G. W. BROWN.

SAFETY FLUID LAMP AND HEATER.

APPLICATION FILED JUNE 3, 1918.

1,297,650.

Patented Mar. 18, 1919.

2 SHEETS—SHEET 1.

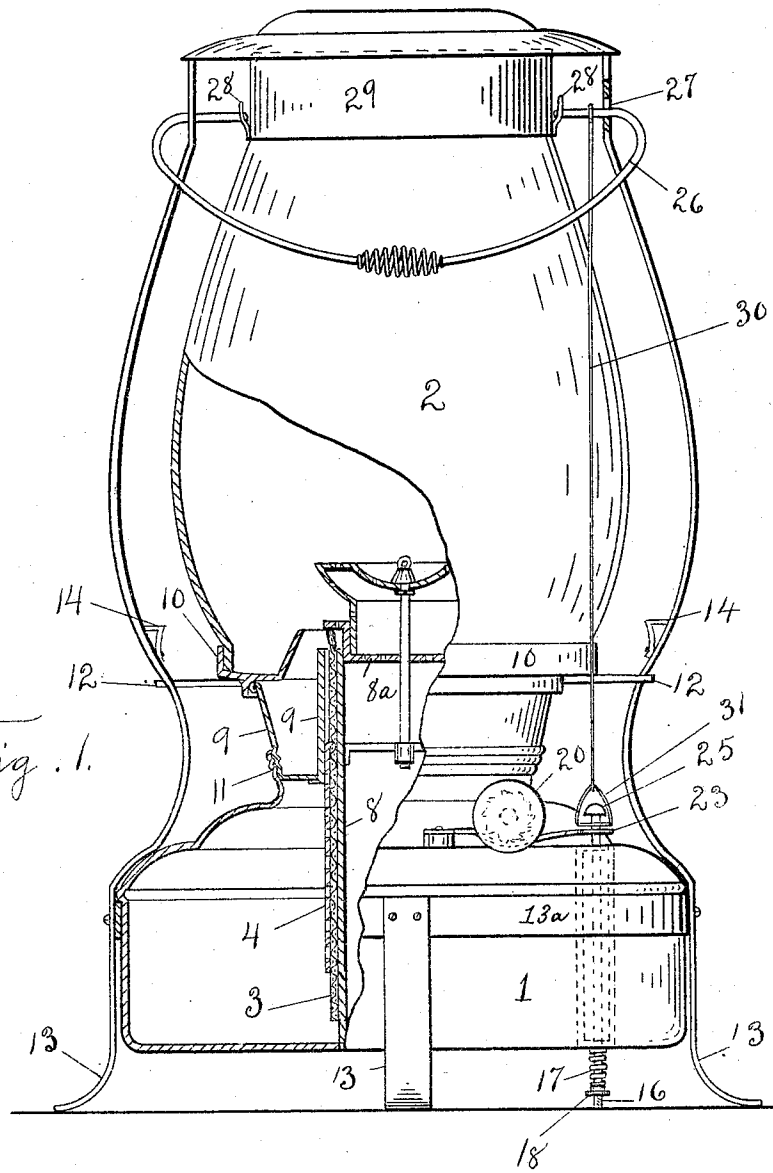


Fig. 1.

INVENTOR—

George W. Brown

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

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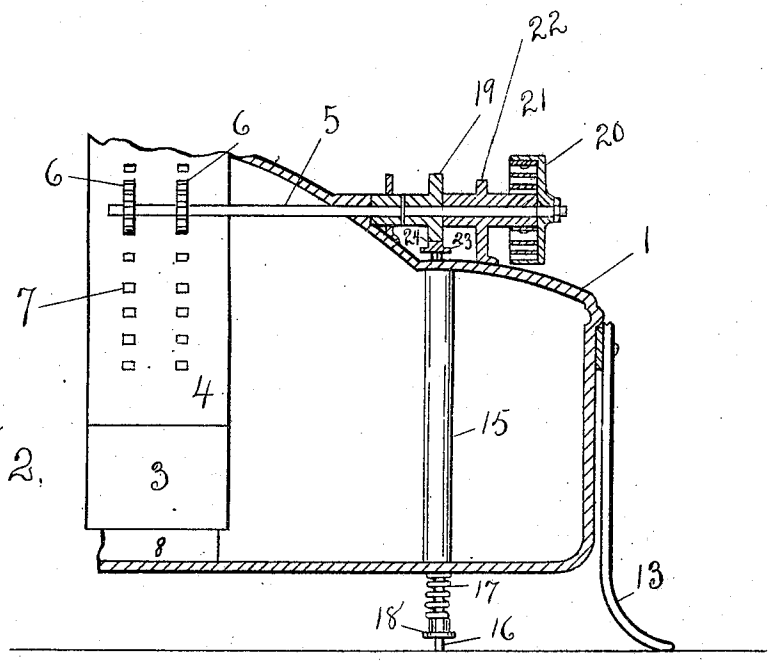


Fig. 2.

