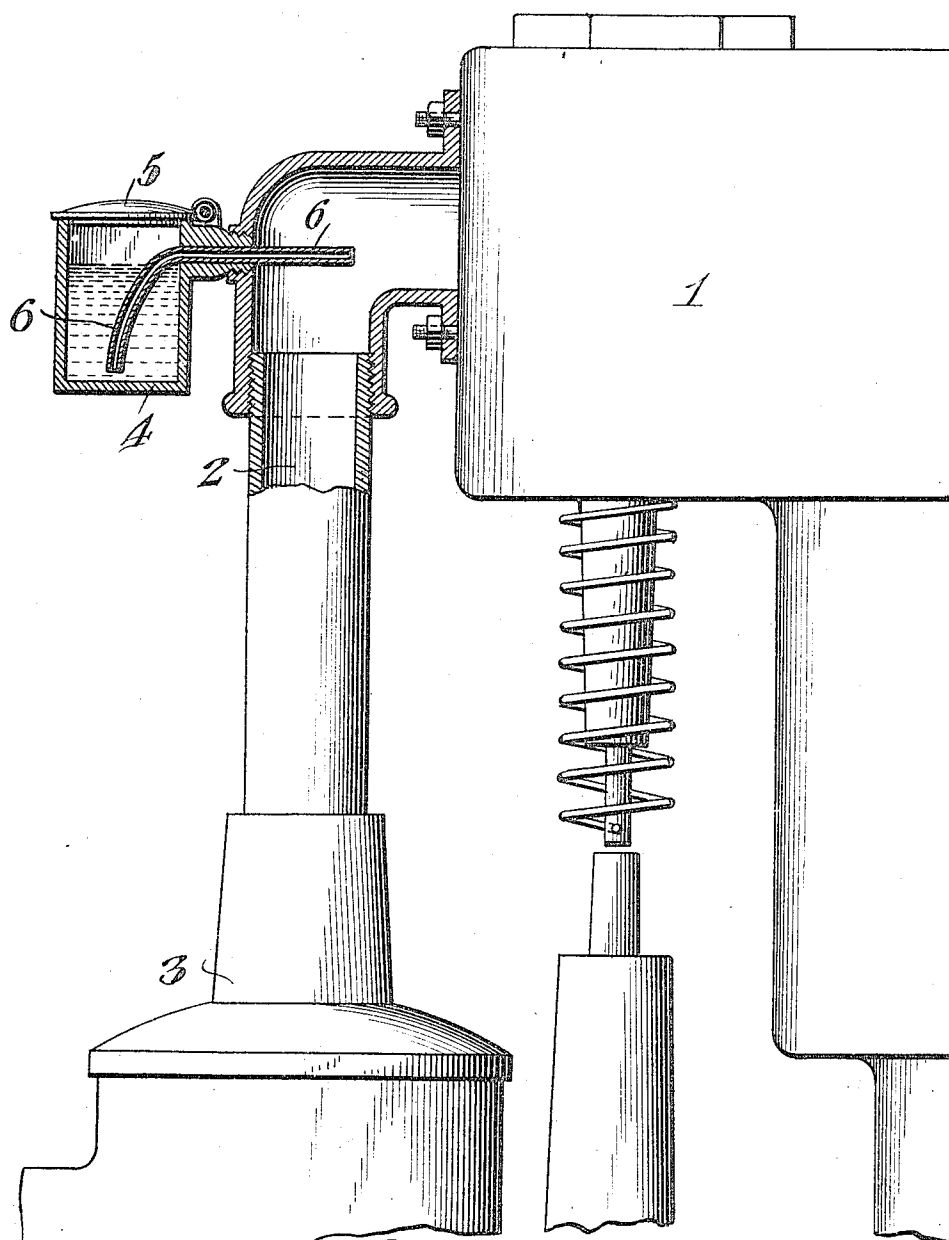


O. E. APPEL.
SUCTION PRIMING CUP.
APPLICATION FILED FEB. 5, 1910.

993,942.

Patented May 30, 1911.



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Witnesses
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UNITED STATES PATENT OFFICE.

ORVILLE EMANULE APPEL, OF BUSHTON, KANSAS.

SUCTION PRIMING-CUP.

993,942.

Specification of Letters Patent. Patented May 30, 1914.

Application filed February 5, 1910. Serial No. 542,266.

To all whom it may concern:

Be it known that I, ORVILLE E. APPEL, a citizen of the United States, residing at Bushton, in the county of Rice and State of Kansas, have invented a new and useful Suction Priming-Cup, of which the following is a specification.

This invention is a suction cup for use in starting explosive engines, and the object of the invention is to provide a simple device by which the engine may be supplied with an initial or priming charge when it is cranked for starting.

