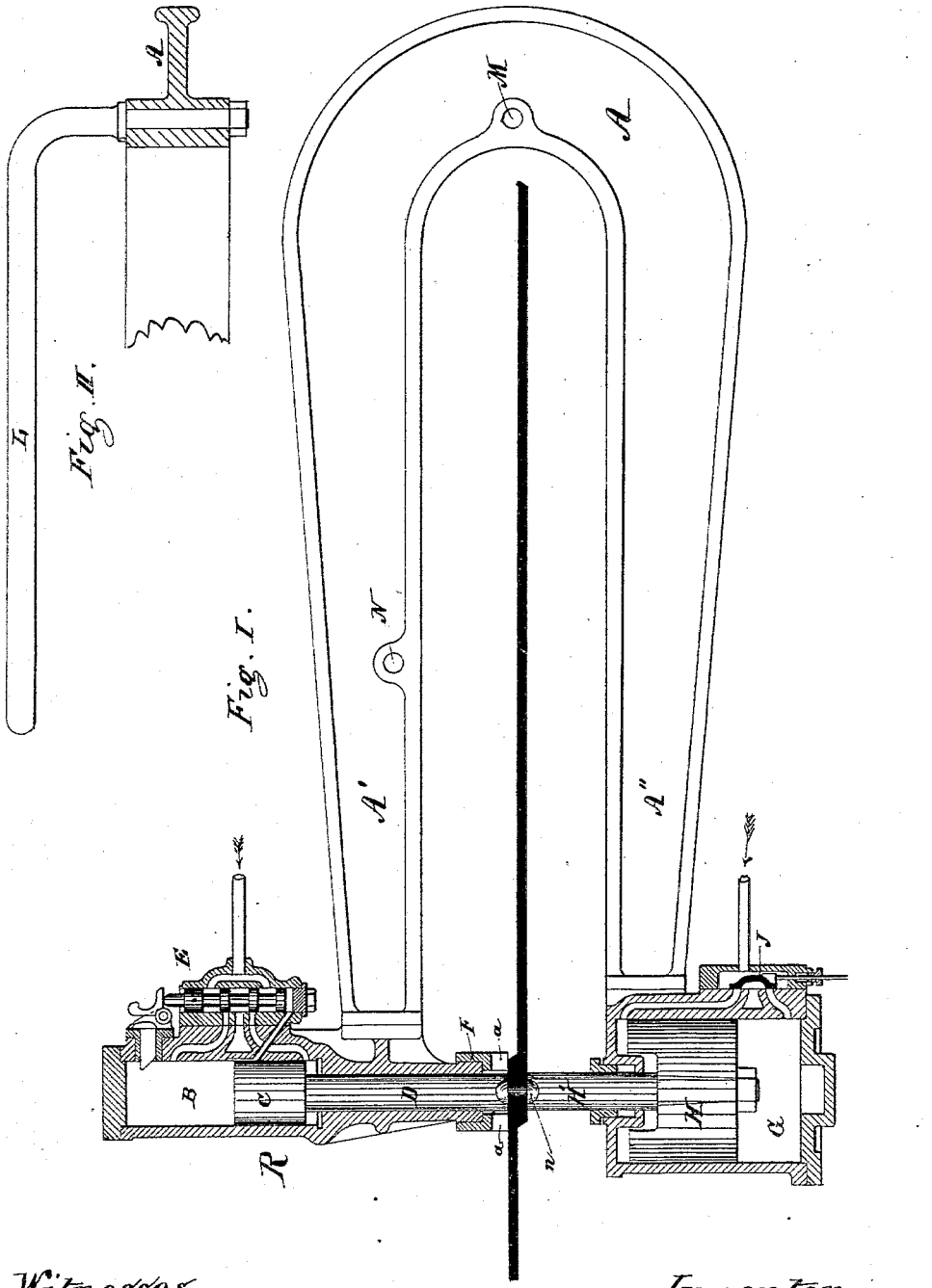
(No Model.)

J. F. ALLEN.

RIVETING MACHINE.

No. 303,968. Patented Aug. 26, 1884.



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JOHN F. ALLEN, OF BROOKLYN, NEW YORK.

RIVETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 303,968, dated August 26, 1884.

