

(No Model.)

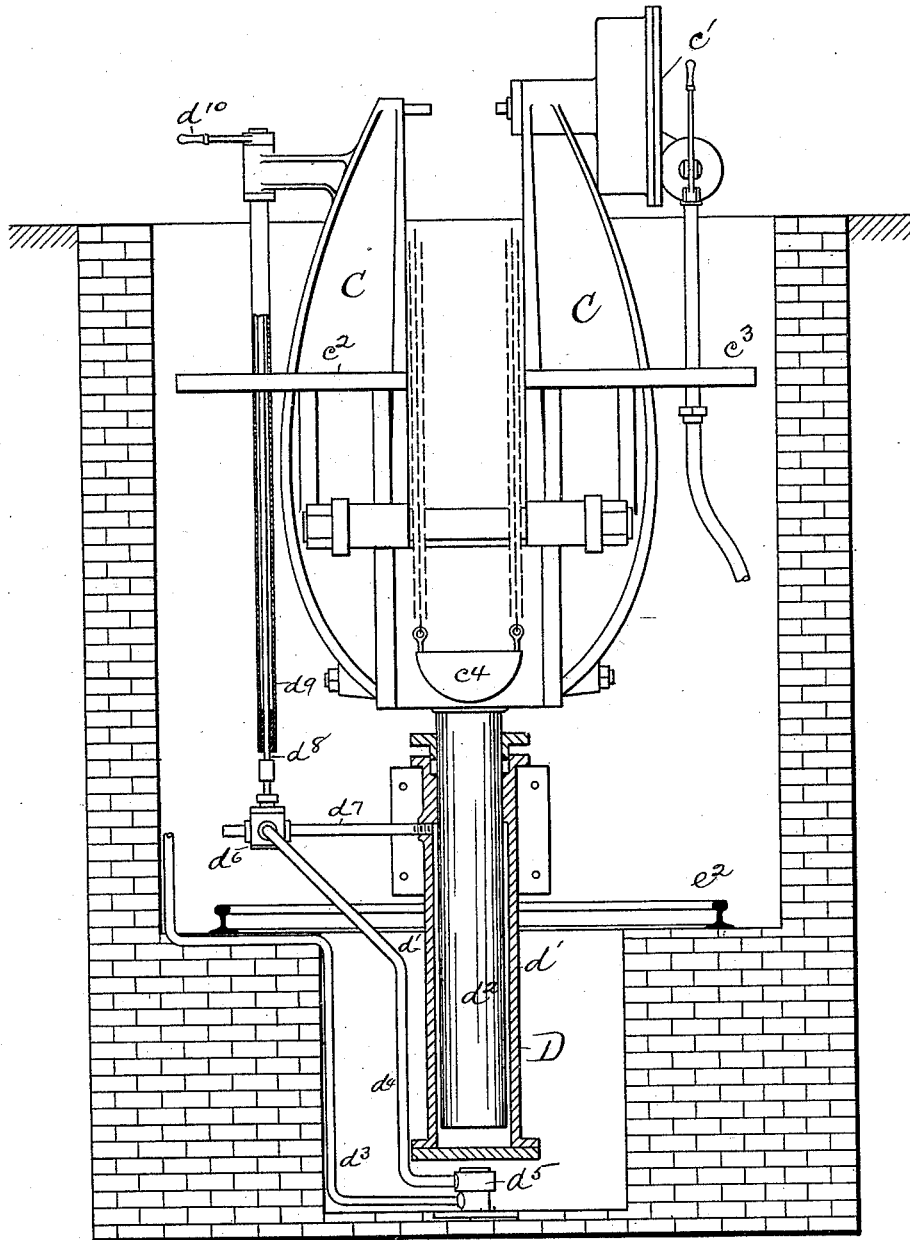
3 Sheets—Sheet 1.

W. B. HUGHES.

MECHANISM FOR SUPPORTING AND MOVING RIVETING MACHINES.

No. 423,428.

Patented Mar. 18, 1890.



