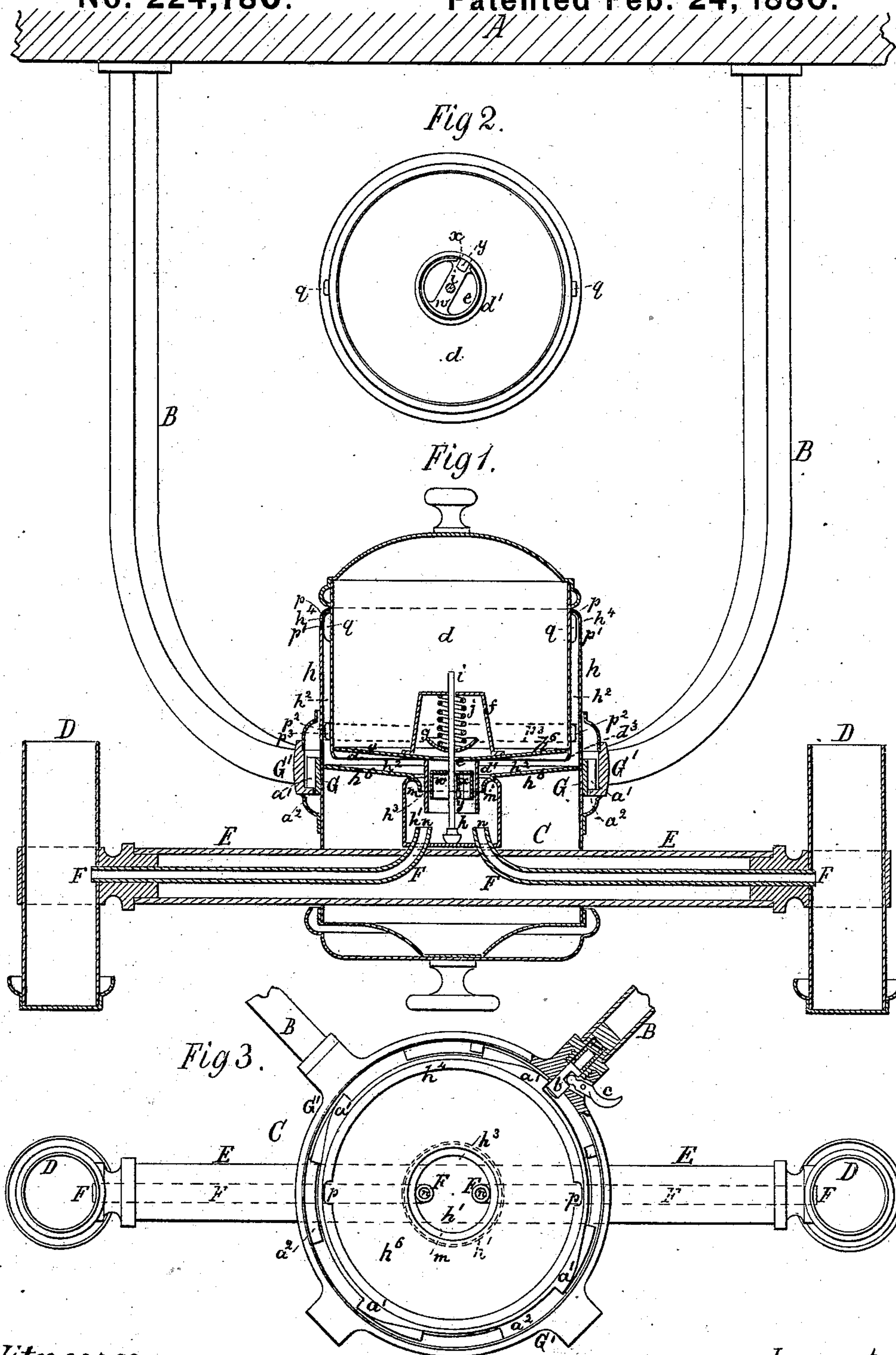


C. P. HOWARD.
Car-Lamp.

No. 224,780.

