No. 640,832. Patented Jan. 9, 1900.

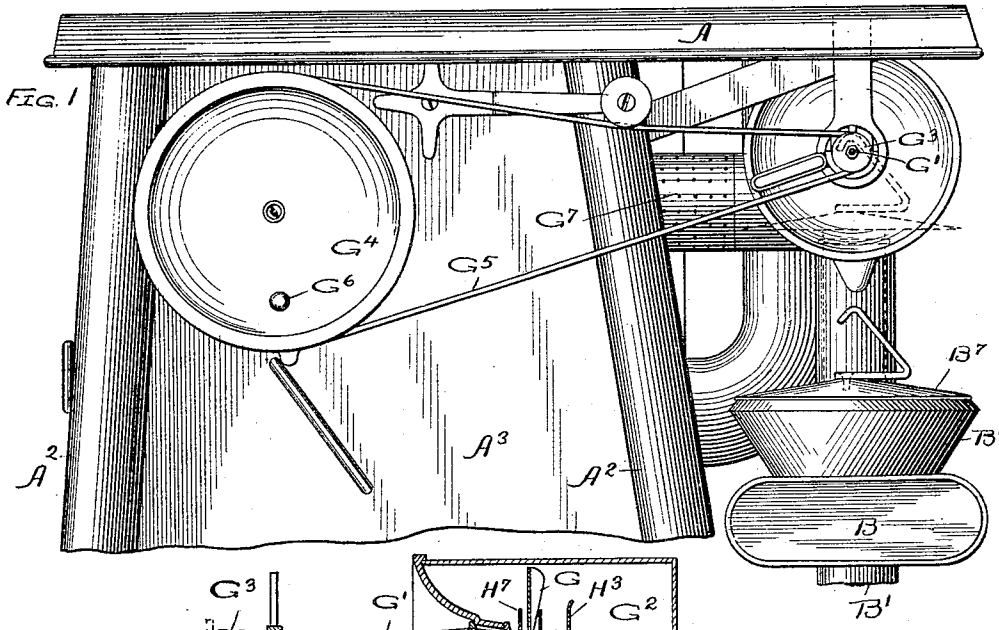
W. H. THAYER.

CARBURETER.

(Application filed Mar. 15, 1899.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1



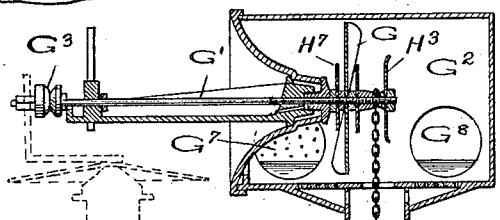
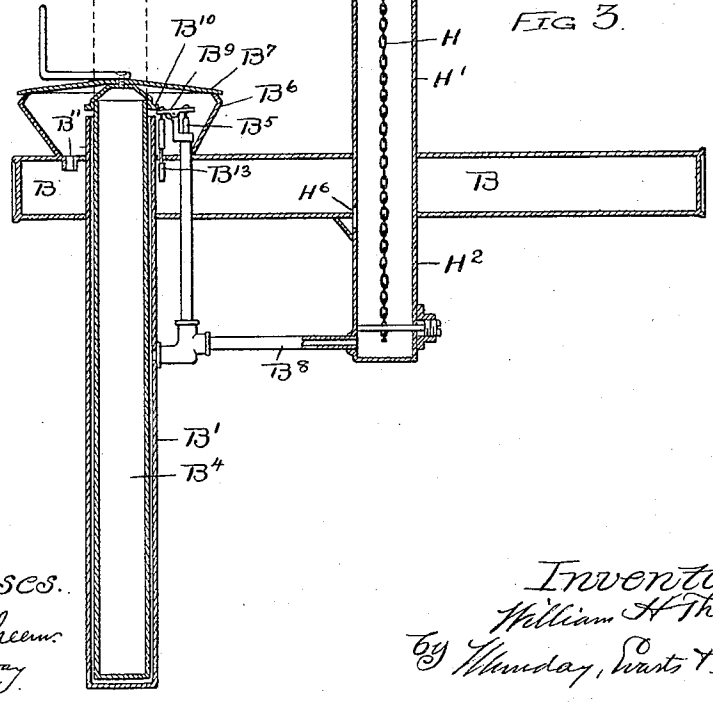


FIG 3.



Witnesses.
Wm. M. Rheems.
H. W. Munday.

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(No Model.) 2 Sheets—Sheet 2.

FIG. 2.

