No. 802,820. PATENTED OCT. 24, 1905.

J. T. NICHOLSON.

PERCUSSION TOOL.

APPLICATION FILED SEPT. 27, 1904.

FIG. 1.

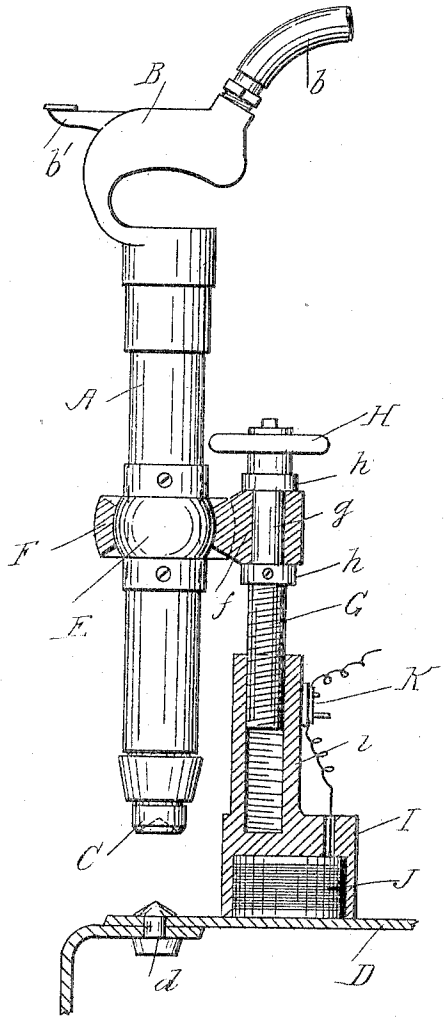


FIG. 3.

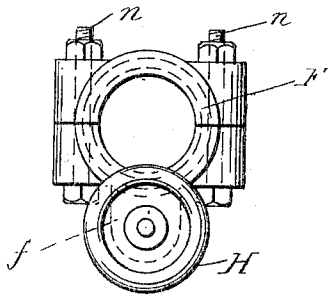
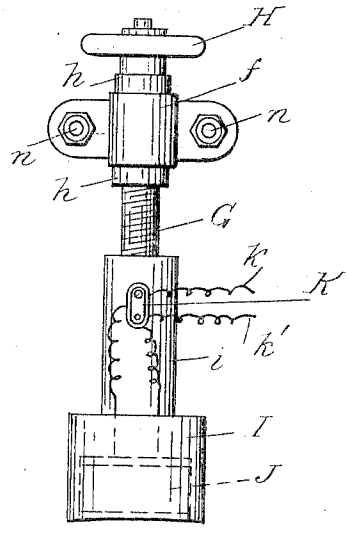


FIG. 2.



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PERCUSSION-TOOL.

No. 802,820. Specification of Letters Patent. Patented Oct. 24, 1905.

Application filed September 27, 1904. Serial No. 226,150.

To all whom it may concern:

Be it known that I, JESMOND TAYLOR NICHOLSON, a citizen of the United States, residing at Wilkesbarre, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Percussion-Tools; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to percussion-tools—such as riveting-machines, calking-machines, and hammers; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed whereby the tool is held in position and adjusted to the work.

In the drawings, Figure 1 is a side view, partly in section, showing a pneumatic riveting-machine provided with attachments according to this invention. Fig. 2 is a side view of the attachments turned one-quarter around from the position shown in Fig. 1. Fig. 3 is a plan view of the attachments.

A is a pneumatic riveting-machine of any approved construction.

B is the handle of the machine, and *b* is the air-supply pipe which is attached to the said handle and provided with an operating valve-lever *b'*.

C is the die or cup which forms the head of the rivet and which is operated by a piston which is reciprocated in the cylinder of the machine in the usual manner.

D is a portion of a boiler, and *d* is a rivet in position under the die of the pneumatic riveting-machine.

E is a portion of a ball which is secured to the cylinder of the pneumatic riveting-machine in any approved manner.

F is a socket which engages with the ball so that the riveting-machine may be moved to a limited extent laterally or pivotally, but which prevents the machine from moving longitudinally. This socket F has a projecting arm *f* on one side.

G is a feed-screw provided with a bearing *g*, which is journaled in the arm *f* and arranged parallel with the cylinder of the riveting-machine. H is a wheel or handle for revolving the said feed-screw, and *h* represents collars which prevent the feed-screw from moving longitudinally.

I is a shoe provided with a screw-threaded sleeve *i*, with which the feed-screw engages, and J is an electromagnet inserted in a circular chamber in the lower part of the said shoe. The shape of the lower part or face of the shoe is curved or otherwise shaped to conform to the surface of the work, which in this case is the shell of the boiler.

K is a switch secured to the shoe, and *k k'* are the wires by means of which the electromagnet is connected with any approved generator of electricity.

The socket which engages with the ball is formed in two parts, which are secured together by clamping-bolts *n*, so that it can be applied to the said ball.

When the electromagnet is energized, it secures the shoe to the work, so that the operator does not receive the recoil of the machine when the die strikes the rivet. The ball-and-socket joint permits the machine to be moved pivotally in all directions, and the feed-screw enables the position of the machine to be adjusted longitudinally while it is at work.

These attachments are very useful in connection with a pneumatic riveting-machine and can also be applied to calking-machines, hammers, and other similar tools, and are also applicable to machines operated by electricity or by hydraulic power.

In carrying out this invention the tool can be provided with two electromagnets, if desired arranged one on each side of it, instead of a single electromagnet, as shown.

What I claim is—

1. The combination, with a percussion-tool, of a ball-and-socket joint supporting the said tool, a feed-spindle journaled in a bearing at one side of the socket of the said joint and provided with means for revolving it by hand while the tool is at work and having also a screw-threaded portion, an electromagnet for holding the said tool to the work, and a shoe secured to the said electromagnet and provided with a screw-threaded portion for the said screw-threaded portion of the feed-spindle to engage with.

2. The combination, with a percussion-tool, of a ball-and-socket joint connected to the casing of the said tool and provided with a projecting arm, a shoe provided with a screw-threaded sleeve, an electromagnet carried by the said shoe and operating to hold the said tool to the work, and a feed-screw journaled in the said arm and engaging with the said sleeve and provided with a hand-wheel on its end portion above the said arm.

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

JESMOND TAYLOR NICHOLSON.

Witnesses:
OSCAR H. DILLEY,
FANNIE W. NICHOLSON.