No. 667,225. Patented Feb. 5, 1901.

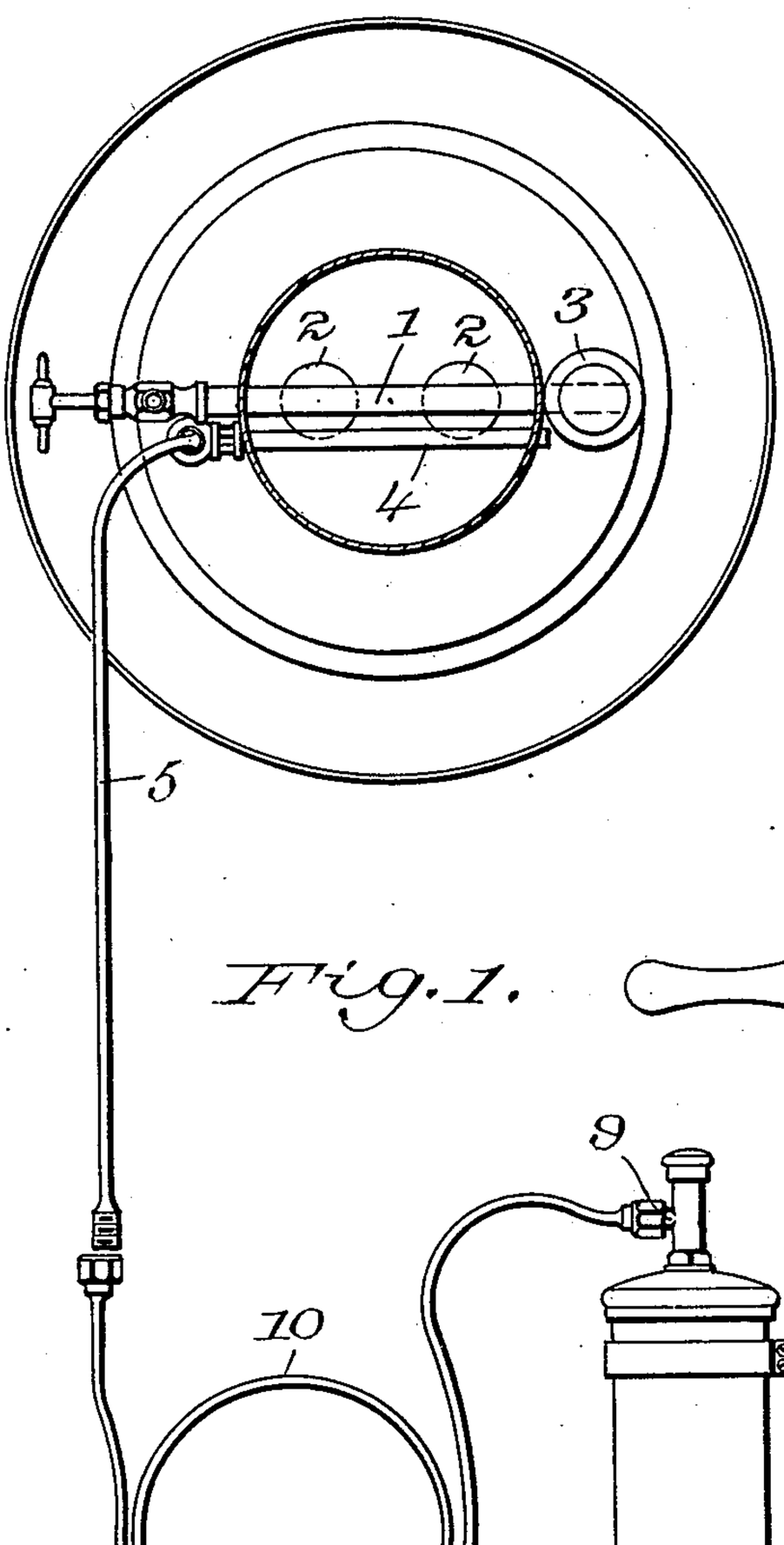
A. KITSON.

PORTABLE IGNITION APPARATUS FOR VAPOR BURNERS.

(Application filed May 25, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 2.