Patented Feb. 24, 1880.



Witnesses:
J. P. Th. Lang,
J. Russell Carr

Inventor:
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Fig 4.

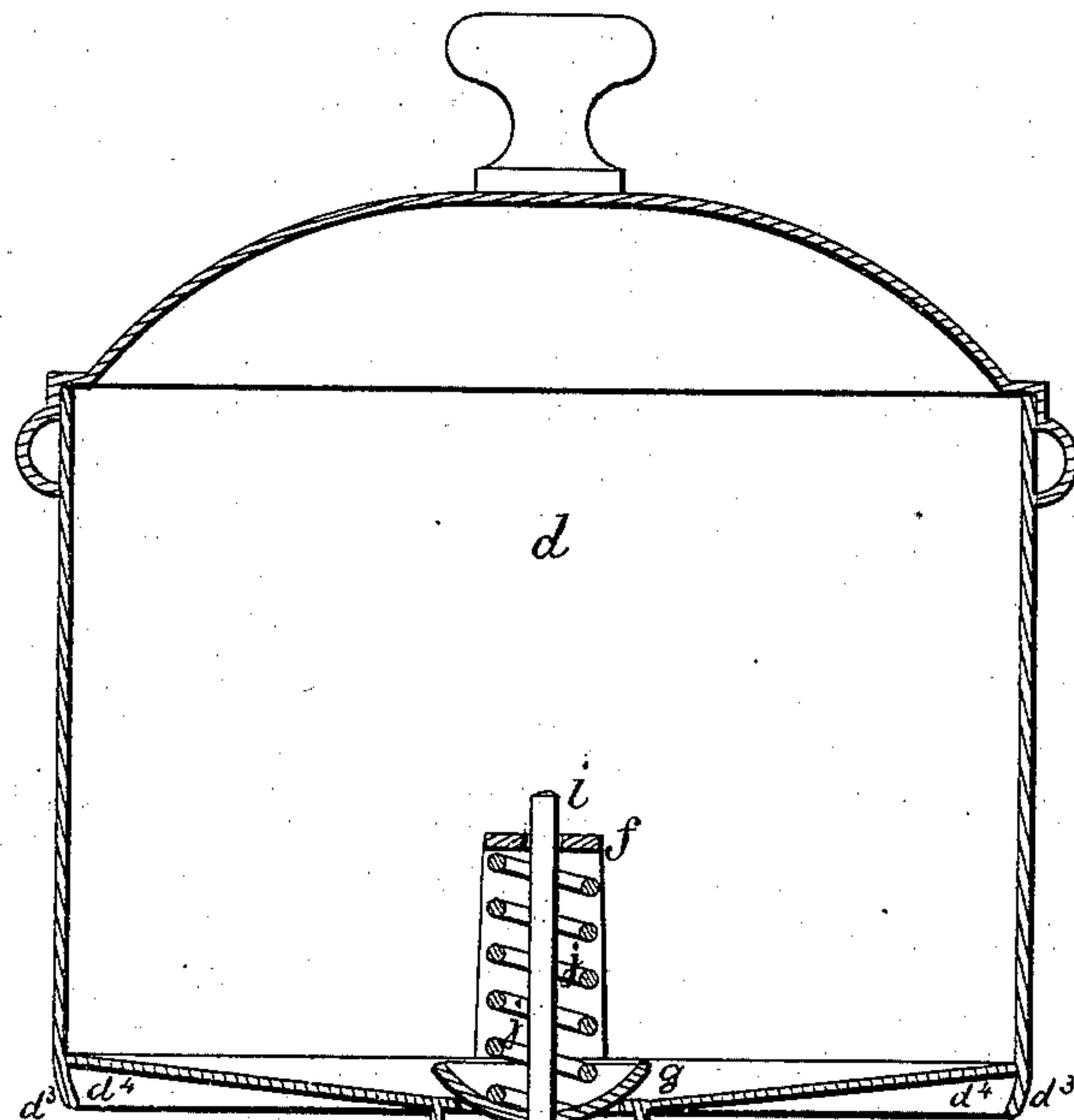


Fig 6.

