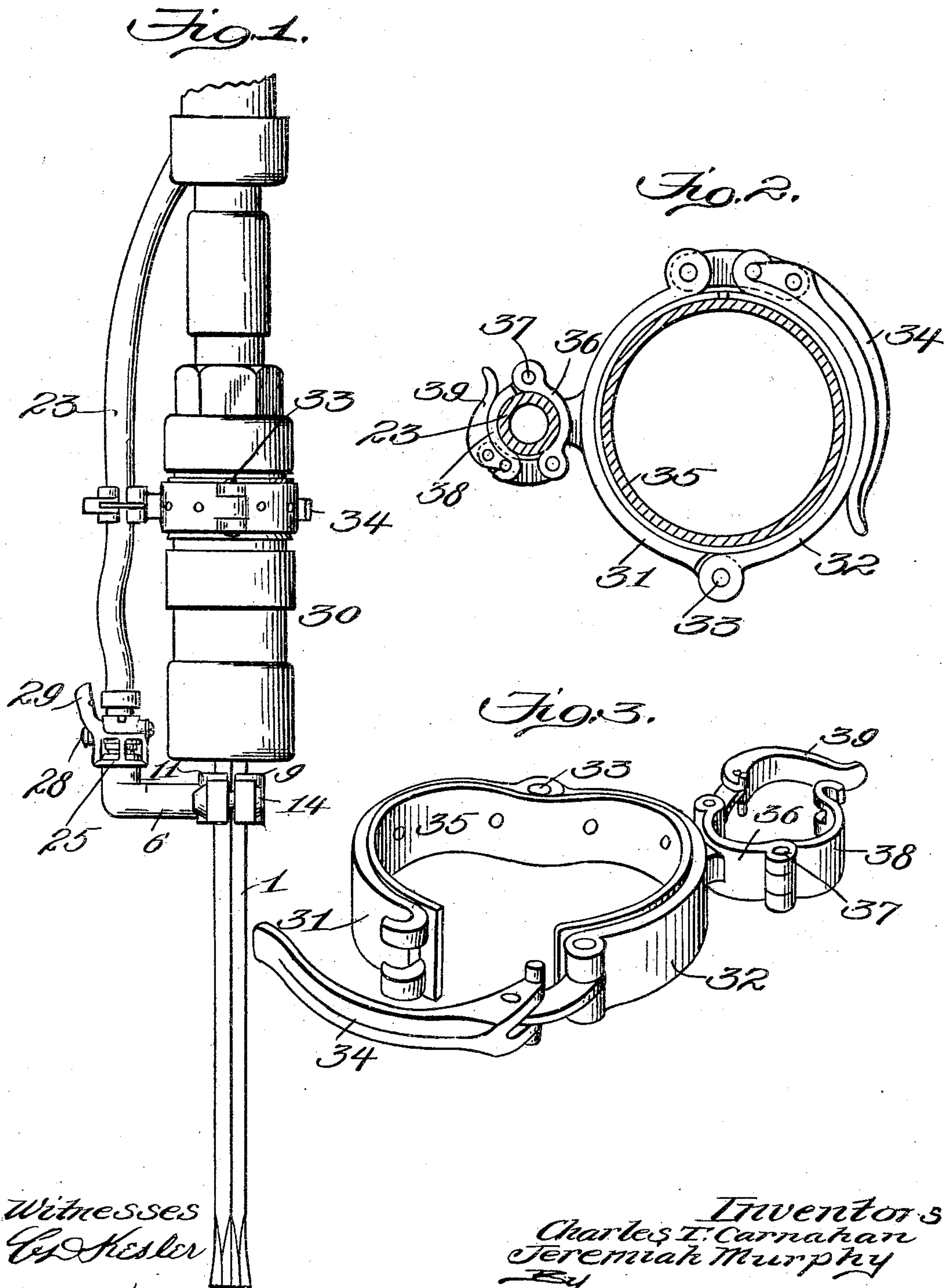


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 APPLICATION FILED AUG. 4, 1908.

940,510.

Patented Nov. 16, 1909.