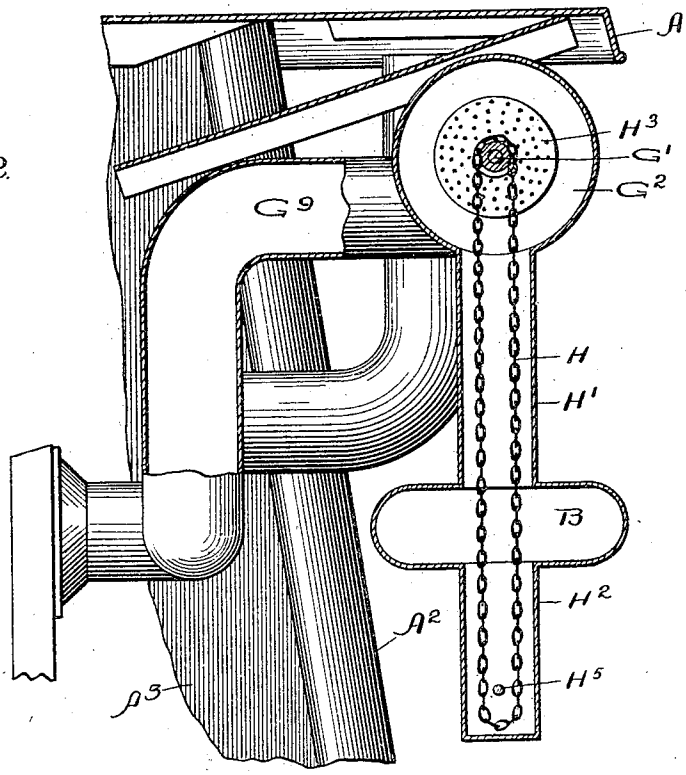
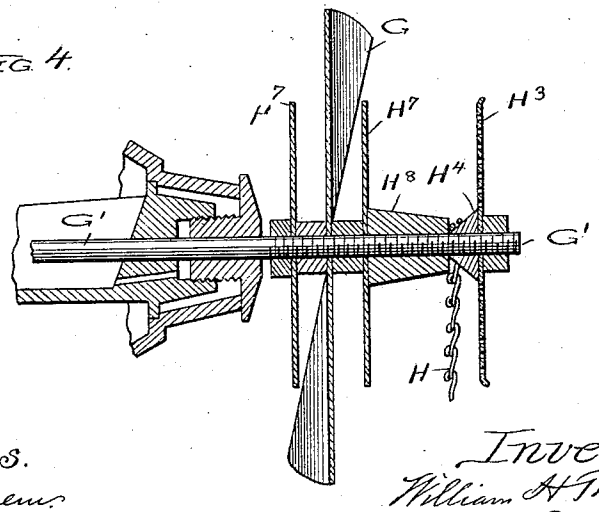


FIG. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM H. THAYER, OF HARVEY, ILLINOIS, ASSIGNOR TO THE GEORGE M. CLARK & COMPANY, OF CHICAGO, ILLINOIS.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 640,832, dated January 9, 1900.

Application filed March 15, 1899. Serial No. 709,141. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. THAYER, a citizen of the United States, residing in Harvey, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Carbureters, of which the following is a specification.

This invention relates to improvements in carbureters, and has been devised more especially for use in connection with vapor-stoves.

My main object has been to devise a safe and suitable means for starting vapor-stoves in operation.

The nature of the invention will be understood from the accompanying drawings and the subjoined description.

In the drawings, Figure 1 is a side elevation of the invention as applied to a vapor-stove. Fig. 2 is a vertical section thereof. Fig. 3 is a section at right angles to that given in Fig. 2, and Fig. 4 is an enlarged section of the fan-shaft.

In said drawings, A represents the top of the stove, supported at its ends by suitable uprights, two of which are shown at A^2 A^3, and which are preferably connected by an intermediate metal sheet A^3. The oil-reservoir is shown at B. From it the oil feeds first into the chain-well H^2 and from thence flows through the connecting-pipe B^8 to the vertical cylinder B′, provided with a plunger B^4, nearly filling the cylinder. This plunger is raised when the oil is to be replenished, and when thus raised a vertically-sliding valve B^5, of which only the upper end of the stem is illustrated, but which is located in and controls passage B^8, closes by gravity, the stem of the valve being provided with a lever B^9, engaged by a projection B^{10} on the plunger, so that the valve is kept open when the plunger is in its lower position. On top of the reservoir and surrounding the filling-inlet thereof is an upstanding rim B^6, forming a safety or overflow tank into which excess oil in cylinder B′ may flow. The plunger carries a cover B^7, adapted to close the overflow-receptacle. The inlet through which the oil moves from the overflow-tank is shown at B^{11}, and B^{13} is the valve for releasing the air trapped in the top of the reservoir. This valve is connected to the lever B^9 and closes as soon as the plunger is raised by reason of the swinging of said lever under the gravity of valve B^5, so that the air cannot escape during the time the fluid is being poured in.

