

(No Model.)

A. M. BAIRD.
RIVETING MACHINE.

No. 556,656.

Patented Mar. 17, 1896.

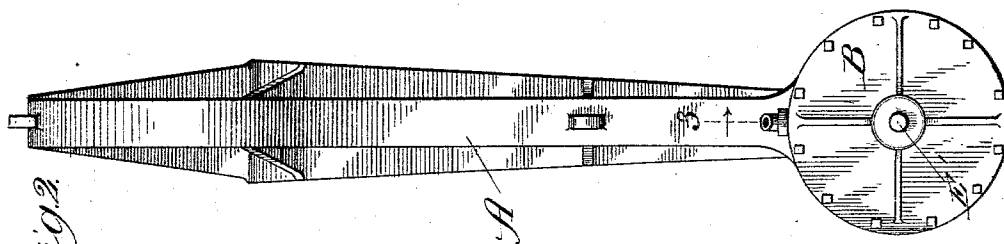


Fig. 2.

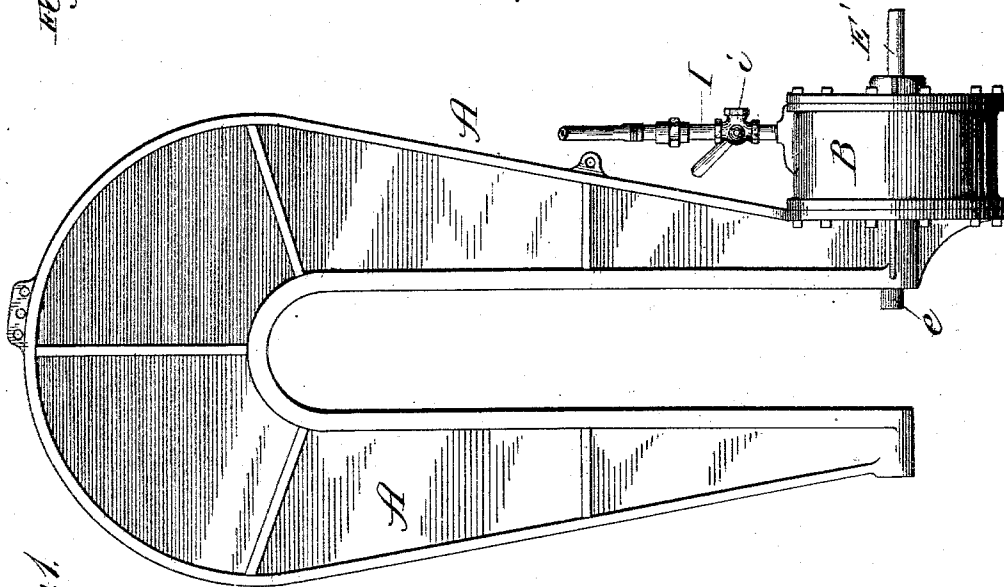


Fig. 1.

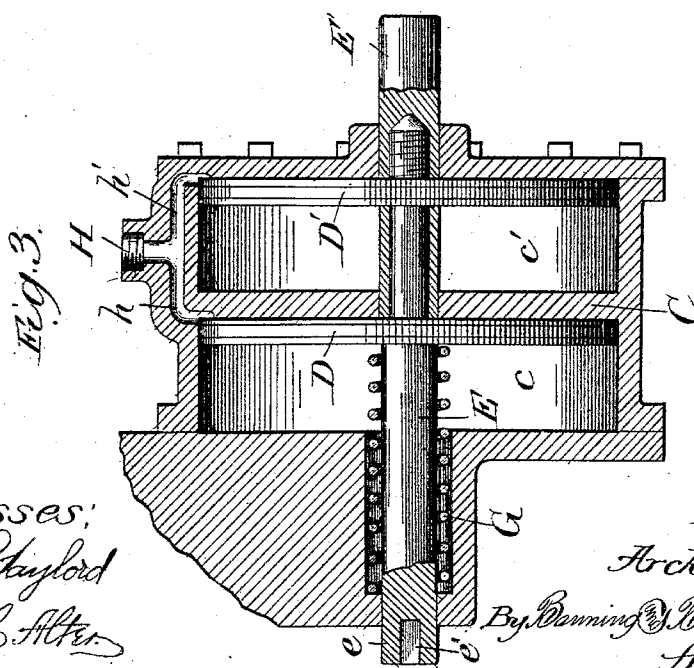


Fig. 3.

