

W. C. EMPEY & D. L. CHILDS.

LOCK FOR MANIFOLDS.

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1,060,239.

Patented Apr. 29, 1913.

Fig. 1.

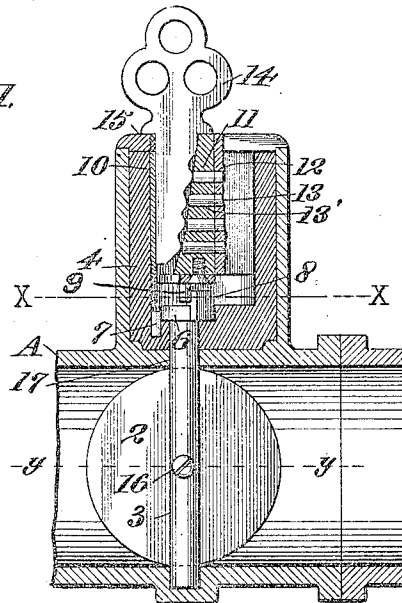


Fig. 4.

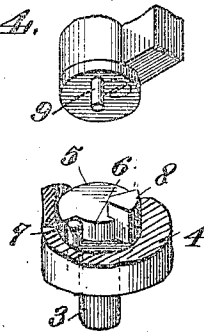


Fig. 2.

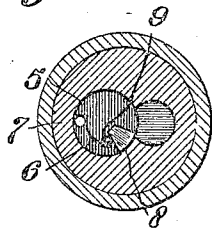


Fig. 3.

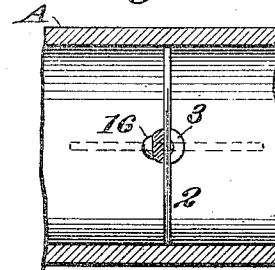
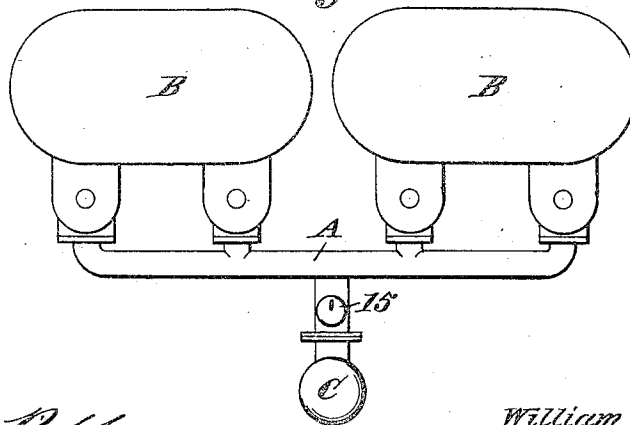


Fig. 5.



WITNESSES:

Charles Pickles
R. S. Bunn

INVENTORS.

William C. Empey
Denis L. Childs
BY *E. H. Strong*

ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM C. EMPREY AND DENIS L. CHILDS, OF SAN FRANCISCO, CALIFORNIA.

LOCK FOR MANIFOLDS.

1,060,232.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed July 2, 1912. Serial No. 707,432.

To all whom it may concern:

Be it known that we, WILLIAM C. EMPREY and DENIS L. CHILDS, citizens of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Locks for Manifolds, of which the following is a specification.

This invention relates to a key-controlled, cut-off valve, and particularly pertains to a cut-off for manifolds or fuel conduits on internal-combustion engines.

It is the object of this invention to provide a key-controlled means for controlling the flow of the explosive mixture from the carbureter to the engine cylinders through the manifold or fuel conduit, and by means of which the operation of the engine may be prevented when desired.

The purpose of this invention is to provide a means for effectively locking the engines of automobiles, and similar vehicles, against operation so as to prevent the vehicle being used by unauthorized persons.

The invention resides in a butterfly valve arranged in the manifold, or fuel conduit, combined with a key-controlled lock by which the valve may be retained in either its closed position, to prevent the passage of gases through the manifold in sufficient quantity to operate the engine, or in its open position to allow the gases to pass to the engine.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a vertical section of the invention as applied. Fig. 2 is a detail horizontal section on the line X—X of Fig. 1. Fig. 3 is a detail horizontal section on the line Y—Y of Fig. 1, with the valve in another position. Fig. 4 is a detail in perspective of the connection between the valve and the lock, showing it in a disunited position. Fig. 5 is a diagram illustrating the manner of applying the invention.