2 SHEETS—SHEET 1.



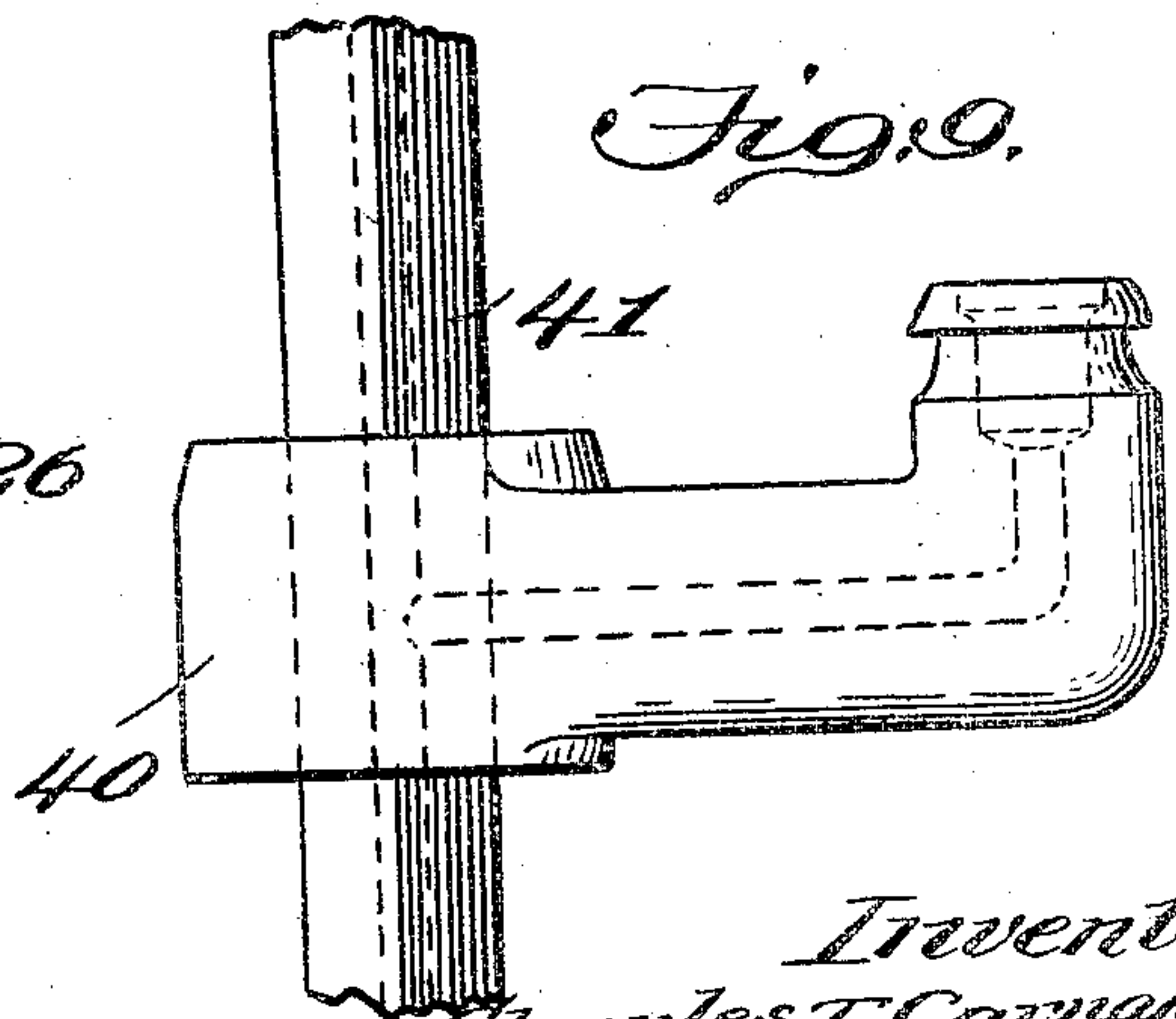
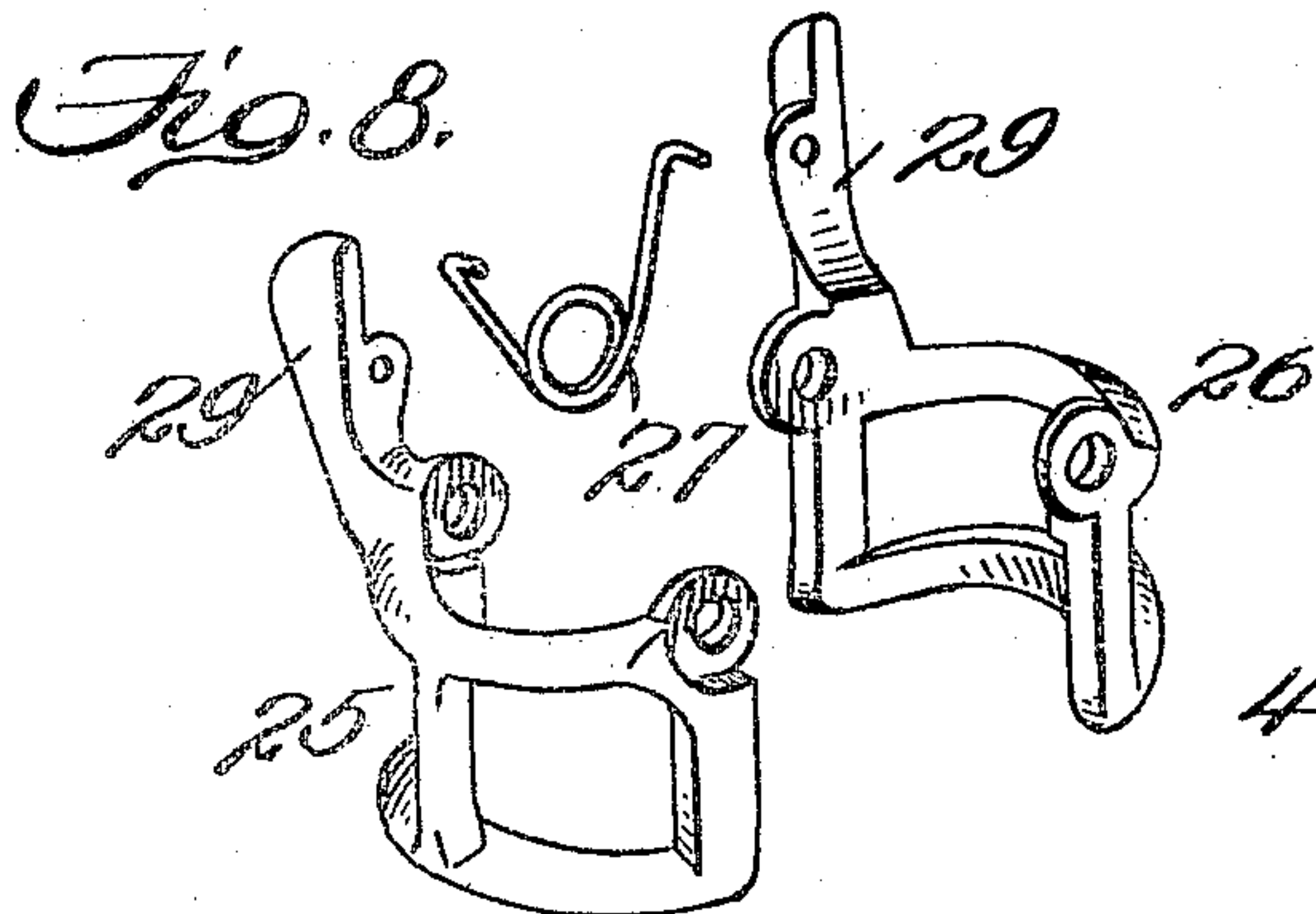
