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W. N. JONES.

MANDREL HOLDING AND OPERATING MACHINE.

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NO MODEL.

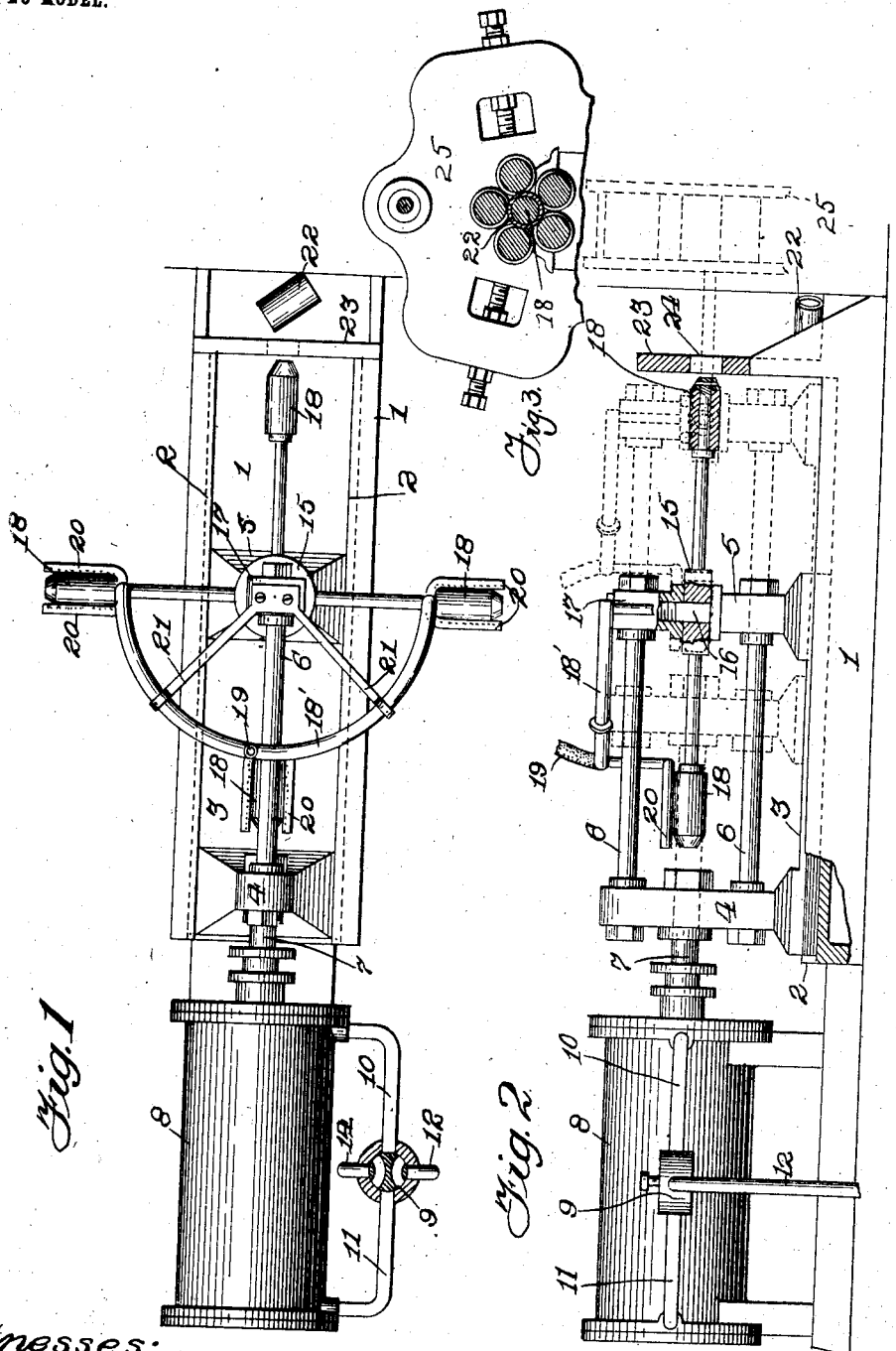


Fig. 1

Fig. 2

Fig. 3

Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM N. JONES, OF STEUBENVILLE, OHIO.

MANDREL HOLDING AND OPERATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 770,072, dated September 13, 1904.

Application filed March 2, 1904. Serial No. 196,178. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM N. JONES, a citizen of the United States of America, residing at Steubenville, in the county of Jefferson and State of Ohio, have invented certain new and useful Improvements in Mandrel Holding and Operating Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in mandrel holding and operating machines to be used in connection with socket-welding machines. In the manufacture of sockets it is the usual practice to feed the strip of metal between rolls which wrap the same on the mandrel, the strip is cut off, and the socket on the mandrel is then welded by the rolls. In a socket-welding machine of the type above described it is now the common practice to manipulate the mandrel which holds the socket by hand. These mandrels during the process of welding the socket become highly heated, and thus materially retard the work.

It is the object of my invention to provide a device with a plurality of mandrels adapted to successively be brought into position for receiving the socket, with means for moving the mandrel into position between the rolls and withdrawing the same therefrom and automatically stripping the socket from the mandrel. When one mandrel is being used, each of the non-working mandrels is being cooled, and when the working mandrel is withdrawn and the sockets stripped therefrom one of the cooled mandrels is brought into working position, and the mandrel from which the socket is just stripped is automatically moved into position for cooling with the moving of one of the cooled mandrels into working position.

