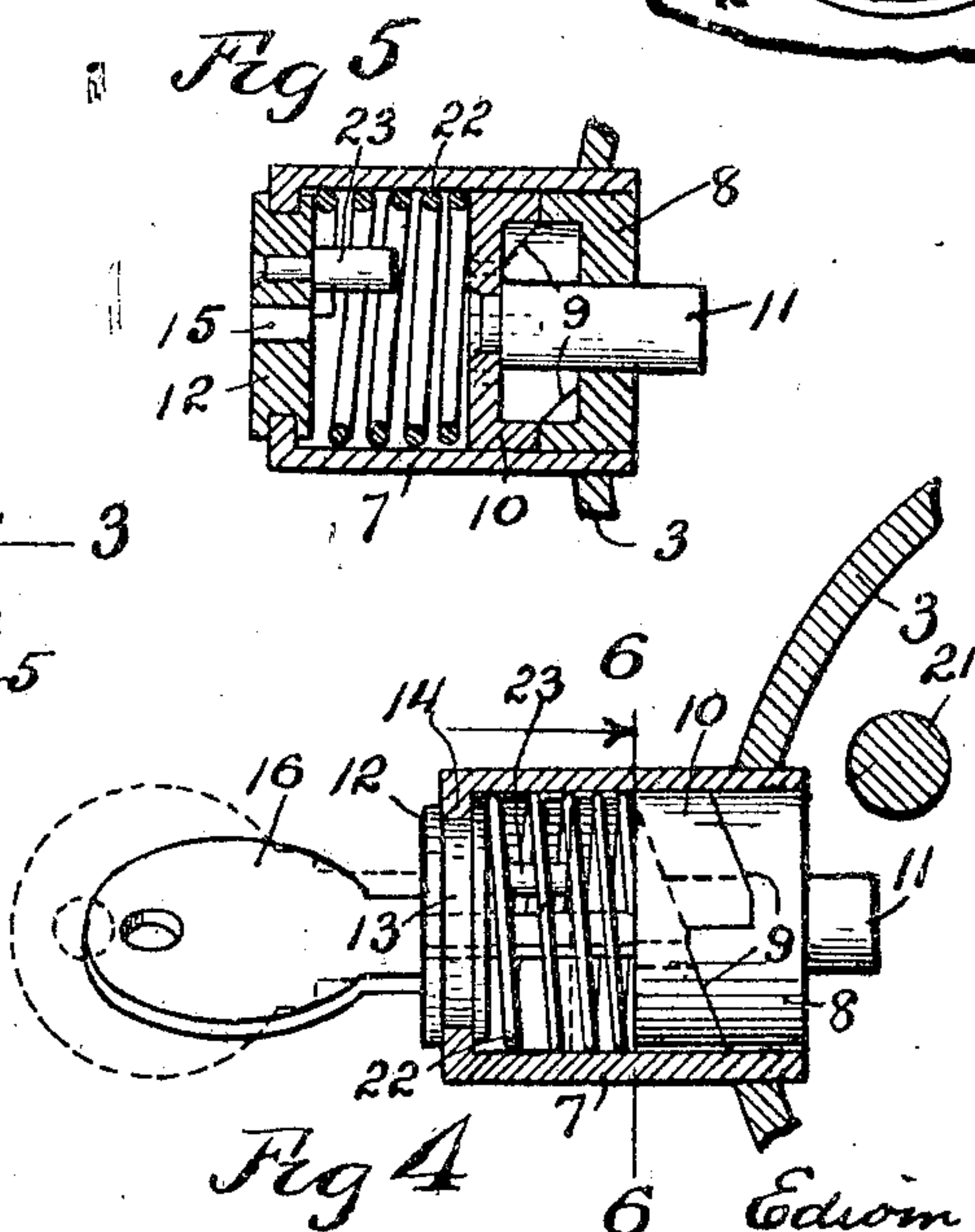
