

L. SEGUIN.
CENTRIFUGAL PUMP.
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1,345,895.

Patented July 6, 1920.

FIG. 1

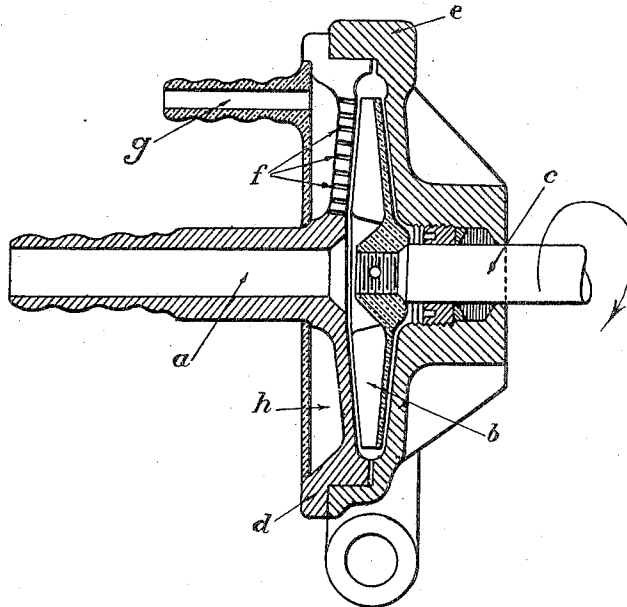
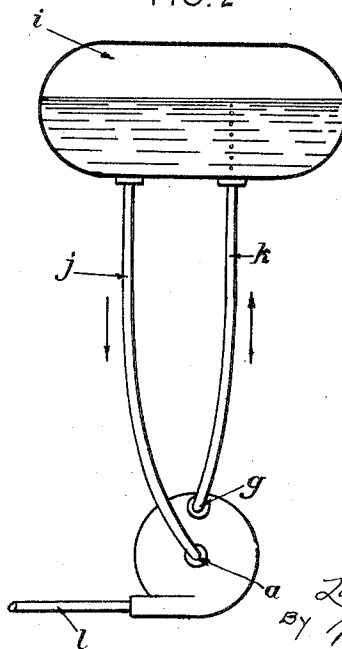


FIG. 2



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CENTRIFUGAL PUMP.

1,345,895.

Specification of Letters Patent.

Patented July 6, 1920.

Application filed March 29, 1920. Serial No. 369,743.

To all whom it may concern:

Be it known that I, LAURENT SEGUIN, citizen of the Republic of France, residing at 41 Rue La Boétie, Paris, in the Republic of France, have invented new and useful Improvements in Centrifugal Pumps, of which the following is a specification.

When it is necessary to use a centrifugal pump for liquids liable to contain air bubbles in suspension or for liquids at temperature near their point of ebullition,—particularly for feeding a petrol motor,—it happens that the centrifugal pump frequently fails, even when fed under a head. This is due to the air or vapor bubbles carried away by the liquid assuming immediately in the pump, like the liquid itself, a circular motion. Owing to the centrifugal force, the liquid and the gas tend to move toward the periphery of the pump and consequently toward the delivery outlet but inasmuch as the centrifugal force acts with much less power upon the gas owing to its low density, it may occur, and it often occurs, that the gas bubbles, instead of continuing their course toward the periphery, assume a position of equilibrium and accumulate in a large bubble which takes the form of a tore inside the centrifugal pump. Said gas-tore, in proportion as it increases, gradually obstructs the passage of the liquid and may eventually cause the pump to fail entirely.

This drawback may be further increased if the motor is fitted in an aeroplane, for then, when the aeroplane rises, the barometric pressure on the liquid being reduced, the formation of air and vapor bubbles is increased and the gaseous tore formed as hereinbefore stated is enlarged.

The object of the invention is an improvement in centrifugal pumps which makes it possible to obviate this drawback, said improvement consisting substantially in providing in the covering or casing of the pump small apertures leading into a receptacle furnished with a draining or sludge pipe.

In the accompanying drawing, given by way of example,

Figure 1 is a section of a centrifugal pump according to the invention.

Fig. 2 is a diagram of the installation

of said pump assumed to be used as a feeding pump for a gasolene engine.

In said drawing, *a* is a neck provided on the casing of the pump for the inlet of the petrol, *b* is the rotor of the pump, *c* is the shaft of said rotor, and *d* is the plate which closes the casing of the pump.

Plate *d* is perforated with small apertures *f* along a radius and carries the air drain *g*.

The petrol contained in the tank *i* (Fig. 2) reaches the pump through the pipe *j* and the neck *a*. The pressures in the pump are graduated along the radius of the rotor, increasing from the center to the periphery. The result is that in the drain box *h* there is a series of jets of liquid which carry away with them the gas bubbles as and when formed.

The gases are thus constantly eliminated toward the drain and the pump cannot fail.

There is obviously a loss in the efficiency of the centrifugal pump, but as the apertures may be very small such loss may be reduced as much as desired.

The draining or sludge pipe *g* may be connected to the tank by a tube *k*. *l* indicates the delivery pipe for the liquid.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A centrifugal pump for liquids liable to contain gaseous bubbles in suspension or liquids reaching temperatures near their point of ebullition, comprising a casing, a rotor rotatably mounted in said casing, and a drain chamber, the casing of the pump being provided with small apertures located at different distances from the axis of the pump and opening into said drain chamber.

2. A centrifugal pump for liquids liable to contain gaseous bubbles in suspension or liquids reaching temperatures near their point of ebullition, comprising a casing, a rotor rotatably mounted in said casing and a drain chamber, the casing of the pump being provided with a series of small apertures arranged along a radius at different distances from the axis of the pump and opening into said drain chamber.

3. The combination of a tank, a centrifugal pump comprising a casing, a rotor ro-

tatably mounted in said casing, an inlet neck centrally arranged on the casing, an outlet connection on said casing at the periphery thereof, means for connecting the tank to said inlet neck, a drain chamber and means for connecting the drain chamber to the tank, the casing of the pump being pro-

vided with small apertures located at different distances from the axis of the pump and opening into said drain chamber. 10

In testimony whereof I have signed my name to this specification.

LAURENT SEGUIN.