In the drawings A represents a manifold pipe, or fuel conduit, leading to engine cylinders B and a carbureter C. Disposed in the manifold, or fuel conduit, A, adjacent the carbureter C, is a butterfly valve 2, mounted on a rotatable valve stem 3. The valve stem 3 is supported in the manifold A and extends transversely thereof, with

its outer end extending therethrough, as shown in Fig. 1. The outer end of the stem 3 extends into the casing 4 of a cylinder lock of the Yale type; an outwardly extending flange 5 being formed on the upper end of the stem 3, which flange is cut away approximately one-fourth its circumference, to form a groove or slot 6 into which a pin 7, mounted on the bottom of the lock casing 4, extends. The pin 7 acts as a stop, against which the ends of the groove or slot 6 abut, to limit the rotation of the valve stem 3 to one-fourth of a revolution.

Formed on the upper face of the flange 5 is a boss 8, which is designed to be engaged alternately on opposite sides by means of a pin or stud 9, carried on the inner end of the lock cylinder 10, which cylinder is mounted to revolve in the lock casing 4 in the manner common in locks of the Yale type.

The cylinder 10 is provided with the usual perforations or pockets 11, adapted to register with similar pockets 12 formed in the inner walls of the lock casing 4, and in which pockets 11 and 12 tumblers 13—13' are disposed. The tumblers 13 are designed to be engaged by a key 14 which is inserted in a keyway or slot 15, formed in the cylinder 10 in such manner as to position the abutting ends of the tumblers 13—13' on the line of separation between the cylinder 10 and the lock casing 4, so as to permit of the rotation of the cylinder 10 by means of the key 14.

In the operation of this invention, when it is desired to cut-off the flow of gases through the manifold or fuel conduit, A, the key 14 is inserted in the cylinder 10 and the latter is rotated in such direction as to cause the pin 9 to engage the boss 8, and thereby rotate the valve stem 3 one-fourth of a revolution, so as to dispose the valve 2 transversely across the manifold A. When in this position, the valve 2 acts to obstruct the manifold and thereby prevents the passage therethrough of sufficient explosive mixture from the carbureter to the engine to allow the latter to operate. The pin 9 is so positioned in the cylinder 10 in relation to the boss 8 carried by the valve stem 3, as to abut against one side of the boss 8 when the valve 2 extends longitudinally in the manifold A, and to abut against the opposite side of the boss 8 when the valve 2 extends transversely of the manifold A. This arrangement admits of the lock cyl-

inder 10 being rotated one complete revolution either in opening or closing the valve, thus permitting the key 14 being withdrawn from the lock cylinder when the valve is
 5 either opened or closed, by reason of the pockets 11 in the lock cylinder 10 registering with the pockets 12 in the lock casing 4, when the valve 2 is disposed in either its extreme open or closed position.

10 From the foregoing it will be seen that when the key 14 is inserted in the lock cylinder 10 to either open or close the valve 2, that the lock cylinder will be rotated three-fourths of a revolution before the pin 9
 15 comes into engagement with the boss 8; the continued movement of the lock cylinder 10 being sufficient to rotate the valve stem 3, one-fourth of a revolution. The movement of the valve stem 3 in either direction is
 20 limited by means of the stop 7 engaging the ends of the slot or groove 6 formed in the flange 5 on the end of the valve stem 3. As a means for facilitating the assembling of the parts, the valve stem 3 is formed with an
 25 offset flat side which receives the valve 2; the latter being inserted in the end of the manifold after the stem 3 has been placed in position, and attached to the stem by means of a screw 16. In placing the stem 3 in
 30 position, the lock cylinder is moved, and the stem is inserted in a perforation 17, formed in the lock casing and the wall of the manifold; the inner end of the stem extending

into a pocket 18 formed in the inner wall of the manifold at a point opposite the perforation 17. The inner end of the lock cylinder 10 is covered with a plate 19 on which the pin 9 is formed; the plate 19 serving as a shield to cover the inner end of the keyway 15, and thereby preventing the escape
 40 through the keyway of such gas as may leak into the lock casing around the valve stem 3.

Having thus described our invention, what we claim and desire to secure by Letters Patent, is—

45 The combination with a conduit, of a key operated cylinder, a pin on said cylinder, a valve stem, a valve on said stem within the conduit, a boss carried by said valve stem adapted to be engaged by the pin on the
 50 cylinder when the latter is rotated to revolve the valve stem, and a stop for limiting the rotation of the valve stem, said valve stem being locked in position between said pin and said stop when said valve stem has been
 55 moved to the limit of its movement in either direction.

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

WILLIAM C. EMPEY.
 DENIS L. CHILDS.

Witnesses:

LEWIS W. VAN WICKLEN,
 HARRY GIBBONS.