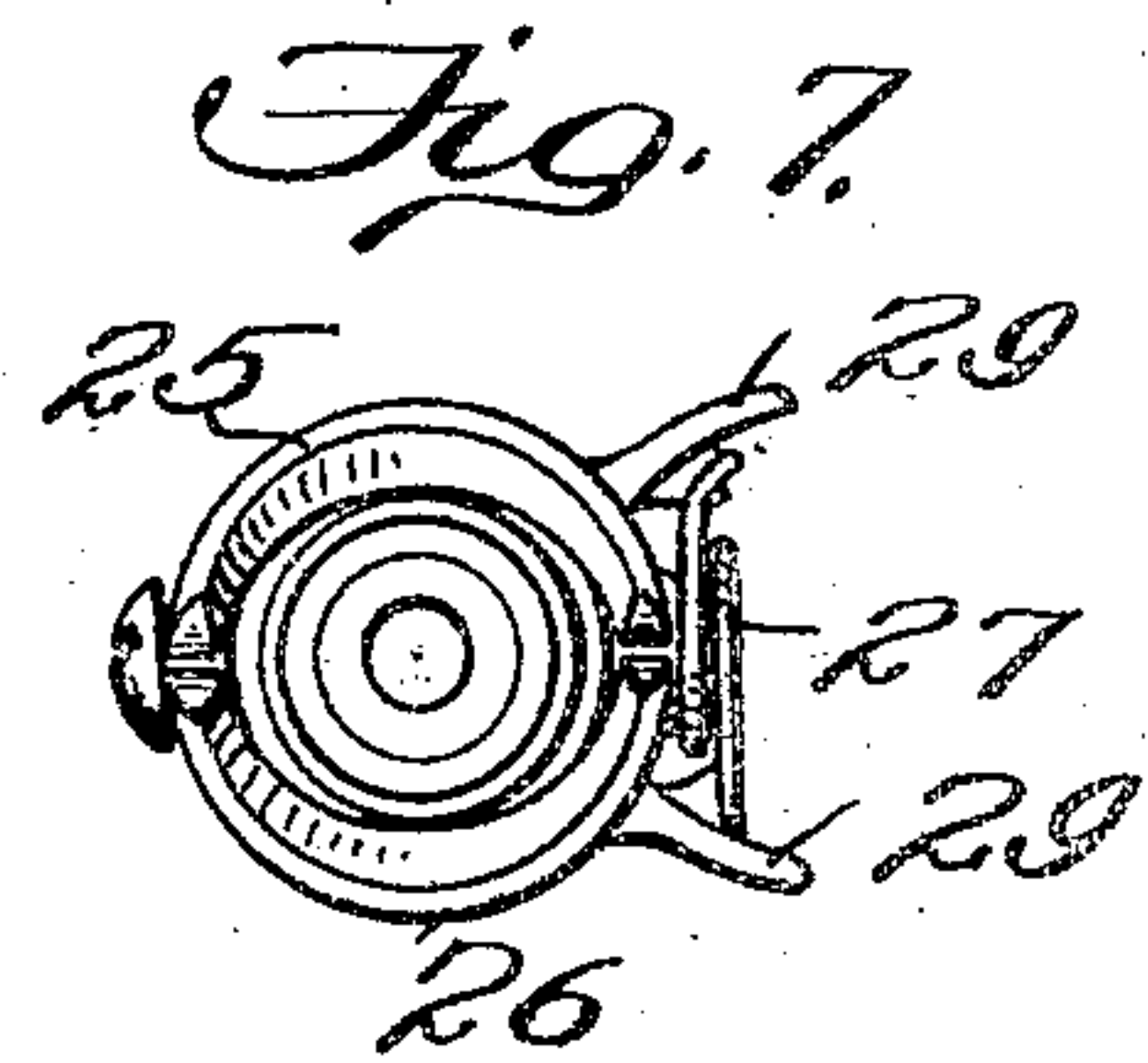
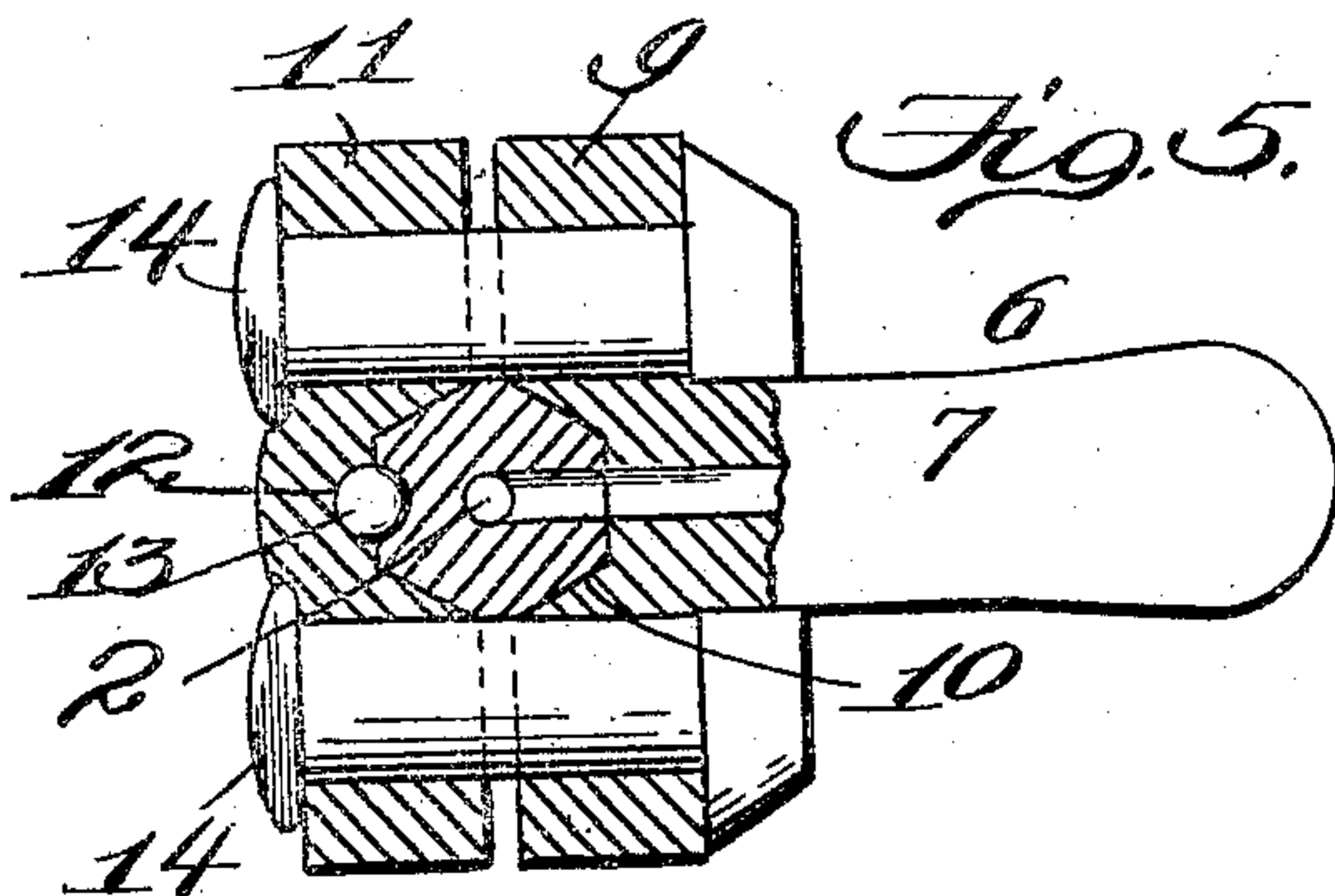
