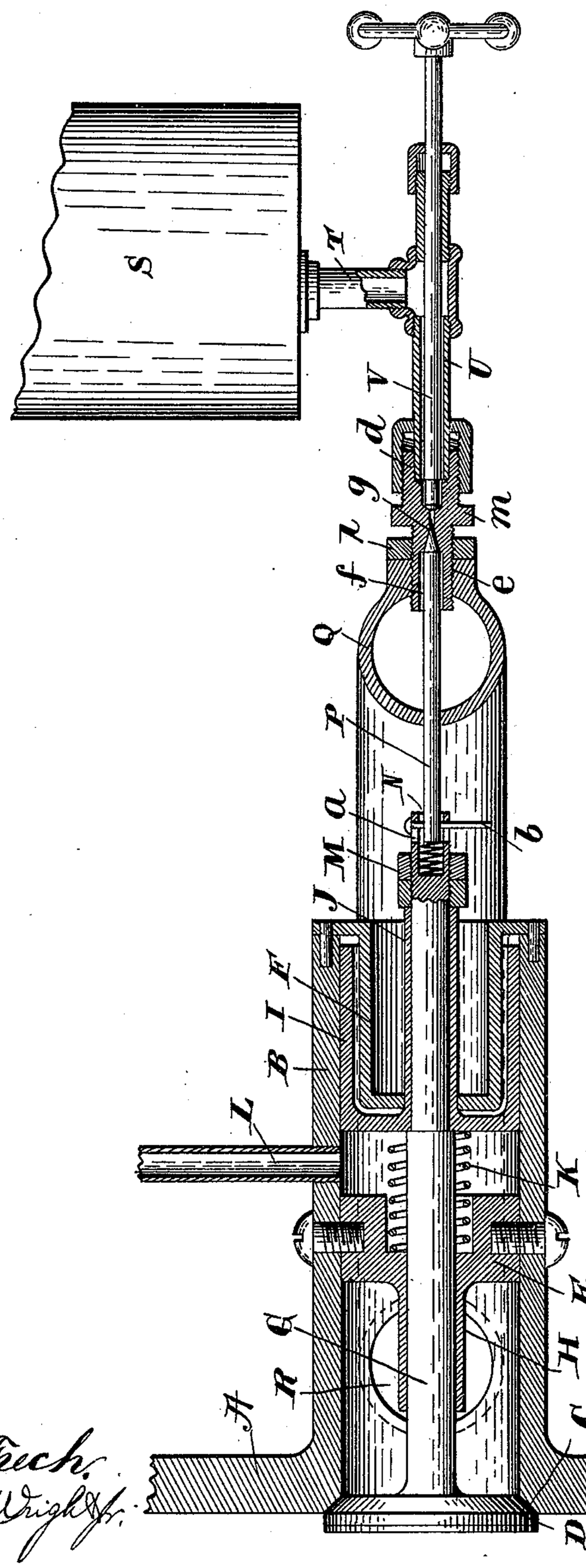
No. 635,218. Patented Oct. 17, 1899.

A. WINTON.

OIL VALVE FOR GASOLENE ENGINES.

(Application filed June 7, 1899.)

(No Model.)



Witnesses
Geo. E. Frech.
Chas. R. Wright Jr.

Inventor
Alexander Winton,
by A. S. Pattison,
Attorney

UNITED STATES PATENT OFFICE.

ALEXANDER WINTON, OF CLEVELAND, OHIO.

OIL-VALVE FOR GASOLENE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 635,218, dated October 17, 1899.

Application filed June 7, 1899. Serial No. 719,714. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER WINTON, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in Oil-Valves for Gasolene-Engines, of which the following is a specification.

My invention relates to improvements in oil-valves for gasolene-engines, and pertains to a construction involving a pressure-regulated inlet-port valve carrying a yielding oil-valve and an adjustable seat or nipple for said oil-valve, all of which will be fully described hereinafter and particularly pointed out in the claims.

The accompanying drawing is a sectional view of my invention.