All of the above construction is hereinafter more fully described, and specifically pointed out in the claims, and in describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate like parts throughout the several views, in which—

Figure 1 is a top plan view of my improved machine. Fig. 2 is a side elevation thereof, partly in section to better illustrate the parts, showing in dotted lines the position of the mandrels when one of the same is in working position and showing in dotted lines a part of a welding-machine. Fig. 3 is a sectional view of a part of a conventional type of socket-machine with which my improved machine may be employed.

To put my invention into practice, I provide a suitable bed-plate 1, provided with guides 2 along its side edges to receive the side edges of the base 3, which carries upwardly-extending standards 4 5, respectively. The base 3, together with the standards, is adapted to reciprocate on the bed or table 1, and to accomplish this the standards 4 5 are rigidly connected by tie-rods 6, a piston-rod 7 being connected to the standard 4. This piston-rod 7 has its piston (not shown) working in the steam-cylinder 8, the admission of steam to each end of said cylinder being controlled through the medium of the ordinary four-way valve 9, having pipes 10 11, leading to the respective ends of the cylinder, and an inlet-pipe 12 and exhaust-pipe 14, this valve being of the usual form or type well known in many arts. On the standard 5 is mounted for rotation a turret 15, which may be made rotatable on the standard in any approved manner, a practical construction being illustrated herein and embodying a stud 16, on which the turret is mounted to rotate, with a cap 17 threaded onto the upper end of said stud, and to which cap the rod 6 is connected. This turret carries a plurality of mandrels 18, adapted to be successively brought into working position by turning the turret. The mandrels not in working position are adapted to be cooled off, and to this end I provide a spray-pipe 18′, fed by a supply pipe or hose 19, leading to any desired water-supply, the spray-pipe being provided with forked perforated discharge branches 20, which lie directly over the mandrels which are in non-working position. The spray-pipe 18 may be supported in any desired manner, as by a bracket 21, attached to the cap 17. At the front of the bed-plate 1 is a stripping mechanism for removing the sockets 22 from the mandrels, a practical construction of which

embodies a vertical plate 23, having an opening 24 therein, through which the mandrels 18 are adapted to pass, this opening being of a size to permit the mandrels to pass readily therethrough in their forward movement, but preventing the socket from being drawn through the opening during the rearward movement of the mandrels.

In operation the device is adapted to be placed in front of the socket-welding machine 25, and one of the mandrels 18 is alined with the opening 24. The socket-welding machine may be of any well-known or desired type—such, for instance, as shown in the patent issued to D. Heggie July 17, 1900, No. 653,913. Steam is then admitted to the rear end of cylinder 8, so as to move the piston of said cylinder, having caused the piston-rod 7 to move the base 3 forwardly to the position shown in the dotted lines in Fig. 2, thus inserting the mandrel in position in the socket-welding machine for the welding of the socket thereon. When the socket has been welded, the four-way valve is operated so as to admit steam to the forward end of the cylinder, thus moving the piston in the reverse direction and withdrawing the mandrel from the socket-welding machine, carrying the socket therewith. As the socket engages the stripper-plate 23 it is removed from the mandrel, and the turret 15 is then given a partial turn, whereby to bring another of the mandrels into position for insertion into the socket-welding machine for the welding of another socket. The mandrel which was withdrawn was by the moving of another mandrel into position moved around in under one of the spray-pipes 20, and is sufficiently cooled to be again used in its proper turn. It will be evident that means may be devised for the operating of the turret, though in practice I have found it convenient to simply move the mandrels by hand, as the operator is always standing at a position which enables him to grip the shank of one of the cooled mandrels and turn the turret so as to bring another mandrel into position. It will also be evident that while I have herein shown the device as provided with four mandrels, yet a greater or less number of mandrels may be provided on the turret, if so desired. It will further be obvious that various slight changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. An apparatus for use in connection with welding-machines, embodying a rotatable turret, a plurality of mandrels carried by said turret, and means for reciprocating the turret with relation to the welding-machine.

2. An apparatus for use in connection with welding-machines, embodying a bed or table, a base mounted on said bed or table, a rotatable turret carried by the base, a plurality of mandrels carried by the turret, and means for reciprocating the base to move same toward and away from the welding-machine, substantially as described.

3. In a device of the character described, a suitable bed or table, a reciprocatory base mounted thereon, means for operating said base, a rotatable turret carried by the base, a plurality of mandrels carried by said turret, and a stripping mechanism common to each of the mandrels and arranged in the line of reciprocation of said base, substantially as described.

4. In a device of the character described, the combination of a stripping mechanism, a rotatably-mounted turret, a plurality of mandrels carried by said turret, means for moving the turret to place one of the mandrels in working position with relation to said stripping mechanism, and means in the path of the mandrels for cooling the same when in their non-working positions, said stripping mechanism being arranged to remove the socket from the mandrel as it is returned to its non-working position, substantially as described.

5. In a device of the character described, a stripping means, a rotatably-mounted turret, a plurality of mandrels carried thereby, means for successively moving the mandrels into working position with relation to said stripping means, said stripping means being arranged to remove the socket from said working mandrel as it returns to its non-working position, substantially as described.

6. In an apparatus for use in connection with welding-machines, a rotatably-mounted turret, a plurality of mandrels carried thereby, means for actuating the turret for moving one of the mandrels into working position with relation to the welding-machine, and means in the path of the mandrels for cooling the same when in their non-working position, substantially as described.

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

WILLIAM N. JONES.

Witnesses:
HARRY L. JONES,
JOHN A. MANSFIELD.