No. 665,391. Patented Jan. 1, 1901.

F. J. CHAPMAN.

CASING FOR PNEUMATIC HAMMERS.

(Application filed May 4, 1900.)

(No Model.)

Fig. 1.

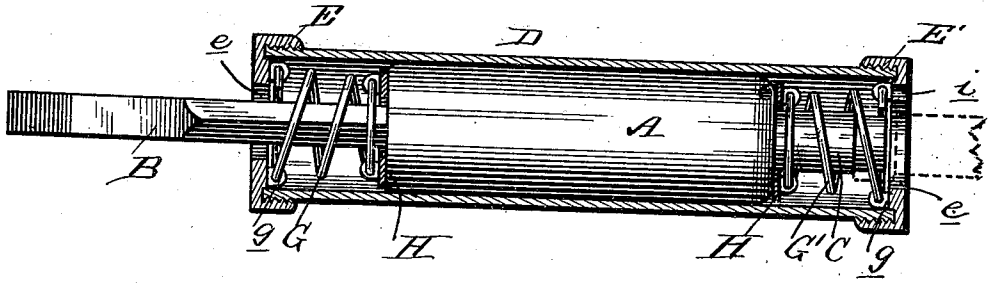


Fig. 2.

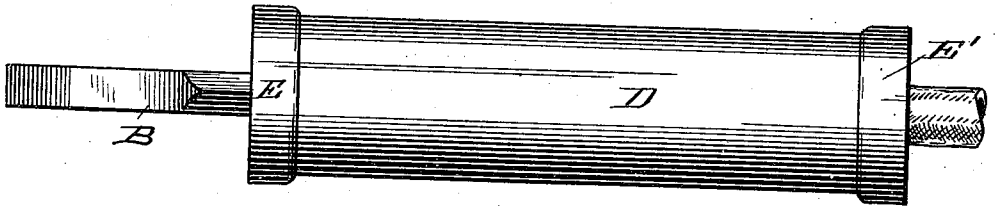
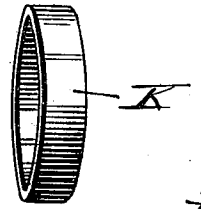


Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANK J. CHAPMAN, OF PHILADELPHIA, PENNSYLVANIA.

CASING FOR PNEUMATIC HAMMERS.

SPECIFICATION forming part of Letters Patent No. 665,391, dated January 1, 1901.

Application filed May 4, 1900. Serial No. 15,566. (No model.)

To all whom it may concern:

Be it known that I, FRANK J. CHAPMAN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Casings for Pneumatic Hammers; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in pneumatic hammers, more particularly in an adjunct to a pneumatic hammer, consisting largely in a cover or casing for the hammer-cylinder surrounding the same and yieldingly supported in relation to the hammer-cylinder, so that the vibrations, which are usually of such a nature as to materially affect the hand of the operator, are avoided.

The invention also is embodied in the construction and arrangement of parts hereinafter described, and defined in the claims.

In the drawings, Figure 1 is a longitudinal section through the casing, showing the cylinder in elevation. Fig. 2 is a side elevation, and Fig. 3 is a detail perspective of the cap.

A represents a cylinder of a pneumatic hammer of any desired or approved type, and in this connection I desire it understood that the shape of the cylinder as shown is simply arbitrary, the same being shown for the purpose of this specification only.

B designates a chisel or working tool, and C the coupler-stem.

D designates a casing which is slightly larger than the cylinder of the hammer, so that the latter may have free movement therein. This casing is oblong and tubular, as represented in Fig. 1, and has removable flanged caps E and E′ on its opposite ends, having central openings *e* therein, through which the air-tube and working tool pass. Secured to the caps are suitable springs G and G′, the same being fixed by passing through suitable eyelets *g*. The inner ends of the springs carry washers H, which rest against the ends of the cylinder, thereby permitting the power of the springs to center the cylinder in the casing.

To afford a complete exit for the exhaust, suitable perforations may be made in the casing, as at *i*, or the exhaust may be carried out through the opening in the cap.

When the tool is not to be used, the same is removed from the cylinder and the hose detached, leaving the hammer in the casing, and to prevent dust or moisture from getting to the hammer when the same is not in use suitable caps K, as shown in Fig. 3, are employed to fit over the ends of the casing.

In operation the rapidly-moving hammer within the cylinder necessarily causes a continuous vibration to the cylinder, and, as experience has demonstrated, this vibration being brought to the hand of the operator frequently causes paralysis and is otherwise very objectionable. By placing the cylinder within the protecting-casing and absorbing the vibration by the spring the objection is wholly overcome, and in this connection it will be noted that the casing is made in diameter just sufficient to permit of the vibration of the cylinder, and when the casing is at an incline the cylinder will move against the inner wall of the casing rapidly, thus creating a friction which heats the cylinder to a certain extent. This heating effect is important, especially when the tool is used during cold weather and in exposed places.

