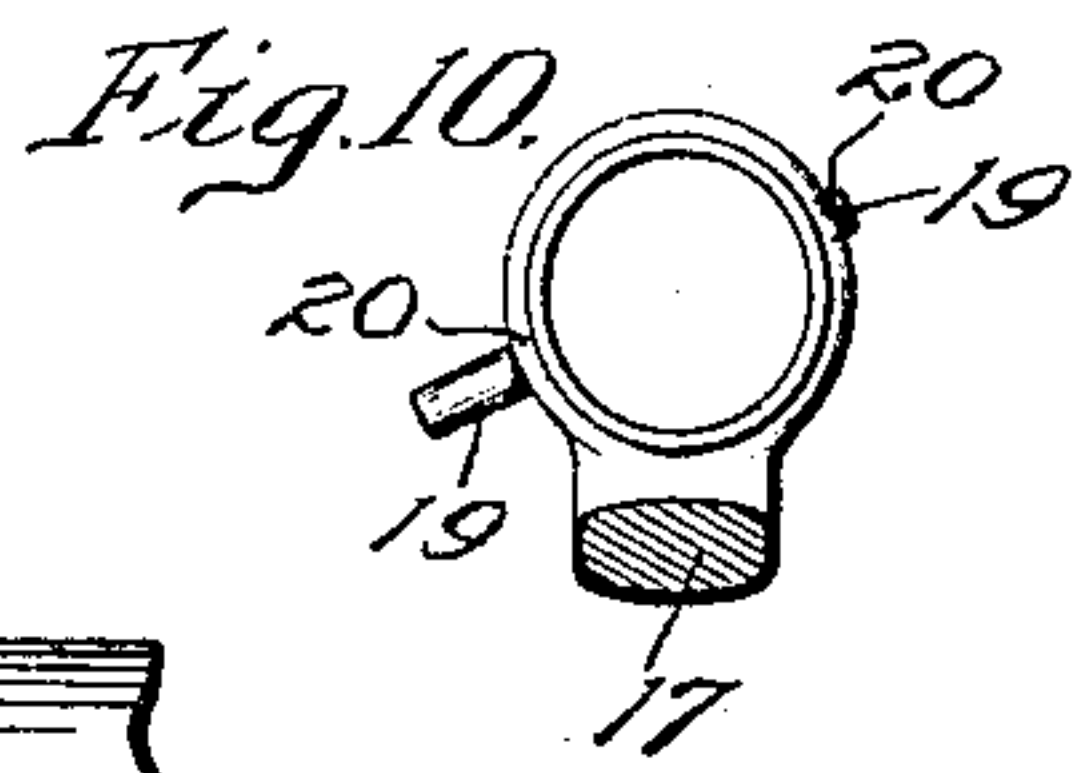
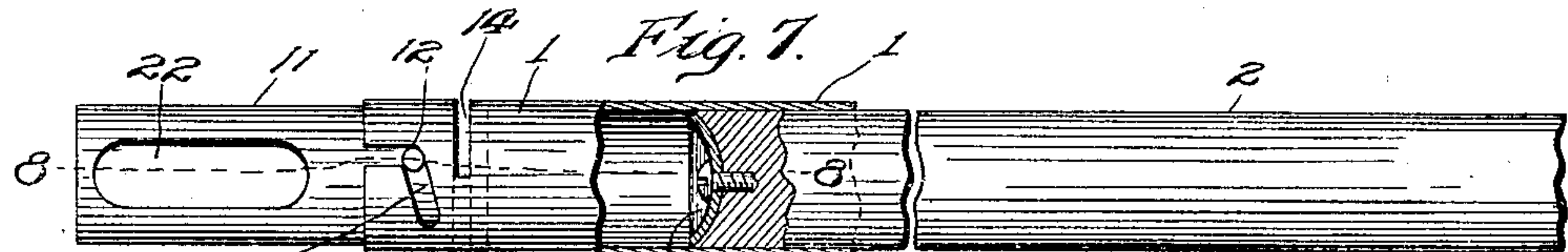