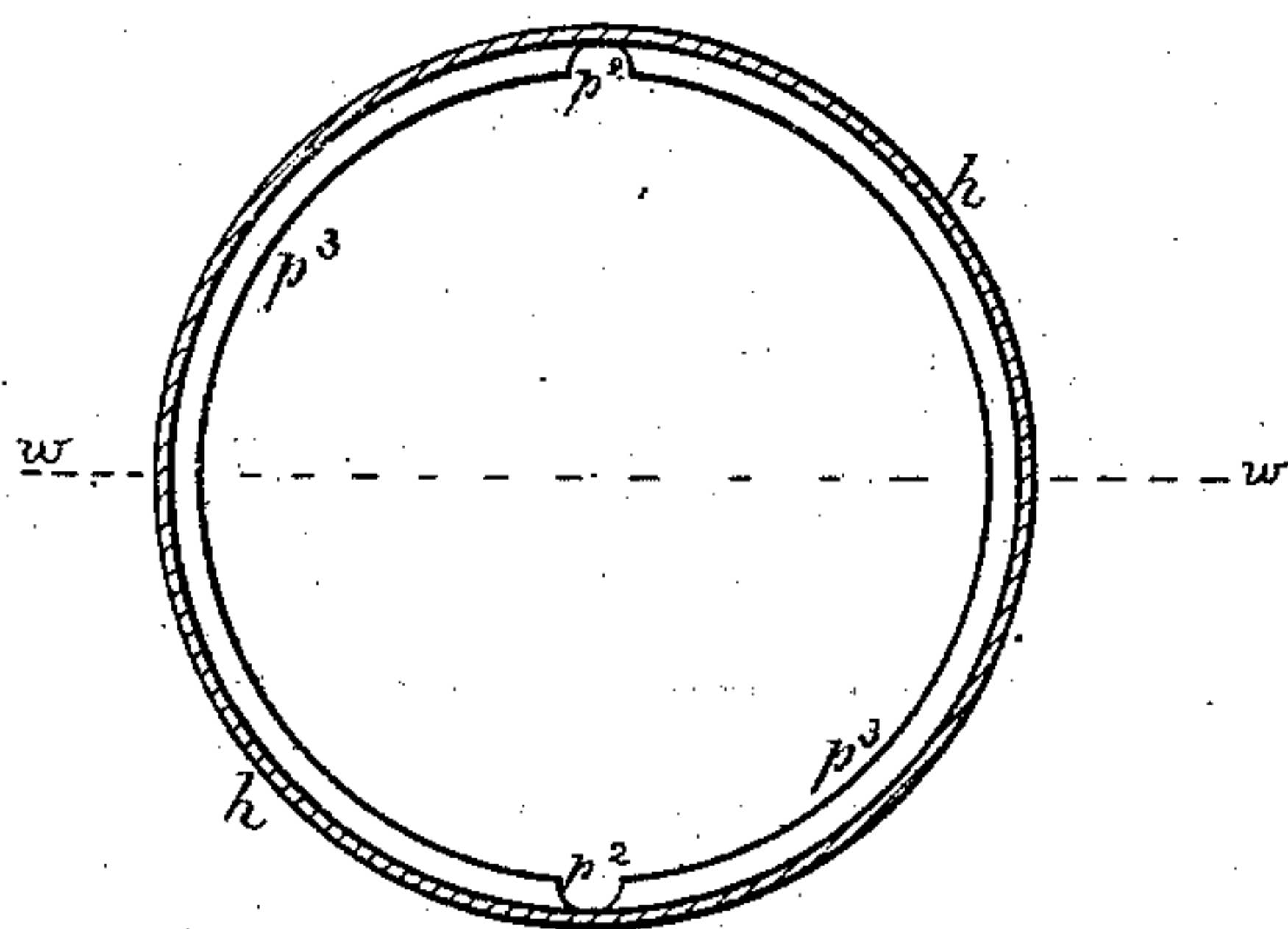


Fig 7.

