

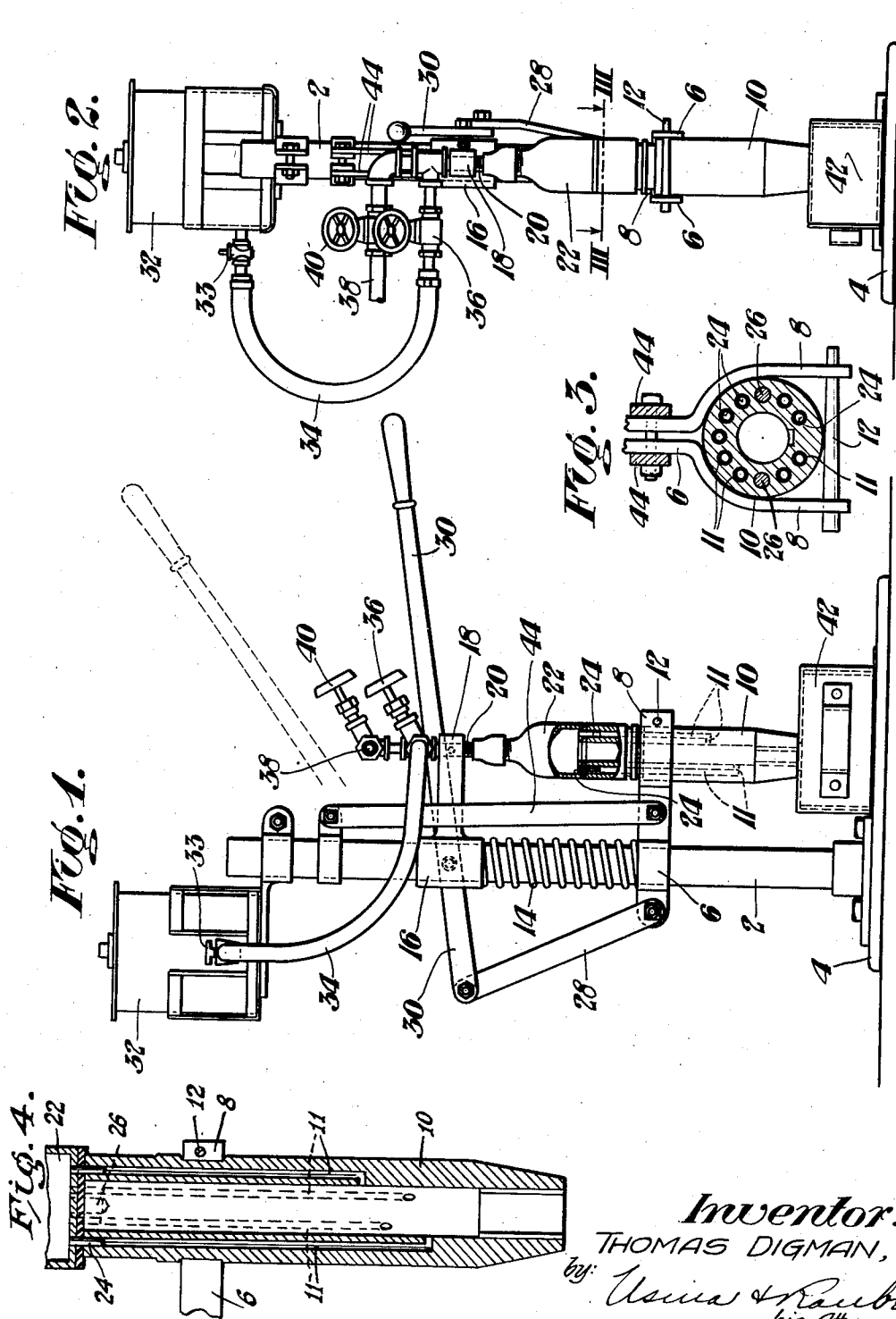
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CLEANING APPARATUS

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## CLEANING APPARATUS

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2 Claims. (Cl. 15—20)

This invention relates to cleaning apparatus and has particular reference to improved apparatus for cleaning the air-ports and barrels of pneumatic tools.

In order to insure efficient operation of most pneumatic devices and to keep the wear on barrels and pistons of pneumatic devices to a minimum, frequent cleaning of the operating parts thereof is necessary and it is the object of this invention to provide improved apparatus by which such operating parts can be rapidly and thoroughly cleaned and prepared for reassembly.

The above and further objects will be apparent from the following description and in the accompanying drawing, in which:

Figure 1 is an elevation, partly in section, of one embodiment of my invention;

Figure 2 is a side elevation thereof;

Figure 3 is a cross-sectional elevation on line III—III of Figure 2; and

Figure 4 is a vertical section through the cleaning head or nozzle.

Referring more particularly to the accompanying drawing, the numeral 2 indicates a support which preferably is held in a vertical position. The support 2 is made movable by securing it to a base-plate 4 of such size that the support 2 is held upright by the base-plate 4 and not easily overturned. The support 2 has an arm 6, provided with a ring portion 8, secured thereto. The ring portion 8 of the arm 6 is adapted to receive a barrel 10 of a pneumatic hammer, or other similar device. The barrel 10 has port-holes 11 therethrough. To adapt the apparatus to handle a variety of parts, the ring 8 can either be provided with means for adjusting its diameter or, if desired, a key 12 for locking the barrel 10 (or other parts) in the ring 8.

