

(No Model.)

C. L. COFFIN.

METHOD OF ARC AND INCANDESCENT METAL HEATING.

No. 487,607.

Patented Dec. 6, 1892.

Fig. 1.

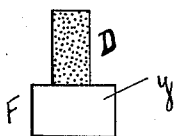
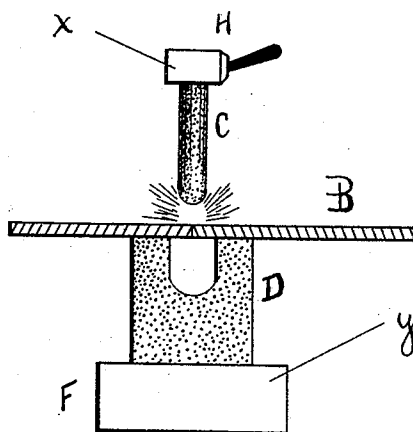


Fig. 2.

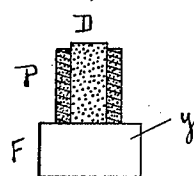


Fig. 3.

WITNESSES
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METHOD OF ARC AND INCANDESCENT METAL-HEATING.

SPECIFICATION forming part of Letters Patent No. 487,607, dated December 6, 1892.

Application filed August 6, 1892. Serial No. 442,335. (No specimens.)

To all whom it may concern:

Be it known that I, CHARLES L. COFFIN, of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful
5 Improvement in Methods of Welding or Working Metals Electrically, of which the following is a specification.

My invention consists in an improved method of welding or working metals electrically
10 hereinafter fully described and claimed.

Figure 1 is a diagrammatic view of an apparatus which may be used to practice my invention. Fig. 2 is a side view thereof, and Fig. 3 illustrates a slight modification.

15 F represents a base or frame in which is mounted a conductor of some refractory material, preferably carbon, the base F being suitably insulated and being connected by a conductor Y with one pole of a generator of
20 electricity.

C represents a carbon or other suitable refractory electrode held in an insulated handle H and connected by conductor X with the other pole of a generator of electricity. B
25 represents an article to be heated, or two articles, as shown in Fig. 1, to be welded together.

P represents a protective coating of any suitable refractory material with which conductor D may be enveloped to keep it from
30 the air.

In operating my invention the article to be

heated is in contact with conductor D. Conductor C is brought against the outer side of said material, and a current is then passed
35 through conductor D, material B, and material C. As soon as the circuit is established conductor C is raised from the material, so as to establish an arc between it and the material, by which the material B becomes rapidly
40 heated. At the same time the heating effect of the current raises the conductor D, or that part of it which is in contact with material B, to a state of incandescence, thereby heating
45 the under side of material B. When two articles are to be welded together, the conductor D may be forked, as shown in Fig. 1, so that the welding edges of the materials may be subjected on one side to the arc and on the
50 opposite sides to the heating effect of conductor D.

What I claim as my invention, and desire to secure by Letters Patent, is—

The herein-described method of heating metals electrically, consisting in heating the
55 material on one side by contact with a conductor in electrical connection with one terminal of a generator and heating the material on the other side by a voltaic arc.

CHARLES L. COFFIN.

Witnesses:

CYRUS E. LOTHROP,
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