WITNESSES:

F. C. I.

INVENTOR

Magge Turner
Helen MacCarthy

William B. Hughes

BY

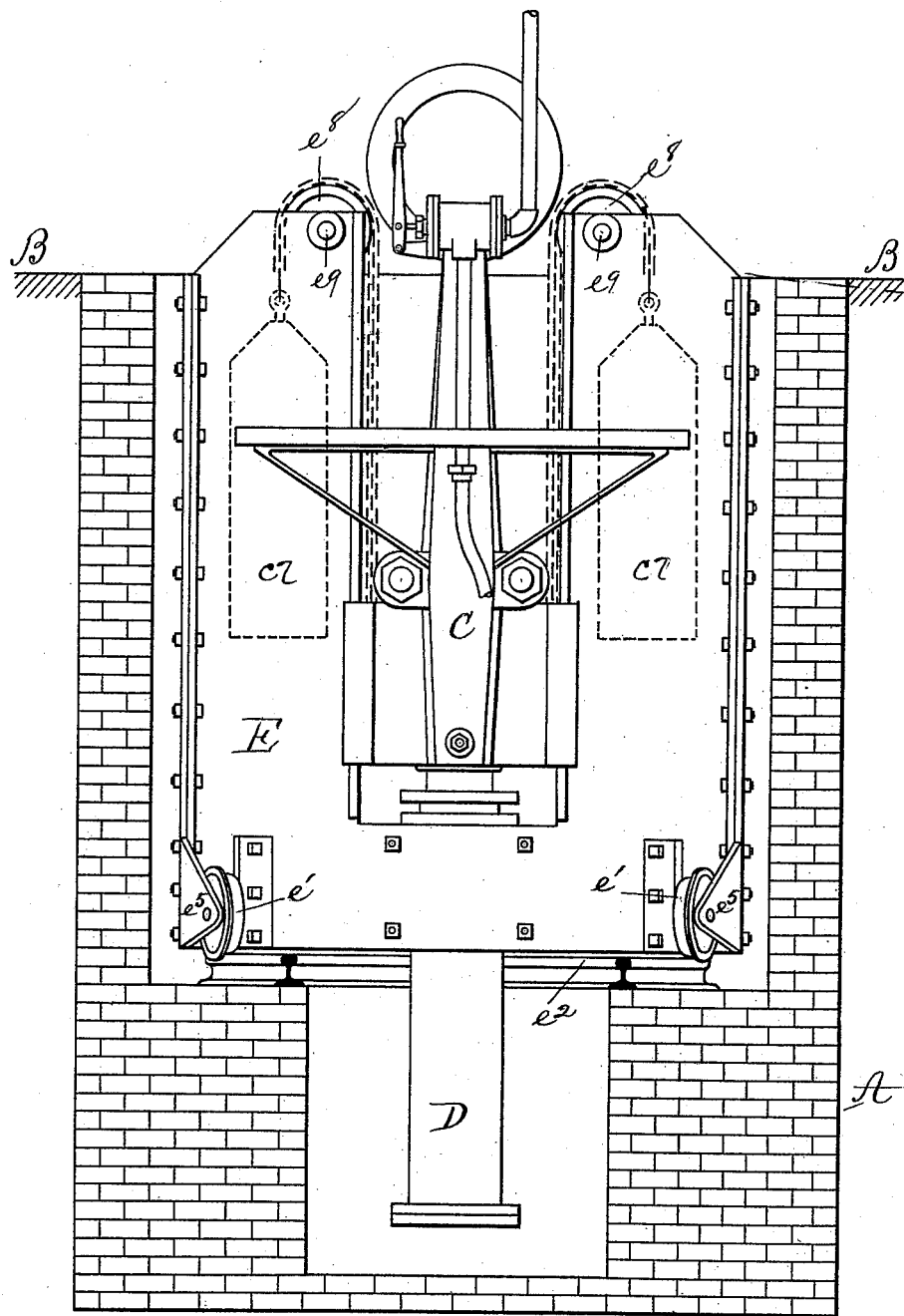
Price & Stewart
ATTORNEYS

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WITNESSES:

FIG. 2.

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(No Model.)

