No. 731,665. PATENTED JUNE 23, 1903.

C. H. CLAYTON.

WELDING MACHINE.

APPLICATION FILED JAN. 15, 1903.

NO MODEL.

Fig. 1.

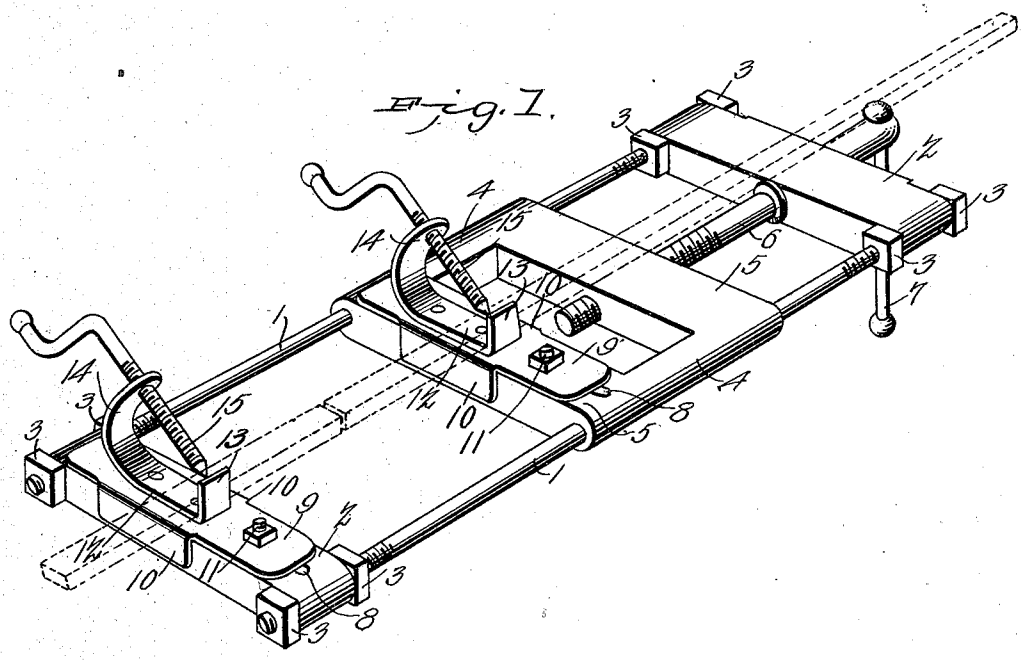


Fig. 2.

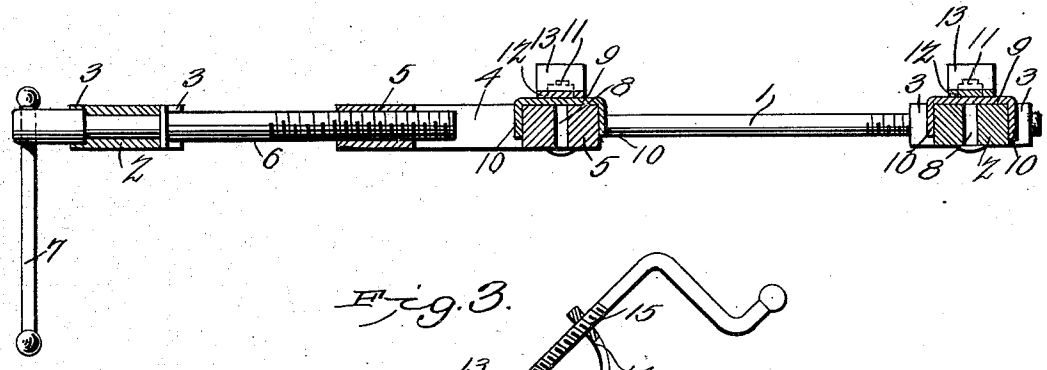
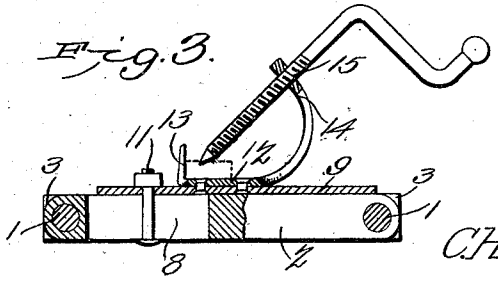


Fig. 3.



Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 731,665. Patented June 23, 1903.

UNITED STATES PATENT OFFICE.

CHARLES H. CLAYTON, OF FREEHOLD, NEW JERSEY.

WELDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 731,665, dated June 23, 1903.

Application filed January 15, 1903. Serial No. 139,171. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. CLAYTON, a citizen of the United States, residing at Freehold, in the county of Monmouth and State of New Jersey, have invented a new and useful Welding-Machine, of which the following is a specification.

