

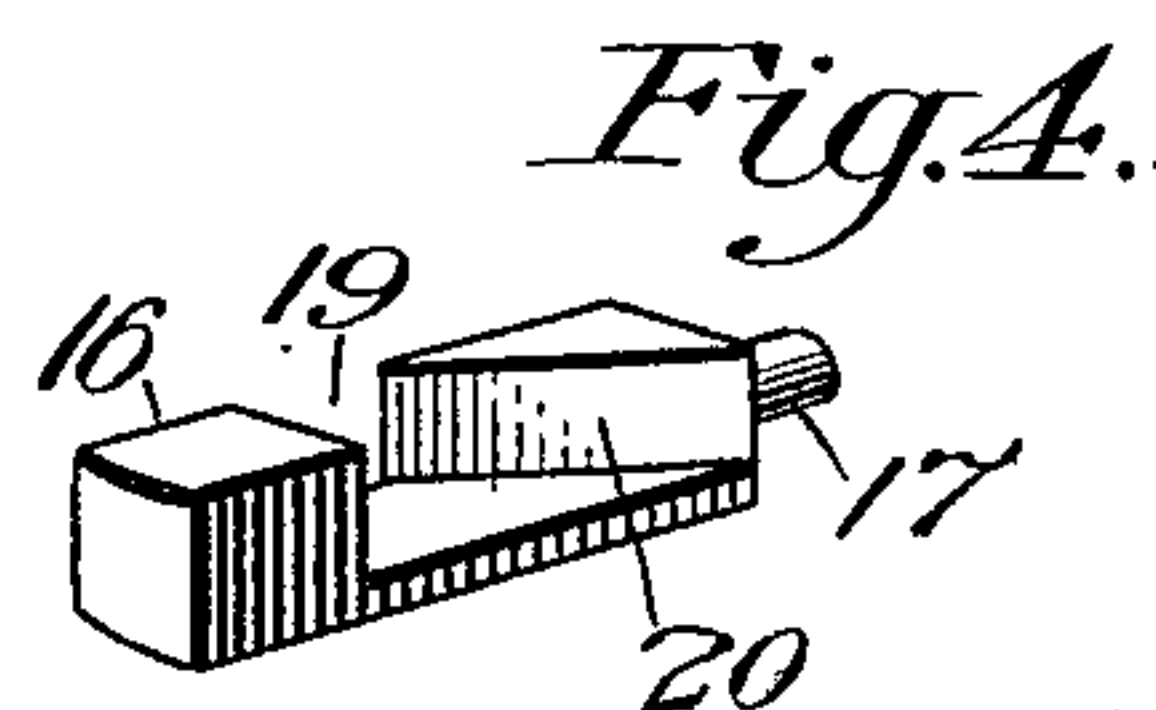
