C. H. WISNER.

PRIMING CUP FOR GASOLENE ENGINES.

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915,399. Patented Mar. 16, 1909.

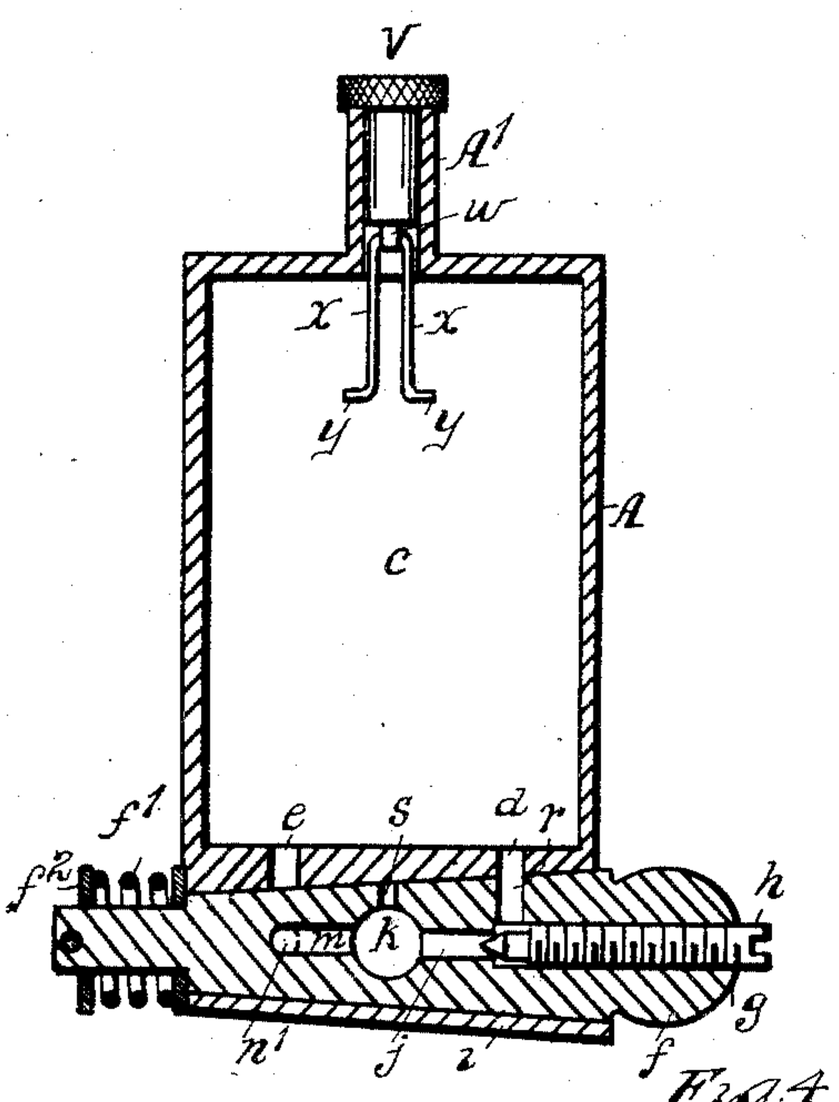

Fig. 4.

