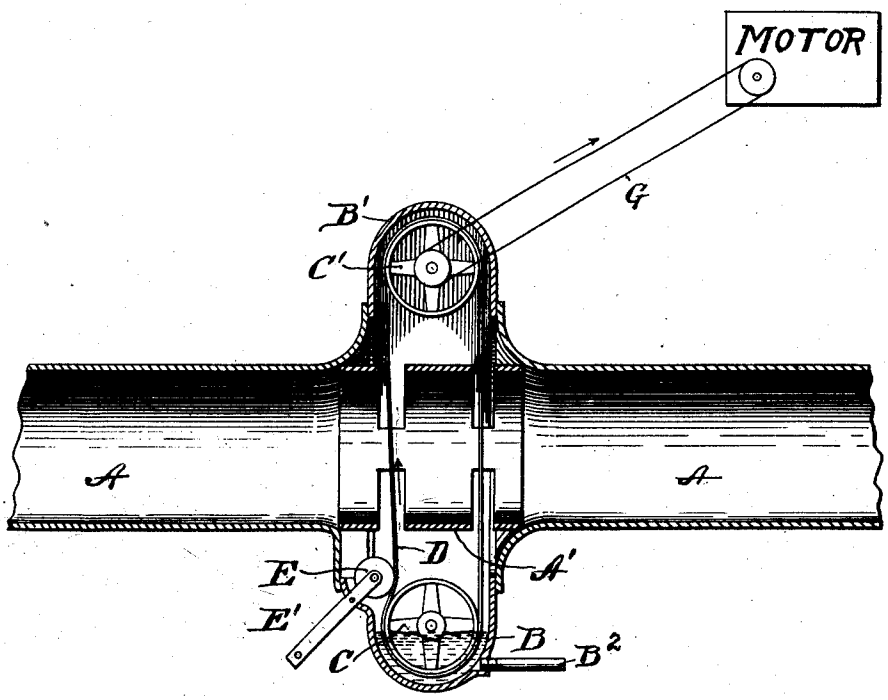
No. 866,115. PATENTED SEPT. 17, 1907.

H. DOCK.

VAPORIZER.

APPLICATION FILED JUNE 21, 1906.



Witnesses

Inventor
HERMAN DOCK

By his Attorneys

UNITED STATES PATENT OFFICE.

HERMAN DOCK, OF WYNCOTE, PENNSYLVANIA, ASSIGNOR TO DOCK GAS ENGINE COMPANY, A CORPORATION OF NEW JERSEY.

VAPORIZER.

No. 866,115. Specification of Letters Patent. Patented Sept. 17, 1907.

Application filed June 21, 1906. Serial No. 322,696.

To all whom it may concern:

Be it known that I, HERMAN DOCK, a citizen of the United States, residing at Wyncote, Montgomery county, Pennsylvania, have invented certain new and useful Improvements in Vaporizers, of which the following is a full, clear, and exact description.

My invention relates to improvements in vaporizers, particularly valuable for use with engines of the internal combustion type.

The object of the invention, broadly speaking, is to provide a very simple and effective means for mixing with air a certain definite proportion of liquid fuel, which proportion will be maintained substantially constant whether the demand for the mixture be great or small; that is, assuming the vaporizer is connected to an engine of the internal combustion type, the construction is such that the proportion of fuel to air constituting the mixture will be maintained with substantial uniformity whether the engine is running at a high speed or a low speed. Many attempts have been made to accomplish this object, and the same have involved additional air inlets, diaphragms, wing valves and various attachments complicating the vaporizer and only partially serving to accomplish the object intended. Such attachments also require much manual adjustment and constant observation.

By my new device I have successfully attained the desired object and have produced a simple, low cost vaporizer which is capable of regulation and yet which automatically maintains a mixture of substantial uniformity.

In the accompanying drawings I have conventionally illustrated the invention by a longitudinal sectional view showing certain parts in elevation.

In the drawings, A—A represent an in-take pipe for an internal combustion engine.

B is a well for containing the liquid fuel.

C—C′ are pulleys carrying an endless band D. The pulley C is housed in the offset portion forming the well B, while pulley C′ is housed in another offset portion B′.

