

No. 897,107.

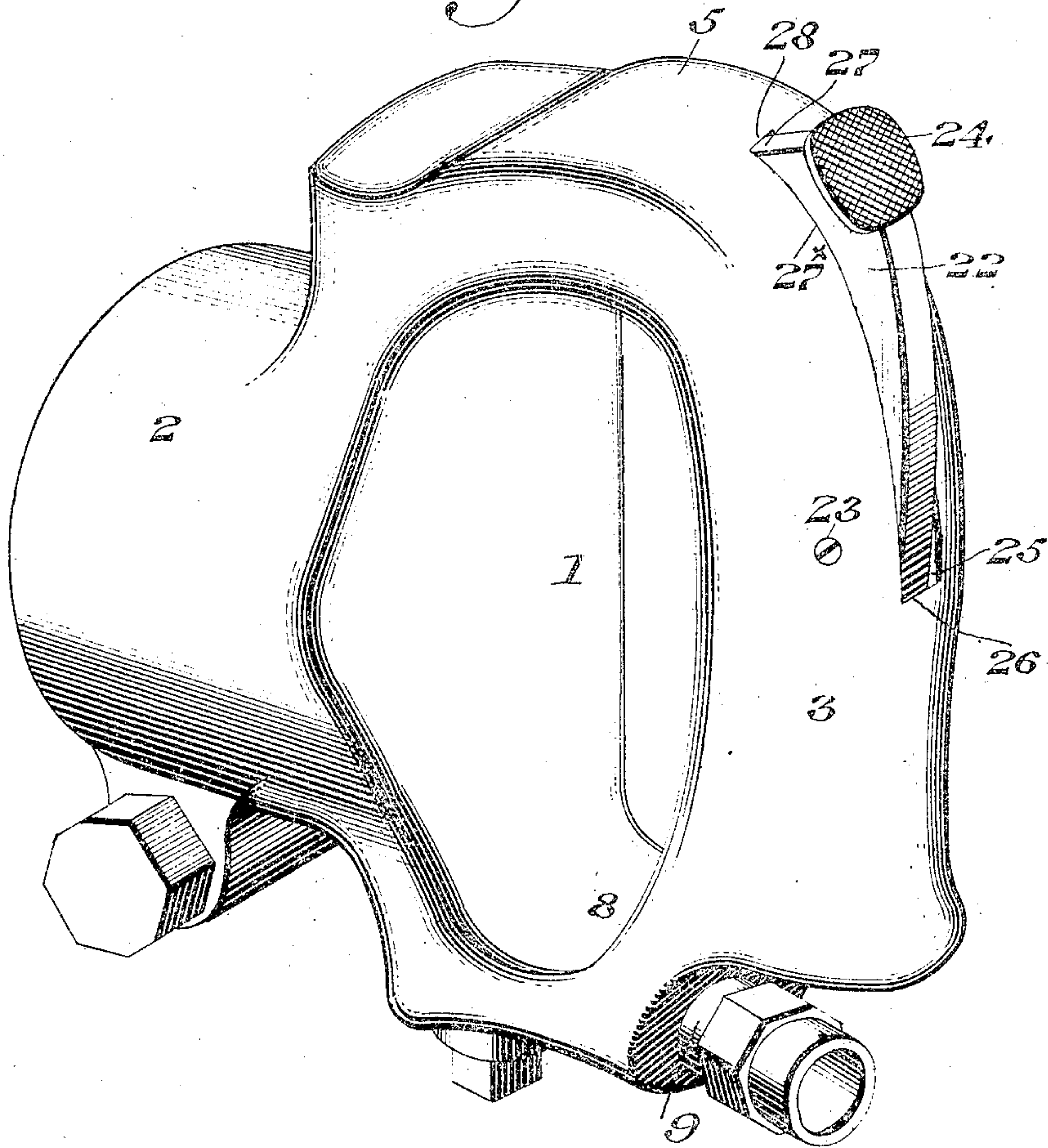
PATENTED AUG. 25, 1908.

