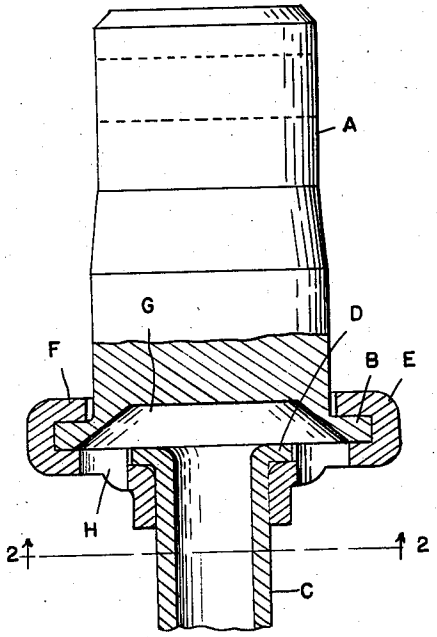
June 11, 1940. J. J. McHENRY 2,204,372

PISTON FOR AIR GUNS

Filed Dec. 19, 1938

FIG.1.



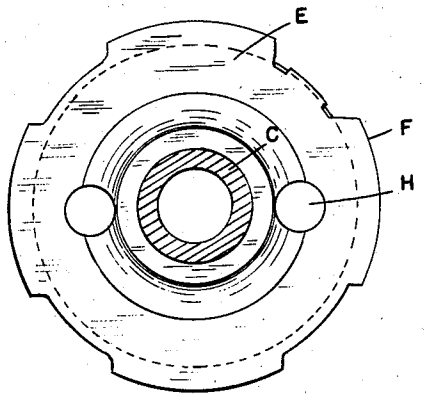


FIG.2.

FIG.3.

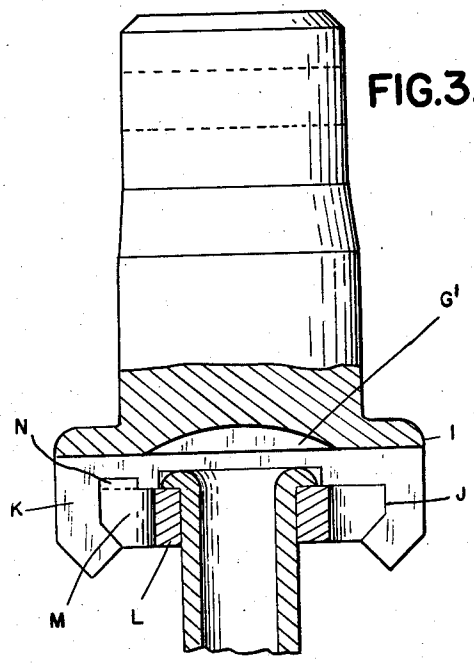
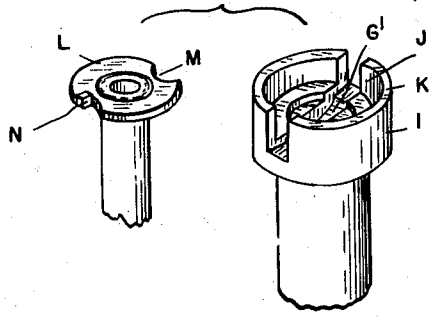


FIG.4.



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PISTON FOR AIR GUNS

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Application December 19, 1938, Serial No. 246,716

4 Claims. (Cl. 124—30)

The invention relates to pistons for air guns of that type in which the piston proper is provided with a forwardly extending air tube passing through the abutment forming the forward end of the air chamber and delivering compressed air from said chamber into the barrel. The air tube is usually attached to the piston by having its rear end inserted into a socket and secured therein by solder. It is, however, necessary to provide a passage for the air from the cylinder into the tube which is usually formed by a drilled port in one side of the tube in close proximity to the piston. Thus, this port remains open during the movement of the piston until its stroke is nearly completed, thereby permitting the compressed air to pass through the tube into the barrel. However, this port so weakens the tube that the latter is frequently broken off.

