No. 712,721. Patented Nov. 4, 1902.

N. L. RIGBY.

VAPORIZER AND BURNER.

(Application filed Nov. 7, 1901.)

(No Model.)

Fig. 1.

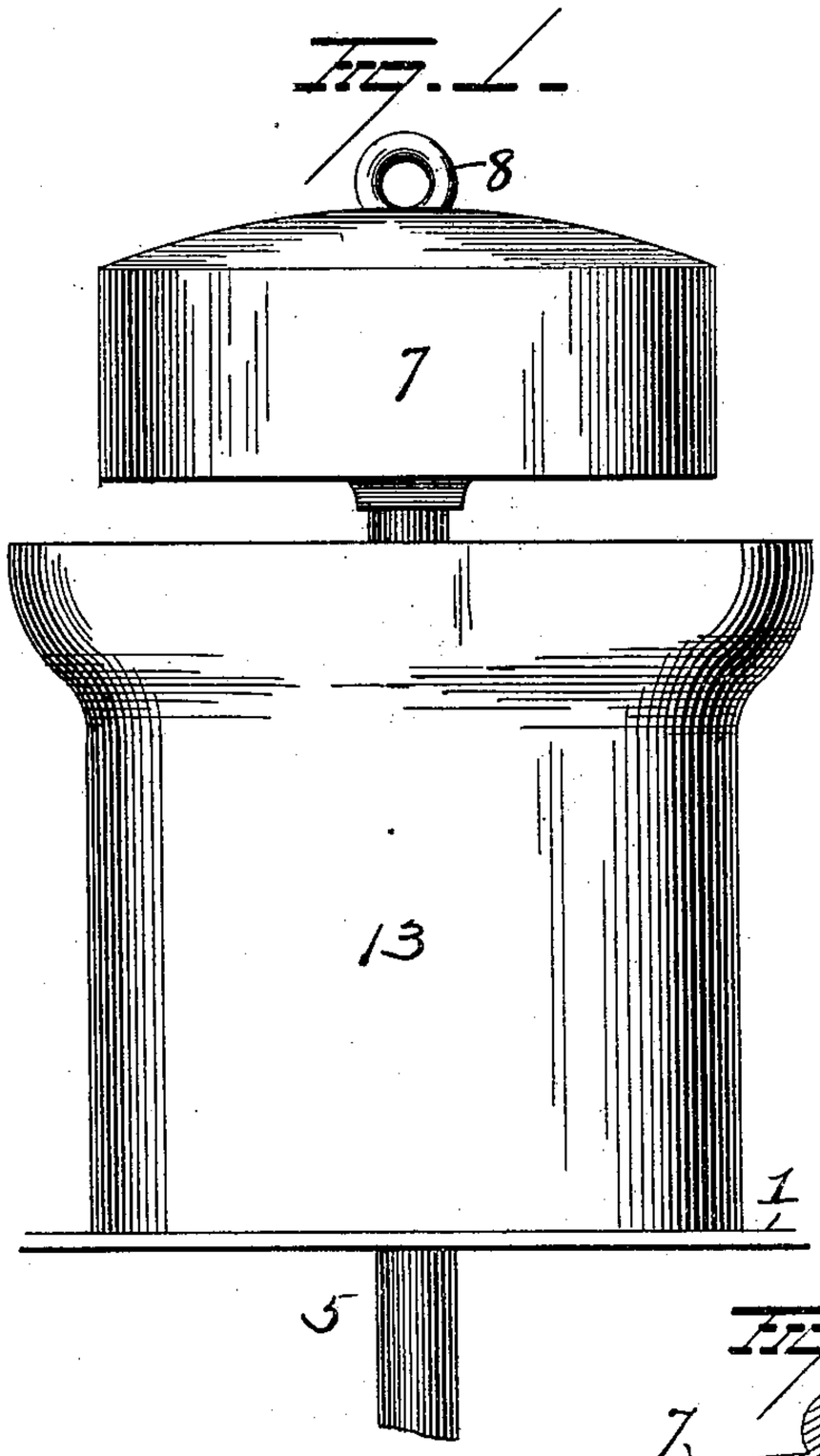


Fig. 2.

