

H. BRAUNTON.
 AUTOMATIC OIL RELIEF VALVE.
 APPLICATION FILED MAR. 10, 1913.

1,066,179.

Patented July 1, 1913.

Fig. 1.

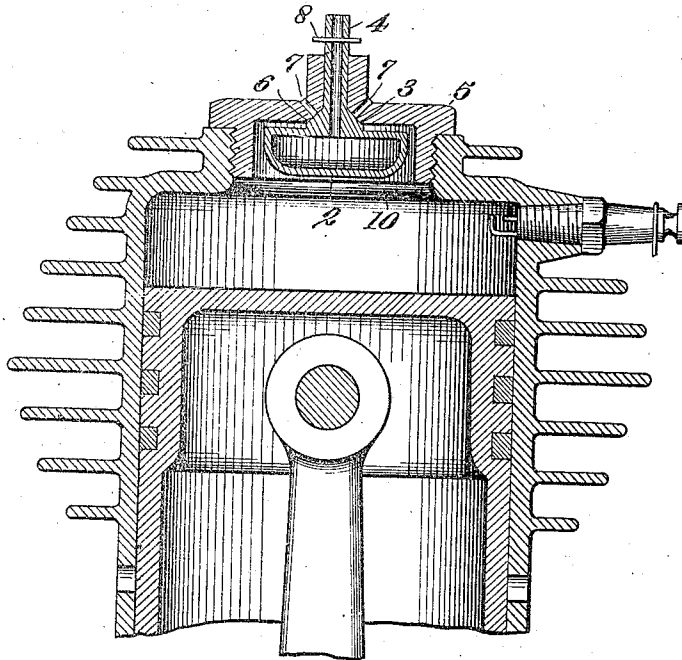


Fig. 2.

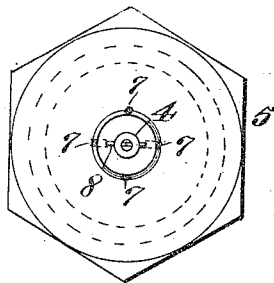
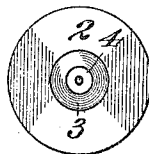


Fig. 3.



WITNESSES:

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AUTOMATIC OIL-RELIEF VALVE.

1,066,179

Specification of Letters Patent.

Patented July 1, 1913.

Application filed March 10, 1913. Serial No. 753,250.

To all whom it may concern:

Be it known that I, HAROLD BRAUNTON, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented new and useful Improvements in Automatic Oil-Relief Valves, of which the following is a specification.

This invention relates to an automatic oil relief valve for rotary cylinder engines of the valveless or two-cycle type.

In operating revolving cylinder engines of the two-cycle type it often happens that considerable trouble is caused by the collection of quantities of lubricating oil in the outer portion or compression chamber of one or several cylinders in the engine. The lubricating oils being forced out by centrifugal action very often collect in sufficient quantities to foul the spark plugs, and it has happened that cylinder heads have been forced off by the hydraulic action of a sufficient accumulation of oil between the piston and cylinder head.

The object of this invention is to provide an automatic valve through which any excessive deposit or accumulation of oil may be automatically discharged while the engine is in operation.

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 outer portion of the cylinder showing the application of the valve. Fig. 2 is a plan view of the valve mechanism. Fig. 3 is a bottom view of the float member attached to the valve.

Referring to the drawings, A indicates in general the outer portion of a gas engine cylinder of the revolving cylinder valveless or two-cycle type. In operating revolving cylinder engines of this type it often happens that considerable lubricating oil collects in the compression chamber of the cylinder causing a great deal of trouble. The oil in some instances being carbonized by the heat of combustion forms a glowing mass which pre-ignites the charges admitted; in other instances it fouls the spark plugs sufficiently to entirely prevent ignition.

The object of the invention is to provide an automatic valve through which any ac-

cumulation of oil may be automatically discharged while the engine is running.

