M. M. LIFF & W. R. HON.

COMBINATION VALVE.

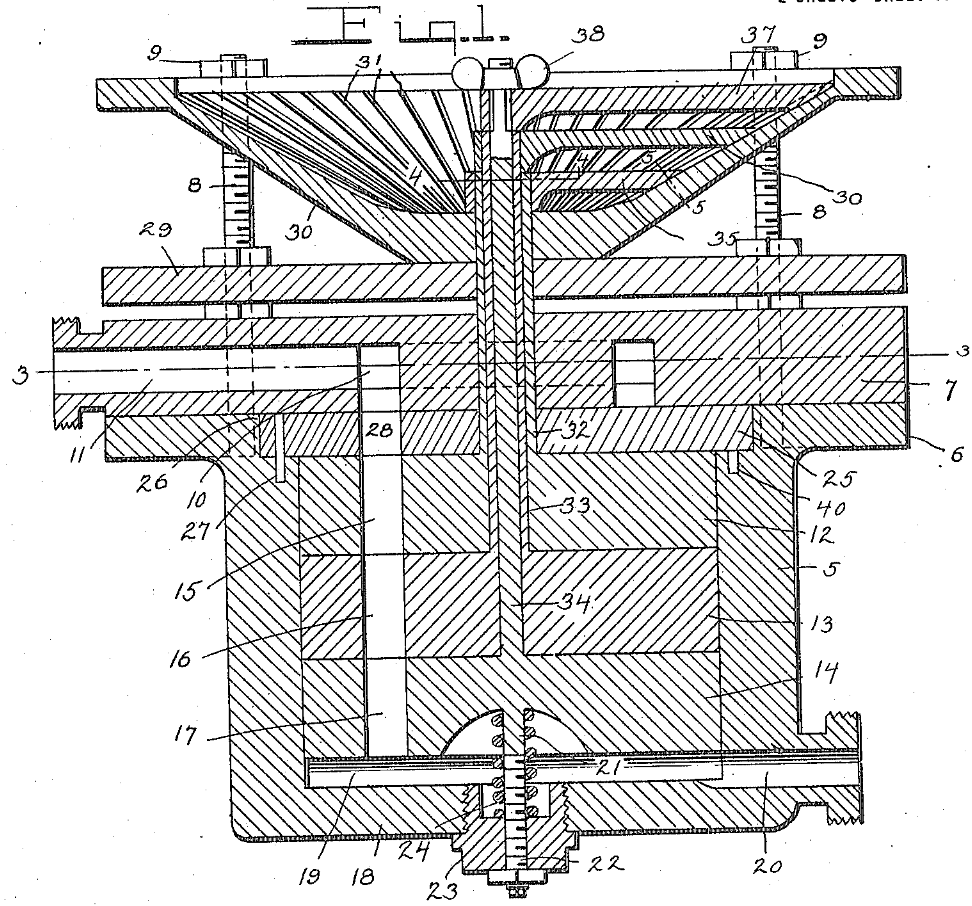
APPLICATION FILED AUG. 29, 1916.

1,237,795.

Patented Aug. 21, 1917.

2 SHEETS—SHEET 1.

Fig. 1.



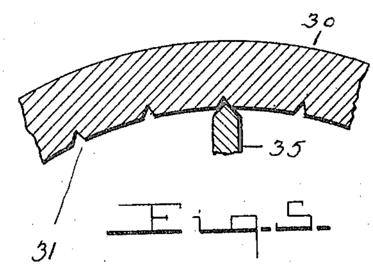


Fig. 5.

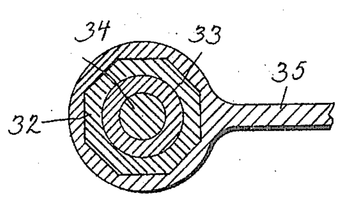


Fig. 4.

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2 SHEETS—SHEET 2.

Fig. 2.

