

(No Model.)

H. P. SMITH.
ELECTRICAL ALARM.

No. 460,895.

Patented Oct. 6, 1891.

Fig. 1.

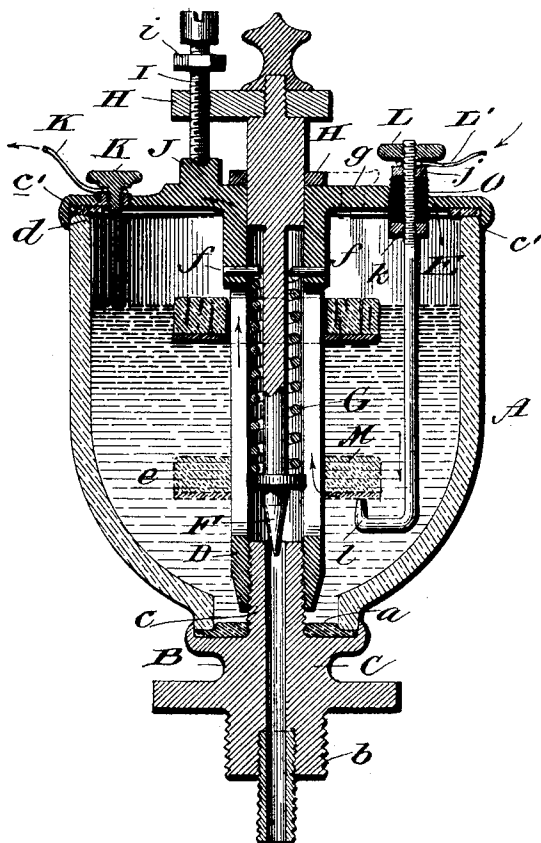
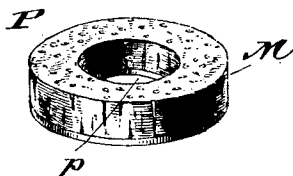


Fig. 2.



Witnesses

L. C. Hills.

E. H. Bond.

Inventor:

Homer P. Smith.

E. B. Stocking.
Attorney

UNITED STATES PATENT OFFICE.

HOMER P. SMITH, OF NEENAH, WISCONSIN.

ELECTRICAL ALARM.

SPECIFICATION forming part of Letters Patent No. 460,895, dated October 6, 1891.

Application filed March 24, 1891. Serial No. 386,232. (No model.)

To all whom it may concern:

Be it known that I, HOMER P. SMITH, a citizen of the United States, residing at Neenah, in the county of Winnebago, State of Wisconsin, have invented certain new and useful Improvements in Electrical Alarms for Lubricators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in lubricators; and it has for its object, primarily, to provide a simple, cheap, and reliable electric alarm to indicate when the oil in the oil-receptacle has reached a predetermined point. I provide a buoyant contact supported by the oil within the oil-receptacle and arranged as the oil reaches the predetermined point to make contact with a contact-point suspended within the oil-receptacle, and thus complete the circuit and sound the alarm. Provision is made for varying the time of contact, so as to sound the alarm when the oil reaches a lower or higher level within the oil-receptacle, as may be desired. The parts are confined within the oil-receptacle out of the way, where they can not be tampered with and where they are not liable to injury or loss.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a central vertical section through a lubricator provided with my improvements. Fig. 2 is a perspective view of the movable floating contact removed.

Like letters of reference indicate like parts in both views where they occur.

My improvements may be applied to various forms of lubricators; but in the drawings I have shown the preferable form with which I have chosen to use it.

In the said drawings, A is the oil-receptacle, preferably of glass, the lower portion being formed with a neck *a*, which is seated upon the disk B, preferably of leather, and held in the metallic portion C, which is provided with a screw-threaded neck *b* for con-

nection with the desired part, the connection or portion C being centrally bored and provided with a screw-threaded upwardly-extending portion *c*, to which is connected the tube D, which is open upon opposite sides, the said tube being supported from the cap E, and may be an integral part thereof or a separate part affixed thereto in any suitable manner. The cap rests upon a ring *c'* upon the upper edge of the receptacle, as seen in Fig. 1, and is provided with a surrounding rim or flange *d* to embrace the receptacle at the upper edge thereof.

F shows the valve, which is provided with a stem extending upward through an opening in the cap, and within the tube D is provided with a collar or shoulder *e*, against which one end of the spring G finds a bearing, the other end being suitably resisted, as by the pins *f*, in the depending neck portion of the cap or cover. The cap is provided with a filling-aperture *g*, which is opened and closed by a rotatable cover H, sleeved on the upper end of the valve-stem, as seen in Fig. 1. The valve-stem is provided with a horizontal arm H, through the free end of which is tapped a screw I, which is designed to engage a post J on the cap, and is provided with a jam-nut *i*, so that by adjustment of this screw and nut the valve-stem may be raised or lowered and the tension of the spring increased or diminished and the flow of the oil through the bore of the portion C regulated.

K is a binding-post on the cap and connected with one pole of a battery, (not shown,) and L is a binding-post connected with the other pole.

K' and L' designate the connecting-wires. Included in the circuit is designed to be an alarm of any suitable construction (not shown) and which is arranged to be sounded when the circuit is completed in a manner which will now be described. The binding-post I is screw-threaded at its upper end and is provided with jam-nuts *j* and *k*, one upon each side of the insulating medium O, as seen in Fig. 1. This post has an extension which extends down within the oil-receptacle to near the bottom thereof, where it is turned horizontally and then upward, as at *l*. The nuts on the screw-threaded portion provide for adjustment of the extension vertically to

vary the time of contact of the movable contact, as will be readily understood.

M is the movable contact. It is preferably substantially circular in form, so as to be guided by the tube D, around which it loosely fits; but other forms may be employed without departing from the principle of the invention. It is composed of a thick layer of cork P, to the under surface of which is affixed in any suitable manner a thin plate of copper or other suitable material, the specific gravity of the device as a whole being such that it will float upon the surface of the oil, or it might be partially submerged, as shown in Fig. 1 in full lines. It is bored centrally, as shown at p, to allow it to be sleeved loosely upon the tube D, as seen in Fig. 1.

The operation is simple and will be readily understood from the foregoing description, when taken in connection with the annexed drawings. Normally the movable contact is up out of contact with the contact l, and the circuit is broken, and the alarm of course will not be sounded; but when the oil in the receptacle falls sufficiently to allow the metal face of the movable contact to engage the contact l, as indicated by dotted lines in Fig. 1, the circuit will be completed and the alarm sounded.

The improvements might be employed in connection with lubricators wherein the central tube D is not used, suitable means being provided for insuring contact of the parts as the oil falls.

What I claim as new is—

1. In a lubricator, the combination, with the oil-receptacle, of the depending tube open upon its sides, the movable buoyant contact guided upon the said tube, the spring-actuated valve within the said tube, the fixed contact within the receptacle, the lower metallic portion having screw-threaded upwardly-extending portion to which the lower end of said tube is connected, and electrical connections, substantially as described.

2. In a lubricator, the combination, with the oil-receptacle and its cover, of the depending tube open upon opposite sides, the valve provided with a stem extended upward through an opening in the cover and having horizontal arm, the spring around the valve-stem within the tube, the screw tapped through the said horizontal arm and engaging a post on the cap and provided with set-screw, the float guided upon the tube and having metal contact-surface, the adjustable insulated vertical post having its lower end extended horizontally and then vertically in line with the movable contact and serving as the fixed contact, and the electrical connections, substantially as specified.

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

HOMER P. SMITH.

Witnesses:

GEO. LE TOURNEUX,
G. F. THOMPSON.