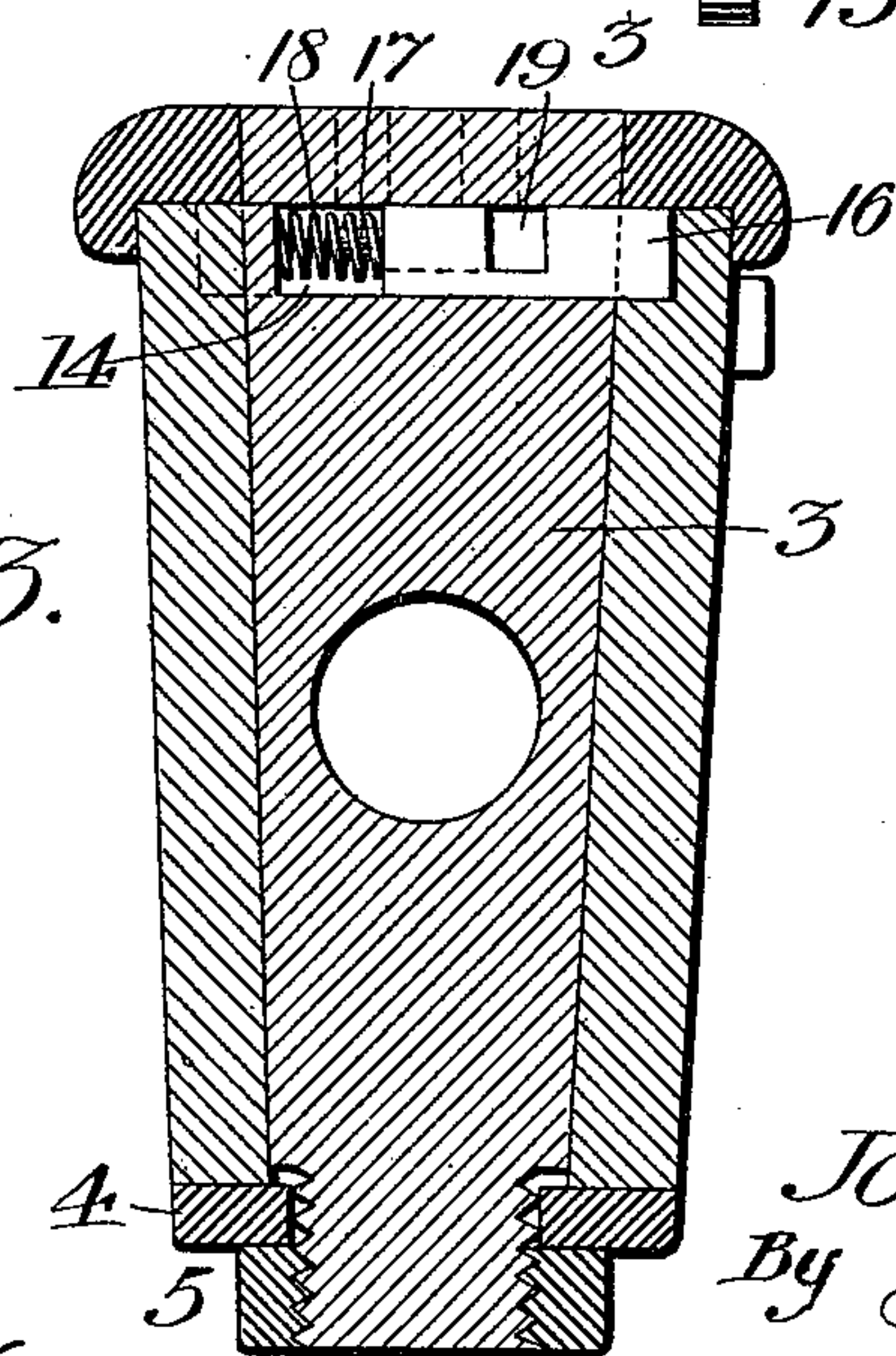
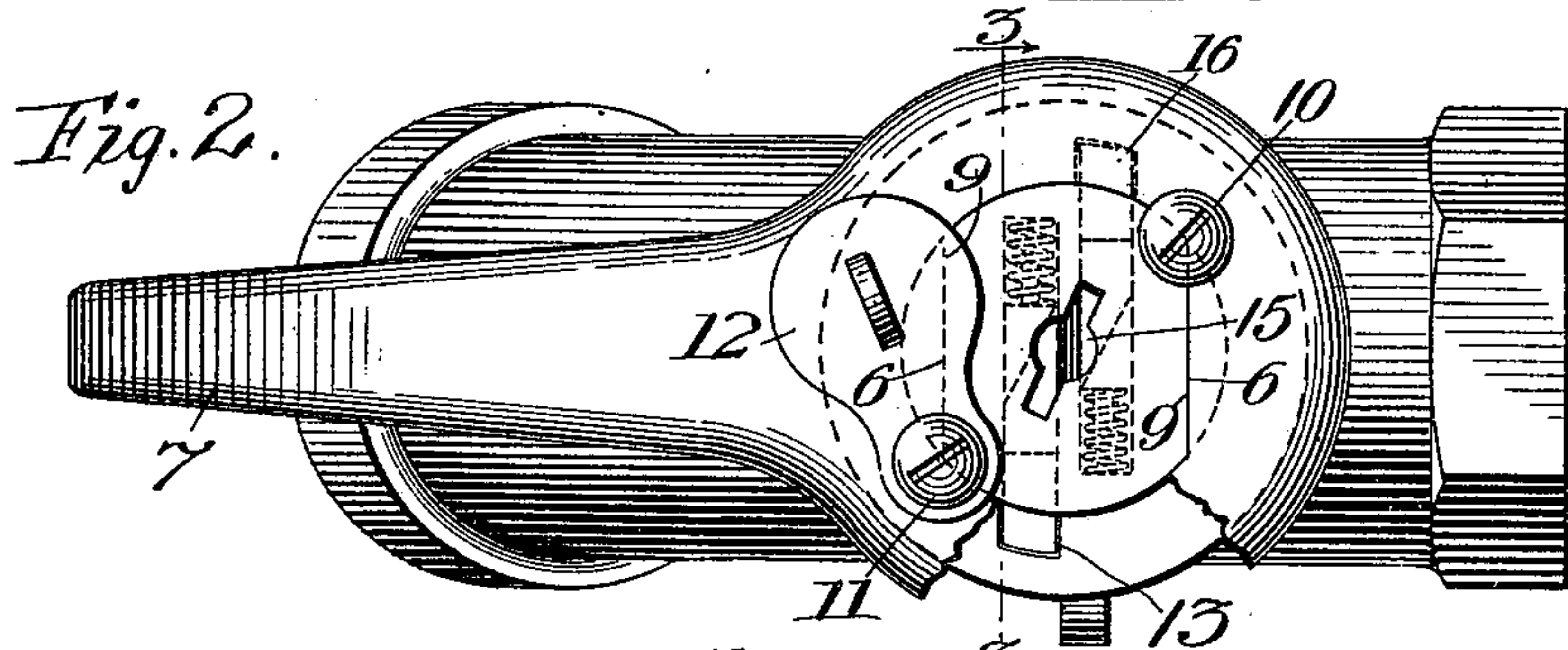