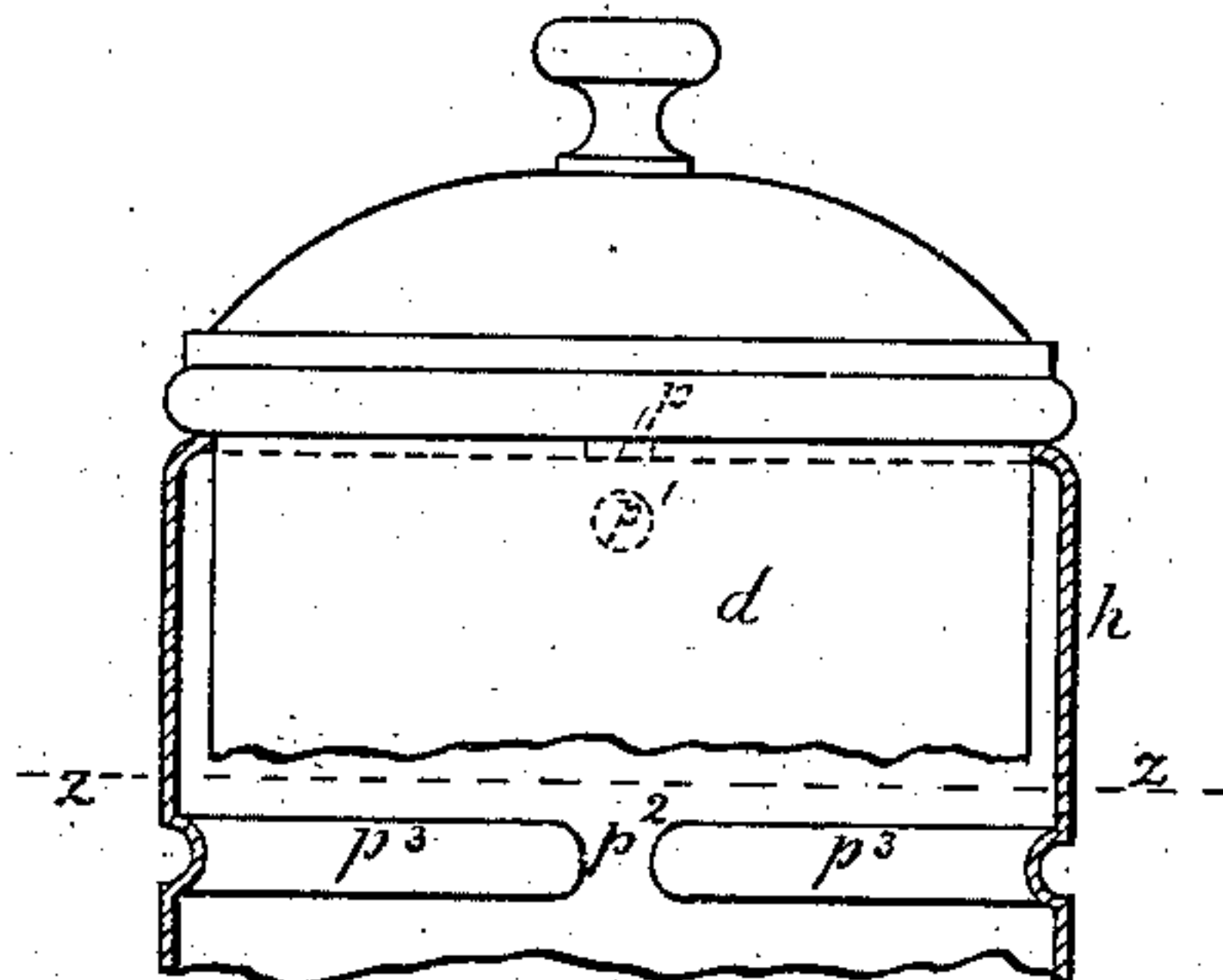
