

(No Model.)

G. D. BURTON & E. E. ANGELL.
ELECTRIC FORGE.

No. 488,466.

Patented Dec. 20, 1892.

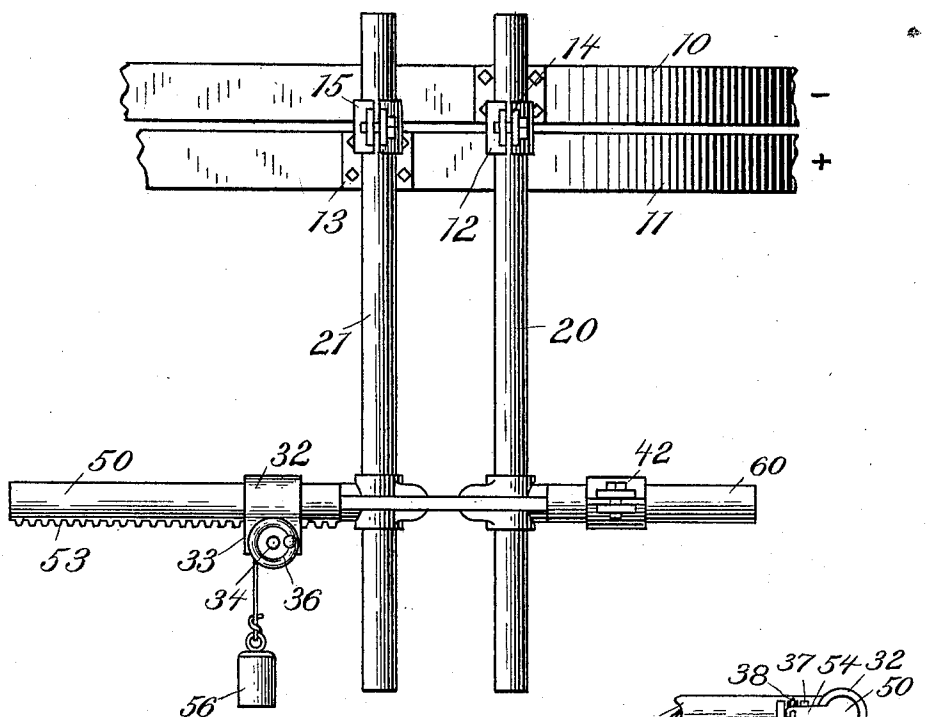


Fig. 1.

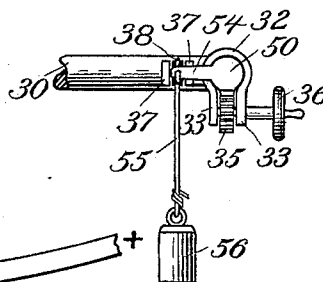


Fig. 3.

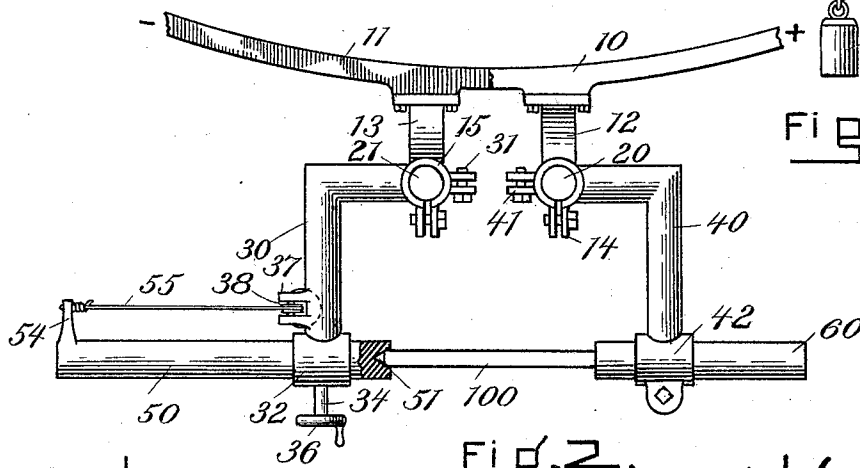


Fig. 2.

WITNESSES.

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ELECTRIC FORGE.

SPECIFICATION forming part of Letters Patent No. 488,466, dated December 20, 1892.

Application filed October 6, 1891. Serial No. 407,900. (No model.)

To all whom it may concern:

Be it known that we, GEORGE D. BURTON, residing at Boston, in the county of Suffolk, and EDWIN E. ANGELL, residing at Somerville, in the county of Middlesex, State of Massachusetts, citizens of the United States of America, have invented certain new and useful Improvements in Electric Forges, of which the following is a specification.