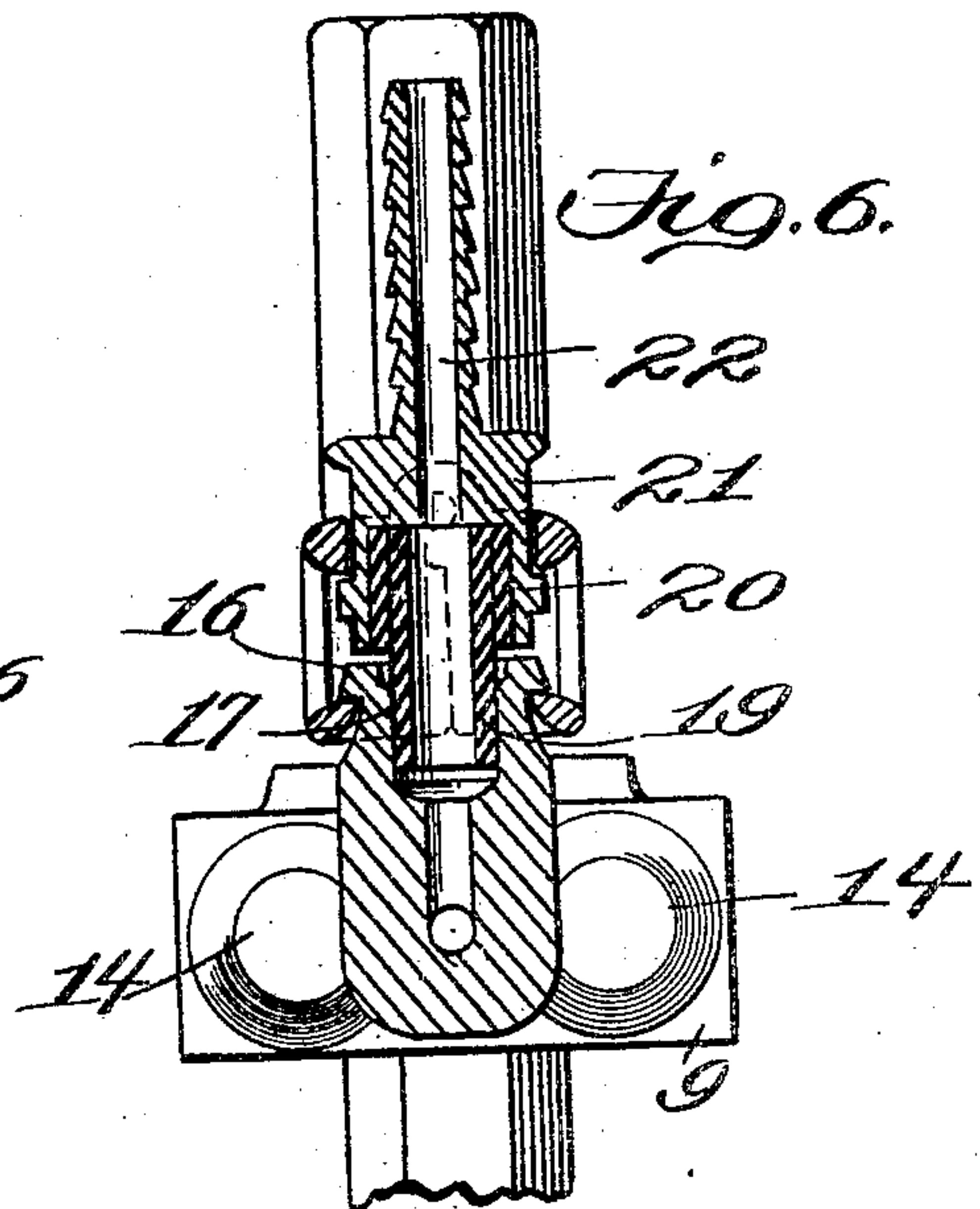
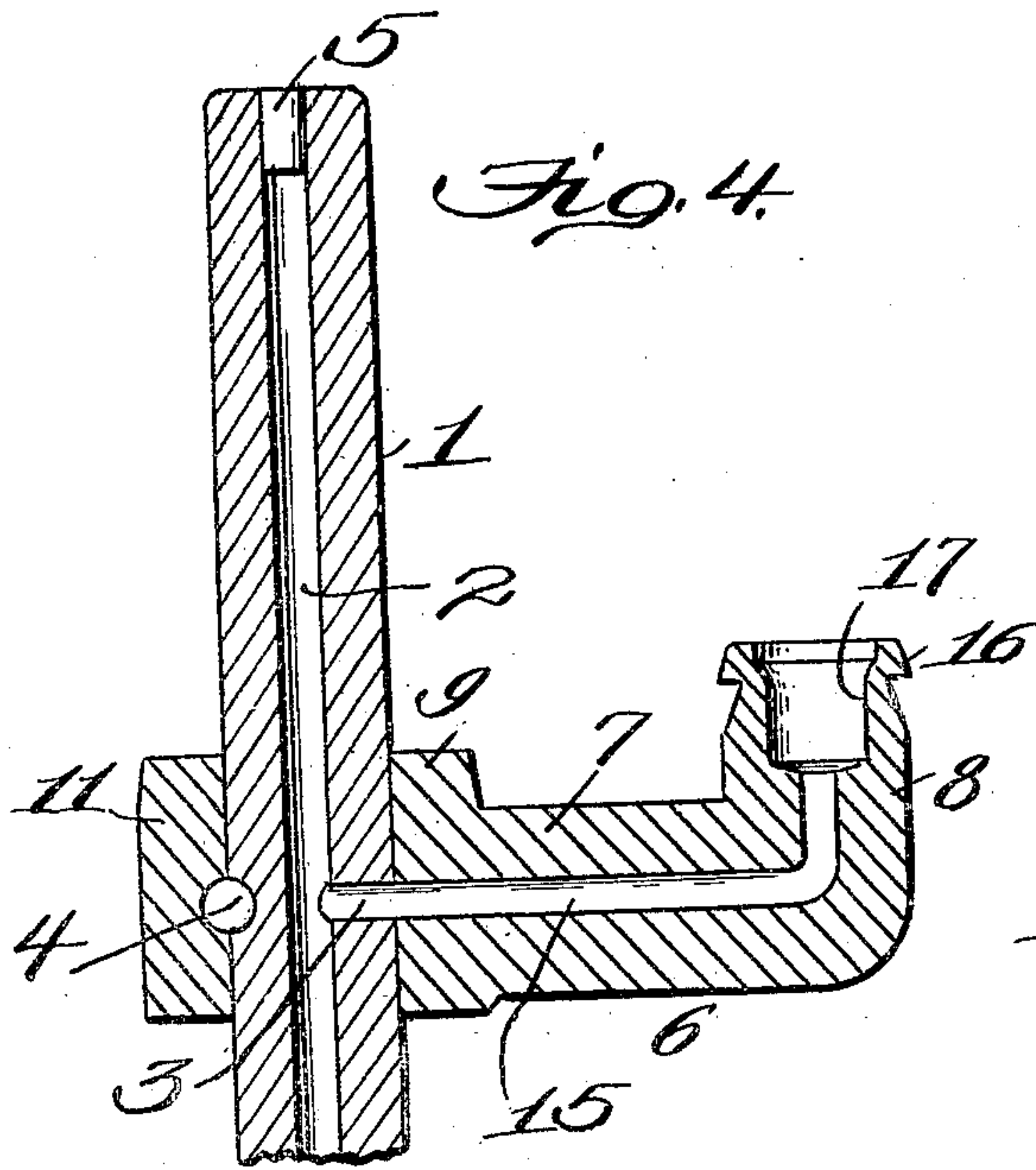
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Witnesses:  
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# UNITED STATES PATENT OFFICE.

