

A. C. CLARK.
PNEUMATIC HAMMER.
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1,055,135.

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Fig. 1.

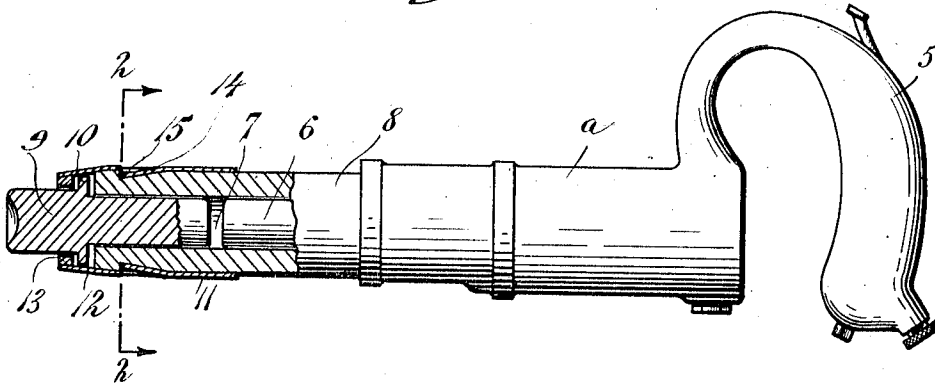


Fig. 2.

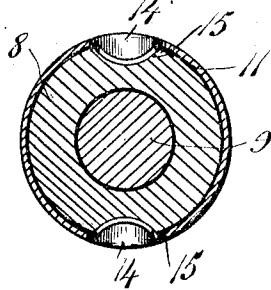
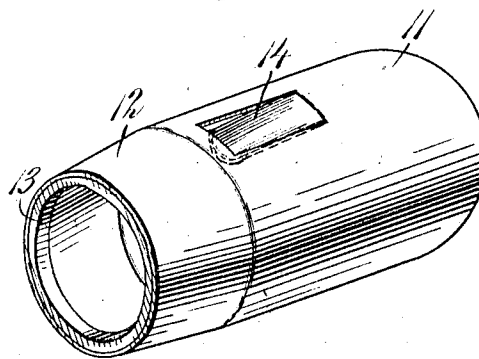


Fig. 3.



Witnesses

Thos. Roseman
E. A. Mueller

Inventor

Alfred C. Clark,

By Victor J. Evans

Attorney

UNITED STATES PATENT OFFICE.

ALFRED C. CLARK, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO
JOSEPH SCOTT, OF PHILADELPHIA, PENNSYLVANIA.

PNEUMATIC HAMMER.

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To all whom it may concern:

Be it known that I, ALFRED C. CLARK, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Pneumatic Hammers, of which the following is a specification.

The present invention relates to tool holding devices for pneumatic hammers, and resides in the construction, combination, and operative arrangement of parts hereinafter more fully disclosed and claimed.

In the drawing, Figure 1 is an elevation of a pneumatic tool showing the retaining device in applied position thereon, the said device, as well as a portion of the hammer being shown in section. Fig. 2 is a transverse sectional view taken, upon the line 2-2 of Fig. 1. Fig. 3 is a perspective view of the retaining device.

In the general construction of pneumatic tools no effective means have been provided for preventing the tool being shot out of the hammer when the trigger is accidentally operated. It is not uncommon and frequently desirable that workmen temporarily lay aside their pneumatic tool without cutting off the operative power, and on such occasions accidents have been known to occur which have resulted disastrously. If the tool is laid upon a scaffold, an undue shaking or vibration of the scaffold might cause either the scaffold itself or some instrument or material upon the said scaffold to contact with the trigger with the foregoing result. Again, instances have been known wherein a proper pressure was not applied to the handle of the tool to force the operating member of the same tightly to its work, and again, when the trigger has been prematurely operated, in both of which instances the force of the plunger within the hammer is sufficient to eject the operating tool at a velocity sufficiently great to involve serious damages upon the persons in the immediate vicinity, as well as to the work operated upon by the tool.

It is therefore the primary object of my invention to provide a simple, but thoroughly effective means which may be readily attached to the barrel of a pneumatic instrument, such as a hammer, the said means being so arranged with relation to the reamer, riveter, chipper, calker or drill, which is op-

erated upon by the plunger of the hammer to effectively prevent the ejection thereof from the hammer even when the trigger has been operated, and thus overcome the existing dangers to life and surroundings.