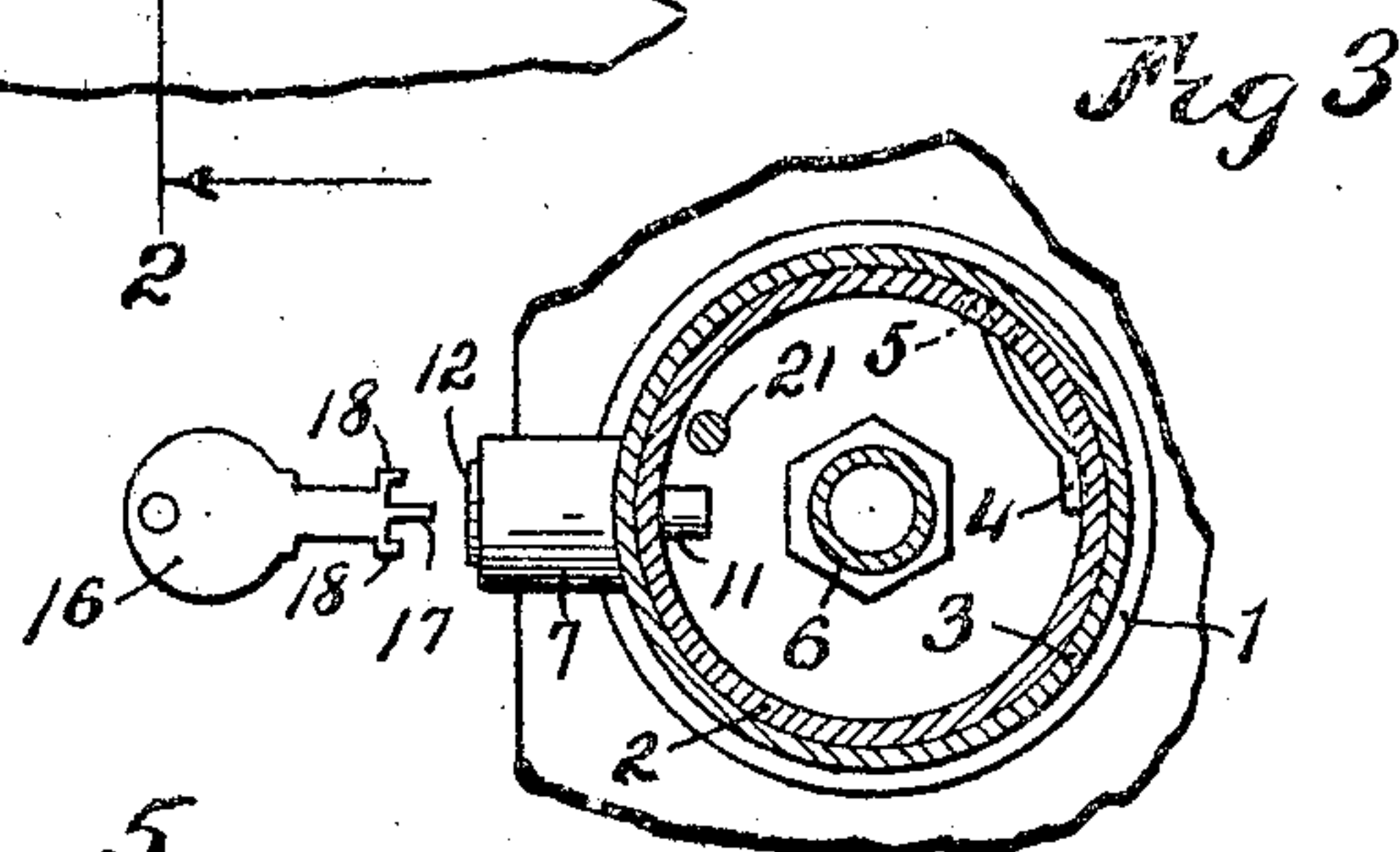