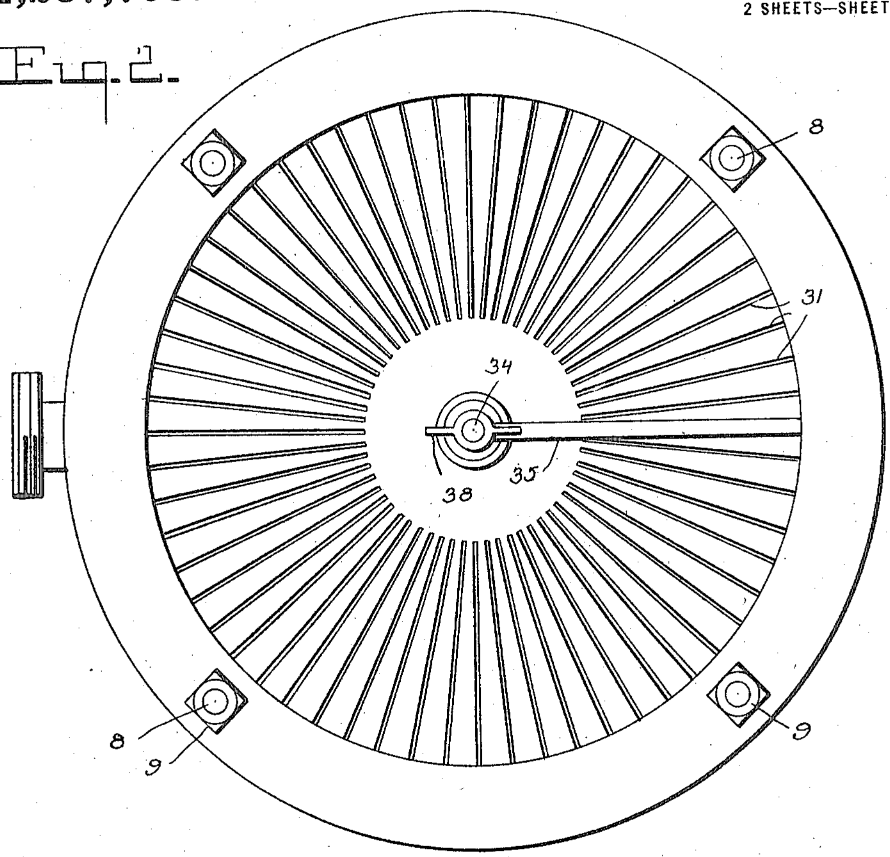
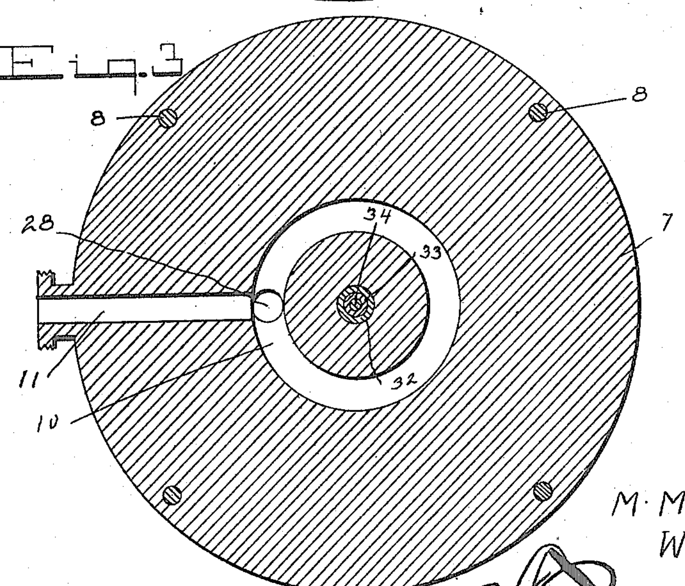


Fig. 3



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UNITED STATES PATENT OFFICE.

MADISON M. LIFF AND WILLIAM R. HON, OF CONCEPTION JUNCTION, MISSOURI.