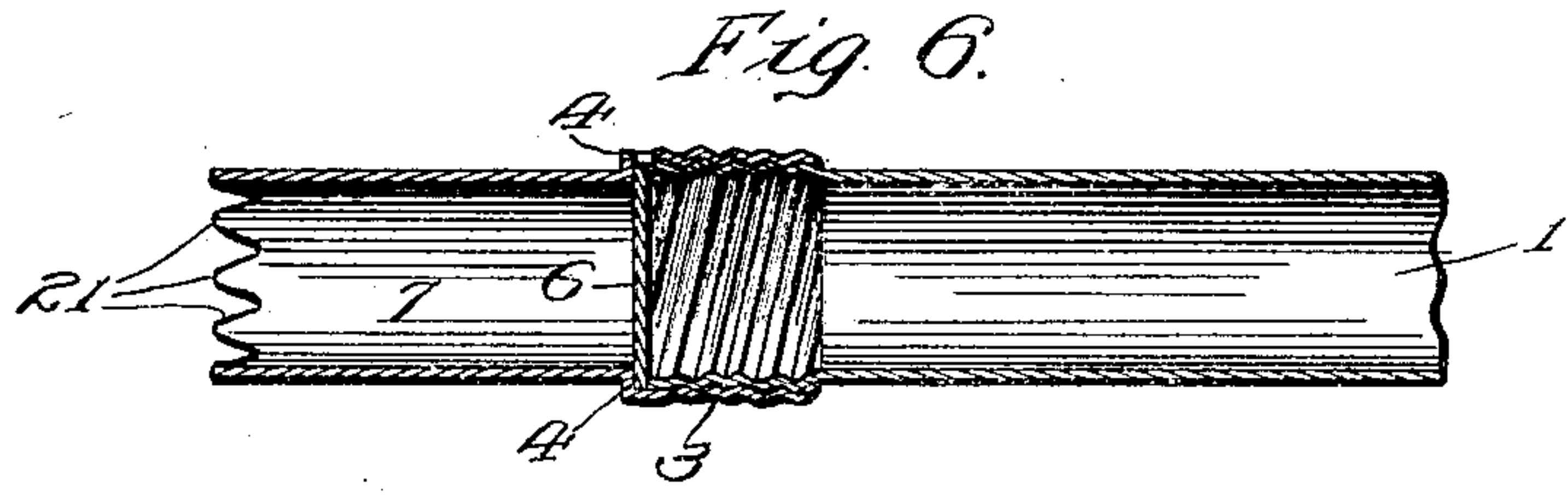
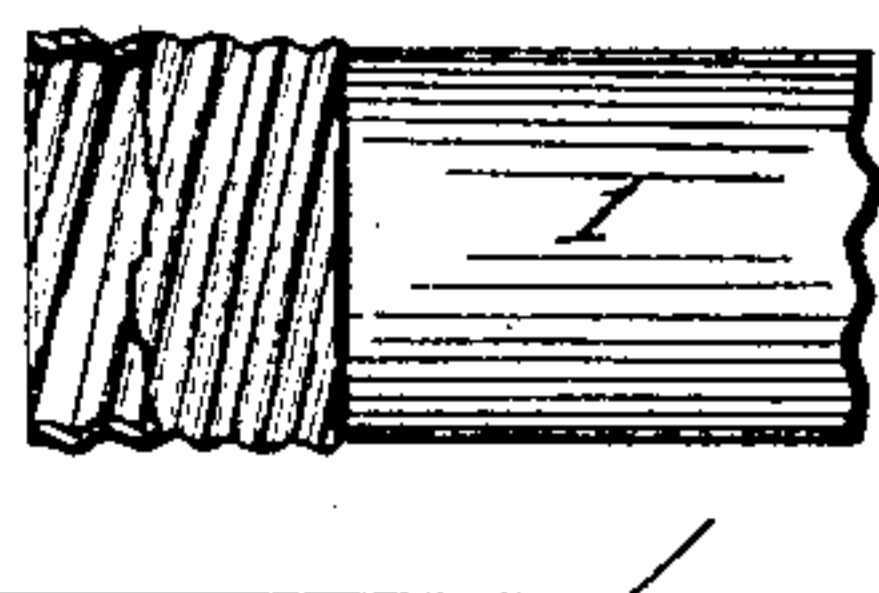
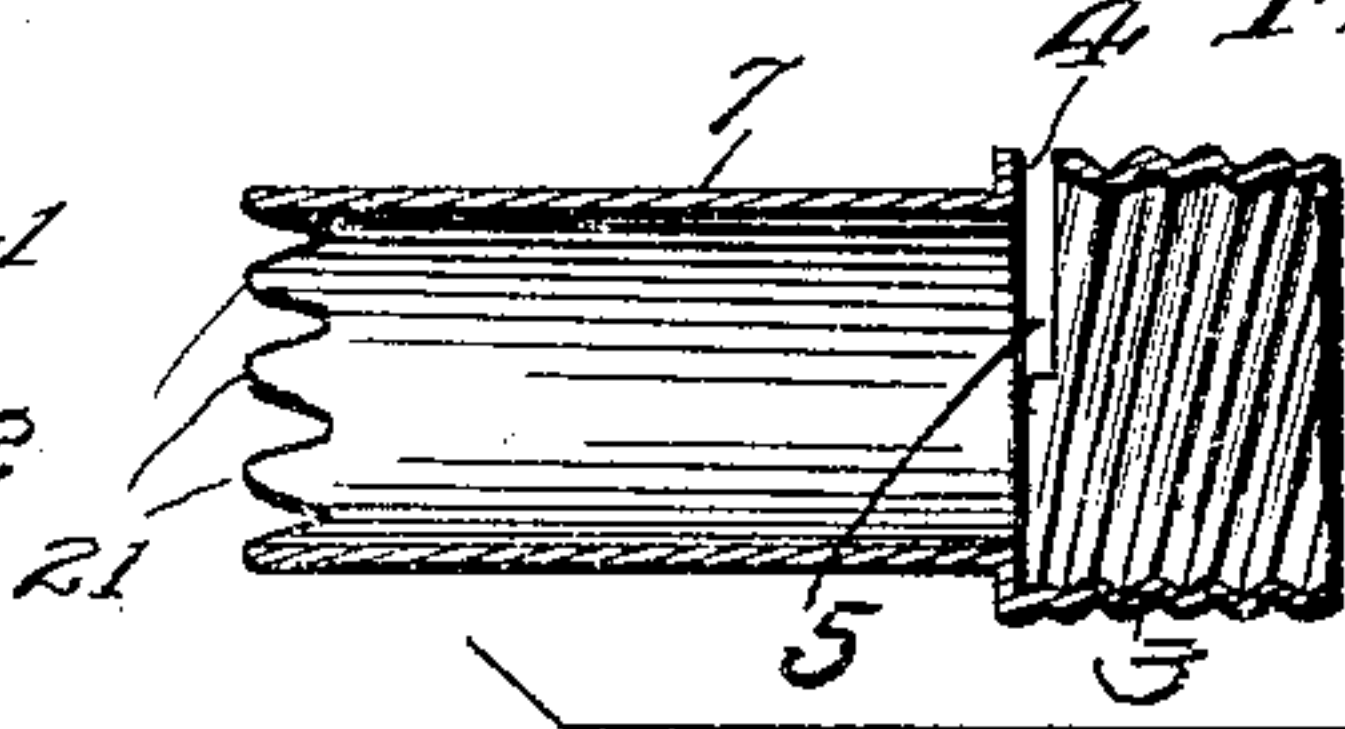
