

(No Model.)

2 Sheets—Sheet 1.

W. S. GERMEYER.
AUTOMATIC LUBRICATOR.

No. 280,736.

Patented July 3, 1883.

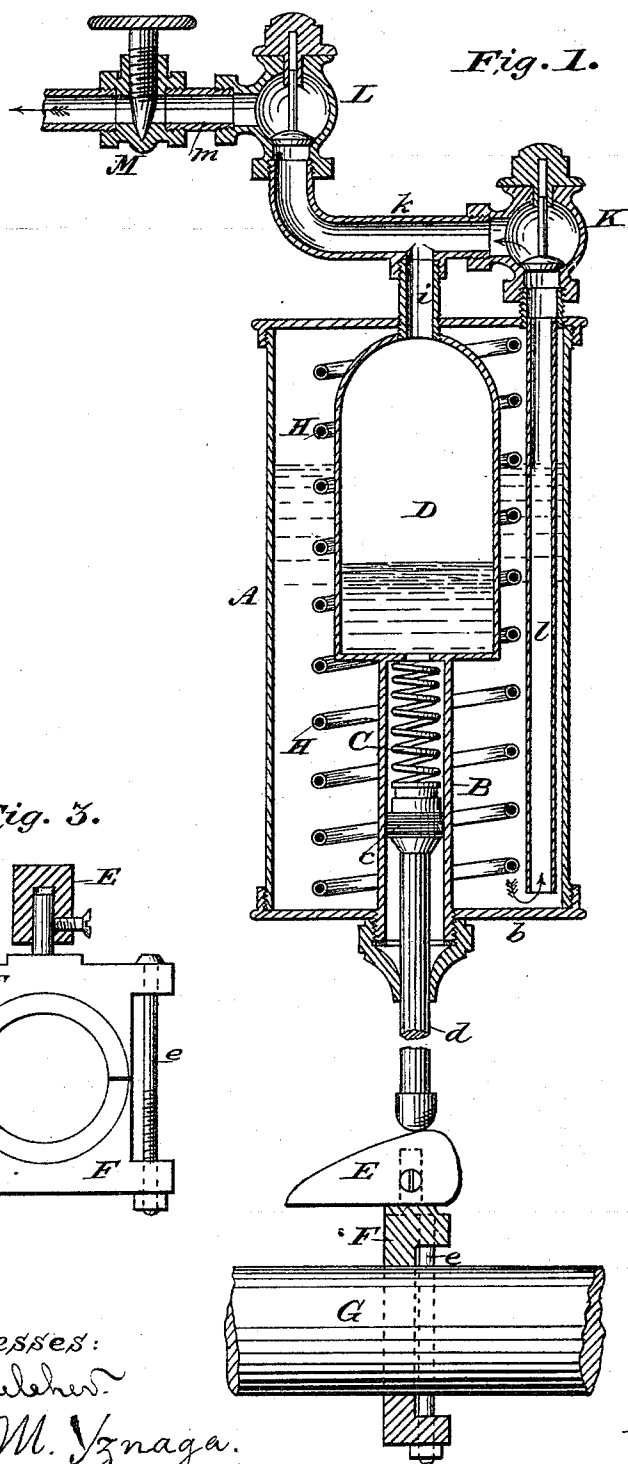


Fig. 1.

Fig. 4.

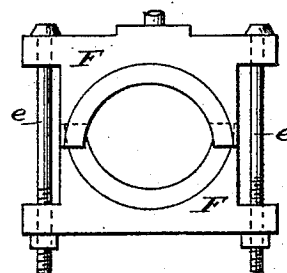


Fig. 3.

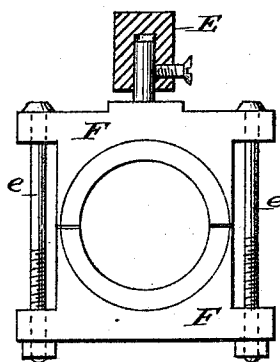
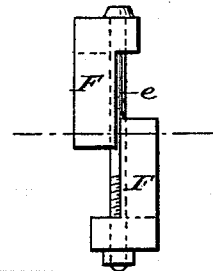


Fig. 5.



Witnesses:
S. B. Kuleher.
J. M. Vznaga.

Inventor:
Wm. S. Germeyer,
By T. C. Bruch,
Attorney

(No Model.)

2 Sheets—Sheet 2.

W. S. GERMEYER.
AUTOMATIC LUBRICATOR.

No. 280,736.

Fig. 2 Patented July 3, 1883.