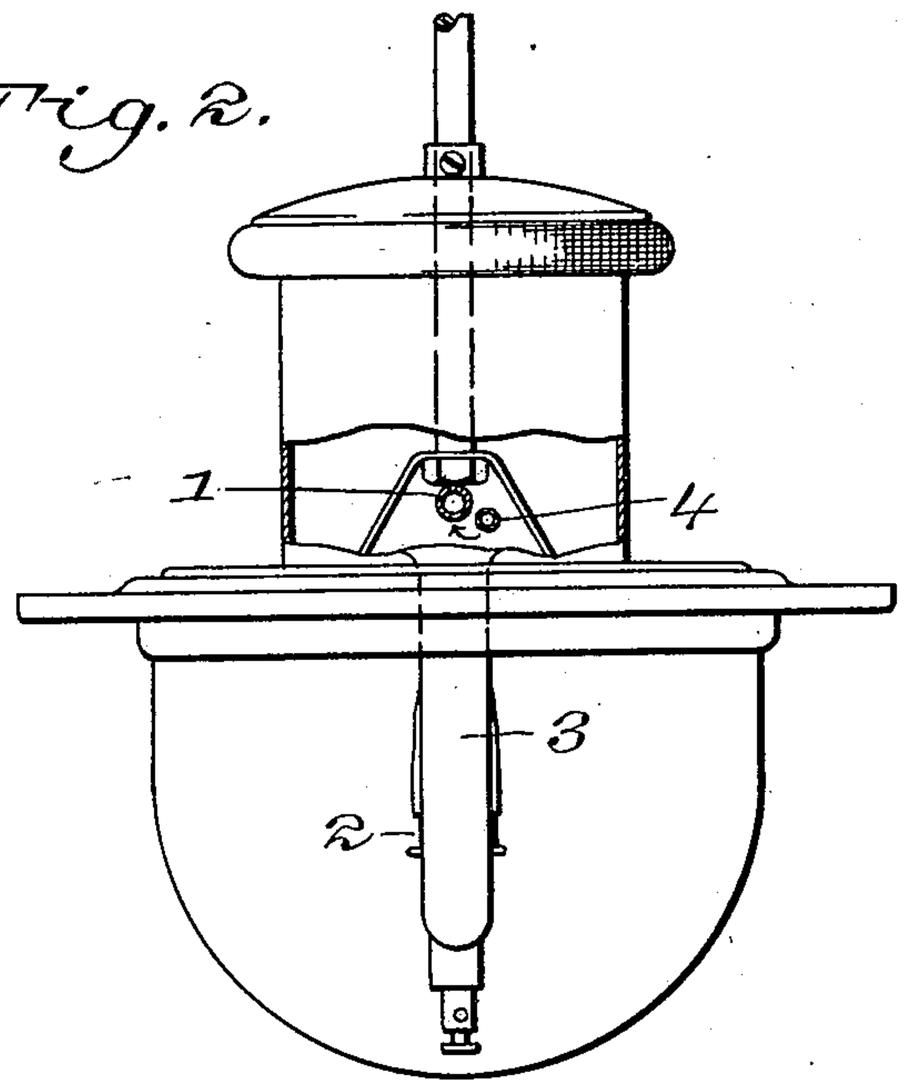