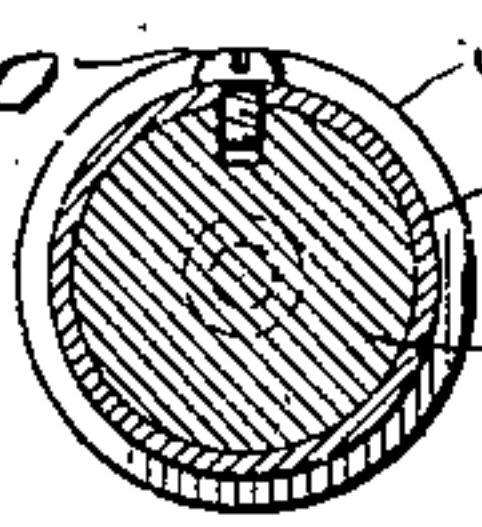
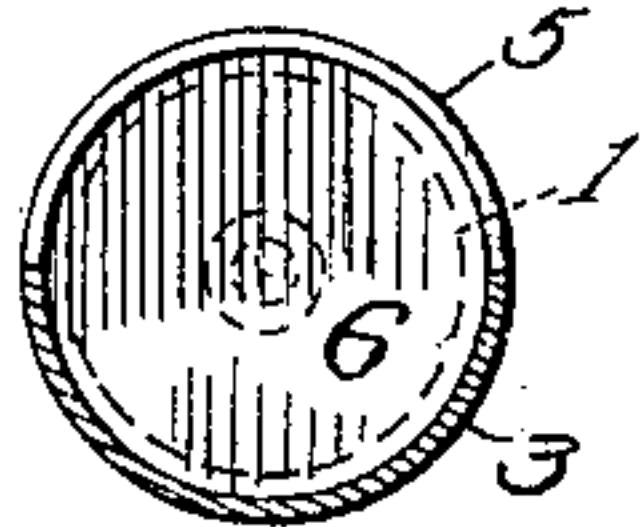
