

(No Model.)

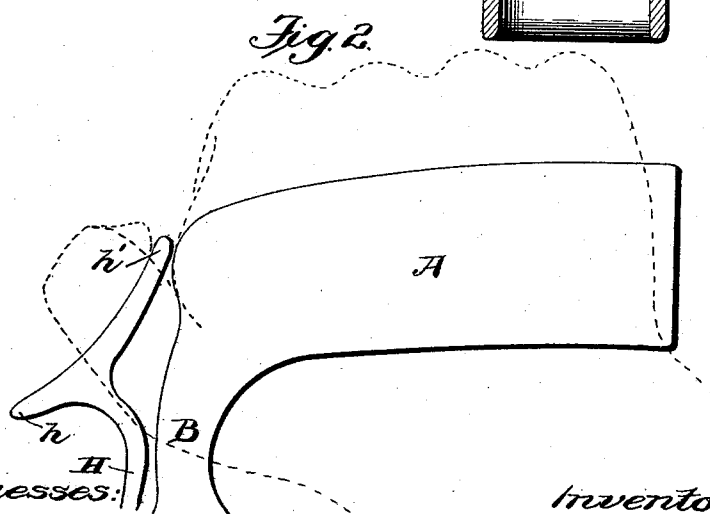
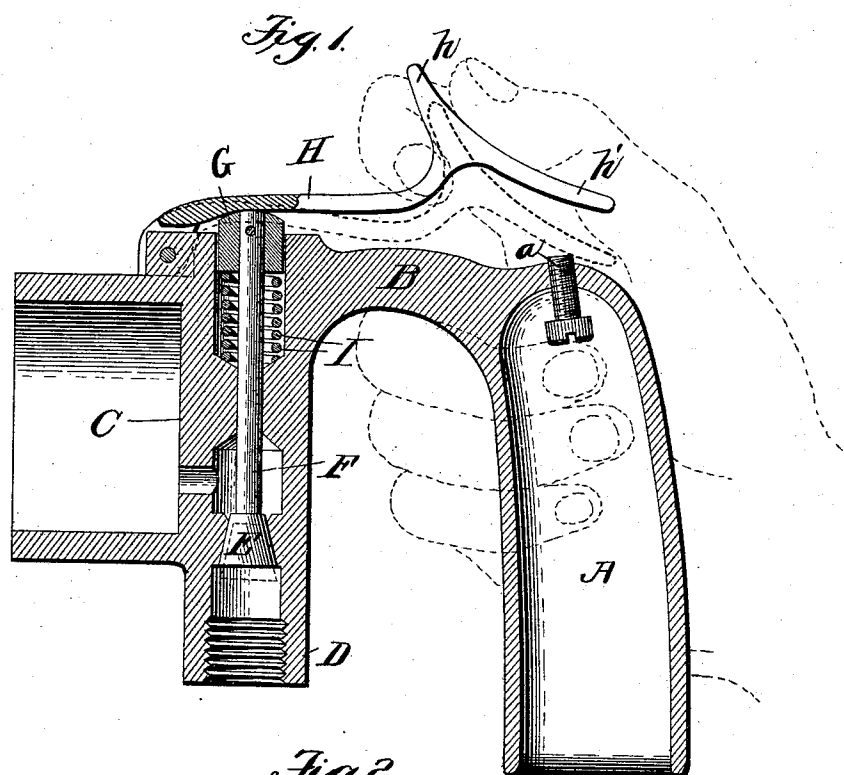
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T. R. HILL.

HANDLE FOR DIRECT ACTING ENGINES.

No. 578,603.

Patented Mar. 9, 1897.



Witnesses:

G. A. Pennington

G. A. Cornwall

Inventor:

Thomas R. Hill
by Paul Bakewell
his atty.

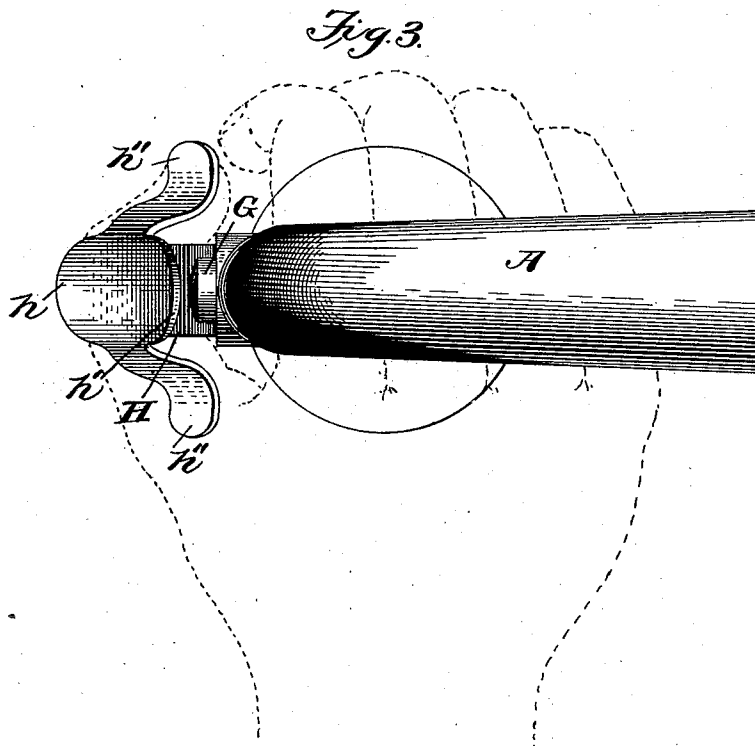
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UNITED STATES PATENT OFFICE.