COMBINATION-VALVE.

1,237,795. Specification of Letters Patent. Patented Aug. 21, 1917.

Application filed August 29, 1916. Serial No. 117,442.

To all whom it may concern:

Be it known that we, MADISON M. LIFF and WILLIAM R. HON, citizens of the United States, residing at Conception Junction, in the county of Nodaway and State of Missouri, have invented certain new and useful Improvements in Combination-Valves; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable other skilled in the art to which it appertains to make and use the same.

This invention has for its object to provide an improved valve which may not be opened by unauthorized persons and is particularly adapted for use in controlling the flow of liquid fuel to the explosive engine of a motor vehicle, although it is not necessarily limited to such use.

Another object is the provision of a valve having the inlet and outlet ports arranged out of line with the ports in the valve sections, so as to prevent an unauthorized person disconnecting the pipes leading to and from the valve and inserting an instrument in the valve ports in order to ascertain the combination of the valve.

With these and other objects in view, the invention consists in the novel construction, combination and arrangement of parts as will be hereinafter specifically described, claimed and illustrated in the accompanying drawings, in which:

Figure 1 represents a longitudinal sectional view through the improved valve,

Fig. 2 represents a top plan view thereof,

Fig. 3 represents a horizontal sectional view on the line 3—3 of Fig. 1,

Fig. 4 represents a fragmentary sectional view on the line 4—4 of Fig. 1, and

Fig. 5 represents a detail sectional view on the line 5—5 of Fig. 1.

Referring to the drawing in detail, wherein similar reference numerals designate corresponding parts throughout the several views, the numeral 5 indicates the cylindrical casing of the valve, having the external flange 6 at the upper open end thereof upon which is supported the top plate 7. The top plate 7 is secured in position upon the flange 6 by bolts 8 and nuts 9, and constitutes a closure for the upper end of the casing 5.

The cover plate 7 is formed with a circular outlet passage 10, which communicates with a radial outlet port 11.

A plurality of valve sections 12, 13 and 14 are arranged in superposed relation within the casing 5 and are formed with ports 15, 16 and 17, respectively, adapted, when moved into registration, to permit free passage of liquid therethrough. The lowermost valve section 14 is arranged in spaced relation to the bottom 18 of the valve casing, providing an inlet chamber 19, communicating with an inlet passage 20 arranged substantially at right angles to the port 17 in the lowermost valve section 14, so as to prevent an unauthorized person from inserting an instrument through the port 20 and the ports in the several valve sections to aline the latter. The lowermost valve section 14 is formed with an integral lug 21, which projects axially therefrom and is engaged by an adjustable screw 22 fitted in a plug 23 secured in an aperture formed in the bottom of the casing 5. The screw 22 normally retains the valve sections in position in the casing and the loose movement of the valve sections incident to the wear of the screw 22 is compensated for by an expansion spring 24, which is confined between the plug 23 and the lowermost valve section 14.

A relatively stationary circular plate 25 is fitted in a groove 26 formed in the upper open end of the casing 5 and is locked in position therein by a pin 27. The plate 25 is formed with a transverse passage 28 adapted to be alined with the ports in the several valve sections, so as to permit fluid to pass from the chamber 19 through the ports 17, 16, 15 and 28 to the outlet chamber 10.

A supporting plate 29 is secured in position above the top plate 7 by the bolts 8 and nuts 9 and supports an inverted frusto-conical dial 30, which is also secured by the bolts 8 and nuts 9 and is formed in its upper concave or dished surface with a plurality of radiating grooves 31.