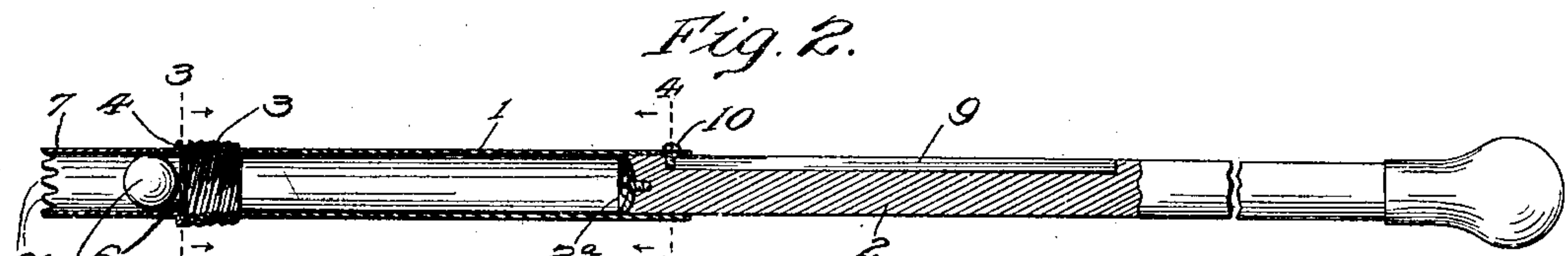
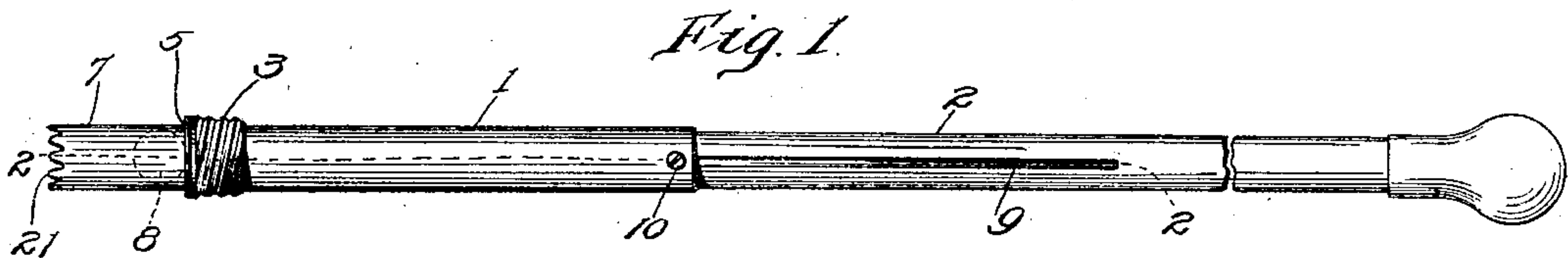