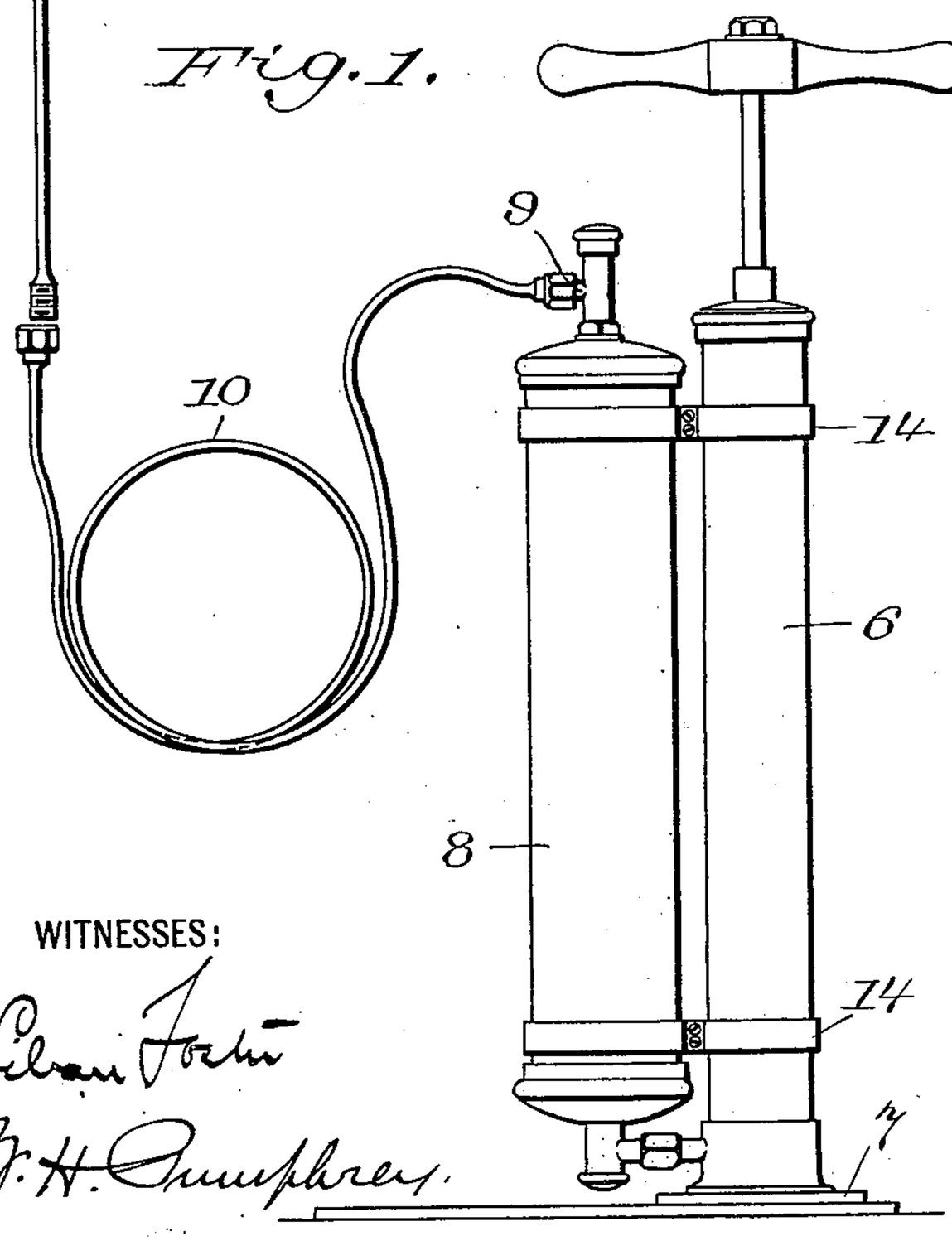


