No. 691,404. Patented Jan. 21, 1902.

H. E. MEYERS.

PORTABLE ELECTRIC WELDING MACHINE.

(Application filed Mar. 14, 1901.)

(No Model.)

Fig. 2.

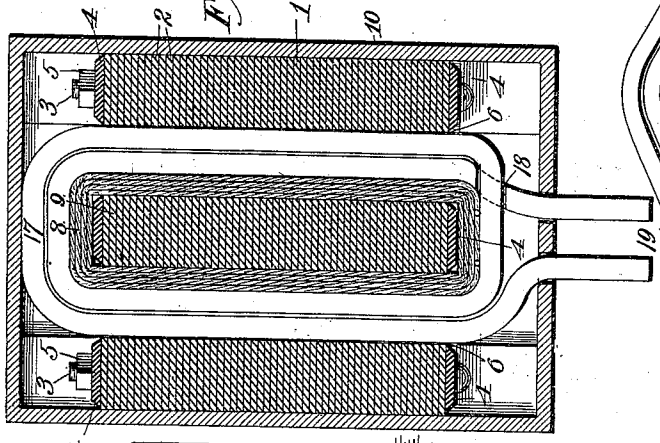


Fig. 4.

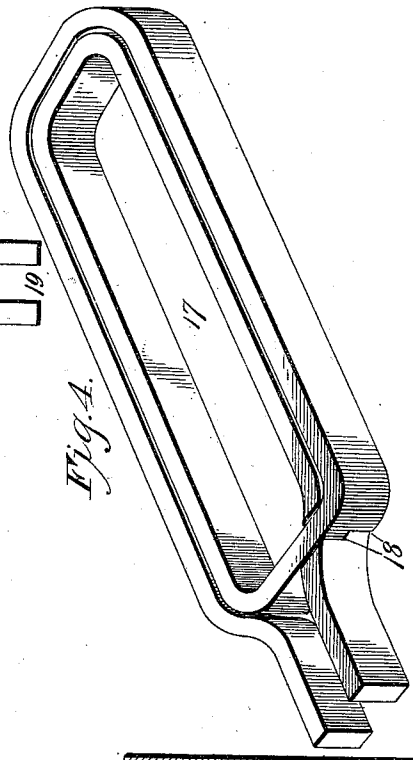


Fig. 1.

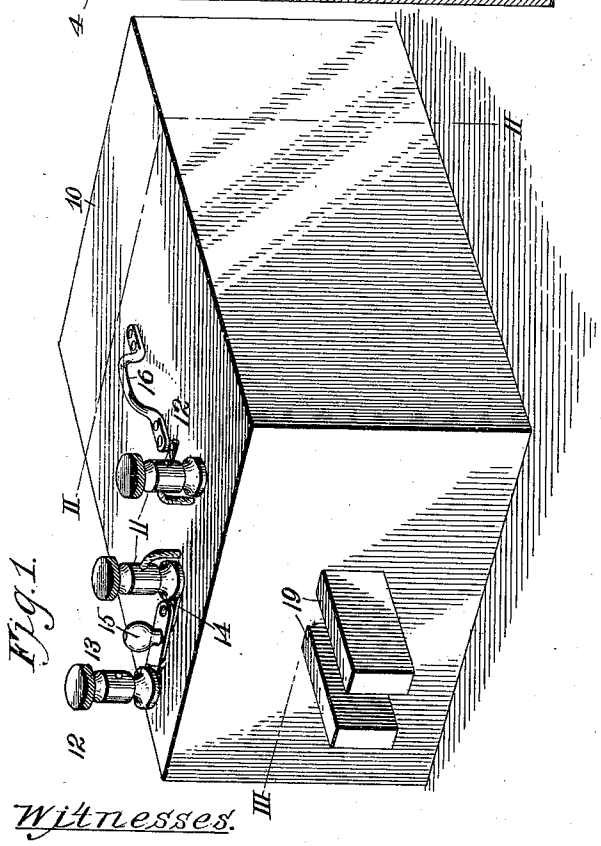
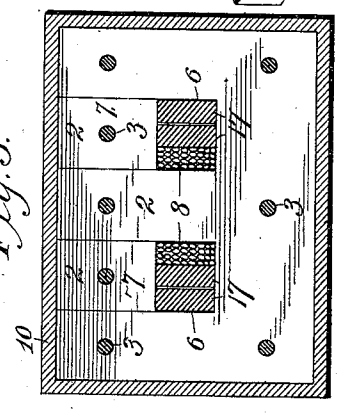


Fig. 3.



Witnesses.

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HENRY E. MEYERS, OF BUTTE, MONTANA.

PORTABLE ELECTRIC WELDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 691,404, dated January 21, 1902.

Application filed March 14, 1901. Serial No. 51,102. (No model.)

To all whom it may concern:

Be it known that I, HENRY E. MEYERS, a citizen of the United States, residing at Butte, Silverbow county, Montana, have invented a new and useful Portable Electric Welding-Machine, of which the following is a specification.

