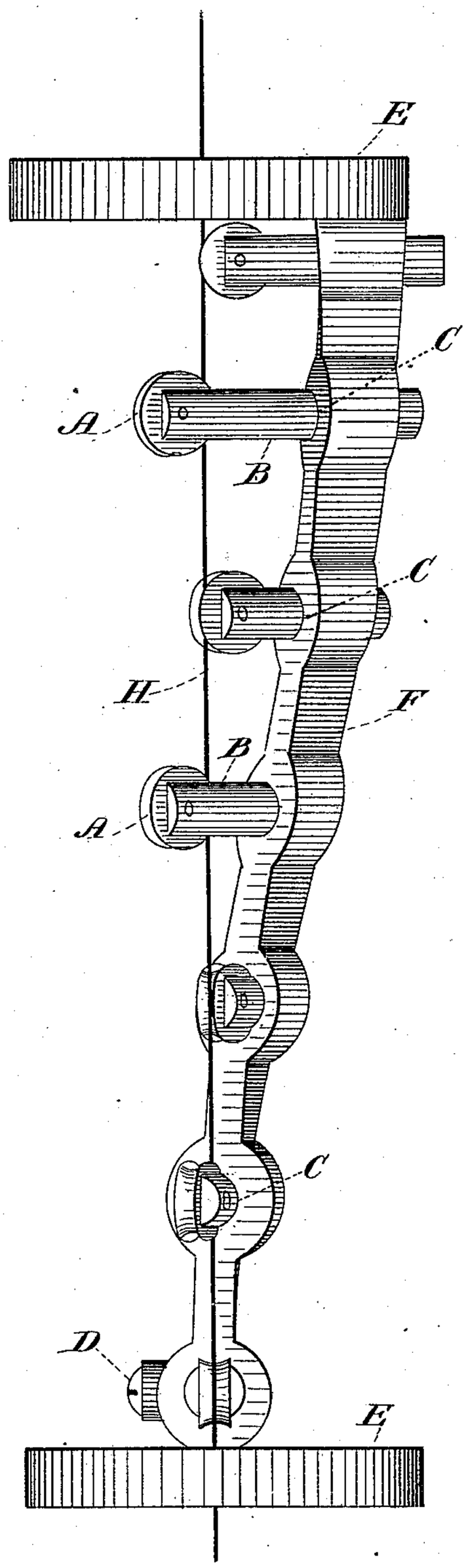
(No Model.)

H. BORCHARDT.

WIRE STRAIGHTENER.

No. 299,615. Patented June 3, 1884.



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UNITED STATES PATENT OFFICE.

HUGO BORCHARDT, OF BRIDGEPORT, CONNECTICUT.

WIRE-STRAIGHTENER.

SPECIFICATION forming part of Letters Patent No. 299,615, dated June 3, 1884.

Application filed November 15, 1883. (No model.)

To all whom it may concern:

Be it known that I, HUGO BORCHARDT, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Wire-Straighteners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to wire-working, and has for its object to produce a straightener which shall be simple in construction and economical in cost, and which shall possess all the advantages of the best rotary straighteners now in use without having their corresponding disadvantages. The objections to the rotary straighteners now in use are their tendency to mark the surface of the wire, and also the fact that it is impossible to straighten shaped wire with them.

In the straighteners now in common use the wire is passed through a series of dies or between bearing-surfaces adjustably arranged in a frame which is mounted in any suitable manner, and to which rapid rotation is imparted, the dies or bearing-points being so adjusted in the frame that the wire in passing through is forced out of line with the axis of the frame in all directions, each portion of the wire as it passes through the frame being deflected in various directions, so that it passes through with a spiral motion and comes out thoroughly straightened, but often badly marked by the surfaces of the dies as they are rapidly rotated about it. With my improved device I am enabled to straighten round or shaped wire or light metal tubing without making the slightest mark upon the surface of the wire, or without injury to the tubing when used for that purpose. My invention consists in a series of stationary rolls, which bear upon the surface of the wire at different and constant angles.

For the purpose of enabling others to understand and use my improved device, I will proceed to describe the same, referring by letters to the accompanying drawing, which is an isometrical view of the whole device.

A A are a series of rolls journaled in the ends of sliding pins B B. These pins slide in sockets C C, and are secured in position after adjustment by set-screws D, or in any convenient manner. Any number of pins and rollers may be used, the essential principle of my invention being that they shall bear upon the wire at different angles—that is to say, each roll acts on the surface of the wire in a plane at an acute angle to the plane of the adjacent rolls. The arrangement shown in the drawing is deemed preferable to any other.

E E are two heavy metallic rings or plates, through which the wire passes in entering and leaving the device, and between which extends a single strip or bar, F, in which are the sockets C C. This strip makes a partial turn spirally about an imaginary center, the position of which is clearly indicated in the drawing by the wire H. It follows therefore that the sockets, and of course the pins, are not parallel, but they all point at different angles toward the center.

It should be understood that the rolls are not an essential feature of my invention, it being well understood that for certain classes of work the rolls may as well, if not better, be omitted, the ends of the pins which come in contact with the wire being slightly grooved. I have shown and described my device as provided with rolls as I ordinarily use them; but I make no claim either to their use or omission in a wire-straightener, as they have been used with and without rolls for many years.

More than one side strip may be used, if desired; but one will be found amply sufficient. Where but one side strip is used, as in the drawing, it is necessary that the wire, when the device is in use, should be passed alternately over and under the rolls. When two side strips are used, the wire passes between the two series of rolls.

In the drawing I have shown the wire as running straight through between the rolls. In practice, however, the rolls are so adjusted that their bearing-surfaces are not in exactly a straight line; but the bearing-surfaces of the successive rolls are arranged alternately on opposite sides of the center, so that the wire as it is drawn through between the rolls is given a slightly serpentine motion.

As stated above, the side strip, F, makes a partial turn about the center of the device, so that no two of the rollers act on the wire in the same plane.

I have shown the rollers as having faces curved inward, which enables a single set of rolls to act on any sized round wire. When it is desired, however, to straighten shaped wire, special rolls are required, which are provided with grooves corresponding in shape with the wire.

Having thus described my invention, I claim—

1. In a device for straightening wire, a series of stationary rolls arranged in spiral form, and acting on alternate sides of the wire, whereby the surface is acted on from all directions.

2. In a device for straightening wire, a series of rolls journaled in the ends of pins, which are capable of adjustment in sockets arranged in spiral form, whereby each roll is caused to act on the surface of the wire in a plane at an acute angle to the adjacent rolls.

3. In a wire-straightener, the plates or rings E, through which the wire passes, and a single strip, F, connecting said plates or rings, and constructed to make a partial turn about the center, said strip being provided with a series of sockets, in combination with a series of pins adjustably arranged in said sockets, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HUGO BORCHARDT.

Witnesses:
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