W. H. KELLER.
PNEUMATIC TOOL.

APPLICATION FILED JAN. 13, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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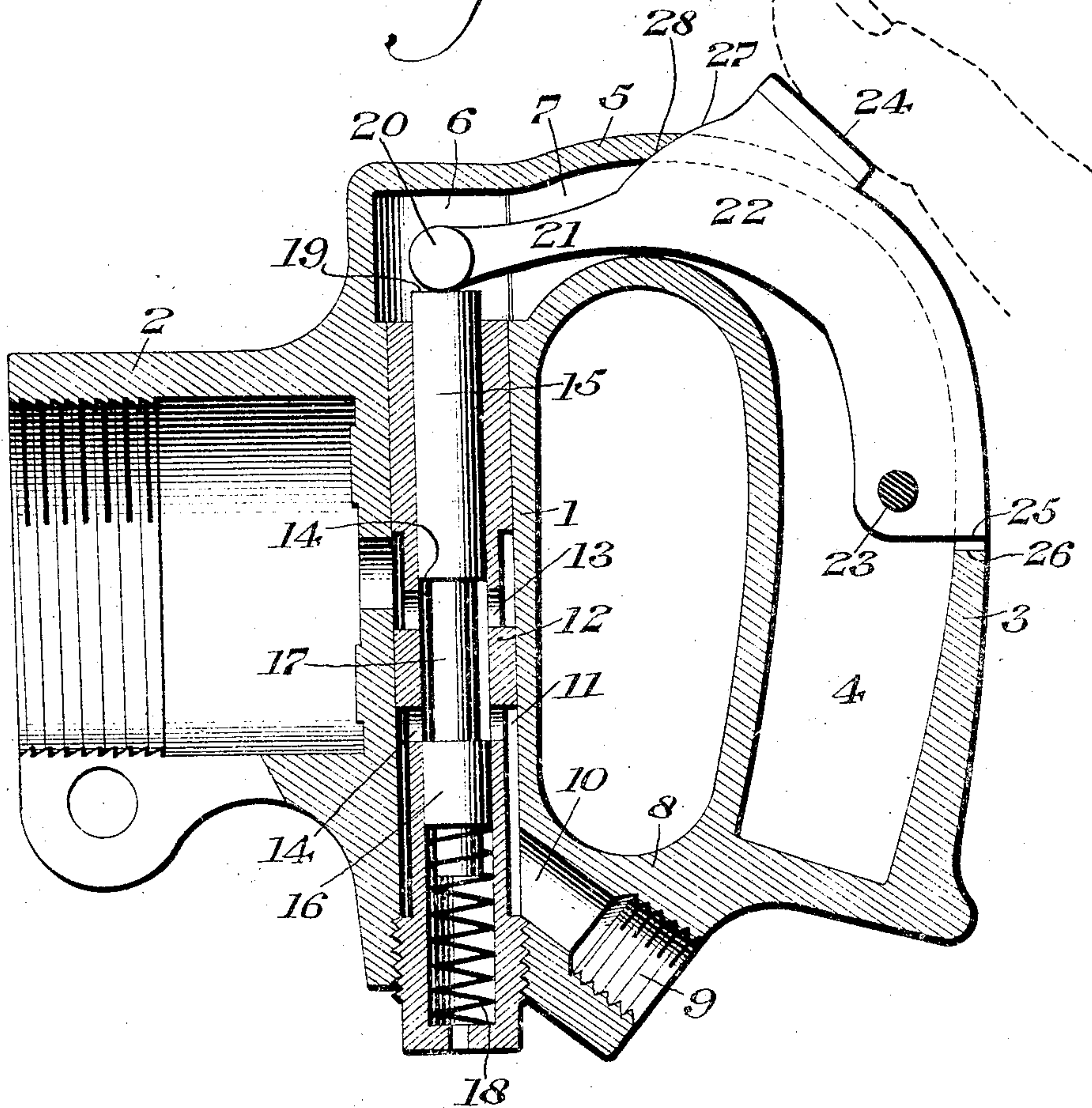
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2 SHEETS—SHEET 2.

Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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PNEUMATIC TOOL.

No. 897,107.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed January 13, 1905. Serial No. 240,876.

To all whom it may concern:

Be it known that I, WILLIAM H. KELLER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Handle for Pneumatic Tools, of which the following is a specification.

In a prior patent granted to me January 17, 1905, No. 780,354, I have shown, described, and claimed, a type of pneumatic tool handle embodying a chambered handle having a head-block provided also with a chamber into which the upper portion of the throttle valve is adapted to project, said throttle valve being adapted to be operated by either the thumb or finger of the operator.

In my present invention I have described and claimed broadly, a lever suitably fulcrumed and adapted to be manually operated by the thumb or finger of the operator. In my prior patent I have shown the thumb-operated lever as having its lower portion projecting through the bottom of the neck containing it, whereas in my present invention I show the lever as having its extension wholly contained within the head-block chamber and the hollow neck joining the handle proper to the head-block.

In my prior patent above referred to I have claimed broadly, a valve actuating device and lever suitably fulcrumed, whereas in my present application I do not desire to be limited to a lever, but contemplate the use of any manually operated device located in such a position as to be readily manipulated by the thumb or finger of the operator.

To the above ends my invention consists broadly of the novel construction, location and arrangement of a throttle valve and its adjuncts, said valve being wholly outside of the handle of the pneumatic tool or its grasping portion and operated by any suitable or convenient manually actuated device in sliding or similar contact with said throttle valve.