Referring now to the drawing in detail, *a* indicates an ordinary pneumatic hammer, which is provided with a handle 5 having the usual means therein for controlling the operation of the plunger or piston 6, which is mounted in the passage 7 of the barrel 8 of the said hammer.

As previously stated any desired tool may be attached to the hammer, and as the various tools used are commonly known in the trade as "snaps," the instrument employed in connection with the hammer will be thus hereinafter termed.

The "snap" 9, in the showing of the drawing is in the nature of a rivet forming head, and is of a size and shape to freely enter the bore of the barrel of the hammer in a proper position to be operated upon by the piston 6. The "snap" 9 is formed with a continuous flange 10, which is disposed to the outer mouth of the barrel, and which is adapted to form a stop which contacts with the said mouth to prevent the entire "snap" from entering the bore 7.

The numeral 11 designates my improved tool retaining device. The device is in the form of an elongated sleeve or thimble and has its outer end tapered as at 12. Arranged within the said outer end of the thimble is a stop collar 13, which may be formed integral with the said thimble or secured thereto as desired. The collar 13 is provided to form a stop for limiting the outward movement of the "snap" when operated upon by the plunger 6. In this connection it may be well to here state that under ordinary conditions the annular flange 10 of the "snap" does not contact with either the mouth of the barrel or with the collar 13, as when the "snap" is forced to its work by pressure upon the handle 5 of the hammer by the operator, an impact of force rather than the reciprocatory movement of the "snap" is occasioned by the operating plunger.

The thimble 11 is preferably constructed of some strong but resilient material, and the said thimble in the showing of the drawings, is slit to provide inturned tongues 14. It is to be understood that the said tongues

14 are not necessarily formed from a portion of the thimble, as the same may be attached thereto and extend within the bore of the thimble through suitable slots if desired. The tongues 14 preferably have their outer faces slightly dished, or their under faces slightly rounded, the purpose of which will presently appear.

The barrel 8, at a suitable distance away from its mouth and at diametrically opposite points thereon is formed with inclined notches or depressions 15, the upper face of which being dished to receive the curved tongues 14, when the sleeve is slipped upon the end of the barrel the inclined depressions 15 terminate in angular shoulders, and the ends of the tongues 14 are adapted to abut against the said shoulders, while their bodies are arranged within the depressions 15. When in this position it will be noted that the sleeve 11 is effectively sustained in a longitudinal position upon the barrel, the peculiar formation of the tongue and depressions preventing the lateral movement of the said sleeve in either direction. When, however, it is desired to remove the sleeve from the barrel, a rotary movement of say about one fourth of a complete revolution is given the sleeve which movement causes the tongues to travel from out of the slots or depressions 15, and permits of the thimble being drawn from engagement with the barrel.

From the above description, taken in connection with the accompanying drawing, the general construction, as well as the method of operation will, it is thought, be perfectly apparent to those skilled in the art to which such inventions appertain without further detailed description. It is to be understood, however, that the essential features illus-

trated and described are susceptible to changes in detail and such structural arrangements as will fall within the scope of the appended claims.

What is claimed is:—

1. The combination with a riveting tool having notches formed therein, of a snap positioned in said tool, and a thimble engaging said tool and having tongues adapted for engagement with said notches whereby longitudinal movement of said thimble in one direction will be prevented, said thimble being adapted to prevent displacement of said snap and also adapted when rotated upon the tool to bring its tongues out of the notches of the tool to permit of the removal of the thimble from the tool.

2. In a device for the purpose set forth, a pneumatic hammer having its barrel adjacent the mouth thereof provided with inclined depressions, the faces of which being dished, a "snap" having an annular flange and coacting with the plunger of the hammer, a thimble engaging the barrel, said thimble having an internal collar which is arranged to engage with the outer face of the "snap," in-turned spring tongues for the thimble, and said tongues being rounded in cross section, and adapted to be received within the depressions of the barrel, and whereby the walls of said depressions will serve as guides for directing the spring tongues out of engagement within the said depressions when the thimble is rotated upon the handle.

In testimony whereof I affix my signature in presence of two witnesses.

ALFRED C. CLARK.

Witnesses:

HELEN G. DALEY,
THEODORE ROSEMAN.