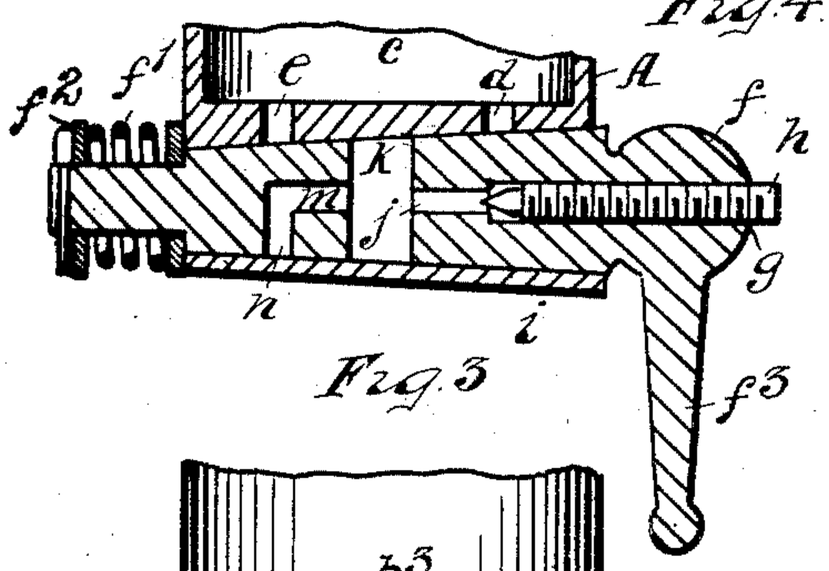

Fig. 3

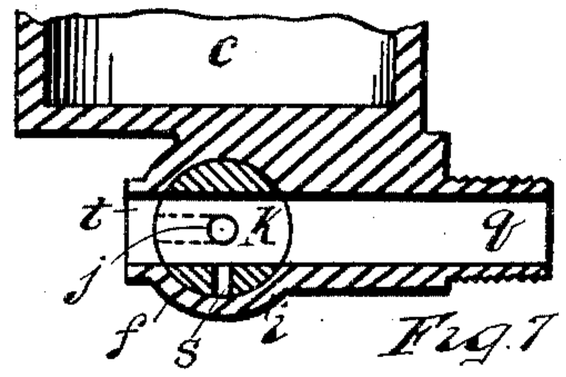

Fig. 7

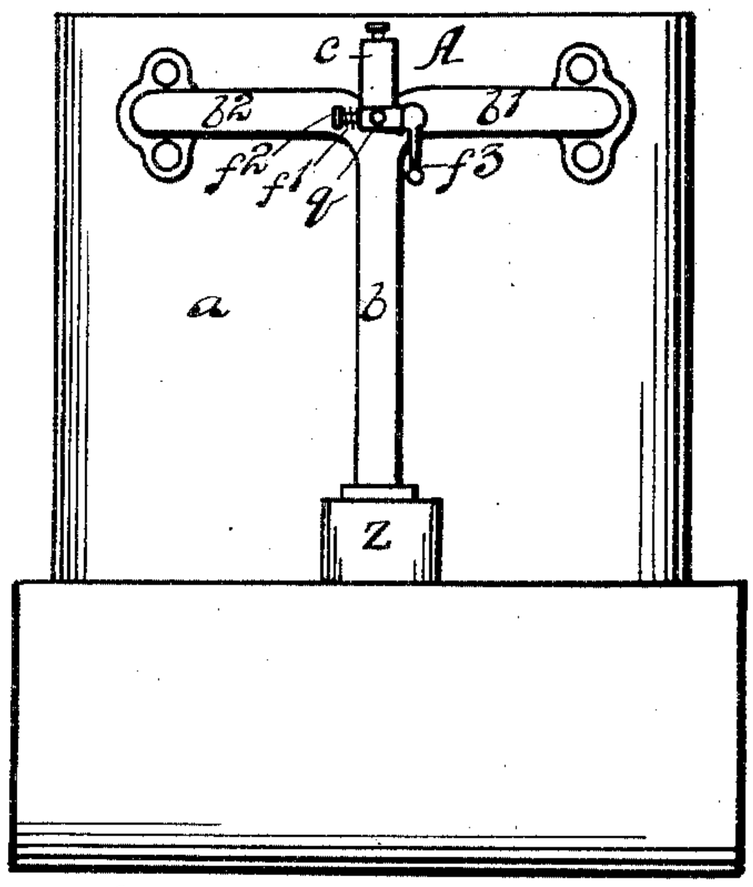