The valve referred to is preferably mounted in the extreme outer portion of the cylinder and is here shown as consisting of a float member 2, to which is secured a conical valve member 3 and a guide stem 4. The valve, stem and attached float are slidably mounted and guided in a removable screw cap 5 mounted in the outer end of the cylinder. The cap 5 is also provided with a valve seat 6 and a series of radially extending ports or passages 7 adapted to be closed by the valve 3. The outer end of the stem 4 is provided with a stop collar or pin 8 for the purpose of limiting the inward movement of the valve and also to prevent the valve from dropping into the cylinder.

In operation, suppose that the cylinder is revolving at a high rate of speed and that a certain amount of lubricating oil is constantly forced out into the compression chamber by the action of centrifugal force, it can then be seen that it will only be a matter of time when a sufficient amount of oil will collect in the bottom of the screw cap, around the float member, to lift the float and connected valve and allow the oil to escape through the radial passages 7. The oil accumulation will thus automatically discharge itself through the radial passages in the screw cap and prevent fouling of the spark plug or carbonization of the lubricating oil in the outer portion or compression chamber of the cylinder.

The float member, together with the valve and stem, has sufficient weight, when actuated by centrifugal force, to normally retain the valve 3 on its seat and close the radial passages and will thus prevent leakage of gases through the passages when explosion takes place, while the set collar or pin 8 will prevent the valve from dropping into the compression chamber when the cylinder remains stationary in a vertical position. I also wish it understood that the valve mechanism here shown may be equally applied to stationary engines of the radial type or any other place where it is necessary to discharge any over-accumulation of oil.

The valve mechanism here shown is simple and compact in construction and positive in action and may be quickly removed and cleaned at any time by unscrewing the cap.

The radial discharge passages formed in the cap are so positioned that they may be easily cleaned at any time by simply forcing a wire or pin through the perforations, thus preventing the deposit of any carbon particles or other material which might clog the passages.

The materials and finish of the different parts forming the valve mechanism may be such as the experience and judgment of the manufacturer may dictate.

I wish it understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims and that I do not wish to limit myself to the specific design and construction here shown.

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

1. The combination with the cylinder of an engine, of an oil collecting chamber, a discharge passage opening out from said chamber through which oil may escape, a valve closing said passage, and means controlled by the collection of oil in the chamber for opening the valve to permit the discharge of the collected oil.

2. In a revolving cylinder engine, an oil collecting chamber, a discharge passage opening out from said chamber through which oil may escape, a valve closing said passage, and means controlled by the collection of oil in the chamber for opening the valve to permit the discharge of the collected oil.

3. In a rotary cylinder engine, an oil collecting chamber, a discharge passage connected with said chamber, a centrifugally actuated valve adapted to normally close said passage, and means actuated by the collection of oil in said chamber for lifting the valve to permit the oil to escape through the discharge passage.

4. In a rotary cylinder engine, the combination of a removable housing connected with the compression chamber of the cylinder, an oil collecting chamber formed in said housing, a discharge passage opening out

from said chamber, a reciprocally movable valve mounted in the casing adapted to close said passage, and means actuated by the collection of oil in said chamber for lifting the valve to permit the oil to escape through the discharge passage.

5. In a rotary cylinder engine, the combination of a removable housing connected with the compression chamber of the cylinder, an oil collecting chamber formed in said housing, discharge passages opening out from said chamber, a reciprocally mounted, centrifugally actuated valve in the housing adapted to close said passages, and a float in the oil collecting chamber connected with the valve actuated by the collection of oil in the chamber to lift the valve to permit the escape of oil through the discharge passages.

6. In a rotary cylinder engine, the combination of a removable housing connected with the compression chamber of the cylinder, an oil collecting chamber formed in said housing, discharge passages opening out from said chamber, a centrifugally closed, reciprocally mounted valve in the housing adapted to close said passages, a float in the oil collecting chamber connected with the valve actuated by the collection of oil in the chamber to lift the valve to permit the escape of oil through the discharge passages, and means for limiting the movement of the valve.

7. In a revolving cylinder engine, the combination of a cylinder with means for automatically releasing any unconsumed accumulation of oil from the cylinder comprising a port in the compression chamber of the cylinder, and a buoyant valve normally closing said port and opened by the accumulation of oil.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HAROLD BRAUNTON.

Witnesses:

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ZOE HARRISON.