The vapor for starting the stove is obtained from the reservoir, as follows: Above the reservoir is a rotating fan G, mounted upon a shaft G′ and located in a chamber or cylinder G^2. The end of the shaft carries a small pulley G^3 and receives power from a much larger pulley G^4 by means of a cord or belt G^5. This large pulley is provided with a handle G^6, whereby it may be conveniently operated, and imparts a rapid rotation to the shaft. The fan-chamber at one side of the fan is provided with an air-inlet G^7, protected by a screen, as shown, and at the other side of the fan with an outlet G^8, which is connected by a pipe G^9, leading to or connecting with the burner of the stove which is first started. This burner I do not illustrate. The fan acts to draw air from inlet G^7 and force it out at G^8; but such air before it reaches said outlet is brought into contact with the oil and thoroughly carbureted by the following means: An endless chain or band, without buckets and adapted to lift only such of the oil as may adhere to its surface or lodge in its interstices, is placed over the fan-shaft and depends therefrom in the pipe H′, which passes down below the reservoir and forms the well H^2, already mentioned, the chain extending down into the well, as plainly shown. A chain of this character carries up the oil in minute drops or particles and only in such quantities as can be readily taken up by the air. The well receives the oil through the opening H^6 at the bottom of the reservoir, and the chain agitates all the oil entering the well and draws up the heavy as well as the light portions thereof and tends to prevent accumulations of the heavy portions. By thus extending the chain into the well the chain is made to work efficiently regardless of the height of the fuel in the reservoir. The chain feeds the oil which it brings to the fan-chamber into the path of the blast created by the fan, and in order that it may do this effectively and present the oil to the blast in a finely-atomized condition I provide the fan-shaft with a distributing-disk H^3, onto which

the oil will find its way from the chain. The inclined face of the cone H^4, upon which the chain runs, facilitates the movement of the oil from the chain to the disk. A pin H^5 is passed through the lower loop of the chain and acts to prevent any disarrangement of it, especially when the stove is inverted, as it is liable to be during transportation. The disk H^3 may be perforated, if desired, and is shown as being made in that manner. Disks H^7 at either side of the fan support the blades of the latter, and the filling-block H^8 preferably tapers toward the chain.

From the description above given it will be seen that a current of carbureted air can be created at any time by rotating the fan, and such carbureted air can obviously be conducted to the burner where it is to be used.

I lay no claim in this case to the reservoir B or its connection to cylinder B′ nor to any feature of said cylinder or its plunger, as any claims to which I am entitled on those devices are reserved from other applications—to wit, Serial Nos. 692,237 and 709,140.

I claim—

1. The combination with the fan and a receptacle for the oil, of an endless chain or band without buckets operated in conjunction with the fan and extending into the receptacle and serving to bring the oil into the current created by the fan, substantially as specified.

2. The combination with the fan and a receptacle for the oil, of an endless chain or band without buckets operated in conjunction with the fan and extending into the receptacle and serving to bring the oil into the current created by the fan, and a disk for atomizing or dividing the oil thus brought into the air-current, substantially as specified.

3. The combination with the fan and receptacle for the oil, of an endless chain or band without buckets operated in conjunction with the fan and extending into the receptacle and serving to bring small portions of the oil into the current created by the fan, a disk for atomizing or dividing the oil thus brought into the air-current, and a cone or cones for feeding the oil to the disk or disks, substantially as specified.

4. The combination in a vapor-stove with a receptacle for the oil, the bucketless band or chain for lifting the oil and an air-current-creating device, of a rotating perforated or gauze disk located in the path of the current and receiving small portions of the oil from said band or chain and acting to divide or atomize it, substantially as specified.

5. The combination in a vapor-stove, of an oil-supplying receptacle, a rotating disk receiving oil from said receptacle, and located in a chamber separate from and above the oil-receptacle, a fan in said chamber creating a blast passing the disk, and means for lifting the oil in limited quantities to said disk, substantially as specified.

6. The combination of an oil-reservoir, a fan and fan-chamber, located above the reservoir, a pipe extending from the fan-chamber to a point below the reservoir, and supplied with oil therefrom, and a moving chain or belt of the kind set forth depending in said pipe and acting to lift the oil to the fan-chamber, substantially as specified.

7. An oil-receptacle having a well H^2 below it, a fan and chamber therefor located above the receptacle, and an oil-feeding chain or belt extending into said well and carrying the heavy as well as the lighter parts of the oil to the fan, substantially as specified.

8. The combination in a vapor-stove, of an oil-supplying receptacle, a rotating disk receiving oil from said receptacle, a cone feeding the oil to the disk, a chain feeding the oil to the cone, and means for moving the air past or through the disk, substantially as specified.

9. The combination in a vapor-stove, of an oil-receptacle, a fan for moving the air, a chamber for said fan having an air-inlet at one end and an outlet at the other end, a moving device in the fan-chamber, the surface of which device is supplied with oil from the receptacle and exposes the oil to the current of moving air, and means for feeding the oil to said device, substantially as specified.

WILLIAM H. THAYER.

Witnesses:
EDW. S. EVARTS,
H. M. MUNDAY.