Fig. 1

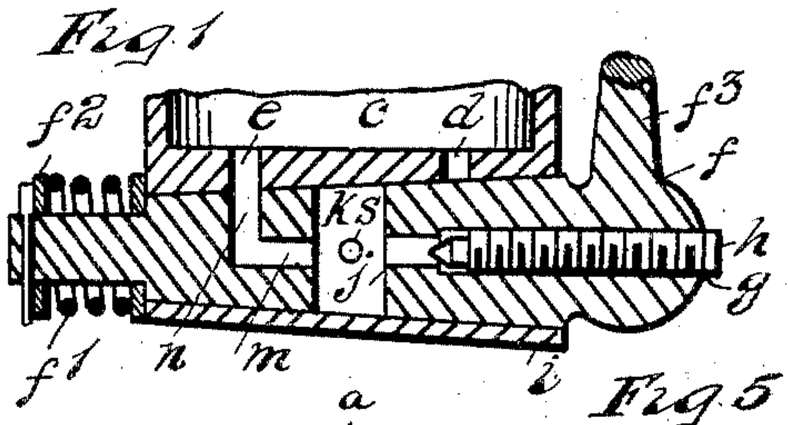

Fig. 5

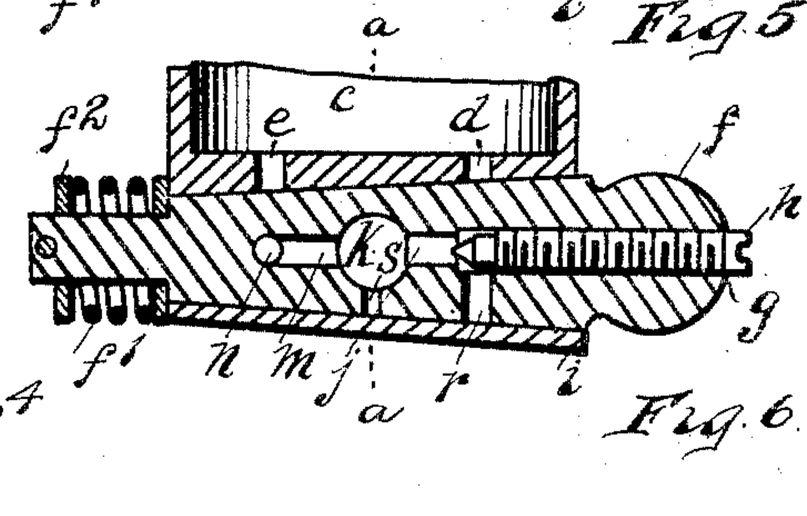

Fig. 6.