E is a presser roll which may bear against the band and by which the tension thereof may be varied for the purposes of regulation, for as will be seen the lower the tension on band D the greater will be the volume of fuel carried thereby. As the tension is increased the volume of fuel lifted is lessened.

E′ conventionally represents a lever by which the position of the roll E may be varied either manually or automatically as desired.

G is a belt leading from a source of power (indicated by the word "Motor") to one of the belt pulleys.

B^2 represents a fuel supply pipe through which liquid fuel is fed to the well B. Any suitable means may be employed for maintaining a suitable supply of fuel within the said well, and, if desired, means may be employed for holding it at a substantially uniform level.

A′ represents a shield for closing off the well B and offset portion B′, save where the band D passes through said shield. The form of this shield A′ is, of course, immaterial, but it is preferable that it should correspond in internal figuration to the pipe A to avoid unnecessary friction.

The band D is made of any suitable material which will adapt itself to the pulleys C C′ so that when said pulleys are driven the band will move freely with them. This band should have a suitable capillary attraction for the liquid fuel. I have found that a woven material furnishes good results.

The rush of air through the pipe A comes in contact with the liquid fuel carried by that part of the band D located in the path of movement of said air, and this fuel, being volatile, is readily taken up by the air and instantly becomes, in conjunction therewith, an explosive mixture which is conveyed to the intended destination by a continuation of pipe A. It will be observed that by the use of this form of vaporizer, the action of the engine is not choked or impeded. A supplemental damper (not shown) such as is commonly employed, may be placed in the gas pipe without in any way affecting the action of the vaporizer itself. While a uniform proportion of fuel to air will be automatically maintained, as has already been indicated, this proportion may be varied by the manual adjustment of the presser roll E or other suitable means.

It may be understood that the band may be porous or screen-like so that air can easily pass through the same, in which event the band may be made of any desired width, since the air can pass through the same as well as around the same.

The direction of the air through the intake pipe and vaporizer is immaterial; hence, either end of said pipe may be connected to the engine. The direction of travel of the belt G and band D is likewise immaterial.

What I claim is:

1. In a vaporizer, an air pipe, a fuel conveyer projecting into said pipe and in the path of movement of the air therethrough, means for moving said conveyer and varying the tension thereof, and means for supplying fuel thereto.

2. In a vaporizer, an air pipe, a fuel conveyer passing transversely through said pipe and in the path of travel of the air therethrough, means for moving said conveyer and varying the tension thereof, and means for supplying fuel thereto.

3. In a vaporizer, a pipe, an endless band fuel conveyer, supporting driving pulleys therefor on opposite sides of

said pipe and externally thereof, said band conveyer passing transversely through said pipe and through the path of movement of the air therein, and means for supplying a liquid fuel to said conveyer at a point externally of the pipe and means for varying the volume of fuel carried by said conveyer.

4. In a vaporizer, a pipe, a fuel conveyer of woven material passing transversely through said pipe, means for moving said fuel conveyer, and means for supplying a liquid fuel to said moving conveyer and means for varying the volume of fuel carried by said conveyer.

5. In a vaporizer, a pipe, a movable fuel conveying belt extending into the same and in the path of travel of the air therethrough, the material of said conveyer having a capillary attractiveness for liquid, means for supplying liquid fuel to said conveyer, and means for manually varying the amount of fuel carrying capacity of said conveyer by varying the tension thereof.

6. In a vaporizer, a pipe, a well adjacent thereto for holding liquid fuel, an endless band of flexible material projecting into said well, said band passing transversely through said pipe, and means at the other side of said pipe from said well for carrying said band at that side and a tension regulating device for said band.

7. In a vaporizer, a pipe, a well adjacent thereto for holding liquid fuel, an endless band of flexible material projecting into said well, said band passing transversely through said pipe, means at the other side of said pipe from said well for carrying said band at that side, and means for varying the tension of said band.

8. In a vaporizer, a pipe, a movable fuel conveyer extending into the same and in the path of travel of the air therethrough, means for supplying fuel to said conveyer, and means for varying the amount of fuel carried by said conveyer by varying the tension thereof.

9. In a vaporizer, an air pipe, a fuel conveying band of porous or screen-like material passing into said pipe and in the path of movement of the air therethrough, means for moving said band, and means for supplying fuel thereto and means for varying the tension of the band.

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Witnesses:
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