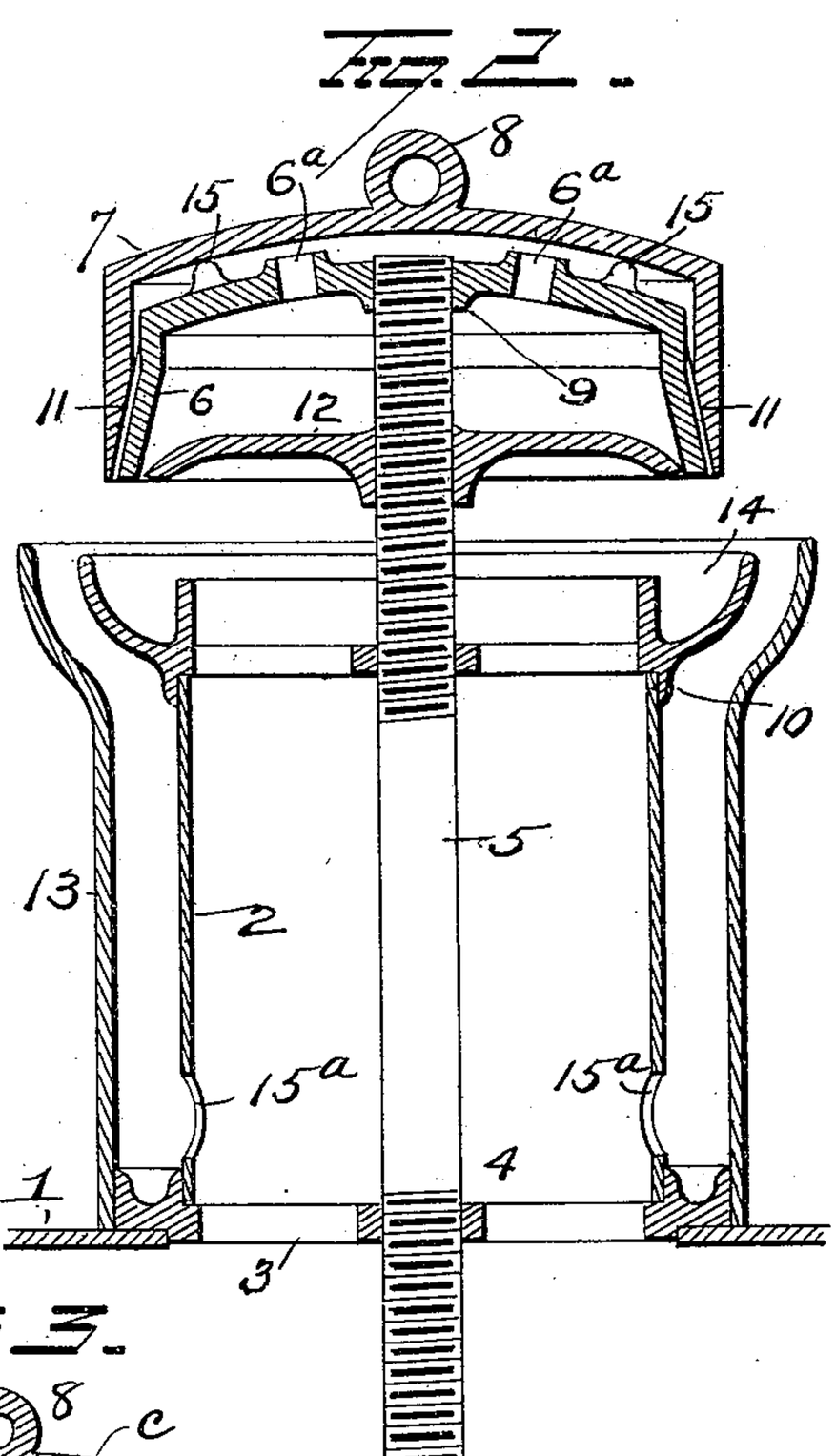
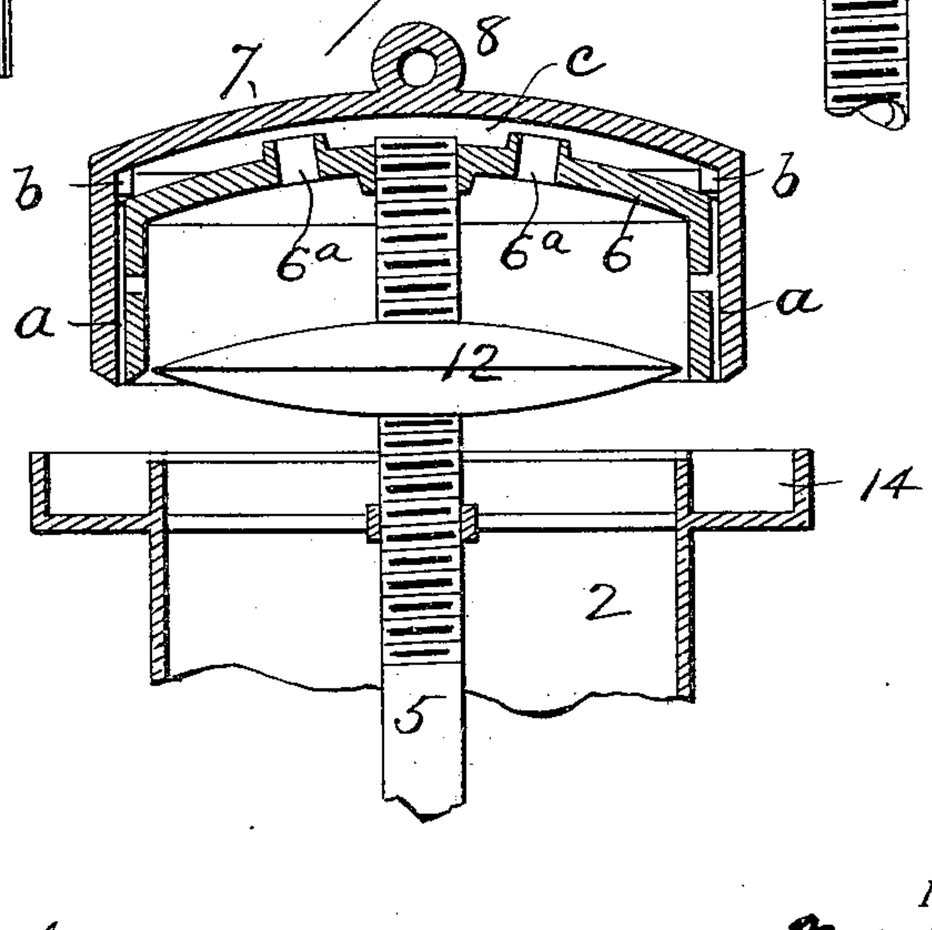