No. 814,078.

PATENTED MAR. 6, 1906.

J. PUSEY.
PNEUMATIC GUN.
APPLICATION FILED FEB. 20, 1905.



WITNESSES:
F. J. Hartman.
Walter C. Pusey

INVENTOR:
Joshua Pusey

UNITED STATES PATENT OFFICE.

JOSHUA PUSEY, OF MEDIA, PENNSYLVANIA.

PNEUMATIC GUN.

No. 814,078.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed February 20, 1905. Serial No. 246,441.

To all whom it may concern:

Be it known that I, JOSHUA PUSEY, a citizen of the United States, residing at Media, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Pneumatic Guns, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1 is a side elevation, the parts being in the open or retracted position preparatory for the insertion of the frangible disk of paper, cardboard, or the like. Fig. 2 is a section on line 2 2, Fig. 1, but showing the frangible disk inserted and clamped in place. Fig. 3 is a full section, enlarged, on line 3 3, Fig. 2. Fig. 4 is a full section, enlarged, on line 4 4, Fig. 2. Fig. 5 is an enlarged longitudinal section of the clamping member or cap and the barrel broken off, the former being detached. Fig. 6 is an enlarged longitudinal section of the parts shown in Fig. 5 connected together and clamping the intervening disk. Fig. 7 is a side elevation, partly broken away, of a modification of clamping device. Fig. 8 is a section on line 8 8, Fig. 7, parts being broken away, part of the barrel and the plunger being shown in elevation. Fig. 9 is a side elevation, partly broken away, of a second modification. Fig. 10 is a section on line 10 10, Fig. 9.

The object of this invention is to simplify the construction and to increase the convenience and efficiency of that kind of pneumatic guns or pop-guns wherein a sheet or piece of paper, cardboard, or the like secured to the barrel may be ruptured by means of air compressed in the latter, thereby producing a loud noise, owing to the sudden escape of the air.

To this end the leading feature of the invention comprises the combination of a clamping member or cap that is connected to one end of the barrel by a screw or cam connection, whereby the former may be caused to move axially with relation to the barrel, and thereby clamp between the opposed ends of the barrel and the clamping member an interposed disk or piece of paper, together with means for compressing air within said barrel back of the disk or piece of paper.

The invention comprises also certain novel features or combinations hereinafter described, and particularly pointed out in certain of the claims.

Referring to the drawings, first more par-

ticularly to Figs. 1 to 6, inclusive, which illustrate a preferred form of the invention, 1 is the barrel, which is preferably made of seamless brass tubing, in which is a piston or plunger 2, having on its inner end a leather washer 2^a, that is adapted to fit tightly against the side of the barrel in order to make a tight joint.

Screwed onto the end of the barrel is a tubular clamping member 3, (hereinafter for convenience termed the "cap,") having an internal circular flange or shoulder 4, which for the purposes of this invention constitutes the inner end of the cap and which when the cap is secured to the barrel is in line longitudinally with the end wall of the barrel 1, as shown. The said cap is provided with a segmental transverse slot 5 immediately back of the shoulder 4, which slot is cut half-way, or it may be somewhat more than half-way, through the cap, as more clearly seen in Figs. 1, 3, and 5. The width of this slot is such as to allow the ready insertion therein of a disk of paper or the like whose diameter is equal to or slightly less than the internal diameter of the cap, as hereinafter described.

The operation of the device is as follows: The cap 3 being in the outward or retracted position, as in Fig. 1, at which time there will be a space between the shoulder or end 4 and the end of the barrel opposed thereto, a disk of paper is inserted in the cap through the slot 5. The cap is then screwed up until the disk is firmly clamped by and between the end 4 of the cap and the end of the barrel, as seen in Figs. 2, 3, and 6, in which the disk is marked 6. The piston 2, being in the retracted or outward position, as in Fig. 2, is now forced inwardly, thereby compressing the air between it and the disk, and finally the latter will be ruptured, the sudden release of the compressed air causing a sharp noise. If, however, the disk be of such strength as to resist rupture and it be not too tightly clamped, it will first belly out and then free itself of the clamp and escape from the cap, in which case it may be used over again.

I sometimes make the cap with an extension 7 for the reception of a ball 8, which upon rupture or escape of the disk will be projected some distance by the blast of air.

As a convenient means for limiting the outward and inward movements of the piston, I make a longitudinal groove 9 therein, into which projects a screw or pin 10, against

which the respective end walls of said groove are adapted to stop.