The invention consists in a certain novel construction and arrangement of parts, all of which are illustrated in the accompanying drawing and will be hereinafter first fully described and then more particularly pointed out in the claims.

In the drawing, I have shown a sectional view of my suction cup and a part of the intake pipe of a hydro-carbon or explosive engine, the parts of the engine immediately adjacent to and acting with the intake pipe being shown in elevation.

The engine, indicated at 1, may be any desired type of gas or gasoline engine or other internal combustion engine, utilizing hydro-carbon as a fuel, and is provided with an intake pipe 2 leading from a carbureter 3, all of which are of the ordinary construction. Immediately adjacent the engine cylinder, I secure to the intake pipe a cup or small reservoir 4 provided with any convenient form of cover 5 and having a small tube 6 leading through its side into the intake pipe and terminating within the pipe close to the cylinder of the engine. The inlet end of this tube or small pipe 6 terminates close to the bottom of the cup or reservoir 4, so that a continuous, uninterrupted passage is provided from a point near the bottom of the cup to a point within the intake pipe and adjacent to the cylinder of the engine.

In the use of my invention, when the engine is not running, a quantity of gasoline or other similar fuel is placed in the cup 4, the level of the fluid being kept at about the same level as the discharge end of the tube 6. When the starting crank is operated, the suction stroke of the engine will cause a fine spray of the fuel to be drawn through the tube 6 and discharged into the

cylinder of the engine, where it will be ignited and, consequently, the engine quickly started.

The cup or reservoir 4 should be of such capacity as to contain sufficient fuel to supply the engine until the regular charge can be drawn in through the intake pipe from the carbureter, as will be readily understood. By having the tube 6 so arranged that its inlet end is disposed close to the bottom of the cup or reservoir and its discharge end maintained above or at the level of the liquid in the cup, the liquid will not be drawn from the cup until the engine is cranked, and will then be drawn through the tube on the suction stroke of the engine so as to mix with the air in the intake pipe and, consequently, pass into the engine in a small spray and be readily ignited. The bore or diameter of the tube 6 is preferably very small so that the device will be automatic in its operation and the provision of controlling valves rendered unnecessary.

While I have shown and described the cup as secured to and supported by the intake pipe, and have illustrated only one cylinder of the engine, it will be understood, of course, that the cup may be supported on a bracket or upon the dashboard of the vehicle and a plurality of discharge tubes connected therewith, each tube leading to one of the intake pipes of a multi-cylinder engine, care being taken that the discharge end of each tube is arranged above or at the level of the fluid within the cup, so that the fluid will not escape from the cup until the starting crank of the engine is operated.

The device is exceedingly simple in its construction and the arrangement of its parts, and its many advantages are thought to be obvious.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A priming means for explosion or hydro-carbon engines comprising a cup or reservoir of a capacity to contain only sufficient fuel to supply the engine until the regular charges from the carbureter can reach the explosion chamber, said cup being provided with an unobstructed pipe leading from a point near the bottom of the cup to a point above the level of liquid in the cup when the latter is filled to the normal height, said pipe

being of a length to enter the intake conduit of the engine into close proximity to the explosion chamber of the engine.

2. A priming means for explosion or hydro-carbon engines comprising a cup having a closed bottom and accessible through the top and there provided with a cover, said cup being also provided with a pipe of relatively small bore and unobstructed throughout, said pipe extending from a point close to the bottom of the cup to a point above the level of fluid within the cup when the latter is filled to its normal full capacity, and there bent to enter the intake conduit of the engine in line with and in close proximity to the entrance of the conduit into the explosion chamber of the engine, said cup having a capacity limited to a supply of fuel only sufficient to cause the starting of the engine when cold.

3. In a device of the class described, the combination with an explosion or hydro-carbon engine, of a cup of a capacity to contain only enough fuel to prime the engine for starting when cold, said cup being mounted on the outside of the engine and having a cover, and a bent pipe with one end dipping into the cup and terminating adja-

cent the bottom thereof and its other end extending through the side wall of the cup adjacent the upper end of the latter and entering the intake pipe of the engine and there freely open.

4. In a device of the class described, the combination with an explosion or hydro-carbon engine, of a cup of a capacity to contain only enough fuel to prime the engine for starting when cold, said cup being secured to the outside of the intake pipe of the engine and provided with a pipe having a bent portion extending down into the cup and terminating adjacent the bottom thereof, and another portion extending beyond the cup above the level of the fluid in the cup when the latter is filled to its normal capacity, said last named pipe entering the intake pipe of the engine and having its extremity within such intake pipe open.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ORVILLE EMANULE APPEL.

Witnesses:

EDWIN J. BRUEGGER,
WM. VOLKLAND.