My invention relates to electric welding-machines; and my object is to provide a portable welding-machine which operates efficiently and economically and is of simple, strong, durable, and cheap construction.

With this general object in view the invention consists in certain novel and peculiar features of construction and combinations of parts, as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 represents a perspective view of a welding-machine embodying my invention. Fig. 2 is a vertical section of the same on line II II, Fig. 1. Fig. 3 is a horizontal section on line III, Fig. 1. Fig. 4 is a detail perspective view of the secondary coil.

In carrying out my invention I provide a laminated block 1, consisting of a series of thin metal sheets 2, secured together by bolts 3, plates 4 being interposed between the block and the heads of the bolts and between the block and the nuts 5, engaging the threaded ends of the bolts. I then saw out block 1 to provide the parallel openings 6 and the laminated blocks 7, the latter forming the upper walls of said openings. By thus completely surrounding openings 6 the best inductive effect is obtained.

8 designates the primary coil, preferably of armature-wire, four abreast and sixteen times around and of substantially elongated rectangular form, the same fitting and held in openings 6 by blocks 7 and snugly around the center wall or partition 9, forming an integral part of block 1, the terminals of said primary coil extending out through the rectangular casing 10, inclosing the block 1, and connecting with the binding-posts 11 upon said casing, one of said binding-posts being connected to one terminal 12 of an incandescent light-circuit and the other to a binding-post 13, adapted to be thrown into or out of circuit with the conducting-plate 14, secured to the other binding-post 11 by means of a switch, as at 15. The current through said incandescent circuit is of the alternating type in order that the welding-machine may be operated at remote distances from the source of electric energy with the loss or waste of a minimum amount of current.

In order that the machine may be transported with the utmost convenience from place to place, the casing is provided with a handle 16. Further mention of the advantages derived from the portable construction of the machine are hereinafter referred to.

17 designates the secondary coil, the same fitting in the opening 6 snugly around the primary coil, and consisting, preferably, of bar metal approximately twice as wide as it is thick. The coil is preferably in the form shown in Fig. 4, where it will be noticed that it is provided at its intersection-point with notches 18 in order that it may be more compact in construction and fit more snugly and accurately within opening 6. The terminals 19 of this coil project through the adjacent wall of the casing and may be arranged or extended to a point contiguous to a vise or other device for holding the tools employed for welding or other work or the pieces of metal or other articles which are to be heated for sharpening, welding, riveting, or other purposes. The form and relation of these terminals to each other are unimportant, as they may be employed for heating one or more bolts to the requisite temperature for riveting in bridge or viaduct work and analogous construction, may be employed by a blacksmith to heat his horseshoes to shape the same, may be employed to heat the ends of picks or drills preliminary to sharpening the same, for heating the ends of metal of the same or varying sizes to be welded together, and, in fact, may be used in such a variety of connections that it is impracticable and unnecessary to attempt to enumerate them all, it being understood, of course, that the articles to be welded must be of smaller area than the terminals of the secondary coil. Otherwise the insulation of the primary coil would be burned out and also cause a burn-out of the secondary coil.

When constructed about seven by seven by four and one-half inches in size, the machine weighs about forty pounds and may be

conveniently carried by hand up a ladder to the top of a building, bridge, or other structure or down into a mine, where any kind of work within its capacity may be done.

The machine practically is composed of only three pieces, as the blocks 7 really form a permanent part of the laminated block 1, being detachable simply for convenience in placing the coils in or removing them from position, and although I have described the preferred manner of producing said laminated blocks 7 it is to be understood that I do not restrict myself to the idea of cutting them from the body of the block.

While I have illustrated and described the preferred embodiment of the invention, it is to be understood that I reserve the right to make such changes in the form, proportion, detail construction, and arrangement of the parts which properly fall within its spirit and scope.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An electric welding-machine, comprising a suitable casing, a laminated block fitting snugly therein and provided with openings, a primary coil fitting in said openings, a pair of binding-posts secured to the casing and connected to the terminals of the primary coil, a circuit-terminal also connected to one of said binding-posts, a third binding-post upon the casing connected to the other terminal of said circuit, a switch for throwing the same in and out of circuit with the binding-post of the pair not connected to said circuit-terminal, and a secondary coil also fitting in the openings of the block and surrounding the primary coil, and having its terminals projecting through one side of the casing, substantially as described.

2. An electric welding-machine, comprising a suitable casing, a laminated block fitting snugly therein and provided with openings, a primary coil fitting in said openings, a pair of binding-posts secured to the casing and connected to the terminals of the primary coil, a circuit-terminal also connected to one of said binding-posts, a third binding-post upon the casing connected to the other terminal of said circuit, a switch for throwing the same in and out of circuit with the binding-post of the pair not connected to said circuit-terminal, a secondary coil also fitting in the openings of the block and surrounding the primary coil, and having its terminals projecting through one side of the casing, and a handle secured to the casing for convenience in carrying the machine, substantially as described.

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

HENRY E. MEYERS.

Witnesses:
HENRY R. WHITE,
G. FRANKEL.