

H. H. SPARR & L. H. NEUJAHN.
 CUT-OFF VALVE.
 APPLICATION FILED JULY 19, 1915.

1,160,664.

Patented Nov. 16, 1915.

Fig. 1

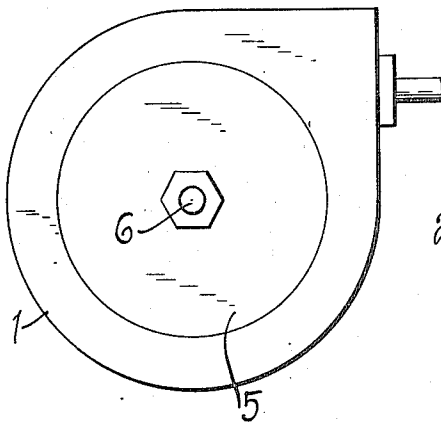


Fig. 3

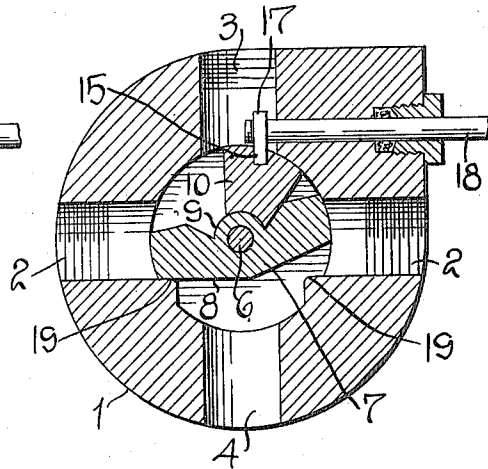


Fig. 2

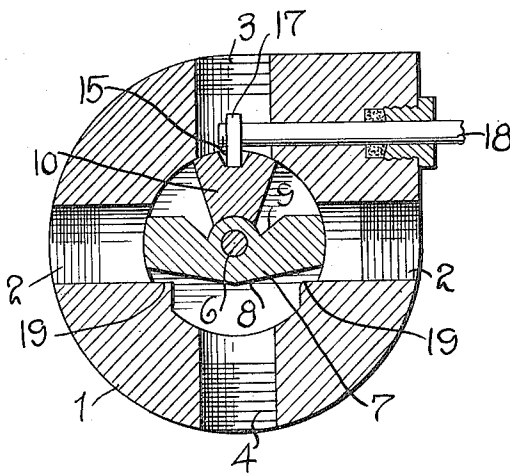
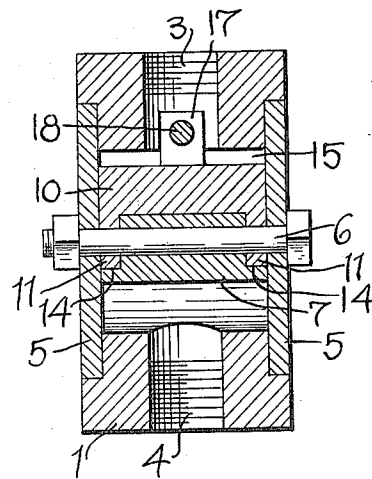


Fig. 4



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CUT-OFF VALVE.

1,160,664.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, HARRY H. SPARR and LEO H. NEUJAHR, citizens of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Cut-Off Valves, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in cut-off valves, and it is an object of the invention to provide a novel and improved device of this general character wherein the possibility of the same being centered is eliminated.

The invention consists in the details of construction and in the combination and arrangement of the several parts of our improved cut-off valve whereby certain important advantages are attained and the device is rendered simpler, less expensive and otherwise more convenient and advantageous for use, all as will be hereinafter more fully set forth.

The novel features of the invention will be carefully defined in the appended claims.

In order that our invention may be the better understood, we will now proceed to describe the same with reference to the accompanying drawings, wherein—

Figure 1 is a plan view of a valve mechanism constructed in accordance with an embodiment of our invention; Fig. 2 is a horizontal sectional view taken through the device as herein disclosed, showing the valve adjusted in cut-off position; Fig. 3 is a view similar to Fig. 2, with the valve adjusted to a different position; and Fig. 4 is a sectional view taken through the inlet and exhaust ports of the valve mechanism and illustrating certain details of construction.