Fig. 1.



WITNESSES:

Libaw Fohn

W. H. Humphreys.

INVENTOR

Arthur Kitson

BY

A. Parkerhurst

ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 667,225. Patented Feb. 5, 1901.

A. KITSON.

PORTABLE IGNITION APPARATUS FOR VAPOR BURNERS.

(Application filed May 25, 1899.)

(No Model.) 2 Sheets—Sheet 2.

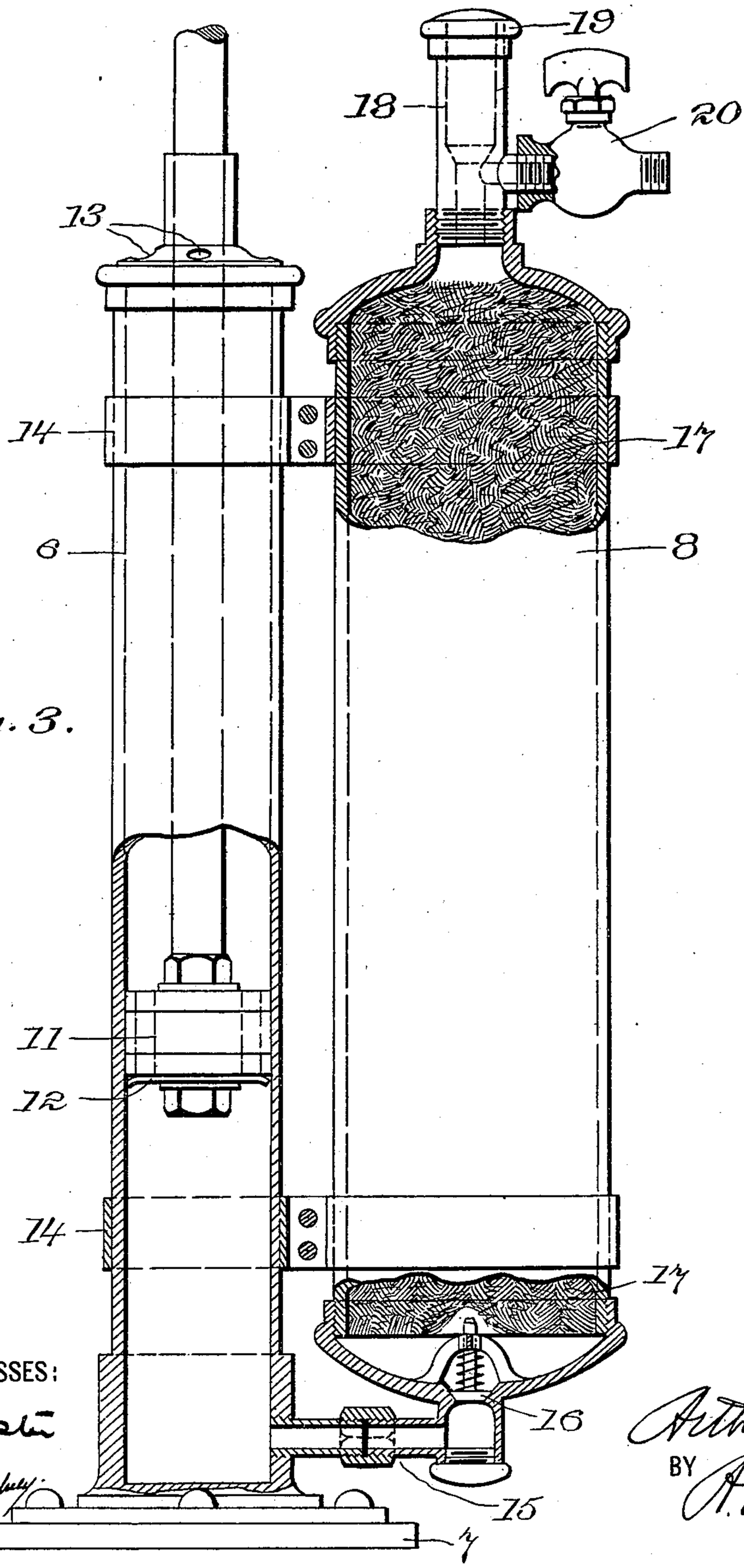


Fig. 3.

WITNESSES:
Libbie Foster
M. H. Campbell

INVENTOR
Arthur Kitson
BY A. Pallmeyer
ATTORNEY

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C

UNITED STATES PATENT OFFICE.

ARTHUR KITSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE KITSON HYDROCARBON HEATING AND INCANDESCENT LIGHTING COMPANY, OF SAME PLACE AND CHARLESTON, WEST VIRGINIA.

PORTABLE IGNITION APPARATUS FOR VAPOR-BURNERS.

SPECIFICATION forming part of Letters Patent No. 667,225, dated February 5, 1901.

Application filed May 25, 1899. Serial No. 718,156. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR KITSON, a subject of the Queen of Great Britain, and a resident of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Portable Ignition Apparatus, of which the following is a specification.

My invention relates generally to vapor-burning apparatus, and more specifically consists of a portable ignition apparatus therefor.

In the various forms of vapor-burning lamps and stoves now in use the most inconvenient feature of their use is the slowness and awkwardness of the operation of igniting them under certain conditions. Where ordinary illuminating-gas can be obtained, it can be conveniently employed to produce the preliminary heating of the vaporizing apparatus, as is described, for instance, in Letters Patent No. 608,051, granted to me July 26, 1898. Where electricity is obtainable, the method described in Letters Patent No. 613,685, granted to me November 8, 1898, may be followed; but in locations where neither gas nor electricity is conveniently obtainable the alcohol-cup is still mainly relied on. Alcohol, however, is costly and its heating action apt to be slow, while the possibility of spilling the alcohol and damaging the fragile mantle in the operation of pouring is considerable when unskilled operators attempt the undertaking. To avoid these difficulties I have invented the improved form of portable igniter or carbureting apparatus, which has the convenience in use and certainty in action of the gas system and is cheaper and quicker than the alcohol system.

The preferred form of apparatus embodying my invention is disclosed in the accompanying two sheets of drawings, in which—

Figure 1 is a side elevation of the vapor-producing apparatus with a horizontal plan and partial section of a vapor-burning lamp shown in diagrammatic relation thereto. Fig. 2 is an end elevation and partial section of the vapor-producing lamp. Fig. 3 is an enlarged elevation and partial section of the portable vapor-producing apparatus.

Throughout the drawings like reference-figures refer to like parts.