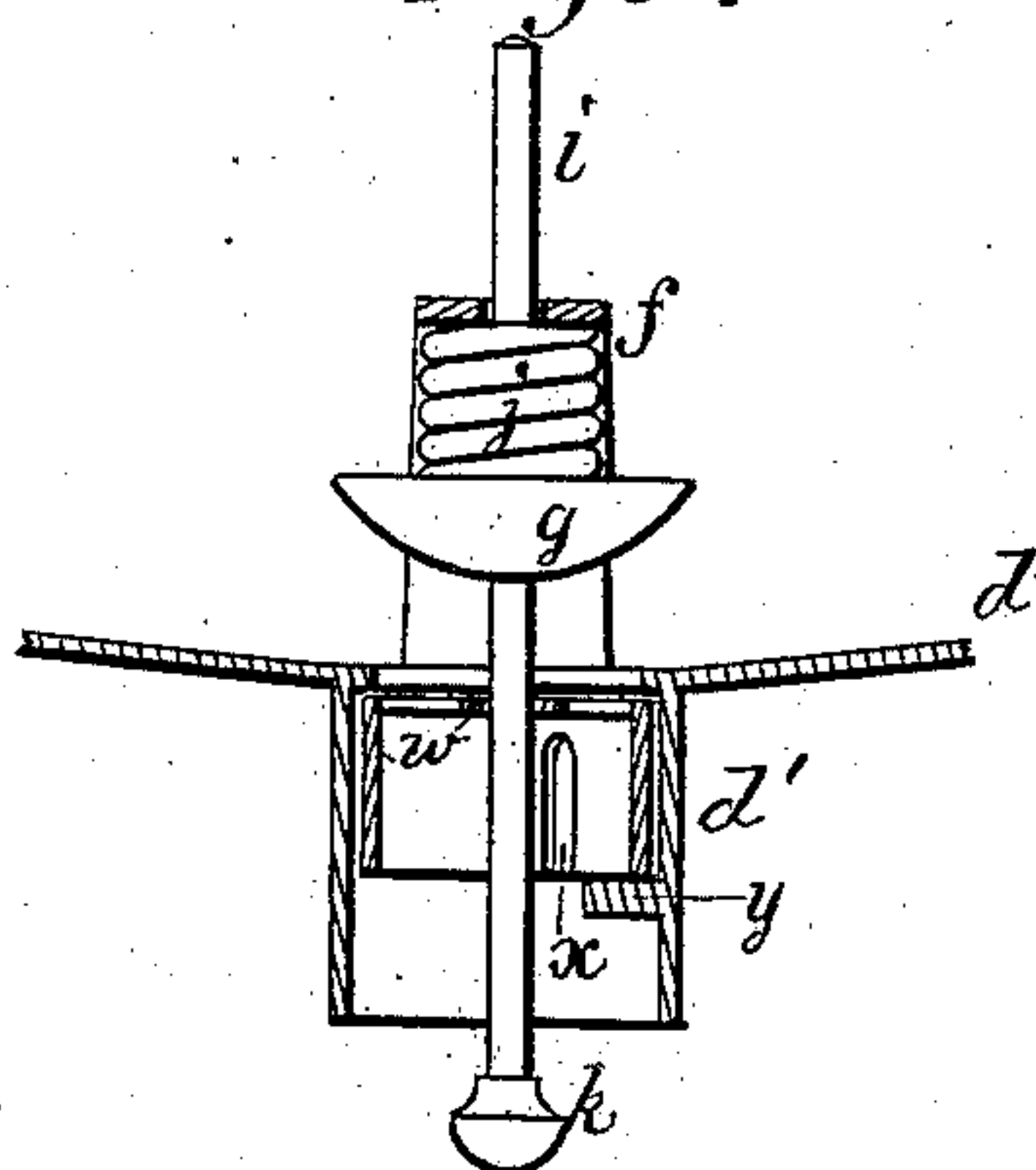