Application filed July 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. ALLEN, of Brooklyn, in the State of New York, a citizen of the United States, have invented a new and useful Improvement in Riveting-Machines, of which the following is a specification.

The nature of my invention consists in the arrangement of a U-shaped frame with long arms, one of which carries the riveting-machine proper, and the other arm carrying a suitable cylinder, in which a heavy piston is made to work, acting as an anvil for the action of the hammer in the riveting-machine. The end of the rod of said piston, forming the die for the rivet-head, holds the rivet and machine in place during the operation of the riveting-hammer, and at the same time presses the plates of the boiler-shell together during the operation as the end of the riveting-machine proper bears against the opposite side of the plates.

In the accompanying drawings, Figure I, a side view of my improved riveting-machine, is represented partly in section. Fig. II shows the holding-on bar for the machine.

A is a strong frame, made in the shape of the letter U, or similar to a jaw, having its two arms, A′ and A″, of sufficient length to reach the rivets at the circular joints of the plates. On the free end of the arm A′ the riveting-machine R is attached. This riveting-machine or device consists of the cylinder B, in which a suitable piston, C, with piston-rod D attached, is made to work backward and forward by any suitable pressure transmitted to said cylinder B by means of the action of its valve E. The end of the piston-rod D is provided with a suitable cavity corresponding with the desired shape of the finished rivet-head, said piston-rod and piston forming the hammer for the riveting device. The arrangement and construction of this cylinder and valves and of the riveting device R are similar to the arrangements described in Letters Patent Nos. 188,224, 193,631, and 194,396, granted to me; but the same may be arranged with any other suitable valve and gearing. This riveting device R, as has been fully described in the above-mentioned Letters Patent, produces the rivet-head by a succession of blows or hammering upon the end of the rivets, similar to hand-work.

To the end of the cylinder B a foot or nozzle, F, is attached with suitable projecting prongs, *a*, to bear against the surface of the boiler-plates.

On the free end of the arm A″ a cylinder, G, is attached, in which a heavy piston, H, can be made to work backward and forward by means of any suitable pressure admitted to the cylinder through the valve J in the usual manner. The end of the rod H′, attached to this piston H, is provided with a suitable cavity to fit over the head *n* of the rivet to be headed. When the piston-rod H′ is moved inward, the necessary space will be had to pass the machine over the plates as well as over any projecting bolts or rivets. When the hot rivet to be headed has been inserted in its hole, the machine is moved so as to come in line with the rivet, when the piston H is moved so as to move its piston-rod H′ outward and over the head of the rivet *n*. By this operation the machine is centered over the rivet and held stationary in that position between the end of this piston-rod H′ and the end of the nozzle or of the prongs *a*, against which, by the forward motion of the piston H and rod H′, the plates are moved, and whereby the plates of the boiler-sections are pressed closely together, with the piston-rod H′ against the rivet-head *n*, and the riveting-cylinder B against the surface of the plates and the opposite side, the amount of this pressure depending on the diameter of the piston H and the pressure acting against the same. Pressure is then admitted into the cylinder of the riveting device R, when the forward and backward repeated action of the hammer of this riveting device against the hot rivets will form the desired head on the end of the rivet, the piston H in the cylinder G, acted upon by the pressure against its surface, acting as an anvil for the action of the hammer in the riveting device.

The machine is suspended from a suitable bolt at M, when the boiler-shell is placed upward, and must then be arranged as to be capable of moving around the shell for operating on the circular joints, and to move upward or downward for the longitudinal joints.

When the boiler-shell is placed on its side to be riveted, the machine is suspended at N and arranged to move sidewise for the longitudinal joints, while when riveting the circular joints the boiler-shell must be turned.

To operate the machine horizontally or against the side of the boiler-shell, a bar, L, is attached at M to the frame A, projecting toward the riveting device R and cylinder C, and from which the machine may be suspended in a horizontal position.

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

The combination of a portable U-shaped frame, A, the elastic anvil consisting of cylinder G, piston H, and piston-rod H′, attached to the end of one of its arms, and the riveting device R, consisting of the cylinder B, piston C, piston-rod D, and foot or nozzle F, having projecting prongs *a* attached to the ends of the cylinder B, said riveting device being attached to the end of the other arm of the U-shaped frame, the whole being constructed and arranged to operate in the manner and for the purpose herein described.

JOHN F. ALLEN.

Witnesses:
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