My invention relates to welding-machines, more especially to machines for doing what is known as "butt-welding" as distingnished from machines for producing a lap-weld; and it consists of the construction hereinafter described and shown in the accompanying drawings.

Machines for welding rods at their ends by means of currents of electricity passed through the rods have long been well known in the art; but so far as I am aware no machines have been constructed for butt-welding rods or bars by simply heating them in an ordinary blacksmith's forge and forcing the ends into contact while at a welding temperature.

The object of my invention is to produce a machine of simple construction, light enough to be easily handled, and adapted to produce butt-welds in the manner just explained.

In the drawings, Figure 1 is a view in perspective of a welding-machine with two bars of rectangular cross-section clamped in position for welding. Fig. 2 is a longitudinal section of the machine, taken on about the median line. Fig. 3 is an end elevation, partly in section, showing the construction of one of the clamps and its manner of support upon the end piece 2.

In the above-mentioned figures corresponding parts are indicated by the same reference characters throughout.

Referring to the drawings by reference characters, my machine consists of a frame composed of the side rods 1 1 and end pieces 2 2, secured to the side rods by having the rods inserted through suitable openings in the ends of said end pieces and held firmly in position by means of nuts 3 3 3, &c. Mounted to slide on the side rods is a frame consisting of two blocks 4 4, bored to permit the passage of the side rods therethrough, and two cross-pieces 5 5, one of which is threaded, as shown, to engage with a screw-shaft 6, rotatably mounted in one of the end pieces 2 and provided at its outer end with a cross-bar 7, slidably mounted in a hole bored through the end of the screw-shaft to afford leverage for turning said shaft. The other cross-piece 5 of the sliding frame is provided with a slot 8, and mounted on the cross-piece is a plate 9, having lugs 10 10, bent downward into approximate contact with the sides of the cross-piece. A screw-bolt 11 passes through the slot 8 and a hole provided for it near one end of the plate 9. One of the end pieces 2 of the main frame is provided with a slot 8, a plate 9, having lugs 10 10, and a bolt 11, in all respects similar to those on the cross-piece 5 of the sliding frame. Mounted on each of the plates 9 9 are clamps, each consisting of a base member 12, turned up at one end to form a shoulder or abutment 13 at right angles to the main portion of the base member and having the other end bent into a curve, as shown at 14. At the end of each curved portion 14 a threaded hole is provided, through which a clamping-screw 15, threaded for a considerable portion of its length, passes. The ends of the clamping-screws 15 15, which engage with the material to be clamped, are pointed, as shown, and the other ends are bent to form crank-arms, by means of which the clamping-screws can be forced into firm engagement with the material to be clamped.

In using my welding-machine the rods or bars to be welded, which may be round, square, or flat, are placed in the clamps, as shown in the drawings, and securely gripped thereby. The ends of the rods or bars are to be practically in contact, as shown. The machine with the rods clamped therein is then laid over a blacksmith's forge or similar source of heat in such position that the ends of the rods where the welds are to be made will be heated. When the rods have reached the welding temperature, the screw-shaft 6 is turned by means of the cross-bar 7 and the sliding frame carrying one of the rods is moved toward the end of the main frame, upon which the other rod is clamped. By this operation rods or bars of any cross-section are welded with great success and without any hammering.

It is desirable in producing the weld to have the centers of the surfaces of metal to be welded as nearly as possible in line with the

axis of the screw-shaft 6, and in order to make this possible with pieces of different dimensions I have mounted the clamps upon the plates 9, which are susceptible of adjustment upon their supports by means of the bolts 11 11 and the slots 8 8.

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

1. The combination of a frame having side and end members, a slide mounted on said members, means for reciprocating said slide, a clamp provided on said slide and a similar clamp provided on an end member of the frame, each of said clamps comprising a base-piece having at one end a shoulder and at the opposite end a curved portion, said shoulder and curved portion being integral with said base, and a clamping-screw passing through the curved portion and arranged at equal angles with the base and shoulder, substantially as described.

2. The combination of a frame having side rods and end pieces, a slide mounted on said side rods, means for reciprocating said slide, a clamp mounted on said slide, a similar clamp mounted on the end piece of the frame, said clamps being laterally adjustable on their supports and consisting of base members having shoulders integral with said base members and at right angles thereto, curved portions opposite said shoulders and integral with the base members, and clamping-rods mounted in the curved portions, substantially as described.

3. The combination of a frame having side rods and end pieces, a sliding frame carried on said side rods, means for reciprocating said sliding frame, a pair of clamps, one mounted upon an end piece of the main frame and one mounted upon the sliding frame, said clamps being laterally adjustable upon their supports by pin-and-slot connections between their supports and the plates on which the clamps are mounted, said plates being provided with downwardly-turned lugs to guide their lateral movement, all substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES H. CLAYTON.

Witnesses:
IDA W. CHERRY,
GARRETT SPROUL.