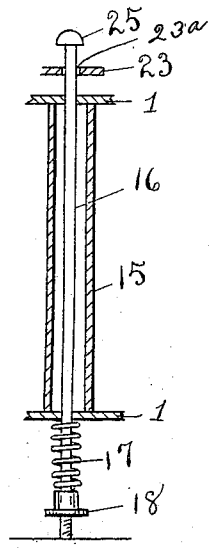


Fig. 3.

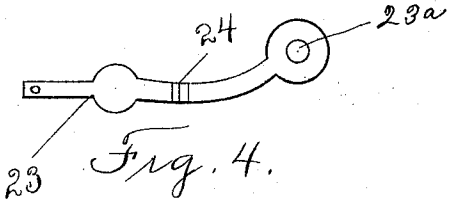


Fig. 4.

INVENTOR—

George W. Brown

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

UNITED STATES PATENT OFFICE.

GEORGE W. BROWN, OF PORTLAND, MAINE, ASSIGNOR TO SUSAN J. DODGE, OF NEW CASTLE, MAINE.

SAFETY FLUID LAMP AND HEATER.

1,297,650. Specification of Letters Patent. Patented Mar. 18, 1919.

Application filed June 3, 1918. Serial No. 237,860.

To all whom it may concern:

Be it known that I, GEORGE W. BROWN, a citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Safety Fluid Lamps and Heaters, of which the following is a specification.

This invention relates to improvements in fluid lamps and heaters. For convenience in the description reference will be had only to lamps, it being understood however that it is applicable to either. It is especially designed to provide a device of this kind which is simple and sanitary in construction and safe in use, the device when provided with my improvements being such that the light is automatically extinguished whenever the lamp is accidentally upset.

In the drawings herewith accompanying and making a part of this application, Figure 1 is an elevation partly in section of a lamp showing my improvement applied thereto; Fig. 2 is a detail sectional view showing the wick operating rod and my improved means for operating it; Fig. 3 is a detail sectional view of the mechanism which disengages the wick operating rod and Fig. 4 is a detail plan view of the spring lock which holds the wick operating rod from rotating under certain conditions.

Same reference characters indicate like parts in the several figures.

In said drawings 1 is a fluid tank, 2 a globe, 3 a wick, 4 a wick carrier adapted to be raised and lowered by a rotating rod 5 having one or more ratchets 6 adapted to take into holes or depressions 7 in the wick carrier. The wick is arranged outside of a cylinder 8. The lamp has a vertically movable extinguisher 8^a located above the end of cylinder 8 and wick 3. The extinguisher may be of the well known type, resting loosely upon the wick, and falling with it until arrested by the cylinder, thus shutting out the air, and extinguishing the light. Outside the wick carrier is a U-shaped cylindrical cup-shaped member 9 havng threaded connection with the top of the tank as seen at 11. The globe rests in a support 10 which is loosely supported on the outer side of member 9. Attached to support 10, one on each side, are arms 12. The device is supported on legs 13. Three of these legs extend upwardly above the globe and two of them opposite each other are provided with brackets 14. To light the wick the support 10 and the globe are raised and slightly turned until the arms 12 rest on brackets 14, leaving free access to the wick. The fourth leg is merely attached to band 13^a which supports the tank and terminating below the globe affords an opening for its removal, when desired.

Passing now to the mechanism which is designed to render the lamp sanitary and safe, the wick operating rod is provided with a hand wheel 20 on its outer end in which is a coil spring 21, one end secured to a fixed bearing 22 secured to the tank and the other to the wide flange of the wheel. The rod is provided with a ratchet 19 fixedly secured thereto. Secured to the top of the tank beneath ratchet 19 is a spring 23 carrying a pawl 24 located to engage ratchet 19. It will be evident now that when the rod is rotated to raise the wick, spring 21 will be brought under tension tending to rotate the rod to lower the wick but will be inoperative for this purpose until the pawl is released from the ratchet 19 by any means when the wick will be automatically and instantly returned down and the light extinguished. One of the important advantages of this arrangement is that the wick is carried below the wall 9 and thus prevents the oil or fluid from oozing over into the outside lamp parts. It is also noted that this provides a very convenient means of extinguishing the light.