This invention relates to an electric forge for heating to a forging temperature bars or blanks of metal from which articles are to be formed.

The object of the invention is to provide an electric forge for the convenient and economical heating of bars or blanks from end to end thereof, and for heating bars having beveled or tapered ends.

Figure 1 of the accompanying drawings represents a front elevation of this improved electric forge in connection with an electric current converter. Fig. 2 represents a plan thereof. Fig. 3 represents an end view of one of the adjustable electrodes with its adjusting mechanism.

Similar numerals of reference indicate corresponding parts in the different figures.

The rings 10 and 11, whereof segments only are represented in the drawings, constitute the positive and negative elements of an electric current converter for transforming a current of small volume and high voltage into a current of low voltage and large volume. The construction of this converter does not constitute a part of this invention, and therefore need not be herein shown or described.

Any suitable current converter or source of electric heating currents may be used in connection with this improved forge. A short bracket 12, provided with a clamp 14 projects downward and outward from the ring 10, and a short bracket 13, provided with a clamp 15 is attached to the ring 11 and projects upward and outward therefrom, terminating in the same horizontal plane as the bracket 12. These brackets are composed of copper or other suitable conductive material or composition. A vertical rod 20 is supported at its upper end in the clamp 14 of the bracket 12, being vertically adjustable therein, and a vertical rod 21 is supported in the clamp 15 of

the bracket 13, being vertically adjustable therein. A short horizontal, angular arm 30 provided at its inner end with a clamp 31, is adjustable upon the vertical rod 21, and a horizontal, angular arm 40, provided at its inner end with a clamp 41, is adjustable on the vertical rod 20. These arms extend laterally from said bars for a short distance and then extend forward, terminating opposite each other. They are provided respectively with clamps 32 and 42 at their outer ends, said clamps being in alignment. An electrode 50 is adjustable in the clamp 32, and an electrode 60 is adjustable in the clamp 42. The electrode 50 is provided with a socket 51 at its inner end for receiving one end of the blank 100 to be heated, and the electrode 60 is provided at its inner end with a similar socket for receiving the opposite end of said blank.

One of the electrodes is provided with mechanism for thrusting and retracting it for the purpose of inserting and releasing the blanks. The mechanism herein shown for this purpose will now be described. The clamp 32 is provided with dependent ears 33, in which a short shaft 34 is journaled. This shaft is provided with a pinion 35, and the electrode 50 is provided on its under side with a rack 53, which is engaged by said pinion. The shaft 34 is also provided at its outer end with a hand-wheel 36, by which it is actuated. The arm 30 is provided with ears 37, in which a pulley 38 is journaled. The outer end of the electrode 50 is provided with a lug 54, and a cord 55 attached to said lug passes over the pulley 38 and supports a weight 56 at its lower end. The draft of the weighted cord tends to draw the electrode 50 toward the electrode 60, and effect the clamping of the bar. The electrode 50 is retracted to release the bar by means of a rack and pinion, which may also serve for thrusting it.

In the use of this apparatus, the electrode, 50, is retracted slightly by turning the hand-wheel, 36, and the blank as 100 is inserted at one end in the socket of the electrode, 60, and the electrode, 50, is thrust forward by the action of the hand-wheel and made to engage by its socket, 51, the opposite end of said blank. The weight, 56, tends to hold said electrode, 50, in contact with the blank. The blank serves

to close the circuit between the electrodes and is heated by the electric current which passes through it. When heated to a forging temperature it is released by a turning of the hand-wheel, 36, whereby the electrode, 50, is retracted.

We claim as our invention:

1. In an electric forge, the combination of an electrode provided with an end socket and with a rack, a conductor provided with a clamp, in which said electrode is movable, a crank-shaft supported in said clamp and provided with a pinion meshing with said rack, another electrode, and conductors connecting said electrodes with the source of a heating current.

2. The combination of two rings constituting opposite poles of an electric converter, rigid conductors connected with said rings, clamps at the outer ends of said conductors, an electrode supported in one of said clamps, and consisting of a solid bar provided with a cup-shaped socket at its inner end and another

electrode supported in the other clamp and consisting of a solid bar provided with a cup-shaped socket at its inner end, said electrodes being adapted to receive the opposite ends of the bar to be heated, substantially as set forth.

3. The combination of two rings constituting opposite poles of an electric converter, conductive brackets attached to said rings respectively, and provided with clamps at their outer ends, vertical rods adjustable in said clamps, composed of conductive material, horizontal angular rods, connected with said vertical rods, clamps at the outer ends of said angular rods, and electrodes adjustable in said clamps and provided with cup-shaped sockets at their inner ends.

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