Fig 5.



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UNITED STATES PATENT OFFICE.

CHARLES P. HOWARD, OF HARTFORD, CONNECTICUT, ASSIGNOR TO JAMES L. HOWARD & CO., OF SAME PLACE.

CAR-LAMP.

SPECIFICATION forming part of Letters Patent No. 224,780, dated February 24, 1880.

Application filed November 22, 1879.

To all whom it may concern:

Be it known that I, CHARLES P. HOWARD, of Hartford, in the county of Hartford and State of Connecticut, have invented a new and useful Improvement in Lamps for Railroad-Cars and other purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical cross-section of my invention applied to a bracket of a car, and shown in connection with ordinary supports and supply-tubes of burners. Fig. 2 is an inverted plan of the oil-reservoir and its connections detached from its holder. Fig. 3 is a partial section of the parts shown in Fig. 1, also a partial plan view of the same, the oil-reservoir and its attached parts being removed. Fig. 4 is an enlarged detail vertical section of the oil-reservoir, showing the valve *g* closed. Fig. 5 is a similar section of a portion of the reservoir, showing the valve *g* opened and locked open. Fig. 6 is a horizontal section of the holder for the oil-reservoir, the reservoir being removed and the parts of the holder below the channeled bead not being shown. The line of section is *z z* of Fig. 7. Fig. 7 is a vertical section of the holder of the reservoir and an elevation of a portion of the reservoir, the line of section being *w w* of Fig. 6.

In Figs. 6 and 7 the lamp is shown as being at right angles to the position shown in Fig. 1.

My invention relates to lamps wherein the burners are supplied from a well or chamber below an oil-holding reservoir provided with a valve, and the amount of oil in said well or chamber is kept up by the aid of atmospheric air admitted into the oil-holding reservoir at the moment the quantity of oil in the well or chamber becomes reduced to a certain extent.

My invention consists—

First, in the combination of a holder for the reservoir and the reservoir, whereby the reservoir is steadied and guided by a bead on the inner circumference of the reservoir, and while thus controlled a free passage for air through channels in the bead is permitted, and thus the supply of oil from the reservoir is insured, while the reservoir is fitted tightly within its holder.

Second, in a lamp provided with a contracted oil-well at the bottom of its holder, and with an upper rim turned inward toward the discharge and filling tube of the reservoir in such a manner as to leave an air-space between said tube and the said rim, the air-space being in communication with the atmosphere and supplying air for insuring the proper supply of oil, and the rim serving for arresting the oil which is in the well when it is suddenly thrown outward and upward by the motion of the car, and after arresting the oil causing it to move inward and downward and to deposit in the oil-well again.

Third, in the combination, with the oil-reservoir, which is contracted at its lower part to form a discharge and filling tube, an external holder contracted at its lower part to form a tubular well, into which air is admitted and oil supplied, and into which the discharge and filling tube projects, and one or more passages leading out of the well from an altitude near the bottom of the discharge and filling tube, whereby the lower portion of the oil-well is converted into a sediment-chamber and the oil supplied in a purified state to the burners and in such quantity as will not cause an overflow of the oil at the burners.

Fourth, in an oil-reservoir provided with a contracted extension forming a filling and discharge tube, and with a cylindrical guiding-cup which is slotted, and with a stop-pin, in combination with a valve which closes the reservoir while it is being handled outside of the holder and opens the supply-passage when the reservoir is in its holder, this combination being such that the cup and pin serve for guiding and steadying the valve and its stem and for holding the valve open when the reservoir is inverted and being filled with oil.

Fifth, in a cylindrical holder for an oil-reservoir provided with an inward-turned rim, and which is contracted to form an air-chamber between itself and an oil-reservoir, in combination with an oil-reservoir provided with a lug or lugs on its surface, and with the spring-valve of the reservoir. This combination is such that the parts may be firmly united together and the valve kept open during violent joltings of the lamp, and the air

in the chamber for supplying the pressure for insuring the feed of the oil from the reservoir may be supplied around the reservoir between the holder and the reservoir.