In devices of this character which are sometimes of considerable size and which are usually allowed to rest upon the floor or table or to be suspended from hooks there is often danger of the device falling or being tipped over and setting fire to the buildings. To obviate this danger the tank is provided with a hollow cylinder 15 extending entirely through it and in cylinder 15 a vertically movable rod 16 is mounted. This rod is normally held down by a spring 17 inserted between the bottom of the tank and a nut 18 on the end of the rod, which nut may be adjustable by having threaded engagement with the rod. The upper end of rod 16 is provided with a lug 25 located in the path of the free end of spring 23 and for convenience the rod may pass through an opening 23^a in the spring. It is noted that when the rod is raised, as is the case when

the lamp is set on the table or floor, the rod is raised until the lug 25 is out of engagement with spring 23 and spring 27 is under tension due to the weight of the lamp resting upon it. It will now be evident that when the lamp is raised or tipped laterally in any direction the tension of spring 17 will force the rod down until the dog 25 engages spring 23, in turn forcing the spring 23 down until pawl 24 is disengaged from ratchet 19, spring 21 then rotating the rod which operates the wick to force the wick downwardly and thus extinguish the light.

Devices of this character being portable and being frequently raised and carried from place to place it is important that means be provided which, when it is designedly lifted and carried about, will prevent the light from being extinguished. To provide for this, the handle 26 is rotatably mounted in the top of the legs and in ears 28 secured to a loose band 29 located above the globe. On one side the handle extends through a vertical slot 27 in the legs. The top of rod 16 is connected to the bail by a cable 30. Any convenient means may be employed for connecting the cable to the top of the rod, a stirrup 31 being shown. When the bail is not in use the cable is inoperative, but when the bail is used to support the lamp it rises in the socket until the stirrup and cable raise or hold up the rod against the action of spring 17, permitting the lamp to be held up by the bail without extinguishing the light.

I claim:

1. In a device of the character described, a fluid tank, a wick, a wick carrier, a light extinguisher, means under tension tending constantly to turn the wick carrier down, means for yieldingly holding the wick carrier inoperative, and means dependent upon the weight of the device to prevent releasing said holding means.

2. In a device of the character described, a fluid tank, a wick, a wick carrier, a light extinguisher, means under tension tending constantly to turn the wick carrier down, means for yieldingly holding the wick carrier inoperative, means dependent upon the weight of the device to prevent releasing said holding means, and means actuated by the bail, when the device is lifted thereby, for rendering said releasing means inoperative.

3. In a device of the character described, a fluid tank, a wick, a wick carrier, a light extinguisher, a rotating rod provided with ratchets adapted to operate the wick carrier and wick, a cup-shaped hand wheel on the end of said rod, a spring, one end attached to the bearing and the other to said wheel, arranged to be set under tension by the turning of the rod to raise the wick carrier, a ratchet fixed on said rod, a spring attached to the tank and carrying a pawl adapted normally to engage said ratchet and lock said rod against rotation, a vertically reciprocating rod extending through the tank, a lug on the top of the rod in the path of said first mentioned spring, and a coil spring inserted between the bottom of the tank and a nut on said rod, the tension of the spring on said rod, when free, tending normally to hold the rod down to cause said lug to release said pawl from the ratchet on the wick operating rod.

4. In a device of the character described, a fluid tank, a wick, a wick carrier, a light extinguisher, a rotating rod provided with ratchets adapted to operate the wick carrier and wick, a cup-shaped hand wheel on the end of said rod, a spring, one end attached to the bearing and the other to said wheel, arranged to be set under tension by the turning of the rod to raise the wick carrier, a ratchet fixed on said rod, a spring attached to the tank and carrying a pawl adapted normally to engage said ratchet and lock said rod against rotation, a vertically reciprocating rod extending through the tank, a lug on the top of the rod in the path of said first mentioned spring, a coil spring inserted between the bottom of the tank and a nut on said rod, the tension of the spring on said rod, when free, tending normally to hold the rod down to cause said lug to release said pawl from the ratchet on the wick operating rod, a bail for supporting the lamp, and means actuated by the bail, when the lamp is supported thereby, for holding said vertically reciprocating rod out of engagement with said locking spring.

In testimony whereof I affix my signature.

GEORGE W. BROWN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."