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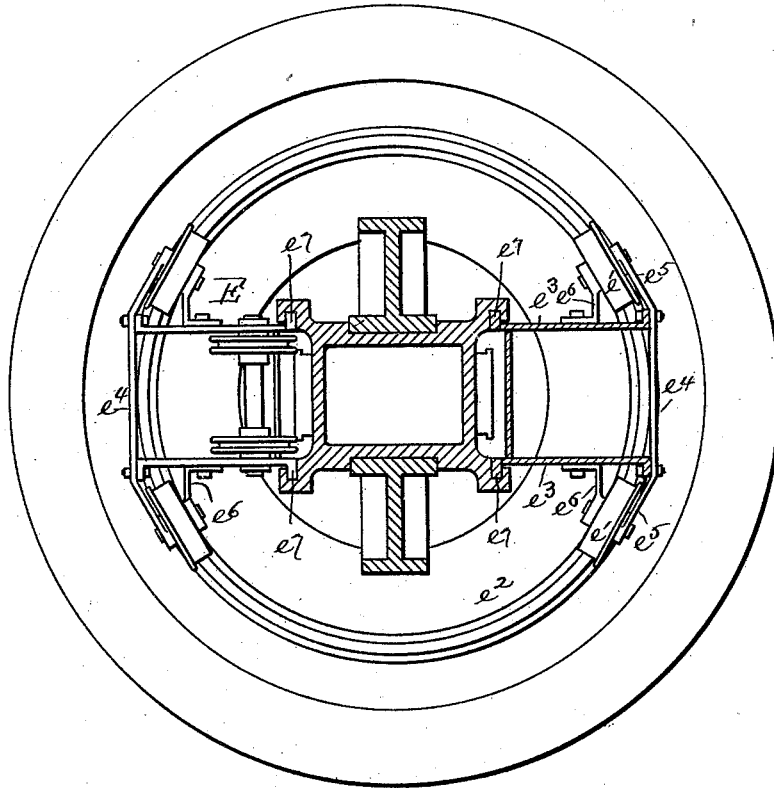


FIG. 3.

WITNESSES:

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John Mac Gathay

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UNITED STATES PATENT OFFICE.

WILLIAM B. HUGHES, OF PHILADELPHIA, PENNSYLVANIA.

MECHANISM FOR SUPPORTING AND MOVING RIVETING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 423,428, dated March 18, 1890.

Application filed October 2, 1889. Serial No. 325,792. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. HUGHES, of the city of Philadelphia, State of Pennsylvania, have invented a certain new and useful Improvement in Devices for Supporting and Moving a Riveting-Machine, of which the following is a full and complete specification, reference being had to the accompanying drawings, in which the same letters of reference indicate the same parts in all the figures.

My invention relates to power-operated riveters—such as are used for boiler and bridge work—and in which as a general rule red-hot rivets are employed.

The machines are generally very heavy, and heretofore it has been customary to place them upon a suitable stand and move the work by a crane in such a manner as to present it properly to the stationary riveter. I have designed a device for facilitating this work, which consists of mounting the riveter upon a ram, preferably a hydraulic ram, by which it may be raised up and down to suit the level of a piece of work placed within its reach. When the riveter is heavy, I prefer to counterbalance its weight, so as to make the device more easy of operation, and I also propose, where it is necessary, to arrange the riveter so that it may be rotated around a central axis.

Figure 1 shows a vertical section of the retaining-walls of the riveter-pit, the riveter in full side elevation, with the ram in section and the counter-balance and revolving device removed. Fig. 2 shows a vertical section of the retaining-walls of the riveter-pit and a full elevation of the riveter, its elevating and rotating devices, with the pipes by which fluid is supplied to the ram removed. Fig. 3 is a plan view of the device, with the riveter and part of its counter-balance and revolving device in horizontal section.

A represents the retaining-walls of the riveter-pit, and B the floor-level.

C is a riveter mounted upon a hydraulic ram D, which is attached to the lower end of the riveter-carriage E. The riveter-carriage E is mounted upon wheels e' e' , which rest upon a track e^2 , which is laid in the bottom of the riveter-pit A. The ram D extends be-

low the carriage E into a lower portion of the pit A, and consists of a cylinder d' and plunger d^2 , upon which the riveter rests and by which it is raised.

d^3 is a fluid-supply pipe, connected with the pipe d^4 by the swivel-joint d^5 .

d^6 is a three-way cock, to which pipe d^4 is connected. d^7 is a pipe leading from the three-way cock to the cylinder d , and by which it is supplied with fluid. d^8 is the stem of the valve d^8 , which works in a telescope-tube d^9 . It may be squared or provided with a feather to enable the external tube d^9 to operate the valve d^8 .

d^{10} is a handle keyed to the top of the tube d^9 .

d^{11} is a bracket on the side of one jaw of the riveter, and which sustains the tube d^9 .