5 Sixth, in the combination of an oil-reservoir having its sides extended down below its bottom for the purpose of forming a drip-guard, and a holder having a contracted extension which forms an oil-well, whereby, while the guard prevents the drip-oil, during the operation of filling
10 the reservoir, from getting upon the circumference of the reservoir and making it unpleasant to handle, the oil-well serves for isolating the bottom and guard of the reservoir from the oil
15 in the well during the use of the lamp and when the lamp is violently jolted.

In the accompanying drawings, A represents the ceiling of a railroad-car; B, the ordinary bracket on which the improved lamp
20 C is placed; D D, the burner-tubes; E, a tubular support for the burner-tubes D and oil-supply tubes F F; G, an interlocking ring fastened to the holder *h* of the lamp-reservoir *d*, and G' a flanged slotted ring of the bracket B.

25 The lamp C is inserted upward into the ring G', turned around a proper distance, and latched or fastened in position by the flanges *a*², beveled stops *a'*, and a spring-bolt, *b*, with
30 lever *c* for operating it, as shown.

The bracket B, fastening-rings G G', and latching-bolt *b*, as well as the supporting-tube E and burner-tubes D, constitute no part of
35 my claim under this patent, and therefore need not be more particularly described, and these parts may be of any other suitable construction and form without departing from the invention, which I shall now proceed to describe as follows:

40 The reservoir *d* of the lamp is closed at top and provided with a hand-knob, by which it can be raised from its position and otherwise manipulated.

45 The bottom of the reservoir *d* is inclined from its outer edge to its center in a downward direction, and at its center an oil filling and escape hole, *e*, is provided, and across this hole, on the upper side of the bottom, a bridge-strap, *f*, is applied.

50 The reservoir *d* has its side wall extended down some distance below its inclined bottom and turned inward at its terminus, as shown at *d*³.

By this construction a drip-chamber, *d*⁴, is
55 formed for waste oil to run into during the operation of filling the reservoir through the contracted portion *d'*. Without this chamber the waste oil would flow along the sides of the reservoir and make it very unpleasant to handle. This will be evident when it is considered that the reservoir is turned upside down
60 in order to fill it, and it very often occurs that the oil overflows or accidentally is spilled upon the bottom of the reservoir outside the filling-tube.

65 *g* is a valve for closing the hole *e* when the reservoir is lifted out of its holder *h*. The

valve *g* is attached to a rod, *i*, and between the valve *g* and bridge-strap *f* a spiral spring, *j*, is placed upon the rod.

70 The valve-rod passes loosely through the bridge-strap, and on its lower end a large knob or foot, *k*, is provided, and this end rests upon the bottom of oil-well *h'* of the holder *h*, and thus resting it causes the valve *g* to stand
75 above the hole or opening *e*, as shown in the drawings.

On the under side of the bottom of the reservoir *d* a contracted cylindrical extension, *d'*, of the reservoir is formed, and around this extension the contracted cylindrical extension *h'*
80 of the holder *h* is formed.

The extension *h'* communicates with the chamber *h*² of the holder *h* by means of an annular passage, *h*³, formed in the bottom plate, *h*⁶, of the holder, around the extension *d'* of
85 the reservoir, as shown in the drawings.

The bottom plate, *h*⁶, extends inwardly beyond the vertical side wall of the well formed by the extension *h'*, and by this means is made
90 to form a top or shield, which, together with the rim *m*, reduces the diameter of the passages *h*³ to a very little greater length than that of the diameter of the discharge and filling tube formed by the extension *d'* of the oil-reservoir, and thus the lower edge of the oil-reservoir is isolated from the oil in the well
95 formed by the extension *h'*, and the outer surface of the reservoir is kept from becoming greased and unpleasant to handle.