It is the object of the invention to obtain a construction dispensing with this lateral port in the tube, and at the same time providing a free passage for the air in the cylinder into the tube. To this end, the invention consists in the construction as hereinafter set forth.

In the drawing:

Figure 1 is a central longitudinal section through the core portion of the piston and the air tube attached thereto.

Figure 2 is a section on line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 1, showing a slightly modified construction;

Figure 4 is a perspective view of the detached parts of the construction shown in Figure 3.

As has been stated, it is usual to attach the air tube to the core of the piston by providing the latter with a socket in which the end of the tube is soldered. This closes the end of the tube and necessitates the use of the objectionable lateral port. With my improved construction the core member is formed with a channel through the forward end thereof, which communicates with the rear end of the tube and also with the air chamber in front of the piston. As shown in Figure 1, A is a cylindrical core member provided with a peripheral flange B at its forward end, preferably formed by upsetting. C is the air tube upset at its rear end to form a peripheral flange D, and E is a sheet metal stamping surrounding the tube C and provided with a plurality of prongs F clinched about the flange B. As thus far described, the tube C is attached to the core A, but without provision for the passage of air into the tube. For this purpose I form in the forward end of the core member A a channel G which extends transversely thereof and centrally communicates with the end of the tube. The outer ends of the channel register with ports H in the stamping E, thereby permitting free flow of air from the chamber in front of the piston into the end of the air tube.

In the modified construction shown in Figures 3 and 4, in place of the peripheral flange B on the core member, the latter is provided with a head portion I with a recess J therein forming an annular axially extending flange K. It is also provided with a transverse passage G' which extends centrally across the bottom of the recess and through the annuar flange K. L is a disk surrounding the tube C and engaging the flange D thereof, said disk being of a diameter to fit within the recess J and being cut away at M to register with the passage G'. The flange K is then turned inward to embrace the disk, thereby securing the tube to the core member. There is also a struck-up lug N on the disk L for entering the transverse passage G' and holding the cut away portions M in registration with said passage.

With both of the constructions above described, the walls of the tube are left imperforate from end to end, so that there is nothing to weaken the mechanical strength of said tube. At the same time, free entrance of air into the end of the tube is permitted during the entire compression stroke of the piston.

What I claim as my invention is:

1. In a piston for air guns, a solid cylindrical core member enlarged and transversely slotted at its forward end, an axially aligned air tube with a peripherally flanged rear end abutting against the slotted end of said core member and communicating with said slot, and clamp means coupling said air tube to said enlarged end of said core member leaving an unobstructed air passage into said slot.

2. In a piston for air guns, a solid cylindrical core member peripherally flanged at its forward end and also provided at said forward end with a transversely extending slot, an axially aligned air tube flanged at its rear end abutting against the slotted end of said core member and communicating with said slot, and a member surrounding said air tube having a clinching engagement with the flange of said core member also having a port therethrough in communication with said slot for passage of air.

3. In a piston for air guns, a solid cylindrical core member having a recess at its forward end with a surrounding annular flange and a slot extending transversely across the bottom of said re-

cess, an axially aligned air tube flanged at its rear end and straddling said slot to abut against the bottom of the recess, and a disk sleeved upon said air tube and fitting within said recess being ported in registration with said slot, said annular flange being closed about said disk to secure the same.

4. In a piston for air guns, a solid cylindrical core member having a recess at its forward end with a surrounding annular flange and a slot extending transversely across the bottom of said recess, an axially aligned air tube flanged at its rear end and straddling said slot to abut against the bottom of the recess, a disk sleeved upon said air tube and fitting within said recess being ported in registration with said slot, said annular flange being closed about said disk to secure the same, and means for holding said ports in registration with said slot.

JOHN J. McHENRY.