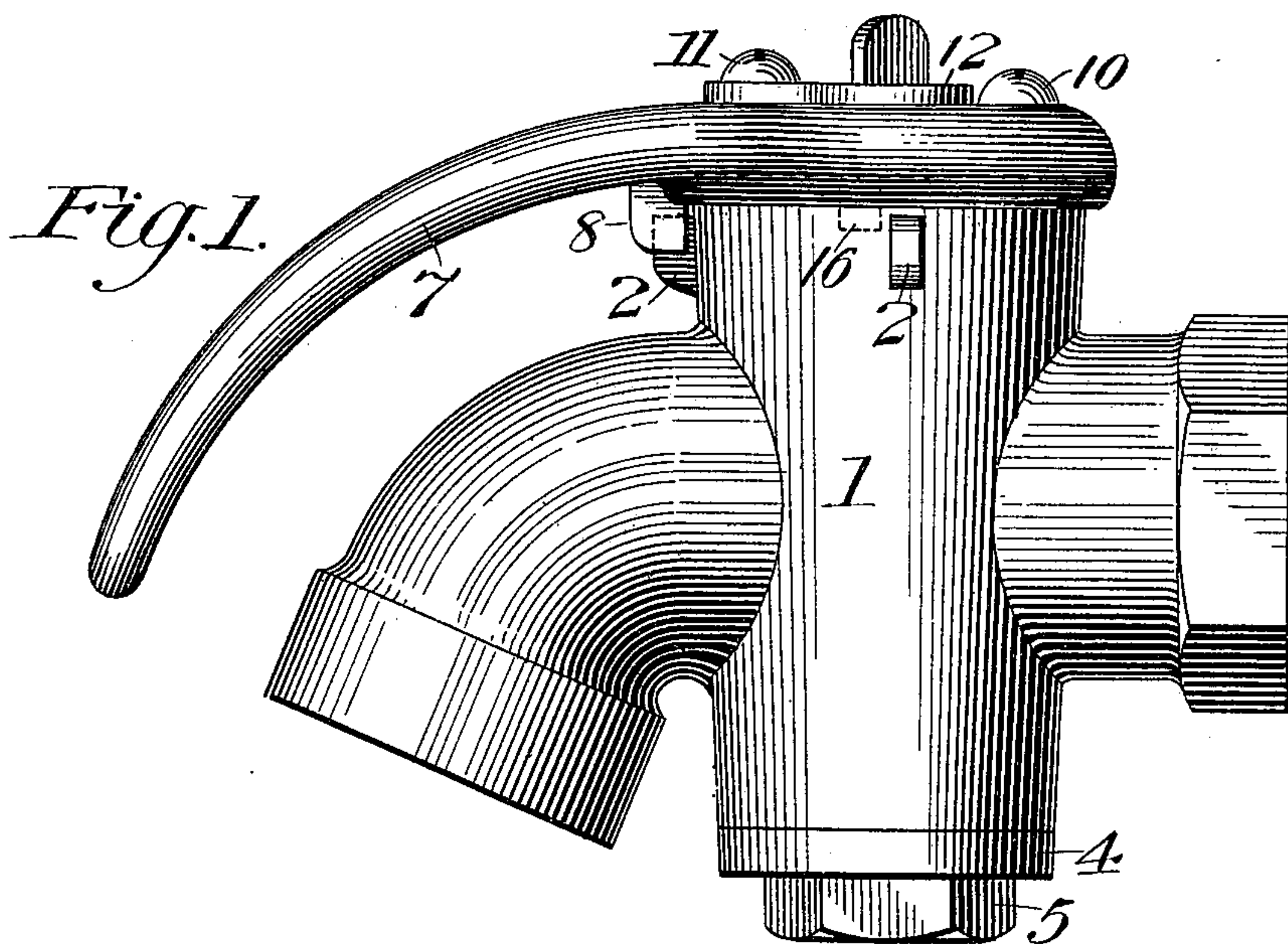
No. 671,984.

