(No Model.)

D. W. COLE.

LAMP STOVE.

No. 533,274. Patented Jan. 29, 1895.

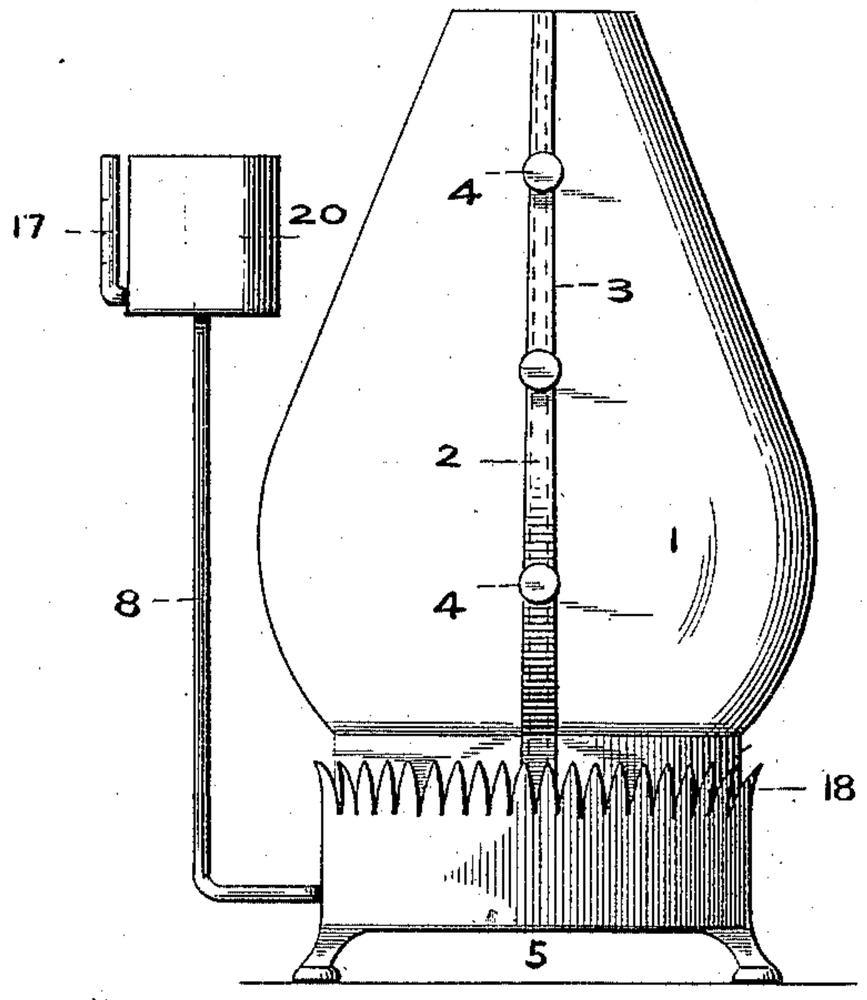

Fig. 1.