The uppermost valve section 12 is formed with a relatively large hollow stem 32, which terminates above the dial or grooved plate 30 and rotatably receives the hollow stem 33 of the intermediate valve section 13, which extends upwardly above the stem 32. The lowermost valve section 14 is formed with a stem 34, which extends upwardly through the intermediate valve 13 and the stems 33 and 32 and terminates above the upper terminal of the stem 33. The upper terminals of the several stems 32, 33 and 34 are of polygonal formation and are engaged in correspondingly shaped openings in a plurality of arms 35, 36 and 37 which are secured in position upon the respective valve stems. The extreme upper end of the relatively long valve stem 34 is externally screw threaded and a wing nut 38 is fitted thereon, whereby the several arms 35, 36 and 37 are secured in position upon the respective stems.

In use, a person familiar with the combination of the valve may adjust several arms 35, 36 and 37 upon the dial 30, so as to register the several ports 15, 16 and 17 with the ports 28 in the plate 25, and thus open communication between the inlet and outlet chambers 19 and 26, and permit liquid to have free passage between these chambers. To cut off communication the arms 35, 36 and 37 are adjusted so as to move the ports of the several valve sections out of alinement. In order to change the combination of the valve the pin 27 is removed from the aperture in the plate 25 and in the casing 5, and the position of the plate is changed with relation to the casing. The plate is subsequently secured in adjusted position by inserting a pin 27 in an aperture therein and in any one of the several recesses 40 formed in the casing. The combination of the lock may also be changed by removing the several arms 35, 36 and 37 and replacing them in a different position upon the upper terminals of the several stems 32, 33 and 34.

What we claim is:

1. A valve including a casing having inlet and outlet ports therein, an adjustable plate having a port therein, means securing said plate in adjusted position, a plurality of valve sections rotatably mounted in said casing having ports therein adapted to be moved into registration with each other and with the ports in said plate, and means for adjusting said valve sections.

2. A valve including a casing having inlet and outlet ports therein, an adjustable plate secured in said casing having a port therein, a plurality of valve sections rotatably mounted in said casing having ports therein adapted to be moved into registration with each other and with the port in said plate, the ports in said valve sections and said plate being disposed in angular relation to the inlet and outlet ports in said casing, and means for adjusting said valve sections.

3. A valve including a casing, a top plate secured upon said casing, said casing and top plate having inlet and outlet ports, a plate adjustably secured in said casing having a port therein, a plurality of valve sections rotatably mounted in said casing having ports therein adapted to be moved into registration with the port in said plate to open communication between the inlet and outlet ports in said casing and top plate, stems carried by said valve sections and extending exteriorly of said casing, a dial supported above said casing, and arms carried by the several stems and movable over said dial to adjust said valve sections.

4. A valve including a casing having inlet and outlet ports therein and an outlet passage communicating with the outlet port, a plate arranged in said casing and having a port therein communicating with the outlet passage, means arranged within the casing for securing the plate in adjusted position, and a plurality of valve sections having ports therein adapted to be moved into registration to open communication between the inlet and outlet ports.

5. A valve including a casing having inlet and outlet ports and a circular outlet passage communicating with the outlet port, an adjustable plate having a transversely extending port permanently communicating with the circular outlet passage, and a valve arranged in said casing adapted to be moved into registration with the port in the plate to open communication between the inlet and outlet ports of the casing.

6. A valve including a casing having inlet and outlet ports and a circular outlet passage communicating with the outlet port, a plate adjustably positioned in the casing having a transversely extending port therein permanently communicating with the circular outlet passage, means for securing said plate in various adjusted positions in said casing, and a valve rotatably mounted in said casing having a transversely extending port therein adapted to be moved into registration with the port in the plate to open communication between the inlet port and outlet passage of the casing.

7. A valve including a casing having inlet and outlet ports and a circular outlet passage communicating with the outlet port, a plate movably positioned in said casing having a transversely extending port therein having permanent communication with

the outlet passage, means for securing said plate in various adjusted positions in said casing, and a plurality of valve sections arranged in said casing having ports therein adapted to be moved into registration with the ports in said plate to open communication between the inlet and outlet ports of said casing.

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

MADISON M. LIFF.
WILLIAM R. HON.

Witnesses:
LEROY C. SMITH,
HENRY J. BERG.