A vapor-burning lamp or other vapor-burning apparatus to be ignited is of course provided with a vaporizing-tube 1 and one or more vapor-burners, (indicated at 2 2,) a mixing-tube 3, and a Bunsen burner 4, provided with side openings adapted to discharge jets of flame under the vaporizing-tube 1. Connected to the Bunsen burner is a tube, preferably a Siemens flexible tube 5, which is usually led down the wall of the building to a point for convenient attachment to the vapor-producing apparatus.

The vapor-producing apparatus consists of a hand-pump 6 or other mechanism for producing an air-pressure, and mounted on a base 7, which can be held in position by the foot of the operator. Supported from the pump 6 is a receptacle 8, preferably made in a cylindrical form, as shown, and supported from the pump by any convenient form of bracket 14 14. The receptacle 8 has a discharge-opening at the top provided with a screw-threaded nipple 9, to which a flexible tube 10 or other connection can be screwed, the other end of the flexible tube being provided with a union or other means of attachment to the tube 5.

The pump 6 may be of any convenient construction—as, for instance, that shown where the piston 11 has valve-passages therethrough closed on a downstroke by the flexible leather washer 12. Openings 13 are provided in the upper part of the pump for the admission of air, and the connection 15 extends from the lower part of the pump to the lower part of the receptacle 8. A check-valve 16, opening so as to permit the passage of air from the pump to the receptacle, but closing to prevent its return, may be placed at any convenient point in the line of connections from the pump to the lower part of the receptacle 8.

In the receptacle 8 is preferably placed a mass of fibrous material, such as cotton-bat-

ting 17 or similar substance, and upon this gasolene, naphtha, or other cheap volatile fluid may be poured through the opening 18 in the upper part of the receptacle, said opening being closed after the introduction of the fluid by the cap 19 or other means. If desired, an ordinary valve 20 may be inserted between the nipple 9 and the tube 10.

The operation of my invention is as follows: The lamplighter thoroughly saturates the mass of fibrous material 17 with volatile fluid, as gasolene, and closes the cap 19. A sufficient amount of fluid may be introduced to cause the same to accumulate in liquid form in the lower portion of the receptacle 8, but usually enough to thoroughly saturate the fibrous material is all that is necessary. The cap 19 being screwed down tight and the flexible tube 10 connected with the nipple 9 the apparatus is taken around to the various lamps to be lighted. Connection is made from the flexible tube 10 to the tube 5 on any particular lamp which is to be lighted and the pump 6 operated. The air forced through the receptacle 8 takes up a quantity of vapor from the volatile fluid therein, and the mixture of vapor and air is passed through the tubes 10 and 5 to the Bunsen burner 4, where it can be ignited. One or two strokes of the pump are sufficient to store up enough air in the receptacle 8 to supply air and vapor for the lighting operation of any one lamp and sometimes for several lamps. In such case the valve 20 is closed after one lamp has been ignited, and the compressed air trapped in the receptacle 8 is thus retained until the connection is then made to a second lamp, and so on until the stock of compressed air is used up, when several more strokes of the pump have to be given to replenish the supply of compressed air. As soon as the mixed air and vapor begins to issue from the Bunsen burner 4 it is lighted by a match or torch and the heating of the vaporizing-tube 1 begins. After the same is heated sufficiently oil is turned onto the vaporizing-tube in the usual way (the oil connection not being shown) and the lamp becomes self-supporting in its operation.

Various changes could of course be made in the details of construction illustrated without departing from the spirit and scope of my invention so long as the relative arrangement of parts or principle of operation disclosed is preserved. The fibrous packing 17 might be dispensed with and the air forced through the body of liquid alone. Other forms of air-compressing apparatus could of course be employed. Other forms of liquid-receptacle and connecting-valves might be substituted. The apparatus could of course be used with other forms of vaporizing apparatus than the particular lamp shown; but all these modifications I still consider within the purview of my invention.

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

The combination of a portable carbureting apparatus comprising an air-pump, a receptacle for volatile liquid supported therefrom, a tubular connection from the pump to the lower part of the receptacle, an opening in the upper part of the receptacle for the introduction of the liquid, a discharge-opening for vapor-laden air in the upper portion of the receptacle, together with a separate vapor-burning apparatus, a preheating-burner on said vapor-burning apparatus, a flexible tube connected to said preheating-burner, and means for connecting said tube to the discharge-opening in the upper portion of the carbureter, together with a valve controlling said detachable connection, and a check-valve controlling the connection from the pump to the lower part of the liquid-receptacle.

Signed by me at New York city, New York, this 20th day of May, 1899.

ARTHUR KITSON.

Witnesses:
LILIAN FOSTER,
A. PARKER-SMITH.