Fig. 3.



WITNESSES

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NICHOLAS L. RIGBY, OF LOS ANGELES, CALIFORNIA.

VAPORIZER AND BURNER.

SPECIFICATION forming part of Letters Patent No. 712,721, dated November 4, 1902.

Application filed November 7, 1901. Serial No. 81,412. (No model.)

To all whom it may concern:

Be it known that I, NICHOLAS L. RIGBY, a resident of Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Vaporizers and Burners; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved hydrocarbon vaporizer and burner, the object of the invention being to provide a device of this character which will be extremely simple in construction, the component parts thereof being assembled without the employment of nails, screws, bolts, rivets, and the like, and which when assembled will result in a combined vaporizer and burner whose operation will be perfect and which can be readily adjusted to regulate the proportion of vapor or gas and air burned.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation illustrating my improvements. Fig. 2 is a view in section of the same; and Fig. 3 is a modification.

1 represents a platform or support having an opening therein over which my improved device is secured, the base portion of which comprises a cylindrical or tubular chamber 2, having a spider 3 in its lower end made with a central screw-threaded ring 4, in which an oil-supply pipe 5 is screwed and extends vertically above the top of chamber 2. The upper end of the pipe 5 is screwed through the flanged central portion 9 of an inverted cup 6 and projects slightly above the same or may be flush therewith, as preferred. This cup 6 is made with a flaring periphery at its lower edge to form a seat for the lower edge of a cap or cover 7, larger than cup 6, to leave a space between the same and the cup 6 to form a vaporizing-chamber, and the cup 6 is made with openings 6^a, permitting the escape of vapor into the receiving-chamber formed by the cup, and flanges are provided around said openings to prevent the entrance of oil therein when the burner is to be first lighted, as will hereinafter appear. On top of cap or cover 7 I preferably provide a perforated lug 8 to facilitate the removal of the cap when desired.

On the upper end of cylindrical or tubular chamber 2 an annular cup 14 is supported and is provided on its lower face with a circular flange 10 to fit the upper end of the chamber 2 and dispose the cup or receptacle 14 directly below the lower edge of the cup 6, and the latter is provided in its flaring portion with grooves 11, through which the oil can escape and drop from the lower edge of the cup into the starting-cup to start preliminary heating, as will be explained, and lugs 15 are provided on cup 6 to prevent the sticking of the cover to the cup due to its weight on the flaring portion thereof.

On the pipe 5 a disk 12 is screwed and is located at the lower end of cup 6 and can be adjusted up and down to regulate the proportion of air and vapor or gas to be burned around the outside of cover 6; or I might employ two convex disks, which can be adjusted toward or away from each other to enlarge or contract the air-vapor passages.

Around the chamber 2 a casing 13 is located, and the chamber 2 is made with openings 15^a to permit a certain amount of air to pass up between chamber 2 and casing 13 and direct the supply of air to the outside of the flame.