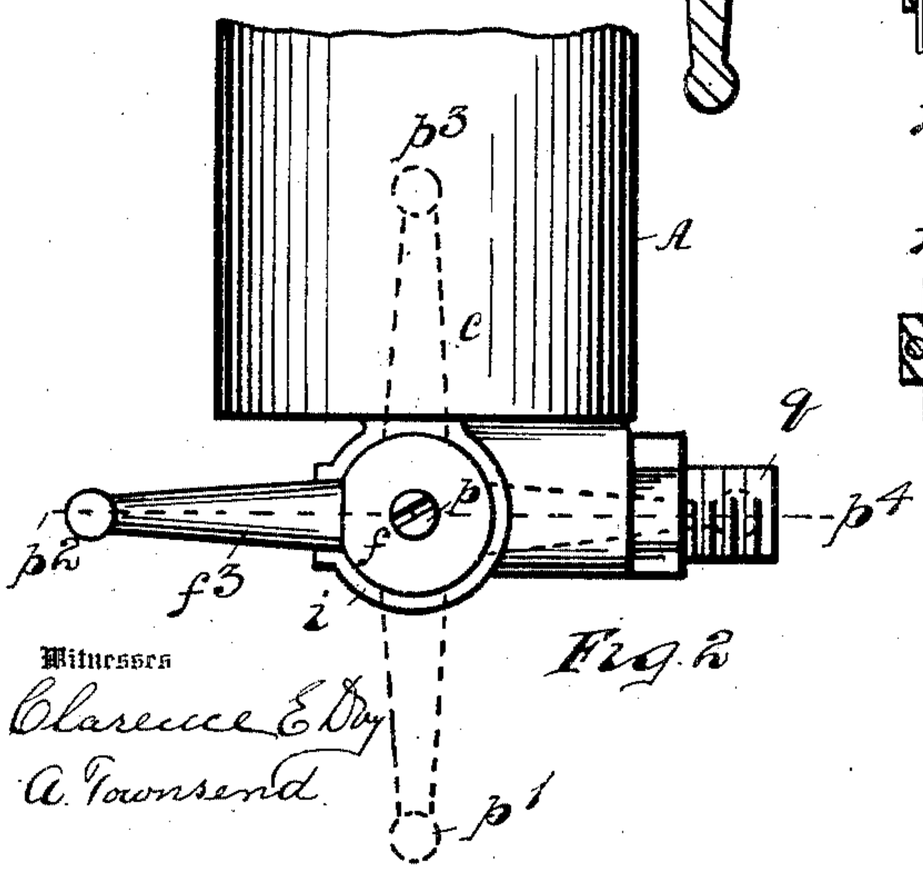

Fig. 2

Witnesses

Clarence E. Day

A. Townsend.

Inventor

Charles H. Wisner

Parker & Burton

Attorneys

UNITED STATES PATENT OFFICE.

CHARLES H. WISNER, OF FLINT, MICHIGAN.

PRIMING-CUP FOR GASOLENE-ENGINES.

No. 915,399. Specification of Letters Patent. Patented March 16, 1909.

Application filed December 7, 1908. Serial No. 466,224.

To all whom it may concern:

Be it known that I, CHARLES H. WISNER, a citizen of the United States, residing at Flint, county of Genesee, State of Michigan, have invented a certain new and useful Improvement in Priming-Cups for Gasolene-Engines, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to a priming cup for gasolene engines, and an object of my improvements is to provide an improved apparatus for supplying the gasolene for starting the engine, or for causing a surplus of gasolene to be removed from the cylinder.

In the accompanying drawings:—Figure 1, is an elevation of a two cylinder gasolene engine, having a priming cup attached thereto embodying my invention. Fig. 2, is an elevation of the priming cup, the upper part of the reservoir being cut away, and the handle of the cup being indicated in different positions. Fig. 3, is a vertical section of the cock, longitudinal of the plug thereof, and the lower part of the reservoir, the plug being turned to its completely closed position. Fig. 4, is a vertical section, similar to Fig. 3, but showing the entire reservoir, the plug of the cock being turned to a position at which both air and gasolene will be taken into the engine cylinder. Fig. 5, is a section similar to Fig. 3, the plug of the cock being turned to a position in which gasolene alone is being fed to the engine cylinder. Fig. 6, is a section similar to Fig. 3, the plug being turned to a position in which air alone is admitted to the engine cylinder. Fig. 7, is a section of the cock and lower part of the reservoir, taken in a plane at right angles to that of Fig. 6, the plug being in the position of the latter figure.

The reference letter A indicates the entire priming cup, which is located between the carbureter and the intake valve of the engine.

a, *a*, are the cylinders of a gasolene engine.

b is the intake pipe leading from the carbureter *z*, and extending in branches b^1, b^2, to the two cylinders. The priming cup A is located adjacent to the junction of the branches b^1, and b^2, so that it delivers gasolene into the intake pipe where it will be taken into either cylinder upon the suction stroke of said cylinder.

c is a reservoir for gasolene.

d, *e*, are apertures, or ducts, through the bottom of the reservoir *c*.

i is the casing of a cock upon the lower end of the reservoir *c*.

t is an intake opening for atmospheric air in the casing *i*, and *q* is a passage leading from said casing into the intake pipe to the engine cylinders.

