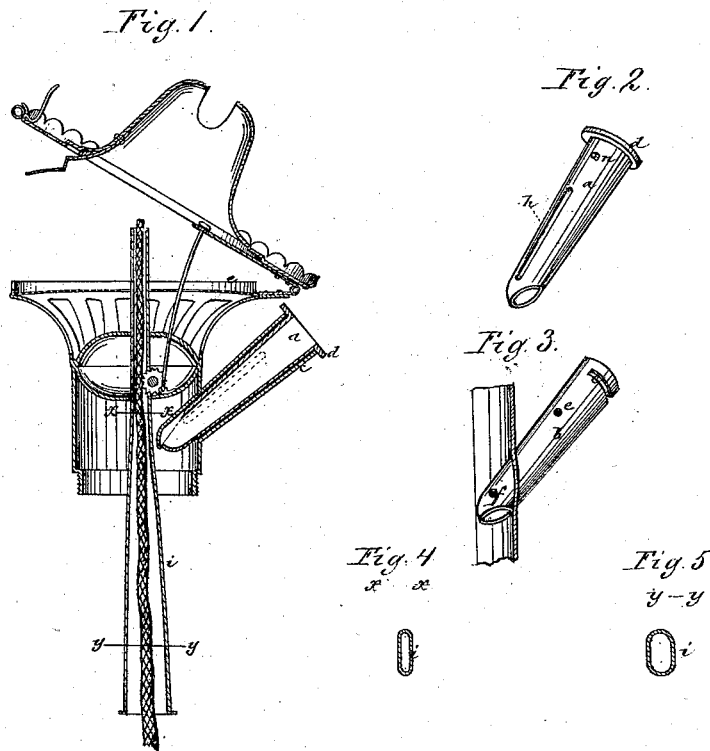


C. B. MANN.

Lamp Burner.

No. 113,183.

Patented Mar. 28, 1871.



Witnesses:

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CHARLES B. MANN, OF BALTIMORE, MARYLAND, ASSIGNOR TO HIMSELF
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Letters Patent No. 113,183, dated March 28, 1871.

IMPROVEMENT IN LAMP-BURNERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, CHARLES B. MANN, of Baltimore, in the county of Baltimore and State of Maryland, have invented a new and useful Improvement in Burners for Lamps; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a sectional elevation.

Figure 2, a perspective view of the inner filling-tube.

Figure 3 is a perspective view of the outer filling-tube.

Figures 4 and 5 are sections through the wick-tube.

My invention is an improvement in kerosene or coal-oil lamp-burners, and is designed to remove many of the objections to the use of this kind of oil for domestic illuminating purposes.

By the use of my improvements the inconvenience and unpleasantness attending the filling of lamps, or replenishing them with oil, will be obviated, and the liability to accidents which are thus occasioned will be entirely done away with.

The filling-tube consists of two tubes, *a b*, one fitted within the other telescopically, and the inner one retained in its place by a pin, *n*, attached to it, and moving in a slot, *c*, in the outer tube, similar to a bayonet-catch.

The mouth or outer orifice of the filler is large enough to admit readily the nozzle of the ordinary coal-oil can, and the end of the inner tube is turned over and spread into a flange, *d*, which has a milled edge, so as to be turned readily by the application of the thumb and finger.

This double tube passes through the neck of the burner *e*, and terminates with a half-round end, with the orifices of discharge pointing downward toward the reservoir of the lamp. When the inner tube is turned to fill the lamp the orifices of discharge of both tubes coincide, so that the oil will then flow directly down into the reservoir; then, on simply turning the inner tube, by means of the milled flange *d*, half way around, when the stop will prevent its turning any further, its orifice of discharge is brought up, and its half-rounded end will then close the orifice of discharge of the outer tube.

When the oil is being poured into the lamp the gas or air that is within seeks an outlet, to provide for which one side of the inner tube is swaged in a little, forming along its outside a gutter or depression, *h*. When this inner tube, being thus swaged, is slipped within the outer tube, the depression forms a space between the tubes.