The operation of my improvements is as follows: Oil is supplied to the vaporizing-chamber by pipe 5 and passes down over cup 6 and escapes through the grooves 11 and drops off the edge of the cup 6 into starting-cup 14, and when a sufficient amount of oil has accumulated therein it is lighted and the supply of oil cut off. The flame from the burning oil in the starting-cup will envelop the cap or cover 7, and when the latter has become sufficiently heated to vaporize the oil the supply of oil is turned on, and as it comes in contact with the heated cap or cover 7 it will be vaporized—or, in other words, the hydrocarbon gas will be liberated and pass down through the openings 6^a into the receiving-chamber formed by cup 6 and also pass through groove 11. This vapor or gas is commingled with air supplied through chamber 2 and finds its way out between the disk 12

and upper edge of chamber 2, and the mixture is burned in the form of an intensely-hot flame enveloping the cover 7 and maintaining the same at a red heat to rapidly vaporize the oil as it is directed thereagainst by the pipe 5.

Instead of constructing my improved device as above explained I might make the same as shown in Fig. 3. In this form of my invention the sides of cup 6 and cover 7 are parallel, with oil-ducts *a* between them, and the outer cover 7 is made with internal lugs *b* to support the same at the proper position to form the vaporizing-chamber *c*.

Various other slight changes might be resorted to in the general form and arrangement of the several parts described without departing from my invention, and hence I would have it understood that I do not wish to limit myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. A vaporizer and burner, comprising telescoping cups having a vaporizing-chamber and discharge grooves or passages between them, means for conducting oil to said vaporizing-chamber, and means for conducting vapor from the vaporizing-chamber into the interior of the inner cup, said inner cup having an outlet for discharging vapor therefrom for consumption.

2. A vaporizer and burner, comprising two inverted telescoping cups having a vaporizing-chamber and discharge-passages between them, the inner cup having a chamber therein communicating directly with the vaporizing-chamber, said inner cup having an outlet for discharging vapor to be burned, from the chamber in said inner cup.

3. A vaporizer comprising an inverted cup having a flaring lower edge, a similarly-shaped cover larger than the cup supported on the flaring lower edge of the latter, means for supplying oil to the space between the cup and cover, means for conducting vapor from said space into the inverted cup, said cup having an outlet for vapor therefrom, and means for heating said cover.

4. A vaporizer and burner, comprising an inverted cup flared at its lower end, a cover inclosing the cup, supported on the flared lower end and forming a vaporizing-chamber between the cup and cover, an oil-supply pipe supporting said cups and cover and discharging the oil through the cup and against the cap or cover, means for directing the vapor from the vaporizing-chamber through the cup to the bottom of the latter, and means for supplying air to commingle with the vapor forming a combustible mixture to be burned around the cover and heat the same.

5. In a combined vaporizer and burner, the combination with an oil-supply pipe and an inverted cup secured centrally to the same and through which the pipe projects, a cover surrounding the cup, supported on the cup and forming a vaporizing-chamber between the cup and cover, a starting-pan below the lower edge of the cup and cover, said cup having grooves therein to permit the starting-pan to be supplied with oil and said cup also having openings for the passage of vapor into the cup, and a vapor-discharge outlet at the lower edge of the cup communicating with the interior thereof.

6. In a combined vaporizer and burner, the combination with an air-supply chamber, an oil-pipe projecting through and above the same, and an inverted cup secured on the upper end of the pipe and through which the latter projects, of a cap or cover supported on the cup and providing a vaporizing-chamber between the cover and cup and the latter having openings therein to permit the passage of vapor into the same, and a disk adjustable on the oil-pipe and located at the lower edge of the cup and adapted to govern the proportion of air and vapor burned at the lower edge of the cup and cover.

7. In a combined vaporizer and burner, the combination with an air-supply chamber, an oil-supply pipe projecting through and above the air-chamber and a vaporizer on the upper end of the oil-pipe adapted to direct the vapor below the vaporizer, and a disk adjustable on the oil-pipe and having its periphery projecting between the vaporizer and upper end of the air-chamber to regulate the proportion of air and vapor to be burned at the lower edge of the vaporizer.

8. In a combined vaporizer and burner, the combination with an air-supply chamber, an oil-supply pipe projecting through and above the air-chamber and a vaporizer on the upper end of the oil-supply pipe adapted to direct the vapor below the vaporizer, of a disk adjustable on the oil-pipe and having its periphery projecting between the vaporizer and upper end of the air-chamber to regulate the proportion of air and vapor burned at the lower edge of the vaporizer, and means for directing the discharge of air through the inner wall of the air-chamber to the outside of the flame.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

NICHOLAS L. RIGBY.

Witnesses:
G. F. McLELLAN,
J. P. LAMOREE.