f is a conical plug fitting into the casing *i*, and held with its surface contiguous to the inner surface of said casing by a spring f^1, and washer f^2, in the usual way.

g is an axial cylindrical aperture formed in the plug *f* from its larger end, and communicating with the transverse opening *k* at the center of the plug *f*. The inner portion of the aperture forms a duct for gasolene.

j is a valve seat formed in the aperture *g*.

h is a needle valve stem having screw threads engaging threads in the aperture *g*, its inner end being adapted to close upon the valve seat *j*, or to regulate the size of the passage between the aperture *g* and the transverse opening *k*.

r is a passage or duct extending at right angles from the aperture *q* to the periphery of the plug *f*, its outer end being adapted to register with the aperture *d* in the bottom of the reservoir *c*.

m is an axial aperture or duct extending in line with the aperture *g*, upon the opposite side of the opening *k*.

n is a radial passage or duct extending from the inner end of the passage *m* to the periphery of the plug *f*, its outer end adapted to register with the aperture *e* in the bottom of the reservoir *c*.

s is a small passage, or duct, extending from the opening *k* at the center thereof, radially to the periphery of the plug *f*.

A^1 is a nozzle located at the top of the reservoir *c* by which the same may be filled.

v is a stopper adapted to close the nozzle A^1.

w is an eye formed at the lower end of the stopper *v*. I bend a resilient wire to form two parallel legs *x*, *x*, with their ends turned outward to form lugs *y*, *y*, and pass it through the eye *w*. By pressing the legs *x*, *x*, together, the lugs *y*, *y*, may be passed through the opening of the nozzle A^1, and when the legs

x, x, spring apart, said lugs will prevent the removal of the stopper, except so far as necessary to permit the filling of the reservoir.

The operation of the above described device is as follows:—During the ordinary operation of the engine, the plug f is turned to the position indicated by p^1 in Fig. 2, at which position the various passages are all closed, as indicated in Fig. 3. Should it be desired to feed both air and gasolene to the engine through this apparatus, the plug f is turned to the position indicated by p^2 in Fig. 2, at which position the passage r will register with the aperture d, and the opening k will be in position to admit air freely, as indicated in Fig. 7, although in the latter figure, the plug f is turned to a position 180 degrees from that at which it is located in Fig. 4. The rate at which the gasolene flows in this position will be regulated by the needle valve stem h. Should it be desired to feed gasolene only to the engine, the plug f is turned to the position p^3 of Fig. 2, when the passages are in the position indicated in Fig. 5, the passage n registering with the aperture e, and the passage s communicating with the delivery passage q, so that gasolene will run through n and m into k, and be delivered to the engine through the passages s and q. Should too much gasolene have been fed to the engine, the plug f will be turned to the position indicated in Figs. 6 and 7, at which there will be a free opening for atmospheric air to the cylinder, and the passages for gasolene will be closed. Thus the engine will take in pure air and discharge air and gasolene, until the surplus gasolene is evaporated and removed.

If desired, kerosene may be fed to the cylinder, for cleaning the same, by the above described apparatus.

What I claim is:—

1. The combination with an engine having an intake passage and a carbureter and intake valve in said passage, of a priming cup having an air passage and a gasolene duct communicating with said intake passage between said carbureter and valve, and means for opening and closing said air passage, and means for opening and closing said duct.

2. In an engine, the combination of a cylinder, a priming cup having an air passage communicating with said cylinder, means for opening and closing said air passage, said priming cup being provided with a gasolene duct adapted to communicate with said air passage when the same is open, and means for controlling the rate of flow of gasolene through said duct or stopping the same.

3. In a priming cup, the combination of a reservoir, a cock having a casing and a plug therein, an opening for air to said casing, and an opening for air from said casing, a transverse passage in said plug adapted to register with said openings in the casing, a duct for gasolene leading from said reservoir, a passage in said plug opening into said transverse passage and adapted to register with said duct when said transverse passage communicates with the opening from said casing, and means for regulating the flow of gasolene from said duct to said transverse passage.