Patented Apr. 16, 1901.

J. TIERNAN.
COCK AND VALVE.

(Application filed Aug. 20, 1900.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN TIERNAN, OF TOLEDO, OHIO, ASSIGNOR OF TWO-THIRDS TO M. C. TIERNAN AND A. H. SMITH, OF SAME PLACE.

COCK AND VALVE.

SPECIFICATION forming part of Letters Patent No. 671,984, dated April 16, 1901.

Application filed August 20, 1900. Serial No. 27,489. (No model.)

To all whom it may concern:

Be it known that I, JOHN TIERNAN, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Cocks and Valves, of which the following is a specification.

My invention relates to cocks and valves, and especially to that type known as an "angle-cock," which is employed in connection with the Westinghouse air-brake and to which are secured the ends of the train-pipe and flexible coupling-hose, one of said angle-cocks being located near each end of a car, so as to be easily accessible for trainmen. It sometimes happens either by accident or through the instrumentality of some maliciously-disposed person that the handle of the angle-cock becomes turned and the communication between the parts of the brake system thus destroyed, so that the part in the rear of the angle-cock is rendered inoperative. When such a condition of the brake system exists, the engineer obviously cannot control the train, and great danger is constantly imminent.

The object of the invention is the provision of means for locking the valve in its open position and, if desired, in its closed position, so that it is impossible for the angle-cock to be turned except by an authorized person.

My invention consists, objectively, in a valve or angle-cock having the top of the plug provided with two parallel holes, within which are located sliding locking-bolts adapted to be operated by a key, the body of the valve or cock being provided with seats or recesses to receive the ends of the bolts, so as to lock the plug against turning.

It further consists in certain novelties of construction and arrangements and combinations of parts hereinafter set forth, and specified in the claims.

The accompanying drawings illustrate one example of the physical embodiment of my invention constructed according to the best mode I have so far devised for the practical application of the principle.

Figure 1 is a side elevation view of an angle-cock embodying my improvements. Fig. 2 is a top plan view of Fig. 1 with a part of

the top broken away to show one of the locking-bolts and seats. Fig. 3 is a sectional view taken on line 3 3 of Fig. 2. Fig. 4 is a perspective view of a locking-bolt. Fig. 5 shows a part of an operating or unlocking key.

Referring to the several figures, the numeral 1 designates the body of the angle-cock.

2 2 are lugs or stops cast integral with the body portion.

3 is a rotary plug having a passage through it; 4, a washer; 5, a nut.

6 6 are the straight edges of the top boundary line of the plug, made by cutting away a part of the metal in any way.