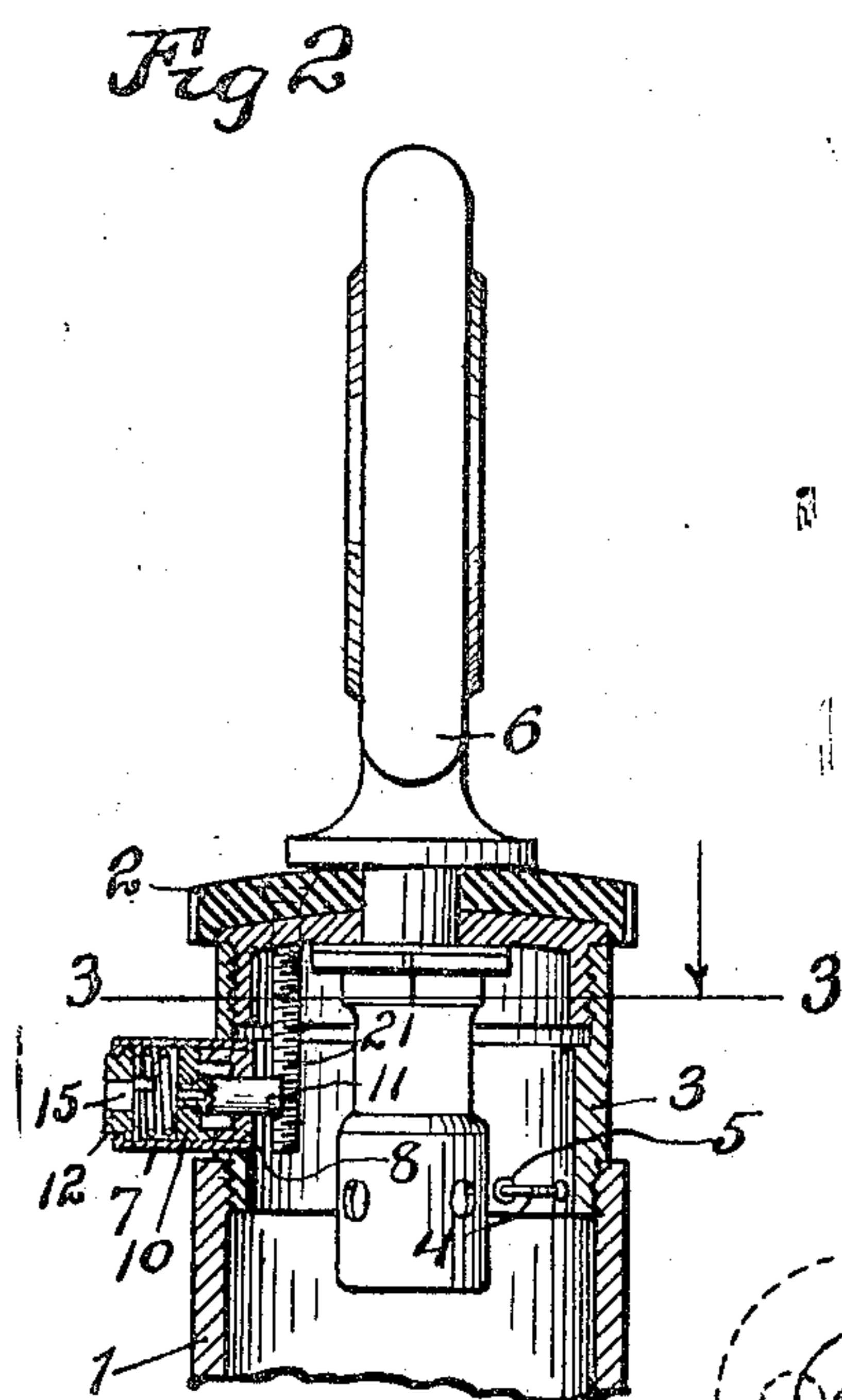
