fitted into the slot, is bound tightly together, leaving a perfectly-smooth true run for the trolley.

I have shown my preferred form of kinking-machine, it being perfectly simple and  
15 quickly applied and operated. Some modifications can be made which would embody the principle of my invention and which I consider part of the same—as, for instance, a change in the form of the cam, so that instead  
20 of making a complete turn of the cam it could be given a partial turn and accomplish the bending; also, the body-casting A can be extended to include a handle instead of making it separately and putting it on; also, the  
25 wrench C can be cast integral with the cam.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a kink-  
30 ing-machine for trolley-wires, composed of a body portion provided with ears to span the

wire and hold it in place, an eccentric cam having a bearing in the body portion in such relation to the wire that when it is turned it will engage with it and force it between the  
35 ears and cause a kink or bend in the wire suitable to receive a trolley-clamping ear, a handle forming part of the body portion to hold it in position upon the wire, and a wrench for turning the cam, substantially as and for  
40 the purpose set forth and described.

2. As a new article of manufacture, a kinking-machine for trolley-wires, composed of a body portion provided with ears to span the  
45 wire and hold it in place, an eccentric cam provided with a groove to conform to the wire and having a bearing in the body portion in such relation to the wire that when it is turned it will engage with it and force it between  
50 the ears and cause a kink or bend in the wire suitable to receive a trolley-clamping ear, a handle forming part of the body portion by which it may be held upon the suspended wire, and a wrench or handle forming part of  
55 the cam, whereby it may be turned in its bearing, substantially as and for the purpose set forth and described.

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Witnesses:

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