(No Model.)

W. R. WEBSTER.

HYDRAULIC RIVETING MACHINE.

No. 292,521. Patented Jan. 29, 1884.

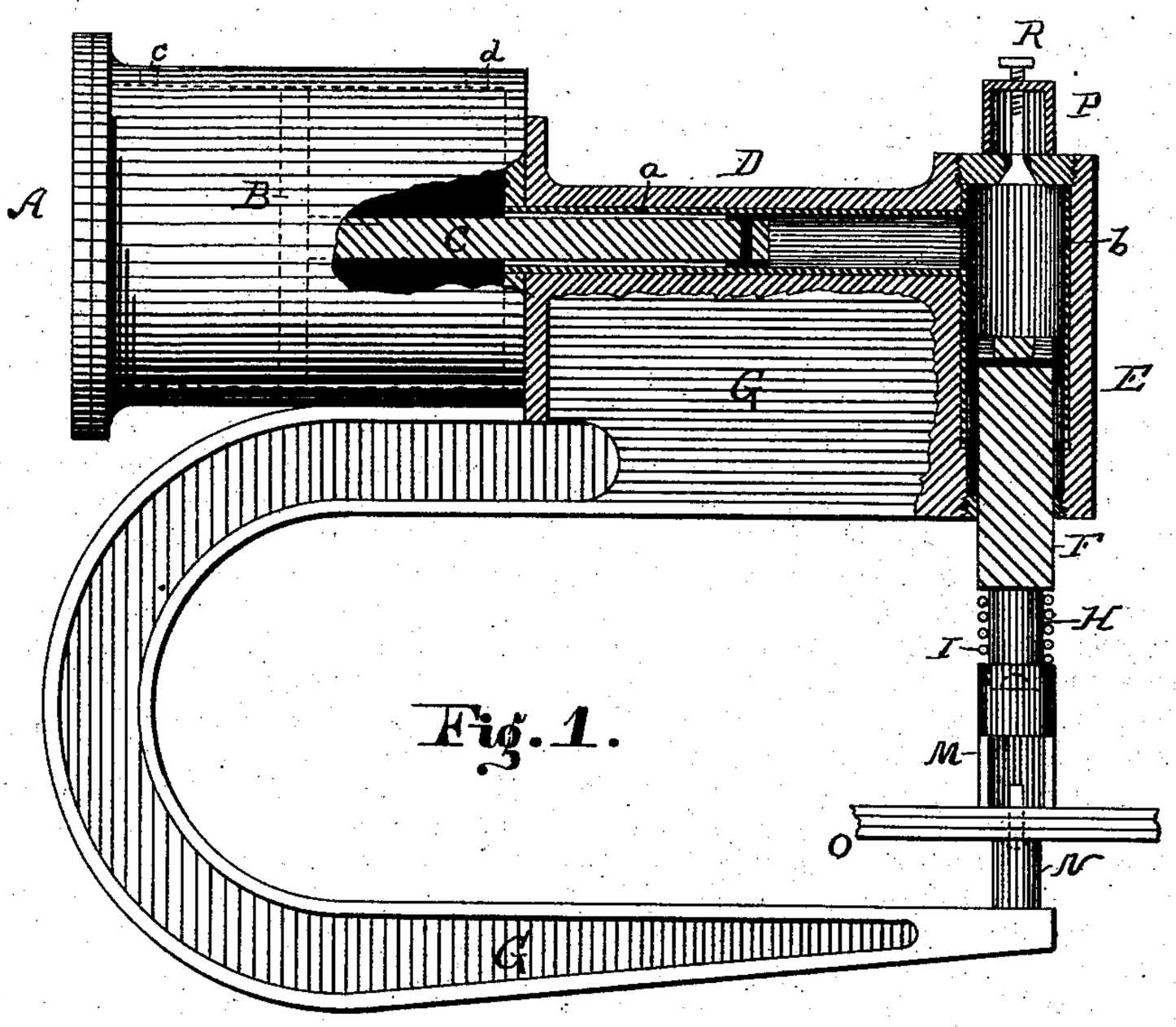

Fig. 1.

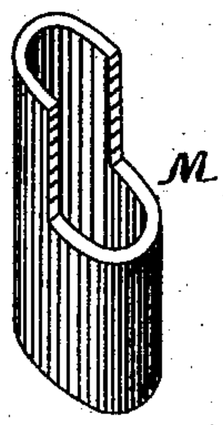

Fig. 2.

WITNESSES:

Theodore Bergner.

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UNITED STATES PATENT OFFICE.

WILLIAM R. WEBSTER, OF ATHENS, PENNSYLVANIA.

HYDRAULIC RIVETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 292,521, dated January 29, 1884.

Application filed August 29, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. WEBSTER, a citizen of the United States, and a resident of Athens, Bradford county, Pennsylvania, have invented a new and useful Improvement in Hydraulic Riveting-Machines, of which the following is a specification.

The object of my invention is to furnish a direct-acting hydraulic riveting-machine having the same power at all points of its stroke, and which will not require an accumulator or a pipe for the exhaust-liquid, and which will be simple and inexpensive in its construction and free from the leaks, &c., to which other hydraulic riveters are subject.

In the accompanying drawings, forming part of this specification, Figure 1 represents partly a side view and partly a vertical central section of my invention; and Fig. 2 represents a perspective view of the sleeve which surrounds the lower part of the rivet-snap.

A represents the air or steam cylinder, furnished with ports *c d* for the introduction of compressed air or steam, and with a piston, B, the rod C of which works in a cylinder, D, containing some hydraulic liquid, and forms a plunger for compressing this liquid.

E is the cylinder in which the plunger F, which forms the head of the rivet, works. These cylinders D and E are preferably cast in one piece with the yoke G, (to which the cylinder A is bolted,) and are afterward bored out and, if necessary, lined with brasses *a b*. The rivet set or snap H is screwed into the plunger F, and is surrounded with a spring, I, one end of which is secured to the plunger and the other to a sleeve, M, which holds the work together while being riveted.

N is the dolly, which is secured to the yoke G, and O represents the plates being operated upon.

P is a reservoir on top of the cylinder E, which is filled with a hydraulic liquid to replace any that may have escaped in any manner from the cylinder D or E.

R is a screw which passes through the cylinder-head of E, which upon being loosened will allow the liquid to pass from P to E or D.

In operating my invention air or steam is admitted to the cylinder A through the port *c* and drives the piston B forward, compressing the liquid in the cylinders D and E and driving the plunger F down. The rivet is placed with its head in the dolly, as shown, and the sleeve M comes against the work and holds it together. The spring I is now compressed and the snap comes against the rivet and forms the head. After the head of the rivet is formed, the air or steam is admitted to the cylinder A through the port *d*, and the plungers C and F are returned to their first positions.

Having thus described my invenion, I claim and desire to secure by Letters Patent—

1. The herein-described direct-acting riveting-machine, consisting of the cylinders A, D, and E, plungers C and F, and snap H, all arranged and operating substantially as and for the purposes set forth.

2. The herein-described device for holding the work firmly while being riveted, consisting of the spring I and sleeve M, substantially as set forth.

WILLIAM R. WEBSTER.

Witnesses:
CHAS. A. RUTTER,
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