It is evident that many changes can be made in the construction and arrangement without departing from the nature and principle of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a pneumatic hammer, the combination with a hammer-cylinder, of a casing and resilient cushions arranged at the opposite ends of the cylinder between the same and the casing, substantially as described.

2. In a pneumatic hammer, the combination with a hammer-cylinder, of a casing and springs interposed between the ends of the casing and the cylinder, substantially as described.

3. In a pneumatic hammer, the combination with a hammer-cylinder, of a casing arranged to come in contact with the cylinder during the movement of the latter, and suitable means for cushioning the cylinder in the casing against longitudinal movement, substantially as described.

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

FRANK J. CHAPMAN.

Witnesses:
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No. 665,392. Patented Jan. 1, 1901.

S. B. WATERS.

AIR COOLING DEVICE.

(Application filed Sept. 11, 1900.)

(No Model.)

Fig. I

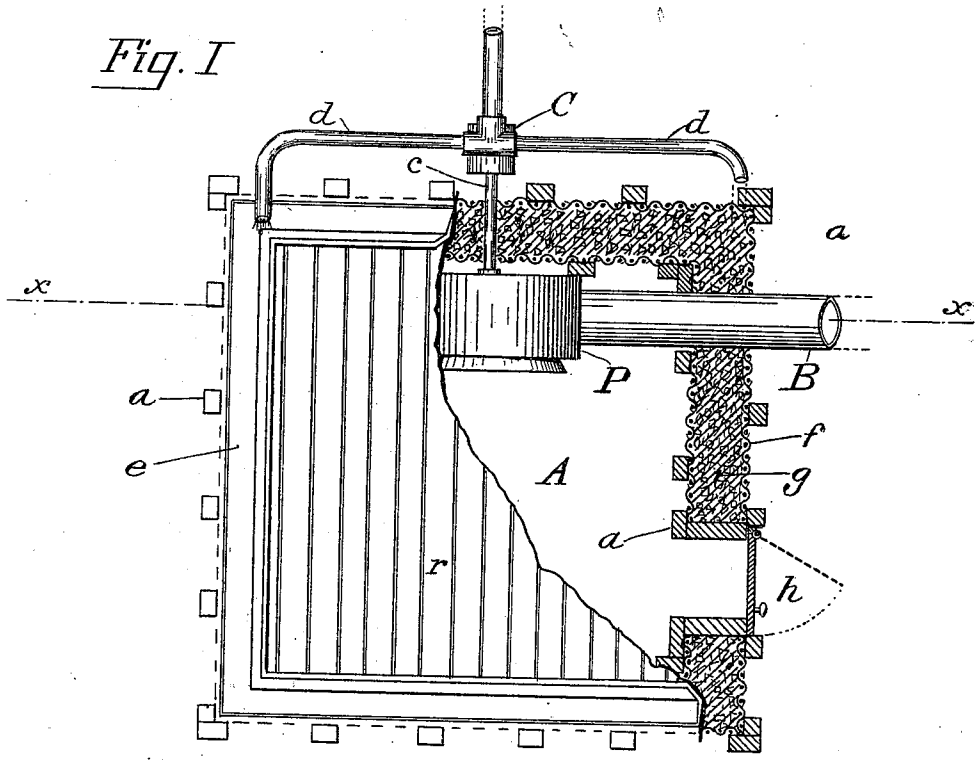


Fig. II

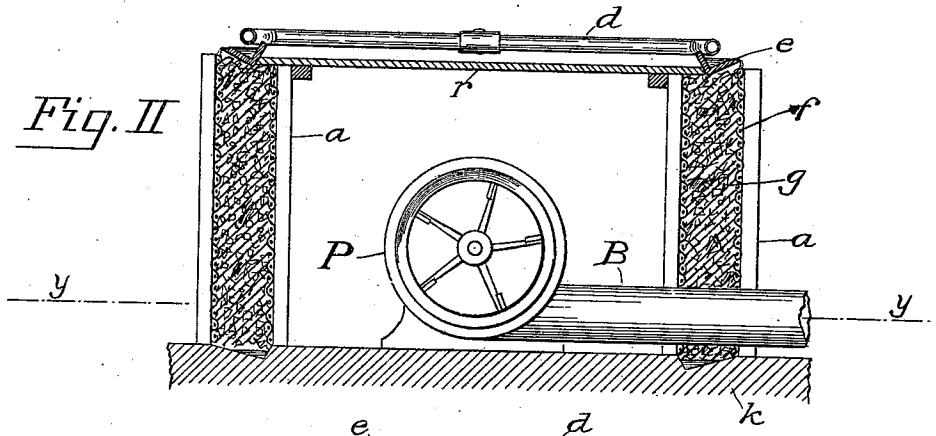
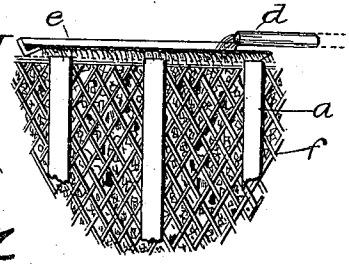


Fig. III



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