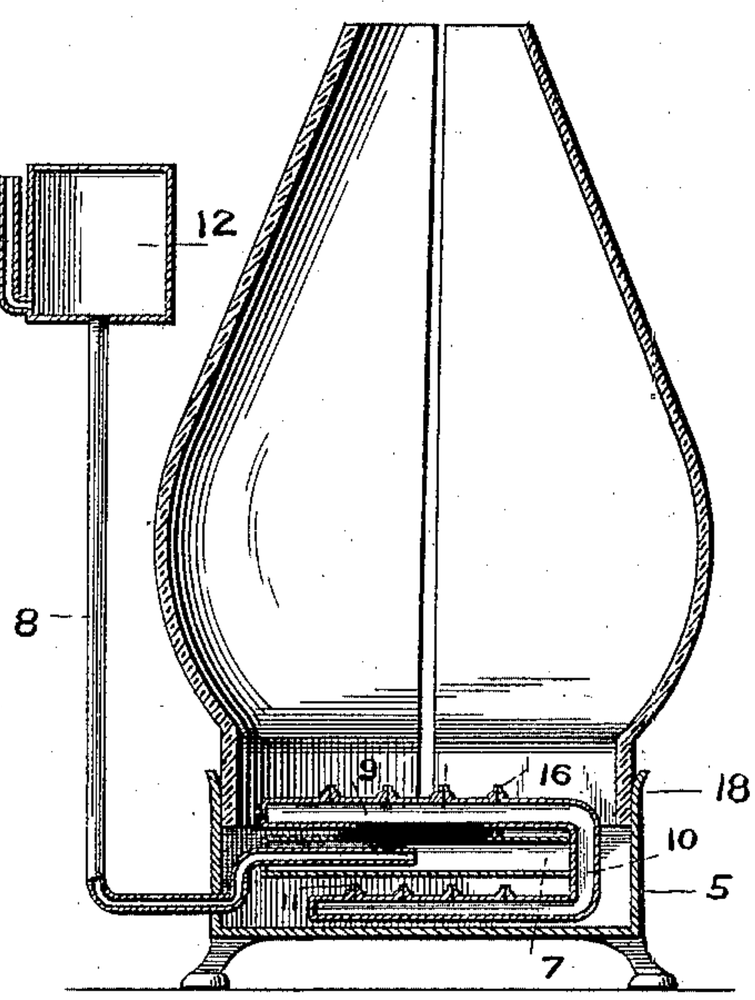

Fig. 2.

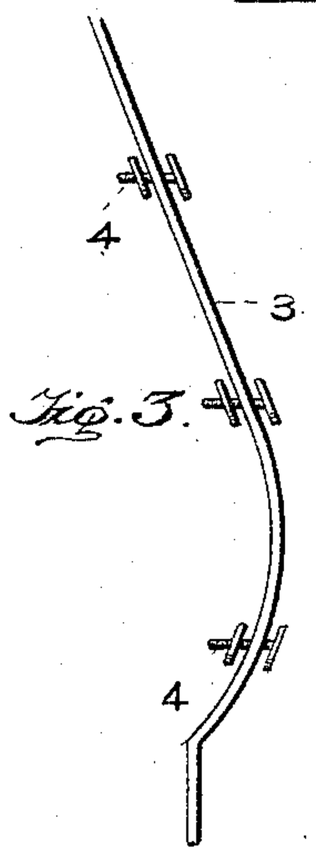

Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

DANIEL W. COLE, OF OTTAWA, KANSAS.

LAMP-STOVE.

SPECIFICATION forming part of Letters Patent No. 533,274, dated January 29, 1895.

Application filed September 1, 1893. Serial No. 484,573. (No model.)

To all whom it may concern:

Be it known that I, DANIEL W. COLE, a citizen of the United States, residing at Ottawa, in the county of Franklin and State of Kansas, have invented certain new and useful Improvements in Lamp-Stoves; 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.

This invention relates to improvements in lamp stoves of that class which employ a transparent chimney for radiating and discharging the heat, the object in view being the provision of simple and cheap means for converting the oil into vapor and economically burning the same, to obviate breaking of the friable transparent chimney by unequal expansion thereof, and to so combine and arrange the various parts that the stove can be moved from place to place without injury thereto.

With these ends in view, the invention consists in the peculiar construction of parts which will be hereinafter fully described, and particularly pointed out in the claim.

I have illustrated the preferred embodiment of my invention in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is an elevation of the complete lamp stove. Fig. 2 is a vertical sectional view through the same. Fig. 3 is a detached detail view looking at one edge of the plate which covers the slot in the chimney.

Like numerals of reference denote corresponding parts in all the figures of the drawings.