As the apparatus must be provided with means for moving the ring portion 8 of the arm 6 into and out of engagement with the barrel 10, a spring 14 is positioned on the support 2, above and resting on the arm 6. A sleeve 16 is slidably carried by the support 2 and ordinarily bears upon the top surface of the spring 14. The sleeve 16 preferably has an arm 18 extending therefrom to which a manifold 20, or similar device, is secured.

Means for engaging with the barrel 10, such as a nozzle 22, is secured to the manifold 20 so that it extends toward and is immediately above the barrel 10 when the manifold 20 is in its normal position. The nozzle 22 is preferably provided with tubes 24 which are designed to engage the port-holes 11 when the nozzle 22 is engaged with the barrel 10. As the apparatus is designed

to clean a variety of barrels, or similar parts, the positions of the tubes 24 preferably are adjustable so that they may engage therewith. However, the same result can be obtained by supplying the apparatus with a plurality of nozzles which are adapted to be substituted for the nozzle 22 and to engage with the various parts to be cleaned.

A plurality of dowel pins 26, or other similar means, preferably are carried by the nozzle 22 so that the nozzle 22 can be properly aligned with the barrel 10. When the dowel pins 26 are engaged with the barrel 10 the tubes 24 are adapted to be engaged with the port-holes 11.

In order to provide means for moving the nozzle 22 into and from engagement with the barrel 10, means, such as a link 28, is pivotally secured to the arm 6 on the side of the support 2 which is opposite the ring 8. A lever 30 is fulcrumed to the link 28 and pivotally secured to the sleeve 16 by a stud, or the like, so that as the lever 30 is moved downwardly, it thereby compresses the spring 14 and carries the sleeve 16 and the nozzle 22 in a downward direction. By compressing the spring 14 a sufficient amount, the nozzle 22 can be brought into engagement with the barrel 10. When no downward pressure is applied to the lever 30, the apparatus returns to its normal position as the spring 14 assumes its uncompressed position in which the nozzle 22 and the barrel 10 are not engaged.

As the invention is designed to completely prepare the barrel 10 for repeated use, lubricating fluid must be forced into the barrel 10 after it has been cleaned. As the support 2 is preferably movable a tank 32, containing a liquid lubricant, may be associated therewith. The tank 32 connects to the manifold 20 by a flexible tube 34 and is provided with a pet-cock 33 which controls the flow of lubricant into the tube 34. A valve 36 controls the flow of lubricant to the manifold 20 from the tube 34.

One of the most effective methods of cleaning the barrel 10 is to blow compressed air therethrough. Therefore, to supply compressed air to the apparatus, a flexible tube 38 is connected between the manifold 20 and a suitable source of compressed air (not shown). A valve 40 is provided for controlling the flow of air to the manifold 20. The manifold 20 is so constructed and arranged that the compressed air from the tube 38 flows into and through the manifold 20 and picks up lubricant from the tube 34 when the valve 36 is open. The air, of course, flows from the manifold 20 through the nozzle 22. There-

fore when the dowel pins 26 and the tubes 24 are engaged with the barrel 10 and the port-holes 11, respectively, a flow of air through the barrel port-holes is produced. This air flow carries out  
 5 with it any dirt, rust or grit present in the barrel 10 and port-holes 11. The lubricant in the air effectively prepares the barrel 10 for reassembly in the apparatus from which it was taken.

In order to collect the dirt and lubricant blown  
 10 from the barrel 10 the base-plate 4 may be supplied with a box 42 having an apertured top situated immediately below the open end of the barrel 10. By filling the box 42 with cotton waste, or similar material, the excess lubricant, as well  
 15 as the dirt or grit that is blown from the barrel 10, can be collected by such waste material.

Guide means, such as rods 44, are preferably secured to the support 2 in such a manner that the lever 30 and the sleeve 16 are prevented  
 20 from moving in a circumferential direction around the support 2.

In actual use, it is preferable to shut the valve 36 when the air is first permitted to flow through the valve 40. This initial air blast can then  
 25 carry all the loose dirt and grit out of the barrel 10. Afterwards the valve 36 can be opened and the lubricant carried into the barrel 10 and the port-holes 11 to effectively prepare them for replacement in the tool from which they were  
 30 taken.

While I have shown and described a specific embodiment of my invention, it will be under-

stood that I do not wish to be limited exactly thereto, since various modifications thereof may be made without departing from the scope of the invention as defined by the following claims.

I claim:

1. Apparatus for cleaning and lubricating the barrel and port-holes of a pneumatic tool including, in combination, a support, means carried by said support for securely holding the barrel of a pneumatic tool, a nozzle movably mounted on said support opposite said barrel holding means, and a plurality of dowel pins and tubes arranged annularly on said nozzle and extending outwardly therefrom, said dowel pins and tubes adapted to engage with the port-holes of said barrel so as to guide and position the nozzle in engagement and alignment therewith upon movement thereof.

2. Apparatus for cleaning and lubricating the barrel and port-holes of a pneumatic tool including, in combination, a vertical support, means carried by said support for securely holding the barrel of a pneumatic tool, a nozzle movably mounted on said support above said barrel holding means, and a plurality of port-hole engaging means arranged on said nozzle and extending downwardly therefrom, said engaging means adapted to engage with the port-holes of said barrel so as to guide and position the nozzle in engagement and alignment therewith upon movement thereof.

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