The invention further consists of other novel features of construction, all as will be hereinafter fully set forth.

Figure 1 represents a perspective view of a pneumatic tool handle, and its adjuncts embodying my invention. Fig. 2 represents a sectional view of Fig. 1, certain of the parts being shown in elevation.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, 1 designates the head-block of a pneumatic tool having the coupling sleeve 2 attached thereto, said coupling sleeve being preferably integral with said head-block.

3 designates the handle proper, the same comprising the grasping part having the chamber 4 therein, said handle or grasping part being connected to the head-block by means of the upper neck 5 and said head-block having the upper chamber 6 therein, which communicates with the chamber 4 by means of the passage 7. The lower portion of the handle is joined to the head-block by means of a neck 8, which may be omitted if desired.

9 designates the inlet for the motive fluid, the latter passing into the duct 10 which, it will be noted, is located wholly outside of the handle 3 or its grasping portion, as well as outside of the neck 8, said duct discharging into the passage 11 in which is located the bushing 12 having the upper and lower parts 13 and 14, said bushing being preferably screwed or driven into the head-block as indicated in Figs. 2 and 3, although, if desired, it may be secured therein by other suitable or equivalent means.

14 designates the throttle valve, the same consisting of the heads 15 and 16 joined by the neck 17, it being apparent that said head 16 controls the flow of the motive fluid through the passage 11, the throttle valve being shown in Fig. 2 as in depressed or open position and in Fig. 3 as in its uppermost or closed position.

18 designates a spring contained in the lower portion of the throttle valve bushing, said spring, at its lower end, abutting against the bottom of the bushing and at its upper end against the upper side of the throttle valve or head 16. It will be noticed that in any position, the upper extremity or surface 19 of the throttle valve may assume, the same is always contained within the head-block chamber 6.

20 designates the head adapted to bear on the upper end 19 of the throttle valve, said head being connected by an extension 21 to the manually operated device 22 which, in Fig. 2, is shown as being fulcrumed at the

point 23 and is provided with the thumb or finger piece 24.

25 designates a cam face which may abut against the wall 26 when the valve is in its uppermost position.

27^x designates the slit in the rear upper wall of the handle in which is fulcrumed the lever 22, the latter having a curved or arc-shaped face 27 to whose contour corresponds the cut or slit 28 in the upper portion of the neck 5, it being understood from Fig. 2 that the arcs for the cuts 27^x and 28 are struck from the common center 23 so that under all conditions the slit 27^x is closed in whatever position the throttle valve or the operating lever may be, so that the liability of dirt, sand or other deleterious substances entering the handle are completely obviated.

It will be apparent that in my invention the throttle valve, which in the present instance has a plurality of heads joined by a neck, is preferably contained within a suitable bushing which is contained within the head-block which constitutes no part of the handle or the grasping portion 3.

In my invention the chamber 4 within the handle is employed partly for the purpose of lightness and partly for the purpose of providing a receptacle for the valve operating device 22, it being apparent that the valve operating device is provided with an extension which terminates in proximity to the top of the throttle valve, said extension and head being located within the head-block chamber 6.

It will be apparent that in my invention the throttle valve and its adjuncts always remain the same and that the valve has the constant pressure of the spring 18 or its equivalent, forcing it upwardly and being opened or moved downwardly by the downward movement of the head 20 contacting with the top of the valve. When the valve is closed any improper movement or displacement of the valve is prevented by the contact of the head 20 with the top wall of the head-block chamber 6, as will be apparent from Fig. 2.

It will be apparent that to equip the handle with a thumb or finger operated device or to change from one device to the other, no change is necessary in the handle, throttle valve or its adjuncts other than the mere mechanical slitting of the handle casing and the assembling of the various parts. So far as I am aware, I am the first in the art to construct a handle and its adjuncts so proportioned and chambered that either a thumb or finger operated device can be applied at will without necessitating any change in the construction location or manner of operation of the throttle valve or of the handle proper and my claims to this feature are, therefore, to be interpreted with corresponding scope.

It will be apparent that the form and con-

struction of the throttle valve, which is preferably a balanced valve, may be changed if desired, without departing from the spirit of my invention, and that the extremity of the extension 21 may, if desired, have a mechanical connection with the valve. I desire to call especial attention to the efficiency of the form of handle and its adjuncts seen in Figs. 1 and 2, since it will be seen that the entire handle and head-block is completely closed, except for the slit 27^x, which is completely closed by the operating device 22, when the parts are assembled. It will also be apparent that instead of the closed or spade handle shown, I may employ a pistol grip or other form of handle.