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TO C. T. CARNAHAN MANUFACTURING CO., OF DENVER, COLORADO, A CORPORATION  
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## WATER ATTACHMENT FOR PNEUMATIC HAMMERS.

940,510.

Specification of Letters Patent.

Patented Nov. 16, 1909.

Application filed August 4, 1908. Serial No. 446,967.

*To all whom it may concern:*

Be it known that we, CHARLES T. CARNAHAN and JEREMIAH MURPHY, both citizens of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented new and useful Improvements in Water Attachments for Pneumatic Hammers, of which the following is a specification.

10 This invention relates to water attachments for pneumatic hammers and the object thereof is to provide a water attachment in a manner as hereinafter set forth, whereby provision is made for admitting  
15 water to the hollow drill to obtain a positive feed of water through the hollow drill so that if a hundred pound pressure is carried on the water the same is imparted to the pressure on the water in the drill, thus always insuring the keeping clear of the axial  
20 bore in the drill and the cleaning of the rock cuttings from the hole in the rock.

Further objects of the invention are to provide a water attachment for pneumatic  
25 hammers which shall be simple in its construction, strong, durable, efficient in its use and comparatively inexpensive to manufacture.

With the foregoing and other objects in  
30 view the invention consists of the novel construction, combination and arrangement of parts hereinafter more specifically described and illustrated in the accompanying drawings wherein is shown the preferred embodiment  
35 of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In describing the invention in detail, reference is had to the accompanying drawings, wherein like reference characters denote corresponding parts throughout the several views and in which:—

Figure 1 is a plan view of a percussion  
45 drill equipped with hose attaching, coupling and clamping devices constructed in accordance with our present invention; Fig. 2 represents a transverse sectional view through the drill showing the clamps for supporting  
50 the hose in proper relation relatively to the drill; Fig. 3 is a perspective view of the clamps shown in Fig. 2, the parts being detached and shown in open position; Fig. 4 represents an axial section through a por-

tion of the drill rod and the angular hose 55 connecting member; Fig. 5 represents a transverse section through the drill rod and the hose attaching member showing one means of fastening said parts in permanent relation; Fig. 6 is a detail sectional view 60 showing the coupling for connecting the hose to the angular attaching member; Fig. 7 shows the hose coupling as viewed from its open end; Fig. 8 is a perspective view showing the parts of the hose coupling in separated relation; and Fig. 9 illustrates a  
65 hose connecting member which may be welded to the drill rod.

Referring to the drawings by reference characters, 1 denotes a drill provided with 70 an axial bore 2, a transverse bore 3, and a peripheral recess 4. One end of the bore 2 is closed by a suitable plug 5.

The water attachment as shown in Fig. 1 comprises an L-shaped member referred to 75 generally by the reference character 6, one arm of which, 7, extends at right angles with respect to the drill 1 and the other arm 8 extends in parallelism with respect to the drill 1. The arm 7 terminates in a clamping 80 member 9 provided with a recess 10 adapted to receive a portion of the drill 1.