4. In a priming cup, the combination of a reservoir, a cock having a casing and a plug therein, an opening for air to said casing, and an opening for air from said casing, a transverse passage in said plug adapted to register with said openings in the casing, a duct for gasolene leading from said reservoir, a passage in said plug opening into said transverse passage and adapted to register with said duct when the same communicates with the opening from said casing, and a needle valve extending longitudinally from the end of said plug and adapted to regulate the flow of gasolene from said duct to said transverse passage.

5. In a priming cup, the combination of a reservoir, a cock consisting of a casing and plug therein, an opening for air leading into said casing and an opening for air leading from said casing, a transverse passage in said plug adapted to register with said openings in the casing, a duct for gasolene leading from said reservoir, a passage in said plug adapted to register with said duct and communicate with said transverse passage, a radial passage extending from said transverse passage to the periphery of the plug at such an angle that it shall communicate with the opening from said casing when the opening to said casing is closed, the first mentioned passage in the plug being so arranged that it shall register with said duct when said radial passage is open and shall be closed when said transverse passage is open.

6. In a priming cup, the combination of a reservoir, a cock having a casing and a plug therein, an opening for air to said casing, and an opening for air from said casing, a transverse passage in said plug adapted to register with said openings in the casing, a duct for gasolene leading from said reservoir, a passage in said plug opening into said transverse passage and adapted to register with said duct, when said transverse passage communicates with the opening from said casing, and means for regulating the flow of gasolene from said duct to said transverse passage, a second duct for gasolene leading from said reservoir, a second passage in said plug adapted to register with said second duct and communicating with said transverse passage, a radial passage extending from said transverse passage to the periphery of the plug at such an angle that it shall communicate with the opening from said casing when the opening to said casing is closed, the last named passage in the plug being so arranged that it shall communicate with said duct when said radial passage is open and shall be closed when said transverse passage is open and

when the first named passage communicates with the first named duct from the reservoir.

7. In a priming cup, the combination of a reservoir, a cock having a casing and a plug therein, an opening for air to said casing and an opening for air from said casing, a tranverse passage in said plug adapted to register with said openings in the casing, a duct for gasolene leading from said reservoir, a passage in said plug opening into said transverse passage and adapted to register with said duct when said transverse passage communicates with the opening from said casing, a second duct for gasolene leading from said reservoir, a second passage in said plug adapted to register with said second duct and communicating with said transverse passage, a radial passage extending from said transverse passage to the periphery of the plug at such an angle that it shall communicate with the opening from said casing when the opening to said casing is closed, said second passage being so arranged that it shall communicate with said second duct when said radial passage is open and shall be closed when said transverse passage is open and when the first named passage communicates with the first named duct from the reservoir.

8. In a priming cup, the combination of a reservoir, a cock having a casing and a plug therein, an opening for air to said casing, and an opening for air from said casing, a transverse passage in said plug adapted to register with said openings in the casing, a duct for gasolene leading from said reservoir, a passage in said plug opening into said transverse passage and adapted to register with said duct when said transverse passage communicates with the opening from said casing, a second duct for gasolene leading from said reservoir, a second passage in said plug adapted to register with said second duct and communicating with said transverse passage, a radial passage extending from said transverse passage to the periphery of the plug at such an angle that it shall communicate with the opening from said casing when the opening to said casing is closed, said second passage being so arranged that it shall communicate with said second duct when said radial passage is open and shall be closed when said transverse passage is open and when the first named passage communicates with the first named duct from the reservoir, said passages being so arranged that said transverse passage shall be open in two angular positions of the plug and so that in one of said positions the others of said passages shall be closed.

In testimony whereof, I sign this specification in the presence of two witnesses.

CHARLES H. WISNER.

Witnesses:
VIRGINIA C. SPRATT,
ELLIOTT J. STODDARD.