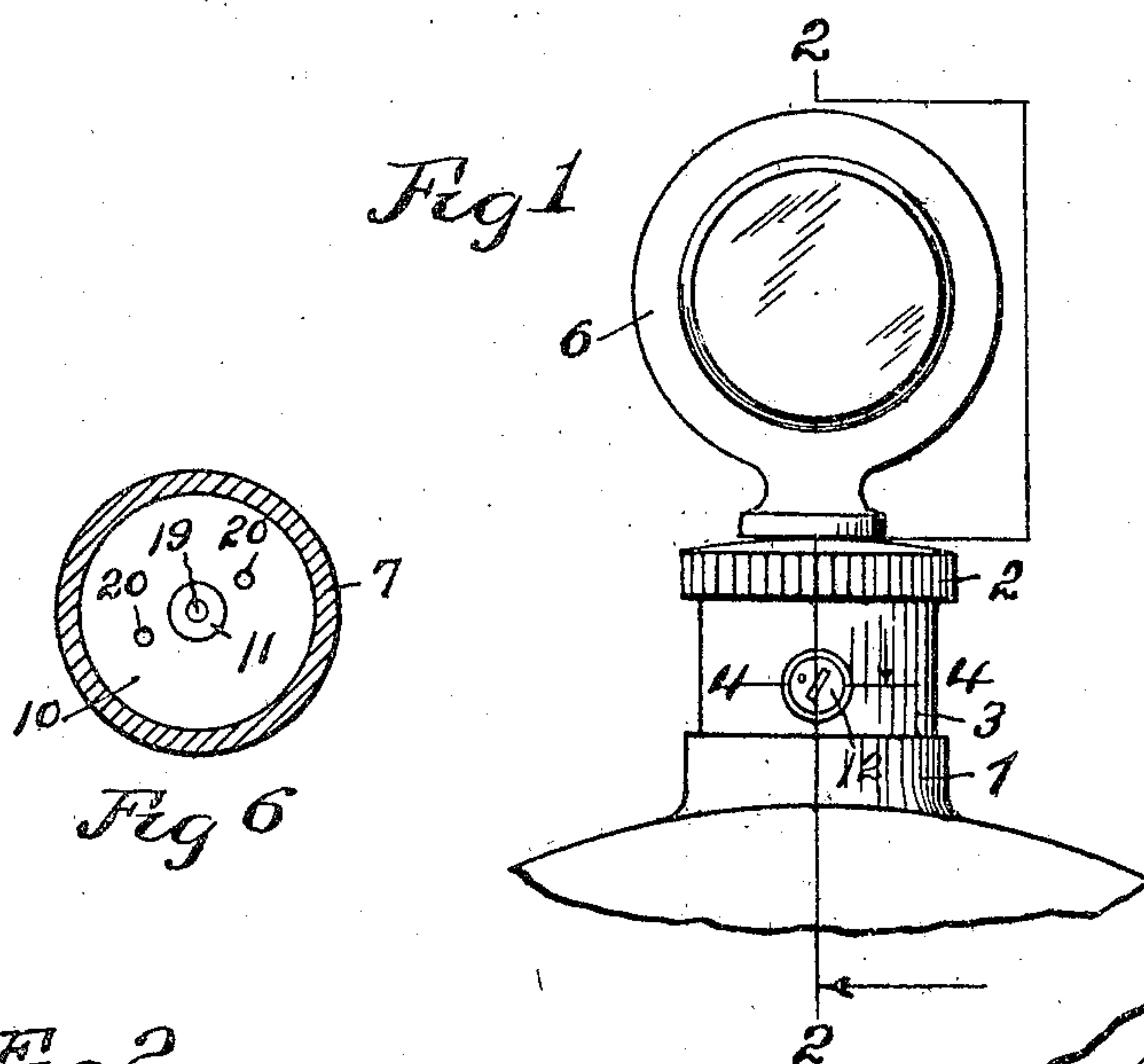