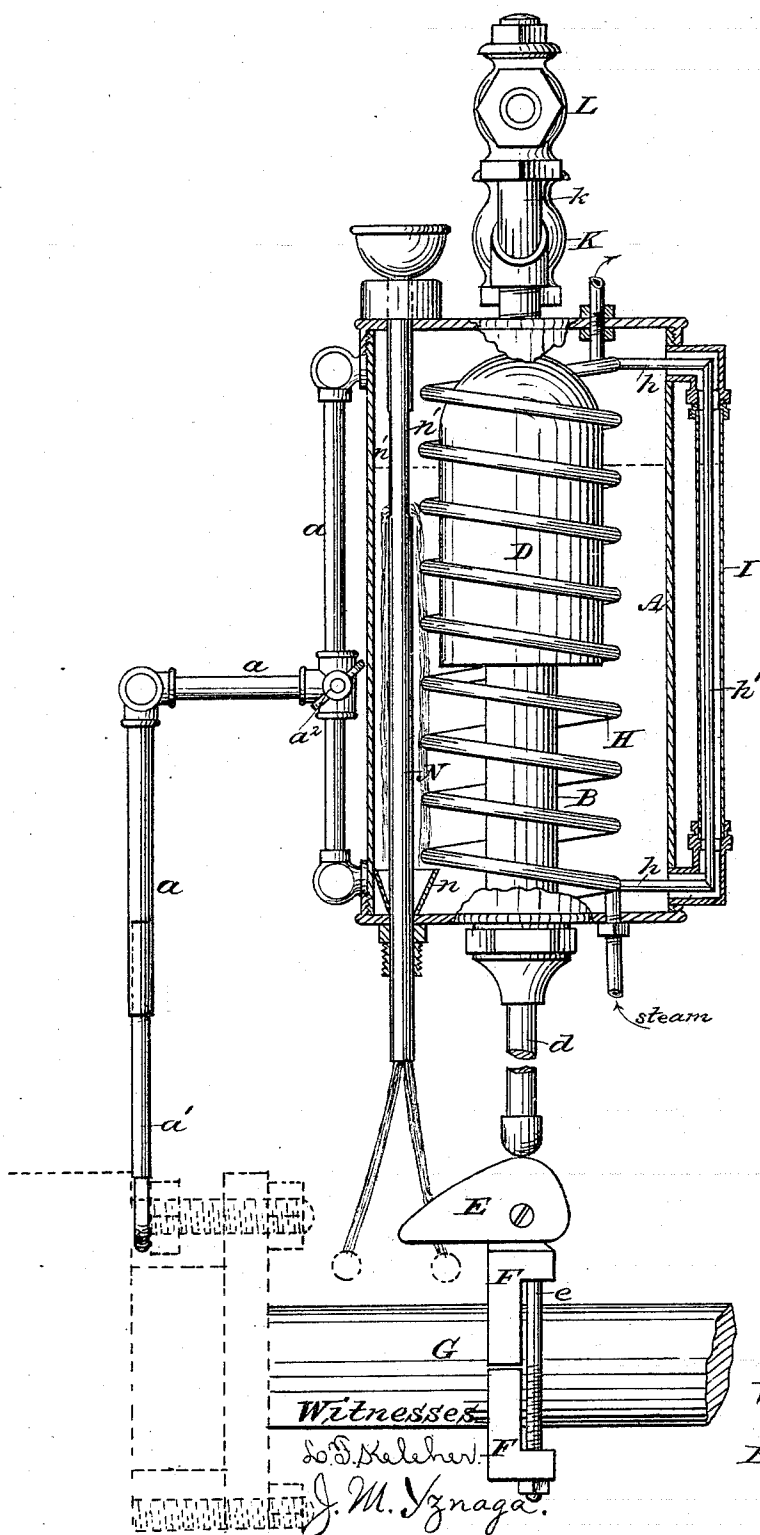
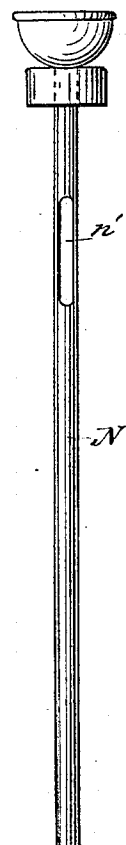


Fig. 6.



Inventor:

Wm. S. Germeyer,

By J. C. Buecht,

Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM S. GERMEYER, OF CARLISLE, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF TO THEODORE CORNMAN, OF SAME PLACE.

AUTOMATIC LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 280,736, dated July 3, 1883.

Application filed May 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. GERMEYER, a citizen of the United States, residing at Carlisle, in the county of Cumberland and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Lubricators; 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.

My invention relates to improvements in automatic lubricators for steam-engines and other purposes; and the object is to produce a lubricator that is automatic in its action, and is operated by some moving part of the engine, and will cease to operate when the engine stops, that is reliable at all times, and in which the tallow or grease is not liable to become frozen.

The invention consists in the construction and arrangement of parts, as will be more fully described hereinafter and more specifically pointed out in the claims, reference being had to the accompanying drawings and the letters of reference marked thereon.

Like letters indicate like parts in the different figures of the drawings, in which—

Figure 1 represents a vertical section of my improved lubricator in position. Fig. 2 is a section at right angles to Fig. 1. Figs. 3, 4, and 5 are detail views of the adjustable clamp. Fig. 6 is a detail view of the wick-tube.

In the drawings, A is a suitable receptacle or case for containing the tallow, oil, or grease, which is preferably secured in place on the engine by swivel-jointed connections *a*, held by set-screw *a'*, and provided with a telescopic connection, *a'*, having an eye or ring to pass over one of the studs for securing the gland of the stuffing-box, as seen in Fig. 2. In the receptacle A is arranged a small pump-cylinder, B, secured to the lower head, *b*, and within it is placed a piston, *c*, provided with suitable packing. Above this piston is placed a spring, C, which has the tendency to force the piston downward.