In a lamp stove designed to employ a hydrocarbon burner which converts liquid fuel into a vapor and burns the same to supply a large volume of heat to a radiating and distributing chimney made of friable transparent material, it is necessary to so construct the chimney that it will not break or fracture when subjected to the intense heat from the burner or to unequal expansion. To this end, I construct the glass chimney 1 in the peculiar form shown by Figs. 1 and 2 and provide the same with a longitudinal slot 2 which extends throughout the length thereof or from bottom to top. This chimney is made of greater diameter at its middle than at the ends thereof, although it is tapered more from its middle to its upper end than from the middle toward the bottom; and the longitudinal slot 2 in said chimney is gradually widened from the top toward the bottom end thereof as the lower part of the chimney is exposed to a more intense heat because the burner is closely adjacent thereto. This slot 2 is covered by an expansible metallic plate 3 held in place by attaching stems 4 in a manner to prevent any decrease in the draft or current that passes through the chimney, and by thus dividing the chimney and covering its slot, the chimney is free to expand and contract without liability to fracture. The attaching stems 4 pass through the slot in the chimney, and said stems are threaded to screw into the plates which are fitted on the inner ends of the stems, said plates being arranged to span the slot in the chimney. The stems are attached to the covering plate by being fitted in openings therein, and the plates on the threaded stems bear against the inside of the chimney while the covering plate bears against the outside of the chimney, whereby the two edges of the divided chimney are held in place or confined between the covering plate and plates on the threaded stems while at the same time the chimney is free to expand or contract without injury. This chimney 1 has its lower end fitted in a suitable seat on the movable bench or base 5, and suitable devices may be provided for clasping the chimney to the bench. This bench is mounted on casters 6 and the other parts of the stove are all mounted on the bench so that the latter can be moved from place to place without disconnecting any of the parts.

The hydrocarbon burner is fixed directly to the bench within or below the lower end of the chimney, and this burner consists of the retort 7, the supply-pipe 8, and the heating chamber 9 extended at one end to form the elbow 10, the horizontal arm of which is carried beneath the retort and provided with one or more nipples 11 to which the vapor is supplied for combustion purposes to maintain the retort at the temperature suitable for converting the hydrocarbon oil into vapor.

The supply pipe 8 has one end connected to an elevated tank 12 and its other end is

carried through one of the closed ends of the retort well into the chamber thereof, and the heating chamber, 9, lies over the retort to which it is connected in any suitable way, communication between the retort 7 and the heating chamber being established by a vertical slot or opening as indicated in Fig. 1. One end of the heating chamber is extended to form the hollow arm 10 which is carried downward at one end of the burner and thence extended below the retort, as shown by Fig. 1, the horizontal part of the arm 10 being provided with the nipples 11. The heating chamber is also provided with one or more nipples 16 to which the vaporized fuel can be supplied to the nipples direct from the retort and heating chamber.

The elevated tank is sustained by the supply pipe 8, and in said tank is a transparent graduated tube 17 which will indicate the quantity of liquid fuel consumed within certain limits of time.

A guard 18 is fitted around the enlarged part of the transparent chimney 1 to prevent it from being accidentally knocked off the base, and this guard is connected by stays 19 to the bench and by a brace 20 to the supply pipe.

The operation may be described as follows:—The retort is first heated in any suitable way, as by placing a small quantity of oil below the same, and after the retort has been properly heated, the valve 21 in the supply is opened to admit the proper quantity of air to the retort, in which the oil is converted into vapor, and from thence the vaporized fuel flows into the heating chamber and thence to the nipples. A large volume of heat is thus generated and delivered to the chimney 1 from whence it is radiated and discharged into an apartment for warming the same.

I am aware that changes in the form and proportion of parts and details of construction of the devices herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes and alterations therein as fairly fall within the scope of the same.

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

In a portable lamp stove, the combination with a base, and a hydrocarbon burner supported therein, substantially such as described, of the expansible chimney provided with a vertical tapered slot 2, a covering plate 4 fitted to the outside of the chimney and over the upper and lower edges thereof, and the attaching stems having the plates which bear against the inside of the chimney, across the slot therein, substantially as and for the purposes described.

In testimony whereof I affix my signature in presence of two witnesses.

his
DANIEL W. × COLE.
mark

Witnesses:
WILLIAM W. DE WOLF,
S. S. SMITH.