On one side of the outer tube are two small holes, *e f*, one being in that part of the tube that is within

the neck of the burner, and the other hole being outside of the neck of the burner. When the inner tube is turned for filling, the depression *h* of the inner tube is brought against both the holes in the outer tube, so that the air or gas can pass from the reservoir in through the inside hole and along the space or depression, and then out of the outside hole. If it should prove necessary to provide means for the more rapid escape of gas from the reservoir when filling than this outlet will afford, the capacity for escape of gas could be doubled by having a corresponding depression swaged outward in the outer tube, so that the two depressions would coincide.

I call this a safety-filling tube, because by it a lamp may be replenished with oil without displacing or removing the chimney or unscrewing the burner, and while the light is burning at full flame, which would be an extremely hazardous thing to attempt in ordinary lamp-burners. This double tube would also serve a valuable purpose as an independent outlet for the escape of gas from the reservoir by leaving it partly open, and in this way would tend to prevent explosions. The flanged orifice of this filling-tube would serve, also, as a stop to prevent the hinged cone from going too far back, so that in manufacturing these burners the device now in use might be dispensed with.

The wick-tube *i* is one continuous tube, made of sheet-brass, and incases the wick in a tight compartment from the burning-point to near the bottom of the reservoir. From the point of burning to the under side of the burner (just below the ratchet-wheel wick-regulator) it is of the usual size to accommodate the flat wick; or, should the round wick for Argand-burners be used, the shape of tube would conform accordingly. From the under side of the burner, or from the collar of the lamp, the wick-tube *i* gradually increases in size until it terminates. If flat wicks are used, the width of the tube at the lower end should be a little greater than that of the wick, and its thickness should be as great as the mouth of the lamp would readily admit. The wick-tube *i* is, in cross-section, a little bell-shaped or flaring at its lower end, the object of this construction being to prevent the wick, when raised by the wick-regulator, from binding on the otherwise sharp end.

The gradual enlargement of the tube overcomes the tendency of the wick to kink and so choke the tube, and no difficulty is experienced in raising or lowering the wick than is experienced in the case of the ordinary short wick-tubes. Neither does the long wick-tube offer any greater obstacle to the oil feeding up the wick to the flame than the ordinary short wick-tubes, for, owing to its peculiar construction, the oil in the reservoir, at whatever height it may be, will rise to the same height in the tube as long as there

is any oil at all in the tube, and there always will be some until the oil in the reservoir has burned so low as to be below the end of the tube; the gas which may be in the reservoir above the surface of the oil is entirely prevented from communicating with the flame by way of the wick-tube. The seam of the wick-tube being tight, the supply of oil which feeds the flame, instead of being taken from the top surface of the oil, is taken from the bottom of the reservoir, and, as it creeps up the wick by capillary attraction to the point of burning, does not pass through the gas, (that is present over the surface of the oil,) and so, of course, does not become impregnated therewith.

As an outlet at all times for the escape of gas that forms within the reservoir, the filling-tube acts conjointly with the long wick-tube to effect the object that I seek to attain, namely, immunity from accident when replenishing lamps with oil while the same are burning at full flame.

Inasmuch as the average temperature of oil in ordinary kerosene-lamps, when the same have been burning several hours, will not exceed 85° Fahrenheit, the amount of gas generated is very small, not enough to contaminate the atmosphere of a room when allowed to escape unconsumed. At the low temperature named enough gas does form in the reservoir above the surface of the oil when the reservoir is not full, which, if ignited, would certainly explode the lamp.

The filling-tube and long wick-tube permit the lamp to be replenished with perfect safety while burning,

since the long wick-tube here serves to exclude the passage of the gas up along side of the wick to the point of burning, and so forces it (the gas) to find exit through the "swaged depression" heretofore described. When thus operated this combination will effectually prevent accidents by filling.

Another advantage is, that when burning, and the process of generating gas is slowly going on within the reservoir, while the long wick-tube serves the purpose heretofore named of excluding the passage of gas upward, the filling-tube affords a safe, efficient, and unobjectionable outlet for the escape of gas, and, when thus operated, this combination will prevent explosions.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The filling-tubes *a b*, constructed as explained, each tube having an orifice of discharge within the lamp, and the inner tube being provided with the groove *h*, and the outer tube with orifices for allowing air from the lamp to enter and escape from said groove and from the lamp.

2. The wick-tube *i*, attached to the burner and extending to near the bottom of the lamp, and the filling-tube *a b*, constructed with orifices and grooves, as herein shown and described, for the purpose specified.

CHAS. B. MANN.

Witnesses:

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