To the upper end of the pump-cylinder is attached a reservoir, D, for containing a supply of oil, &c., at all times. The piston-rod *d* has

a rounded end, which is struck during the reciprocations of the engine by an adjustable cam, E, secured to a bisected clamp, F, attached to the piston-rod G. This clamp is so constructed that by reversing the two parts they will slide past each other, and can thus be attached to different sizes of piston-rods, as seen in Figs. 4 and 5. The bolts *e* secure the clamp in position.

Within the receptacle A is arranged a coil or worm, H, connected to the steam-space, so as to pass a current of steam through it, by which to keep the tallow, &c., always in a melted or liquid state and prevent it from freezing.

To the coil H connections *h* are made, with a small pipe, *h'*, passing through a glass indicator-tube, I, by which the tallow is always kept in a liquid state therein, and by which the height of the lubricant can be always seen.

The upper end of the reservoir D is connected to a pipe, *i*, forming a communication with a branch pipe, *k*. This connects at one side with a check-valve, K, and pipe *l*, which depends into the receptacle A to near its bottom. The other side of the pipe *k* connects with a check-valve, L, to which, again, a pipe, *m*, and needle-valve M are attached. This valve regulates the exact amount of lubricant to be admitted to the cylinder or other part to be lubricated. At one side in the receptacle A is placed a wick-tube, N, having perforations *n'*, and containing asbestos wick, which communicates with and conveys the lubricant down from the receptacle to the piston-rod by capillary attraction. The lower part of said wick is preferably divided, as shown in Fig. 2. A funnel-shaped mouth, *n*, is arranged at the lower end of the receptacle, to facilitate and guide the insertion of the tube. By means of the swivel-joints the receptacle A can be reversed or placed at any angle desired, so as to gain access to the piston *c* for packing it, &c.

The operation is as follows: The receptacle being filled with tallow, grease, oil, or other lubricant, a connection being made to the steam-space with the steam-coil, and the cam adjusted to the desired position, the engine is started. As the piston-rod reciprocates, the cam strikes against the lower end of the piston-rod, compressing the spring and forcing the

oil or grease through the check-valve L and needle-valve into the cylinder, steam-chest, &c. On the downstroke of the piston *c* the oil is drawn by vacuum created up the pipe *l*, through the check-valve K, and into the reservoir D, ready for the next upstroke. At the same time oil is passing from the receptacle by the asbestos wick and descends by means of the wick in the tube N onto the piston-rod G and lubricates it. The operation is thus automatic and continuous, and as soon as the engine stops the lubrication also ceases. To reverse the receptacle the screw *a*² is loosened and the connection *a'* withdrawn from the section *a*.

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

1. In a lubricator, a cylinder, as B, having a vacuum-reservoir, as D, attached to it, in combination with a piston, *c*, and a cam, E, attached to the engine piston-rod, substantially as specified.
2. In a lubricator, an adjustable cam, as E, on a clamp, as F, in combination with a piston, *c*, in the cylinder B, contained in the receptacle A, substantially as and for the purpose set forth.
3. In a lubricator, an adjustable clamp, as F, for attaching a cam, as E, to the engine piston-rod, in combination with piston-rod *d* of a piston, *c*, in the cylinder B, contained within the receptacle A, as and for the purpose specified.
4. In a lubricator, the receptacle, as A, provided with swivel-connections, and secured to a stud of the gland of the engine-cylinder for the purpose of placing said receptacle at any angle, substantially as set forth.

5. In a lubricator, a steam-coil, as H, having connections with a pipe, *h*, in the glass tube of an indicator, I, substantially as and for the purpose specified.

6. In a lubricator, a tube, as N, provided with openings *n'*, and containing an asbestos wick, in combination with the funnel-mouth *n* in the receptacle A, as and for the purpose set forth.

7. In a lubricator, the pump-cylinder, as B, piston *c*, spring, as C, and reservoir, as D, in combination with the tube *l*, check-valve, as K, pipe *k*, and check-valve, as L, arranged substantially as and for the purpose specified.

8. In a lubricator, the pump-cylinder, as B, piston *c*, spring, as C, and reservoir, as D, in combination with the tube *l*, check-valve, as K, pipe *k*, check-valve, as L, and a needle-valve, as M, arranged substantially as and for the purpose set forth.

9. The lubricator herein described, consisting of a receptacle, A, containing heating-coil H, a pump, B, provided with spring C and piston *c*, operated by an adjustable cam attached to the piston-rod of the engine, the tube N, indicator I, and suitable pipes provided with check-valves K L and needle-valve M, all arranged substantially as specified.

10. The combination of a clamp, F, composed of two parts adjustable to suit different sizes of rods, with an adjustable cam, E, and a reciprocating rod, substantially as specified.

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

WILLIAM S. GERMEYER.

Witnesses:

L. F. KELEHER,
J. M. YZNAGA.