The swiveled joint d^5 in the fluid-supply pipe is provided to permit rotation of the riveter.

The riveter C may be of any form. c c are its jaws, and c' its operating mechanism. c^2 c^3 are two platforms, one secured to each jaw, and upon which the mechanics may stand to operate the riveter. These platforms may be placed at any convenient height. The carriage E is constructed as shown in Figs. 2 and 3. It consists of plates of iron bolted together to form a casing. The plates e^3 e^3 form the sides of the casing, and the plates e^4 e^4 the ends. These are bolted together, and the plates e^4 e^4 at their lower ends are provided with lateral extensions e^5 e^5 , which form bearings for one end of the axles of the wheels e' e' . The other bearings are formed by angle-irons e^6 e^6 , bolted to the side plates of the casing. The side plates e^3 e^3 of the casing E are cut down the center, and the interior edges e^7 e^7 of said plates are turned outwardly, so as to form guides for the riveter. In the top of the casing, between its side walls, are mounted the sheaves e^8 e^8 upon the shafts e^9 e^9 —two upon each shaft—which are journaled in the side walls of the casing, the sheaves standing parallel to said side walls.

e^4 are semicircular plates or castings upon the sides of the base of the riveter, and under which passes a strap c^5 , having an eye on either end of it, to which is secured a chain c^6 , which ascends parallel to the riveter over the sheaves e^8 e^8 , and to the free end of each

chain is hung a counterbalance-weight c' c' , which hang inside of the casing and counterbalance the weight of the riveter.

The operation of the device is as follows:

- 5 When it is desired to employ the riveter upon large work, the work may be suitably mounted above the riveter and a vertical line of rivets put in by raising the riveter to the level of one rivet-hole after the other until the whole
10 line is completed. If, now, it is desired to rivet another vertical line of rivets, but in plates at an angle with the plates of the first line, the riveter and its carriage may be revolved to any desired point and then raised.
15 or lowered as desired.

The counterbalance-weight may be dispensed with, as the ram may be made large enough to take care of the riveter alone; but where large riveters are used it will doubtless be desirable to counterbalance it.

What I claim as new is—

1. In a device for supporting and moving a riveting-machine up to its work, the combination of a riveter with a hydraulic ram, consisting of a rotatable cylinder and a piston and devices for supplying fluid to said ram under pressure, the riveter being mounted upon the ram in such a manner that when the ram is operated the riveter will be raised
30 or depressed, substantially as described.

2. In a device for supporting and moving a riveting-machine up to its work, the combination of a riveter with a hydraulic ram, consisting of a rotatable cylinder and piston
35 and devices for supplying fluid to said ram under pressure, the riveter being mounted

upon the ram in such a manner that when the ram is operated the riveter will be raised or depressed, and counterbalance devices connected to the riveter, whereby the weight of the riveter will be counterbalanced and its free movement by the ram permitted, substantially as described.

3. In a device for supporting and moving a riveter up to its work, the combination of a carriage upon which is mounted a hydraulic ram, consisting of a cylinder and piston and devices for supplying fluid to said ram under pressure, one member of said ram—either the cylinder or piston—being secured to the carriage, and a riveter mounted upon the moving member of the ram and adapted to be raised or depressed by the operation of the ram, substantially as described.

4. In a device for supporting and moving a riveter up to its work, the combination of a carriage upon which is mounted a hydraulic ram, consisting of a cylinder and piston and devices for supplying fluid to said ram under pressure, one member of said ram—either the cylinder or piston—being secured to the carriage, supports for counterbalance devices, also mounted upon and secured to the carriage, and a riveter mounted upon the moving member of the ram, and counterbalance devices secured to the riveter and co-operating with supports for them upon the carriage, substantially as described.

WILLIAM B. HUGHES.

Witnesses:

E. A. SCHNEIDER,
HOMER PARSONS.