Referring now to the drawing, A indicates the end of the explosion-cylinder of a gasolene-engine which is provided with a projecting cylinder B. At the inner end of this cylinder B is provided a valve-seat C for the explosive-inlet valve D. This cylinder B is provided with an intermediate web E and at its outer end with an inwardly-projecting tubular head F with a closed inner end, and which serves to close the outer end of the cylinder B.

The inlet-port valve D is provided with a stem G, which passes through an inwardly-extending tube H of the centrally-disposed web E and also through the web and has attached to it an outwardly-disposed cup-shaped piston I, which incloses the inwardly-extending cap F. This piston I fits neatly the inner bore of the cylinder B, but does not fit closely the inwardly-disposed tubular portion F of the cap. This piston I is provided with an outwardly-projecting tube J, which passes through the tubular head F, and through which tube the stem G passes and also beyond the end of the tube. Situated between the cup-shaped piston I and the central web E is a spring K, which serves to hold the piston normally outward, and consequently to normally seat the inlet-port valve D. A pipe L is in communication at one end with the cylinder B at a point between the centrally-disposed web E and the piston I and at its outer end in communication with a pump actuated by the engine for supplying an air-pressure within the cylinder, in the manner fully shown and described in my Patent No. 582,108, dated May 4, 1897, and which need not therefore herein be more fully shown and described. The piston I is clamped to the outer end of the valve-stem G by means of the nut M, and the extending end of the stem is provided with a longitudinal socket N, which receives an oil-valve stem P. Formed in this socket are registering longitudinal openings *a*, and passing through these openings and the said valve-stem P is a pin *b*, of a size to permit the valve-stem to have a longitudinal movement within the said socket. Placed within the socket between the inner ends of this valve-stem and the inner end of the socket is a spring *c*, which normally holds the valve and its stem outward in respect to the said socket.

Q represents a tube which has one end in communication with the inner end of the cylinder B through the opening R, and its opposite end is in communication with the atmosphere. This tube Q may have interposed between its ends a carbureter; but as that forms no part of my present invention it is not here shown or described.

S is an oil-reservoir supported in any suitable manner and with the lower end of which a pipe T communicates, and this pipe also communicates with a pipe U at right angles thereto, and passing through this pipe U is a cut-off-valve stem V. At the inner end of this pipe T a nipple *d* is rotatably attached, the opposite end of the nipple being externally screw-threaded and passing through an internally-screw-threaded shoulder *e*, formed upon the pipe Q. This nipple is provided at its inner end with an elongated valve-stem opening *f*. The inner end of this opening is formed into a valve-seat *g* and receives the valve upon the outer end of the valve-stem P. From this description it will be noted that the inner end of the nipple furnishes a support and a guide for the outer end of the valve and valve-stem, as the opening *s* in the nipple is made sufficiently small to always insure the point of the needle-valve registering with its converging tapering wall when moved into a closed position.

It is desirable to provide at all times a tight

fitting of the oil-valve when it is seated, and to accomplish this the nipple is longitudinally adjustable by screwing it through the enlargement *e* upon the tube Q and clamping it in its adjusted position by means of a clamping-nut *i*.

In adjusting the nipple, and thereby regulating the seating of the oil-valve, the nipple is turned until it is noted that the pin *b*, which unites the opposite end of the valve-stem P to the inlet-port valve-stem G, has a slight inward or backward movement, and then the nipple is tightened by the lock-nut *i*. In this way any wear of the valve and the valve-seat is readily taken up, and it also enables me to provide a perfect seating of the valve, which will not necessitate the turning up of the cut-off valve V when the engine is not running. The nipple is provided intermediate its ends with a projection *m*, adapted to receive a wrench for adjusting it. By means of this adjustment the seating of the oil-valve and of the inlet-port valve can be made to occur at the same time and yet a tight fit of the oil-valve accomplished to prevent any leaking of the oil when the engine is not in operation.