In the modification shown in Figs. 7 and 8 the end of the tubular clamping member 11 (corresponding to the cap 3 of the first form) extends into and is slidable within the end of the barrel 1. It is connected to the latter by a cam connection consisting of pins or studs 12 on the part 11, that project, respectively, into inclined or cam slots 13 of the barrel. The latter has also a segmental slot 14 similar to the slot 5 of the first form, and the barrel has back of said slot 14 an internal circular flange or shoulder 15, Fig. 8, being, in effect, the end of the barrel corresponding to the end or shoulder 4 of the first form.

It will be obvious that by rotating the part 11 in one direction it will be caused to clamp between it and the end 15 a disk that had been inserted through the slot 14 when the said part 11 is in the retracted position, the diameter of the disk being equal to or somewhat less than the internal diameter of the barrel in line with the slot.

In the modification illustrated in Figs. 9 and 10 a tubular guide-support 16, which may be considered, in effect, an extension of the barrel 1, is secured to and in front of the end of the latter by means of a rigid connection 17. Within this support is a rotatable slidable tubular clamping member 18, whose inner end is in line with the adjacent end of the barrel. Said clamping member is provided with pins 19, that project into inclined or cam slots 20 of the support 16. When the part 18 is in the retracted position, as shown in the drawings, there is a space between its end and that of the barrel; but upon rotating the part 18 it will be advanced by the cam action and will clamp between its end and the barrel end a piece or sheet of paper of suitable size, but of any shape, placed across said space.

For convenience of turning the part 18 I extend one of the pins 19 a suitable distance beyond the side of the support 16, as shown.

In operating the piston to compress the air the free end of the cap or clamping member may be placed against a wall, floor, or pavement and the piston then forced in. In order that the air may freely escape upon bursting or driving out of the disk of paper or the like, and so prevent muffling of the noise caused by the released air, I make provision for the escape of the latter when the gun is operated in the manner just mentioned. For example, by making notches 21 in the free end of the extension 7 of the cap 3, as in Figs. 1, 2, 5, and 6, or by making side openings 22, as in the part 11, as seen in Figs. 7 and 8.

In the form of the device shown in Figs. 7 and 8 the clamping member is detachable from the barrel. In such case the segmental slot for insertion of the paper disks might be dispensed with and the disk be inserted in the clamping member or the barrel when de-

tached and then be clamped in place by replacing the clamping member on the barrel. It is, however, obviously more convenient to use the segmental slot in loading the gun.

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

1. In a gun of the character recited, the combination of the barrel member, the tubular clamping member connected, and axially movable with relation, to said barrel member; adjacent ends of said members being in registry with each other, said members having a cam connection for effecting axial movement of said clamping member, together with means for compressing air within said barrel member, substantially as and for the purpose set forth.

2. In a gun of the character recited, the combination of the barrel member, the tubular clamping member connected with, and axially movable with relation to, said barrel member; adjacent ends of said members being in registry with each other, said members having a cam connection for effecting axial movement of said clamping member, the reciprocatory piston within said barrel member, and means for limiting the movement of said piston, substantially as and for the purpose set forth.

3. In a gun of the character recited, the combination of the barrel member, the tubular clamping member secured to and axially movable upon said barrel member, adjacent ends of said members being in registry with each other, said members having a cam connection for effecting axial movements of said clamping member, one of said members having a segmental slot, and means for compressing air within said barrel member, substantially as and for the purpose set forth.

4. In a gun of the character recited, the combination of the barrel, the cap adapted to rotate and at the same time move axially thereon, adjacent ends of said barrel and cap being in registry with each other, said cap and barrel having the cam connection, and the piston adapted to reciprocate in said barrel, substantially as and for the purpose set forth.

5. In a gun of the character recited, the combination of the barrel, the cap mounted and axially movable thereon, and having the end or shoulder in registry with the end of said barrel, and having the segmental slot immediately back of said shoulder, said cap and barrel having a cam connection, and the piston adapted to reciprocate in the said barrel, substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature.

JOSHUA PUSEY.

Witnesses:

GEO. L. ROTE,
WALTER C. PUSEY.