Jan. 2, 1923.

1,441,115

E. C. RENAUD.
MOTOMETER LOCKING DEVICE.
FILED JAN. 20, 1921.



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Patented Jan. 2, 1923.

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UNITED STATES PATENT OFFICE.

EDWIN C. RENAUD, OF ST. JOSEPH, MISSOURI.

MOTOMETER-LOCKING DEVICE.

Application filed January 20, 1921. Serial No. 438,563.

To all whom it may concern:

Be it known that I, EDWIN C. RENAUD, a citizen of the United States, residing at St. Joseph, in the county of Buchanan and State of Missouri, have invented a certain new and useful Improvement in Motometer-Locking Devices, of which the following is a specification.

My invention relates to improvement in motometer locking devices.

The object of my invention is to provide a novel and efficient means for releasably locking a screw cap of an automobile radiator filling tube from being unscrewed to prevent the theft of a motometer carried by the screw cap.

A further object of my invention is to provide a device of the kind described which is simple in construction, cheap to make, not liable to get out of order, and which may be readily applied to automobile filling tubes now in use.

My invention provides still further novel means for preventing the unscrewing, feloniously, of two tubular members of a filling tube which have threaded engagement with each other.

My invention provides still further a simple, cheap and efficient lock adapted for use in connection with a motometer locking device.

My invention is also adapted for use with different kinds and makes of filling tubes. The novel features of my invention are hereinafter fully described and claimed.

In the accompanying drawing, which illustrates my invention, in the preferred embodiment thereof,

Fig. 1 is a front elevation of my improved locking device shown applied to a radiator filling tube.

Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a horizontal sectional view on the line 3—3 of Fig. 2, and a plan view of the operating key.

Fig. 4 is an enlarged horizontal sectional view on the line 4—4 of Fig. 1, some of the parts being shown in elevation; the key being shown inserted.

Fig. 5 is a view similar to Fig. 4, the key being removed.

Fig. 6 is a cross section on the line 6—6 of Fig. 4.

Similar reference characters designate similar parts in the different views.

1 designates the threaded filling tube of an ordinary automobile radiator of the type having internal threads and which is adapted to have removably fitted therein the usual screw cap 2.

In some makes of radiators, the filling tube 1 is too short to conveniently apply thereto my improved locking device. In such case I provide an extension to the filling tube comprising a tubular member 3 threaded at its ends to fit the tube 1 and the cap 2 respectively, as shown in Fig. 2.

To hold the member 3 from being unscrewed, it has secured on its inner side one end of a spring wire 4, the other end of which extends through a transverse hole 5 in the member 3 which intersects the threaded connection between the members 1 and 3. The free end of the wire 4 extends between and is adapted to be jammed against the threads. The wire 4 is disposed horizontally and is arranged so that it acts in the manner of a pawl, which permits the member 3 being screwed into the member 1, but which becomes jammed between the threads when it is attempted to unscrew the member 3. In Figs. 2 and 3 the locking spring 4 is shown as it is disposed with the members 1 and 3 having right handed screw threaded connection with each other. In this arrangement the free end of the spring 4 is in advance when the member 3 is turned in a counter clockwise direction, thus causing the free end of the spring 4 to dig in, thus becoming jammed between the threads. When the member 3 is screwed in, that is turned clockwise, the free end of the spring 4 will slide along the threads. The member 3 can, therefore, be screwed into the member 1 but can not be unscrewed therefrom.

6 designates a motometer of an ordinary type mounted in the usual manner in the screw cap 2.

To prevent the felonious removal of the screw cap 2, to permit the theft of the motometer 6, I provide novel means for releasably locking the screw cap 2 from being unscrewed. In the preferred form of my invention, the elements 2 and 3 are releasably locked together by a lock carried by one of these elements and having a bolt which is key operated arranged to engage a bolt engaging member carried by the other of these elements.

In the specific form shown, a cylindrical lock casing 7 is rigidly secured in a hori-

zontal position in the tubular member 3. In the inner end of the casing 7 is fixed a cylindrical cam member 8 having one or more inclined cam surfaces 9 against which surfaces is adapted to bear the inner end of a bolt carrying member 10 which is rotatable in the casing 7 and which bears against the cam surfaces 9, which, when the member 10 is rotated in one direction in the casing 7, the cam surfaces 9 force the member 10 longitudinally outwardly from the position shown in Fig. 5 and in solid lines in Fig. 4, which is the locking position, to the position shown in dotted lines in Fig. 4, which is the unlocked position.

A central longitudinal bolt 11 has its outer end rigidly secured to the member 10 and is slidably mounted in a central hole in the cam member 8.

Rotatably mounted in the outer end of the casing 7 is a member 12 which has a peripheral groove 13 into which extends an annular internal flange 14 in the outer end of the casing 7. The member 12 is provided with a key hole 15 adapted to receive therethrough a key 16 having at its inner end a central projection 17 and two eccentric projections 18. The projection 17 is adapted to enter a central longitudinal hole 19 in the outer end of the bolt 11. The projections 18 are adapted to respectively enter two eccentric holes 20 provided in the outer end of the member 10.

When the key 16 is inserted through the slot 15 to the operative position, with the projections 17 and 18 in the holes adapted to receive them, and the key is turned in a counter-clockwise direction, the member 10 will be rotated against the cam surfaces 9 and the latter will force the member 10 to the unlocked position, in which position the bolt 11 will be withdrawn from the locking position shown in solid lines in Figs. 4 and 5 out of the path of movement of an eccentric locking member comprising, preferably, a vertical screw 21, the upper end of which is secured rigidly in the screw cap 2.