The inwardly-extending tubular cap F and the outwardly-disposed cup-shaped piston I furnish a dash-pot for preventing the hammering of the inlet-port valve and also of the oil-valve, which prevents not only injury and wear to the valves and the valve-seats, but also prevents a disagreeable noise which otherwise would occur.

In operation when the inlet-port valve D is moved inward from its seat for admitting the explosive material the needle-valve is likewise removed from its seat, permitting a flow of liquid to the pipe Q, and this is conveyed through the said pipe to the explosive-inlet port through the opposite end R of the pipe Q. This arrangement insures a positive feed of the liquid to the pipe Q at each inward movement of the inlet-port valve, since the needle-valve is connected to the stem thereof, as before described. When it is desired to absolutely cut off the flow of the liquid, (as when the engine is out of operation,) the valve D is screwed to its seat, which will cut off the flow of liquid, as will be readily understood from the drawing.

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

1. In an explosive-engine, an explosive-cylinder having an explosive-inlet port, an outwardly-projecting cylinder in communication with said port, an inlet-port valve having a stem projecting through the said cylinder, an intermediately-disposed web within said cylinder, the stem having an outwardly-disposed cup-shaped piston, an inwardly-disposed cap for the end of said cylinder and projecting within the cup-shaped piston, and a pressure communication with the cylinder between the piston and the centrally-disposed web, substantially as described.

2. An explosive-engine comprising a cylinder having an inlet-port, an outwardly-disposed cylinder in communication with said port, the cylinder having a centrally-disposed web with an inwardly-extending tube, an inlet-port valve having a stem passing through the said tube and through the centrally-disposed web, an inwardly-disposed tubular cap for the outer end of the cylinder, an outwardly-disposed cup-shaped piston inclosing the said tubular cap, the said cup-shaped piston having a tube passing through the inner wall of the tubular cap, and a pressure communication with the cylinder between said web and the piston, substantially as described.

3. A gasolene-engine comprising a cylinder, an inlet-port, an inlet-port valve therefor, an oil-supply, a longitudinally-adjustable nipple at the outlet end of the oil-supply, and a valve connected with the inlet-port valve-stem, substantially as described.

4. A gasolene-engine comprising an explosion-cylinder having an inlet-port, an inlet-port valve therefor provided with a stem, an oil-valve longitudinally movable upon the said inlet-port-valve stem, a spring for normally holding the oil-valve outward, an oil-supply, and an adjustable nipple for the outlet end of the oil-supply having a seat into which the longitudinally-movable oil-valve projects, substantially as described.

5. A gasolene-engine comprising a cylinder having an inlet-port, an inlet-port valve provided with a stem, the end of the stem having a longitudinal socket, an oil-valve stem projecting within the socket, a pin passing through the socket and through the oil-valve stem, elongated openings for the pin to permit longitudinal movement of the valve, a spring within the socket holding the valve normally outward, an oil-supply, and a longitudinally-adjustable nipple at the outlet end of the oil-supply, said nipple provided with a valve-seat receiving the oil-valve, substantially as described.

6. A gasolene-engine comprising a cylinder having an inlet-port, an inlet-port valve provided with a stem, an oil-valve longitudinally movable upon the said stem, a combined air and oil tube, an oil-supply, a nipple at the exit end of the oil-supply, the said nipple being screw-threaded and passing through a screw-threaded opening in the combined air and oil tube, means for locking the nipple, the nipple having a valve-seat, said longitudinal valve extending within the nipple and resting upon the said valve-seat, substantially as described.

7. A gasolene-engine comprising a cylinder having an inlet-port, an inlet-port valve provided with a stem, an oil-valve longitudinally movable thereon, a spring for normally holding the oil-valve outward, an oil-supply, and

a nipple at the outlet end of the said oil-supply, the nipple having a cut-off-valve seat at one end and an inlet-valve seat at the opposite end receiving said oil-valve, and a cut-off valve adapted to coact with the cut-off-valve seat, substantially as described.

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

ALEXANDER WINTON.

Witnesses:
GEO. H. BROWN,
LYMAN H. REED.