The reference character 11 denotes a clamping member which opposes the clamping member 9 and which is formed with a 85 recess 12 for the reception of a spherical body 13 which also extends in the recess 4. The clamping members 9 and 11 are connected together by rivets 14 and by such an arrangement, the clamp formed by the mem- 90 bers 9, 11 is fixedly secured to the drill 1, whereby the L-shaped member 6 is also connected to the drill 1, the said L-shaped member 6 constituting an inlet pipe for the water. The L-shaped member 6 is provided 95 with an axial bore 15. The member 9 is formed with a bore which is a continuation of the bore 15 and is adapted to register with the transverse bore 3 in the drill. That arm 8 of the L-shaped member 6 which extends 100 in parallelism with respect to the drill is formed with an exteriorly arranged annular flange 16 and an interiorly arranged seat 17, against which abuts the flexible end 19 of a stationary member of the hose coupling 20. 105 The stationary section of the hose coupling 20, not only embodies a flexible end 19, but also a body portion 21 and a reduced exten-



sion 22 which projects into the hose or tubing 23. The hose coupling 20 further comprises a clamping section formed of two pivoted jaws 25, 26. These jaws are controlled by the action of the spring 27 and pivoted to the body portion 21, as at 28. The jaws 25, 26 are adapted to take over the flange 16, whereby the hose or tubing 23 is coupled with the end 8 of the L-shaped member 6. Each of the jaws 25, 26 is formed with a finger piece 29, whereby the said jaws can be readily detached from the flange 16 and the hose uncoupled from the arm 8 of the L-shaped member 6. The water attachment further comprises a duplex clamp for maintaining the hose or tubing 23 in parallelism with respect to the cylinder 30 of the hammer and the said duplex clamp consists of a pair of semi-cylindrical clamping members 31, 32 pivoted together at one end as at 33 and adapted to be connected together at their opposite ends by the lever 34. Arranged against the inner face of the clamping members 31, 32 is a split band of resilient material, 35, which fits closely to the inside of the members 31, 32 and constitutes means whereby the members 31, 32 will be retained fixedly on the cylinder 30. Formed integral with the member 31 is an auxiliary clamping member 36 which is pivoted as at 37 to an auxiliary clamping member 38. The said auxiliary clamping members 36, 38 are connected together through the medium of the lever 39. The members 31, 32 are adapted to be secured to the cylinder 30 and the members 36, 38 are adapted to be connected to the hose or tubing 23, whereby the latter will be retained in parallelism with respect to the cylinder 30 so that there will be no danger of the hose splitting from the coupling or breaking of the hose at such point when moving the hammer around during the act of drilling or boring.

It is evident that owing to the manner in which the water attachment is connected to the drill, if the latter should become damaged, the rivets of the clamp can be cut and the same clamp used in connection with another drill. It will be furthermore pointed out that the clamp which connects the L-shaped member 6 to the drill acts as a collar, thus allowing the shank of the drill to enter the machine only the proper distance, as the L-shaped member is positioned at a point in proximity to that end of the drill which enters the cylinder of the hammer. It will furthermore be evident that owing to the fact that the water attachment is fixed to the drill, it is not necessary to remove the attachment every time it is necessary to

change a drill. The attachment is designed to be a permanent part of the drill.

In the modification shown in Fig. 9, the construction is the same as that heretofore referred to, with the exception that the clamping members 9 and 11 are dispensed with and a collar 40 substituted in lieu thereof which is welded to the drill 41. In this construction the spherical body 13 is dispensed with.

What we claim is:—

1. The combination of a drill hammer, a hollow drill fitted therein, a water attachment fixed to the drill having a bore communicating with the bore of the drill, a water supply hose connected to the water attachment and means for retaining said hose in parallelism with the hammer comprising a main clamp having complementary pivoted members secured to the cylinder of the hammer, and an auxiliary clamp attached to one of the members of the main clamp and having locking means independent of the main clamp and cooperative with said hose.

2. The combination of a drill hammer, a hollow drill fitted therein, a water attachment fixed to the drill and having a bore communicating with the bore of the drill, a hose connected to said attachment, a main clamp embodying pivotally connected members surrounding and secured to the cylinder of the hammer and having locking means therefor, and an auxiliary clamp having locking means operable independently of that for the main clamp and cooperative with the hose to retain the latter in proper position with respect to the hammer, the auxiliary clamp being supported on one of the pivoted members of the main clamp.

3. The combination of a drill hammer, a hollow drill fitted therein, a water attachment fixed to the drill and having a passage communicating with the bore thereof, a water supply hose connected to said attachment, and means for retaining said hose in proper relation with said hammer comprising a device attached to the hose and embodying a clamp which surrounds the cylinder of the hammer and a yieldable band interposed between said clamp and the hammer cylinder to form a shock-absorbing cushion.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

CHARLES T. CARNAHAN.  
JEREMIAH MURPHY.

Witnesses:

H. J. PHILLIPS,  
LATIMER FOPLESS.