THOMAS ROBY HILL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
CHOUTEAU MANUFACTURING COMPANY, OF MISSOURI.

HANDLE FOR DIRECT-ACTING ENGINES.

SPECIFICATION forming part of Letters Patent No. 578,603, dated March 9, 1897.

Application filed June 16, 1896. Serial No. 595,749. (No model.)

To all whom it may concern:

Be it known that I, THOMAS ROBY HILL, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia, State of Pennsylvania, have invented a certain new and useful Improvement in Handles for Direct-Acting Engines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a longitudinal sectional view through my improved handle. Fig. 2 is a fragmentary view showing a different method of holding the handle and operating the controlling valve-lever, and Fig. 3 is a view illustrating a different manner of holding the tool.

This invention relates to a new and useful improvement in handles for direct-acting engines, which engines are commonly known as "pneumatic" hand-tools.

The engine or tool to which this handle is adapted to be applied is generally run by compressed air as a motive fluid, which air is supplied by a flexible tube attached to the base of the handle, through which is formed the inlet-port to the engine. The reciprocating piston delivers impacting blows upon the end of a chisel or like tool, which chisel or tool is used for cutting stone, carving, calking boilers, &c.

In the drawings, A indicates the hand-grasp or grasping portion of the handle, which is preferably made hollow to lighten the same. This grasping portion is connected to the base of the handle or cylinder-head by a neck B.

C indicates the handle-base or cylinder-head, which is provided with a projecting nose D, to which the supply-pipe for the motive fluid is attached.

The handle-base is bored for the passage of the motive fluid, which is preferably controlled by a cone-seated valve E, adapted to open against pressure of the incoming motive fluid. This valve is mounted on the stem F, whose outer end is provided with a button or head G, between which head and a shoulder in the bore of the handle is interposed a spring I, whose function is to force the head outwardly and seat the valve E

when the motive fluid is not present. This prevents dust, &c., from entering the engine through the valve, which might open when the pressure of the motive fluid was removed. 55

In order to operate the valve in an opposite direction against the pressure of the motive fluid to admit motive fluid to the engine, I pivot an operating-lever H in front of the head G, which operating-lever, when moved to the position shown in dotted lines, Fig. 1, opens the valve E by forcing the head inwardly. The pivot end of this lever H is preferably formed with a nose at its extreme forward end, which is adapted to contact with the handle-base to prevent the lever H from swinging outwardly on its pivot. The rear end of this lever H is provided with an outwardly-projecting horn *h*, in front of which the operator's index-finger may be placed to work the lever and control the valve, as shown by the dotted lines in Fig. 1. 60 65 70

h' indicates a rearward extension of lever H, upon which the operator may place his thumb to operate the lever and control the valve, as shown by dotted lines in Fig. 1, or, as shown in Fig. 3, the operator may place either of his thumbs on the lateral winglike extensions *h''*, which project out from the rearward extension *h'*. This lever may be operated to control the supply of motive fluid either by placing the index-finger of either hand in front of the hornlike projection *h*, the thumb of either hand on the rearward projection *h'* (both of which ways are illustrated in Fig. 1) grasping the handle, as shown in Fig. 2, and operating the lever by the thumb of either hand, or, as shown in Fig. 3, by grasping the handle-base in either hand and operating the lever with the thumb. This form of handle also permits the operator to grasp the cylinder of the tool with either hand and operate the lever. 75 80 85 90

From the above it will be seen that the lever H may be operated by either right or left hand and when the engine is held in any ordinary operative position. 95

In some instances it may be desirable to adjustably limit the throw of lever H and the opening controlled by the valve E. To accomplish this, I arrange an adjustable plug or projection *a* in the handle A, with which 100

the lever H is adapted to contact in its inward movement and be arrested, as shown in Fig. 1. This of course will control the opening of the valve, and it will readily be seen that such opening may be increased or diminished by the adjustment of plug *a*.

I am aware that many minor changes in the construction, arrangement, and combination of the various parts of the device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of the invention, such, for instance, as locating the valve in the grasping portion of the handle instead of in the handle-base, as herein described.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination with the handle-base and handle, a passage for the motive fluid, a valve for controlling the passage of the motive fluid, and a lever for operating said valve, said lever being provided with one or more projections, whereby it may be operated by the thumb, or one or more fingers of either hand; substantially as described.

2. In a handle for direct-acting engines, the combination with the handle-base and handle, a passage for the motive fluid arranged in the base of the handle, a valve for controlling said passage, a lever for operating said valve, a spring for forcing said lever outwardly, said spring also normally closing the passage controlled by the valve by forcing the valve to its seat, and an adjustable plug threaded through the handle, the end of said plug be-

ing in the path of the outer or free end of the lever, for limiting the inward movement of said lever, and thereby controlling the opening of the valve, substantially as described.

3. The combination with the handle-base and handle, a passage for the motive fluid, a valve for controlling the passage of the motive fluid, a lever for operating said valve, said lever being provided with one or more projections, whereby, it may be operated by the thumb or one or more fingers of either hand, a spring for closing said valve and forcing the lever outwardly, and means for limiting the travel of said lever, whereby, the opening controlled by the valve may be regulated by predetermined adjustment; substantially as described.

4. The combination with the handle-base and handle, a passage for the motive fluid, a valve for controlling said passage, and a lever H for operating said valve, said lever having a hornlike projection extending outwardly and forwardly from near its free end, a rearward extension *h'* back of said hornlike projection, and lateral wings *h''* extending downwardly and outwardly from said rearward projection; substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this 1st day of June, 1896.

THOMAS ROBY HILL.

Witnesses:

JOHN REILLY,
H. A. PIKE.