A coil spring 22 mounted in the casing 7 has one end bearing against the member 10, the other end having a bearing against the inner side of the member 12. The spring 22 serves to normally hold the member 10 engaged with the cam surfaces 9. When the lock is unlocked, the key 16 may be withdrawn.

To lock the screw cap 2, after a filling operation, the cap 2 is screwed in the usual manner to its closed position, this being permitted by the bolt 11 being in the unlocked position. The key 16 is then inserted through the slot 15 and into the holes 19 and 20, and then turned in a clock-wise direction, thereby permitting the spring and the pressure of the key to move the bolt

carrying member 10 and the bolt 11 to the locking position in the path of movement of the locking screw 21. The key 16 is then withdrawn from the lock. The screw 21 will then strike the bolt 11, in the unscrewing of the cap 2, thus preventing the removal of the screw cap.

If desired, a longitudinal pin 23 may have its outer end secured in the member 12, so that the inner end of the pin will strike the member 10 to prevent the latter disengaging from the cam surfaces 9.

In case that the filling tube 1 of the radiator is of sufficient length to permit of the mounting therein of the lock casing 7, the tubular extension member 3 may be omitted from the construction.

I do not limit my invention to the structure shown and described, as various modifications, within the scope of the appended claims, may be made without departing from the spirit of my invention,

What I claim is.

1. In a motometer locking device the combination with a radiator filling tube and a screw cap fitted thereto and adapted to support a motometer, one of said elements having mounted thereon a bolt engaging member, of a lock having a casing mounted in the other of said elements, a cam member fixed in said casing, a bolt carrying member slidably and rotatably mounted in said casing and engaging and adapted to be slid in one direction when rotated by said cam member and having means for being rotated by a key, and a bolt carried by said bolt carrying member and movable therewith to and from a position in which it will engage said bolt engaging member so as to hold the cap from being unscrewed, substantially as set forth.

2. In a motometer locking device, the combination with a radiator filling tube and a screw cap fitted thereto and adapted to support a motometer, one of said elements having mounted thereon a bolt engaging member, of a lock having a casing mounted in the other of said elements, a cam member fixed in said casing, a bolt carrying member slidably and rotatably mounted in said casing and engaging and adapted when rotated to be slid in one direction by said cam member and having means for being rotated by a key, a spring for holding said slidable member against said cam member, and a bolt carried by the bolt carrying member and movable therewith to and from a position in which it will engage said bolt engaging member so as to hold the cap from being unscrewed, substantially as set forth.

3. In a motometer locking device, the combination with a radiator filling tube having a screw threaded upper end, and a screw cap fitted thereto and adapted to support a motometer, of a bolt engaging member extend-

ing downwardly from the cap into the filling
tube, a lock casing mounted in the filling
tube, a cam member fixed in said casing, a
bolt carrying member rotatable in said cas-
5 ing by a key and engaging and adapted to
be slid longitudinally by said cam member
when rotated, a spring for holding the bolt
carrying member reliably engaged with said
cam member, said bolt engaging member be-
10 ing carried by and disposed eccentrically
with relation to said cap, and a bolt movable
by said carrying member into and out of the
path of movement of said bolt engaging
member, substantially as set forth.
15 4. A lock comprising a casing, the outer
end of which has an internal annular flange,
two members, one of which is fixed in said
casing and has an axial hole therethrough
the other member being rotatable and longi-

tudinally movable in said casing and having 20
an axial bolt extending through and rotat-
able and slidable in said hole, one of the
members having a cam surface, against
which the other member has a bearing, the
rotatable member having means for being 25
engaged and rotated by a key, a member
having a key hole adapted to receive there-
through said key, said key hole member be-
ing adapted to be rotated by said key and
having a peripheral groove into which said 30
annular flange extends, and a spring mount-
ed in said casing and bearing at one end
against said key hole member and bearing
at its other end against the bolt carrying
member, substantially as set forth. 35

In testimony whereof I have signed my
name to this specification.

EDWIN C. RENAUD.