100 The extension *h'* is formed with an inverted gutter-shaped rim, *m*, in order to turn downward and inward such oil as may be thrown outward and upward in the well by the violent jolting actions of the car to which the lamp
105 is attached.

The extension *d'* forms the discharge-passage of the reservoir *d*, and the extension *h'* forms the oil-well for holding the supply-oil for the burners. The receiving ends *n* of the
110 supply tubes or pipes F enter through the bottom of the well *h'*, and extend up above the surface of the bottom thereof. By thus locating the ends *n* of the pipes F the bottom portion of the well is made to answer as a chamber for receiving and holding any sediment
115 contained in the oil, while pure oil passes out to the burner-tubes D through the pipes F.

At the upper end of the holder *h* an overhanging flange, *h*⁴, is provided, and in this
120 flange notches *p* are cut, and beneath these notches air-holes *p'* are formed. Below the holes *p'* a bead, *p*³, is milled in the periphery of the holder, in order to keep the reservoir from coming in contact with the surface of the
125 holder at any other points than where it bears against this bead and the flange *h*⁴. At points directly under the air-holes *p'* depressions *p*² are formed on the bead, and by this means the air-passage from the holes *p'* to the mouth
130 of the extension *d'* is formed or kept open.

On the reservoir *d* two solid fixed lugs, *q*, are provided, and these lugs enter the notches *p*, and by turning the reservoir *d* a short dis-

5 tance around in its holder these lugs pass under the flange h^4 , and thereby lock the reservoir in position. It will be understood that the position of these lugs is such with respect to the length of the lower portion of the valve-stem i that they allow the spring j to hold the valve g in a proper position when they are turned under the flange h^4 , and still prevent the spring j , in conjunction with the vibrations of the car, from casually lifting the reservoir, and thereby allowing the valve to be closed by the spring.

15 In filling the reservoir from the bottom it is necessary to open the valve, and in order to hold the valve open while filling the reservoir I have provided an inverted cup, w , on the valve-rod i . This cup is sufficiently open to permit the flow of oil through it, and in its side a vertical slot, x , is provided, in which a pin, y , attached to the inner surface of the extension d' , is fitted loosely. With this device, by pressing the valve fully open and turning it around to a certain extent, the valve will be held open, this being accomplished by the pin y standing under the lower edge of the cup w .

What I claim as my invention is—

1. In a lamp, the combination of the holder h , provided with an internal bead having air-channels formed in it and with a contracted well, h' , in communication with the air-chamber h^2 , and the reservoir d , provided with a discharging and filling tube, d' , substantially as and for the purpose described.

2. The oil-well of the reservoir-holder provided with an upper rim, m , turned inward toward the discharging and filling tube d' of the reservoir, substantially as and for the purpose described.

3. The combination of the oil-reservoir d ,

discharging and filling tube d' , holder h , oil-well h' , air inlet and circulation passages $p' h^3$, and one or more passages, n , which discharge the oil from an altitude near the bottom of the filling and discharging tube, substantially as and for the purpose described.

4. The combination, with the oil-reservoir d and its discharging and filling tube d' , and with its valve g , of the guiding slotted cup w and pin y , the said cup sliding and turning with the valve g and its stem i , substantially as and for the purpose described.

5. The holder h for the reservoir, formed with an inwardly-turned perforated guiding and locking flange or rim, h^4 , and a channeled bead, p^3 , and an air-inlet, p' , in combination with the reservoir d , provided with outwardly-projecting lugs q and the spring-valve g , the whole being constructed as described, whereby the valve is locked open and the reservoir held in position and an air-channel formed between the holder and reservoir, substantially as set forth.

6. The oil-reservoir having its outer wall extended down below its bottom, thereby forming a drip-chamber, and also having a discharge and filling tube near the center of its bottom, in combination with a reservoir-holder having a contracted oil-well, over the upper edge of which the bottom of the holder is extended inward and made to nearly touch the periphery of the discharge and filling tube of the reservoir, substantially as and for the purpose described.

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