Witnesses:
Edw. C. Chayford
Lute S. Alter

Inventor,
Archie M. Baird,
By Benjamin D. Benjamin & Sheridan,
Attys.

UNITED STATES PATENT OFFICE.

ARCHIE M. BAIRD, OF TOPEKA, KANSAS.

RIVETING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 556,656, dated March 17, 1896.

Application filed March 26, 1894. Serial No. 505,219. (No model.)

To all whom it may concern:

Be it known that I, ARCHIE M. BAIRD, of Topeka, Shawnee county, Kansas, have invented certain new and useful Improvements in Riveting-Machines, of which the following is a specification.

My invention relates particularly to riveting-machines in which the fluid-pressure is the motive force for actuating an operating-piston, and has for its object the providing of a simple, economical, and efficient steam-machine for heading rivets, bolts, or other rods used particularly in the manufacture of boilers and engine-frames; and the invention consists in the features and combinations hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of my improved riveting-machine; Fig. 2, a plan view of the same, looking at it from the top; and Fig. 3, an enlarged sectional detail of the operating-cylinder, taken on line 3 of Fig. 2.

In constructing my improved riveting-machine I prefer to use a bifurcated or U-shaped frame A of the desired size and shape, capable of withstanding the strains incident to its use and also for the purpose of straddling boiler-plate or other desired mechanism, so that the rivet or bolt to be headed can be easily reached. At one end of the U-shaped frame I secure a cylinder B, of the desired form and size, and provide its interior cylindrical chamber with a transverse partition C, dividing it into several pressure chambers or compartments *c c'*. In these chambers I place movable pistons D D' attached to a single piston-rod E, so that the movements of these pistons are simultaneous in the same directions, and the force of the fluid-pressure on the piston-heads is concentrated and directly applied to the single piston-rod. One end *e* of the piston-rod projects down and out through the riveting-machine, so that it may contact with and head the bolt or rivet to be operated upon, and is provided with an axial opening *e'*, into which may be inserted a hardened face to prevent the wear or upsetting of the piston-rod, thus destroying or preventing the mechanisms from operating. The opposite end of the piston-rod E' projects out through the upper end of the cylinder-head

for the purpose of steadying the motion of the piston-rod and guiding the piston-heads in their rectilinear movements. The piston-heads may be secured to the piston-rod in any convenient manner and provided with packing-rings of the usual forms and types. I preferably interpose between the lower piston-head and the walls of the riveting-frame a spiral spring G, which serves to normally keep the piston in its upper limit of motion in condition to be brought down and upon a bolt or rivet for the purpose of heading it.

The cylinder is provided with a port H, having channels *h* and *h'* leading in behind each of the pistons for the purpose of admitting fluid-pressure behind them and causing the piston to be operated. This port is provided with an inlet-pipe I, which is supplied with a three-way cock *i*, for the purpose of admitting fluid-pressure into the cylindrical chamber or exhausting the fluid-pressure therefrom.

Instead of providing the spiral spring for the purpose of opening or drawing back the piston fluid-pressure may be introduced beneath the lower or either piston and thus cause the piston-rod to be moved back when desired.

The advantages derived from the use of my mechanism are that by using a double piston upon one stem or rod the force or power is multiplied, or, in other words, is the sum of the area of the two pistons multiplied by the pressure per square inch, and the machine is rendered very compact, thus enabling portions of the mechanism, upon which it is desired to operate, to be more easily and readily reached than where a single piston is placed upon the piston-rod. It also brings the force expended upon the piston-heads nearer to the center of work, which renders the machine more effective while it is operating.

I claim—

In a riveting-machine, the combination of a U-shaped frame, a cylinder on one of the free ends of the frame provided with at least two fluid-pressure chambers and an inlet-port communicating with such chambers, a reciprocating piston in each chamber, a single operating piston-rod to which the piston-heads are attached for consolidating force at one

point and extending out of one end to receive
a wearing-face and extending out at the other
end to steady the motion of the parts, and a
spiral spring inserted partially in the recess
5 of the U-shaped frame and wound around the
piston-rod so as to contact one piston-head
for the purpose of assisting to hold the piston

and rod in their open position, substantially
as described.

ARCHIE M. BAIRD.

Witnesses:

R. S. PLUMMER,

R. B. McMASTER.