Various other changes may be made by those skilled in the art and I do not therefore desire to be limited in every instance to the exact construction herein shown and described.

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

1. In a device of the character named, a grasping handle, a head-block to which said handle is secured, a transverse chamber in one end of said head-block, a transversely extending throttle valve located in said head-block and having one end projecting into said chamber and an actuating device for said valve having one portion adapted for manual operation and the other end extending towards said head block chamber and adapted to actuate said throttle valve, the pressure being applied intermediate the pivot of said device and its point of application.

2. In a device of the character named, a head-block, a transverse chamber in the latter, a throttle valve extending transversely of said head-block, said valve having constant pressure on one end thereof, the opposite end terminating in said chamber, a manually operated device fulcrumed in proximity to said chamber and an extension on said device located in said chamber, said extension being in sliding contact with an end of said valve, and said valve being adapted to be actuated by a thumb or finger of the operator, and the pressure on said device being applied intermediate its fulcrum and said extension.

3. The combination of a handle, a head-block, a motive fluid inlet leading to said head-block wholly outside of said handle, a longitudinally extending chamber in the upper portion of said head-block, a throttle valve in said head-block extending transversely thereof and having an end projecting into said longitudinal chamber, means for exerting pressure upon the opposite end of said valve and a manually-operated device having a head bearing on an end of said valve and in sliding contact therewith, said valve

being adapted to be actuated by a thumb or finger of the operator, the pressure being applied intermediate said head and the fulcrum of said device.

5 4. In a device of the character named, a grasping handle, having a chamber therein, a head block to which said handle is secured, a longitudinal chamber in the upper portion of said head-block in communication with
10 the chamber in said handle, a throttle valve located in said head-block, means for operating said throttle valve in one direction by constant pressure and a manually-operated lever having an end contained in said head-
15 block chamber and bearing on said throttle valve for actuating the latter in an opposite direction, the pressure on said lever being applied intermediate its fulcrum and said end.

20 5. The combination of a grasping handle, a head-block having said handle secured thereto, a throttle valve in said head-block and extending transversely thereof, a longitudinally extending chamber in said handle
25 and grasping portion, said chamber being continued through the upper portion of said handle and terminating in the upper portion of said head-block, said throttle valve having its upper extremity projecting into the head-
30 block chamber and a manually-operated device having an extension adapted to contact with an end of said throttle valve, the latter being adapted to be actuated in one direction by constant pressure and in the
35 other direction by said manually-operated device, and the pressure on said device being applied intermediate its fulcrum and said extension.

40 6. In a device of the character described, a head-block, a transverse chamber therein, the upper portion of said chamber being closed, a throttle valve in said head-block, said valve having constant pressure on one end thereof, the opposite end terminating in
45 said chamber, a handle attached to said head-block, a chamber in said handle communicating with said transverse head-block chamber, and an actuating device located in said chamber, and having one end bearing
50 on said valve and the other end adapted to be manually-operated, the pressure on said device being applied intermediate its fulcrum and said end.

7. In a device of the character named, a
55 head-block, a chamber therein, the upper portion of said chamber being closed, a

throttle valve in said head-block, said valve having constant pressure on one end thereof, its opposite end terminating in said chamber, a handle attached to said head-block, a
60 chamber in said handle communicating with said head-block chamber, said handle being connected to said head-block by a solid neck closed at top and bottom, and an actuating device in said chambers and having one end
65 bearing on said valve and a portion intermediate said end and the fulcrum of said device adapted to be manually operated, in combination with means for limiting the movement of said actuating device in either direc-
70 tion.

8. In a device of the character named, a head-block, a transverse chamber therein, the upper portion of said chamber being closed, at its top a throttle valve in said
75 head-block, said valve having constant pressure at one end thereof, and its opposite end terminating in said chamber, a handle attached to said head-block, a chamber in said handle communicating with said trans-
80 verse head-block chamber, an actuating lever located in said chambers and having one end bearing on said valve and the other end suitably fulcrumed and a slit in said handle through which a portion of said lever
85 projects, the latter having its upper portion arc-shaped and the upper portion of the slit in said handle being also arc-shaped, said arc being struck from the axis of said lever.

9. As an improved article of manufacture, 90 a pneumatic tool handle comprising a grasping portion having a chamber therein, closed at its bottom and sides, a head-block having a head-block chamber therein closed at its top, a neck joining the upper part of said
95 handle to said head-block chamber, the upper and lower walls of said neck being closed, said head-block having a pressure supply duct for the inlet of the motive fluid extending into its lower portion and
100 located outside of said handle and its grasping portion, said head-block chamber and handle chamber being adapted respectively for the reception of an actuating device and said head-block chamber being adapted for
105 the reception of a throttle valve and its adjuncts.

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