As disclosed in the accompanying drawings, 1 denotes the casing of our improved valve having the diametrically opposed ports 2 adapted for communication with the cylinder of an engine and having the inlet port 3 and the exhaust port 4 diametrically opposed to the inlet port 3.

Disposed axially of the bore of the casing 1 and operatively engaged with the heads 5 is the shaft 6. Loosely mounted upon said shaft 6 is the valve member 7, the extremities of which coacting with the ports 2 and to facilitate such coaction the face of the valve member 7 opposed to the exhaust port 4 is oppositely beveled from its transverse

center, as indicated at 8. The opposite face of the valve member 7 is provided with the convex portion 9 disposed around the axial center of the shaft 6 and with which is engageable the concave surface of the second valve member 10, the ends of which being provided with depending arms 11 loosely engageable with the shaft 6, the ends of the valve member 7 being provided with radial recesses 14 to permit said mounting. The valve member 10 coacts with the intake port 3 and has its working face or end provided with a groove 15 to receive the extension 17 of the reciprocating rod 18 disposed through the casing 1 and intersecting the intake port 3. The rod 18 is operated through the medium of any suitable valve gear.

Upon outward movement of the rod 18, the valve member 10 will be moved in the same general direction whereupon the fluid entering through the inlet port 3 will pass out through the port 2 at the left of the casing 1 as the pressure of the fluid will cause the valve member 7 to engage the seat 19 positioned between said port 3 and the exhaust port 4 and the exhaust fluid will pass through the second port 2 beneath the valve member 7 and through the exhaust port 4, said travel being facilitated by the beveled face 8. Upon reverse movement being imparted to the rod 18, the flow of the fluid will be reversed.

From the foregoing description, it is thought to be obvious that a cut-off valve constructed in accordance with our invention is of an extremely simple and comparatively inexpensive nature and is particularly well adapted for use by reason of the convenience and facility with which it may be assembled, and it will also be obvious that our invention is susceptible of some change and modification without material departure from the principles and spirit thereof and for this reason we do not wish to be understood as limiting ourselves to the precise arrangement and formation of the several parts herein shown in carrying out our invention in practice.

We claim:

1. A casing provided with opposed ports, an inlet port at one side of the plane of the first named ports and having an exhaust port at opposite side of the plane of the first named ports, a loosely mounted valve member within the casing coacting with the first named ports, a second valve coacting with

the inlet port, and means for imparting rocking movement to the second valve member.

2. A casing provided with opposed ports, an inlet port at one side of the plane of the first named ports and having an exhaust port at opposite side of the plane of the first named ports, a loosely mounted valve member within the casing coacting with the first named ports, a second valve coacting with the inlet port, and means for imparting rocking movement to the second valve member independently of the first named valve member.

3. A casing provided with opposed ports, an inlet port at one side of the plane of the first named ports and having an exhaust port at opposite side of the plane of the first named ports, a loosely mounted valve member within the casing coacting with the first named ports, a second valve coacting with the inlet port, and means for imparting rocking movement to the second valve member, both of said valve members being movable about a common center.

4. A casing provided with opposed ports, an inlet port at one side of the plane of the first named ports and having an exhaust port at opposite side of the plane of the first

named ports, a loosely mounted valve member within the casing coacting with the first named ports, a second valve coacting with the inlet port, and means for imparting rocking movement to the second valve member, the face of the first named valve member opposed to the exhaust port being oppositely beveled.

5. A casing provided with opposed ports, an inlet port at one side of the plane of the first named ports and having an exhaust port at opposite side of the plane of the first named ports, a loosely mounted valve member within the casing coacting with the first named ports, a second valve coacting with the inlet port, and means for imparting rocking movement to the second valve member, the bore of the casing at a point between each of the first named ports and the exhaust port being provided with a valve seat with which the first named valve member coacts.

In testimony whereof we hereunto affix our signatures in the presence of two witnesses.

HARRY H. SPARR.
LEO H. NEUJAHN.

Witnesses:

JOE HAEFEL,
J. P. KITSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."