7 is a handle which has a flange adapted to fit over the top of the body of the angle-cock; 8, a stop or lug on the handle adapted to engage the lugs 2 2 and limit its arc of rotation to about ninety degrees.

9 9 are the straight edges of the hole through the handle, which match the straight edges 6 6 of the top of the plug; 10, a screw fitting a threaded hole made partly in the body of the cock and partly in the handle; 11, a similar screw; 12, a dust-guard held in position by screw 11 and adapted to turn about the screw as a pivot.

13 13 are recesses or seats made in the body of the cock and on opposite sides thereof.

14 14 are parallel holes made near the top end of the plug perpendicular to its length and extending nearly through the same.

15 is a keyhole made in the top end of the plug and intersecting the wall which separates the two holes 14 14 for the bolts.

16 16 are two sliding bolts fitting the holes in the plug and adapted to be held against rotary movement.

17 17 are the stems of the bolts.

18 18 are coiled springs engaging the stems and adapted to bear against the bottom surfaces of the holes 14 14, as clearly shown in Fig. 2 of the drawings.

19 19 are recesses made in the top surfaces of the bolts midway of their ends.

20 20 are oblique walls of the recesses adapted to be frictionally engaged by the arms of a key.

21 is a key, and 22 22 are the arms of the key.

The method of assembling the constituent elements and parts of the valve or angle-cock and the lock is obvious and need not be set forth.

5 When the handle of the cock is in the position shown in Figs. 1 and 2, the bolts 16 16 engage the recesses or seats 13 13 and are held against movement or withdrawal by the springs 18 18. To make possible the rotation
10 of the handle and plug, the key is inserted and turned, the arms 22 22 engaging the oblique walls of the bolts and retracting them and compressing the springs. When the handle and plug are turned from a closed to an open
15 position, the bolts automatically lock under the action of the springs.

From the foregoing it is clear that I have provided means for securely locking the plug of a valve or angle-cock which fulfils all the
20 conditions set forth as the purpose and end of my invention.

While I have illustrated and described only one example of the physical embodiment of my invention, I do not thereby intend to re-
25 strict the scope of the same to such specific example, inasmuch as in practice numerous changes may be made without constituting a substantial departure therefrom. There may be added other recesses 13, so that the plug
30 may be locked in a closed position or in a partly-closed position, the shape of the bolts, key, and keyhole altered, one bolt only employed instead of two, the location of the several parts differently disposed, and numer-
35 ous other changes introduced of a colorable nature. All such alterations I intend to embrace within the scope of my claims.

What I claim as new, and desire to secure by Letters Patent, is—

40 1. The combination in a valve or angle-cock of a body portion provided with a recess or seat for the end of a reciprocating bolt; a rotary plug having a hole in the body of the

same; a bolt and spring located within the hole in the plug; and a keyhole in the plug 45 communicating with the bolt-hole and bolt.

2. The combination in a valve or angle-cock of a body portion provided with recesses or seats for the ends of reciprocating bolts; a rotary plug having two holes in the body of the 50 same; bolts and springs located within the holes in the plug; and a keyhole in the plug communicating with the bolt-holes and bolts.

3. The combination in a valve or angle-cock, of a body portion provided with a recess or 55 seat for the end of a bolt; a rotary plug; a reciprocating bolt located within a hole in the plug; a spring; and a keyhole in the plug for the insertion of a key to retract the bolt from its locked position. 60

4. The combination in a valve or angle-cock, of a body portion having seats for the ends of bolts located at opposite sides of the central opening or passage therethrough; a rotary plug provided with two reciprocating spring- 65 bolts adapted to move simultaneously in opposite directions relative to the seats in the body portion; and a keyhole in the top of the plug and communicating with the parallel holes within which the sliding bolts are lo- 70 cated for the insertion of a key to move the bolts.

5. The combination in a valve or angle-cock, of a body portion having a seat for the end of a reciprocating bolt; a plug having a passage 75 therethrough; a locking-bolt in connection with the plug; a keyhole in the valve for the insertion of an operating-key; and a dust-guard for the keyhole.

In testimony whereof I affix my signature 80 in presence of two witnesses.

JOHN TIERNAN.

Witnesses:

AMOS S. TROUT,
ANNA H. TROUT.