(No Model.) 2 Sheets—Sheet 1.

W. S. GERMEYER & J. A. DURNIN.

LUBRICATOR.

No. 294,315. Patented Feb. 26, 1884.

Fig. 1.

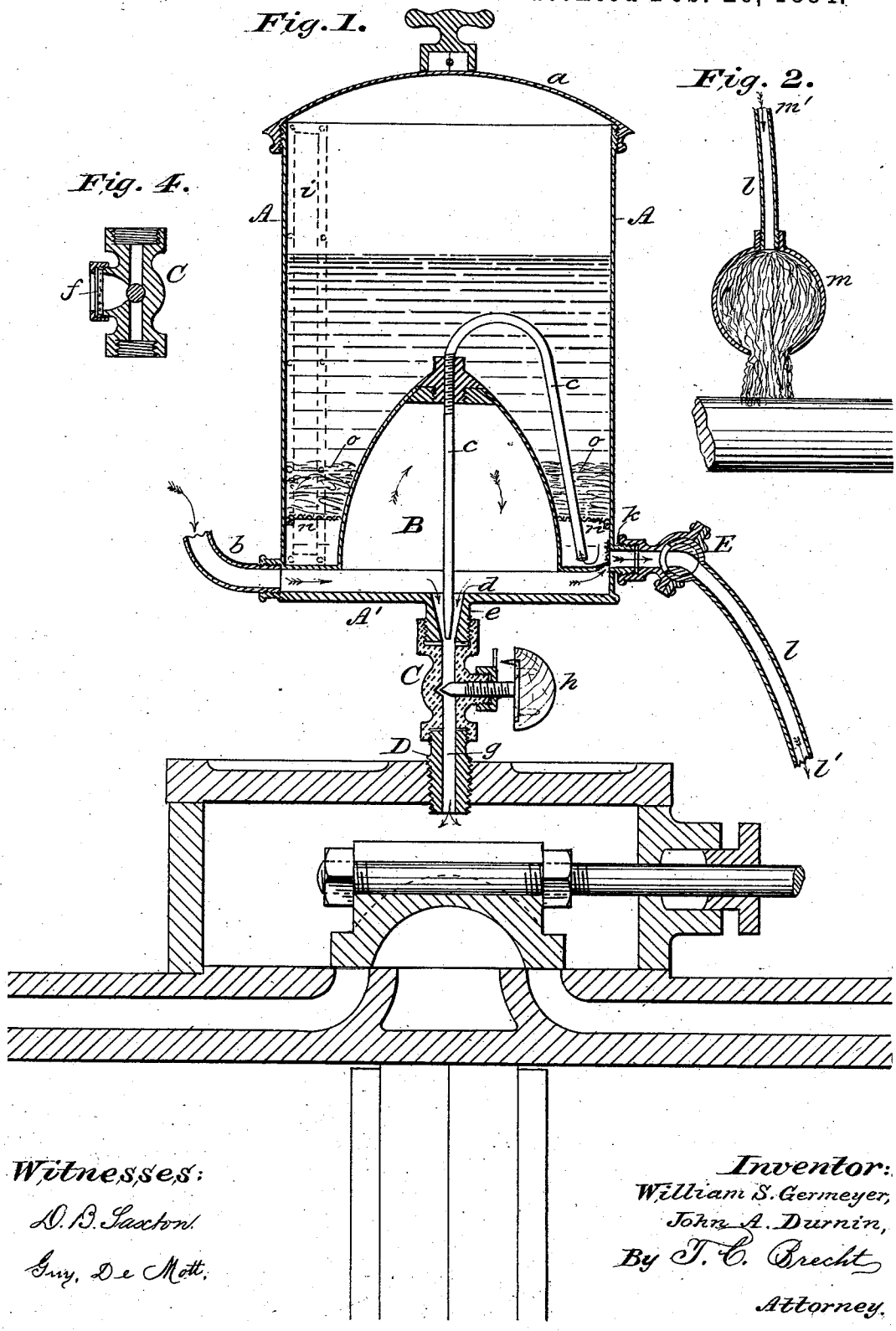


Fig. 2.

Fig. 4.

Witnesses:

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Guy, De Mott.

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(No Model.) 2 Sheets—Sheet 2.

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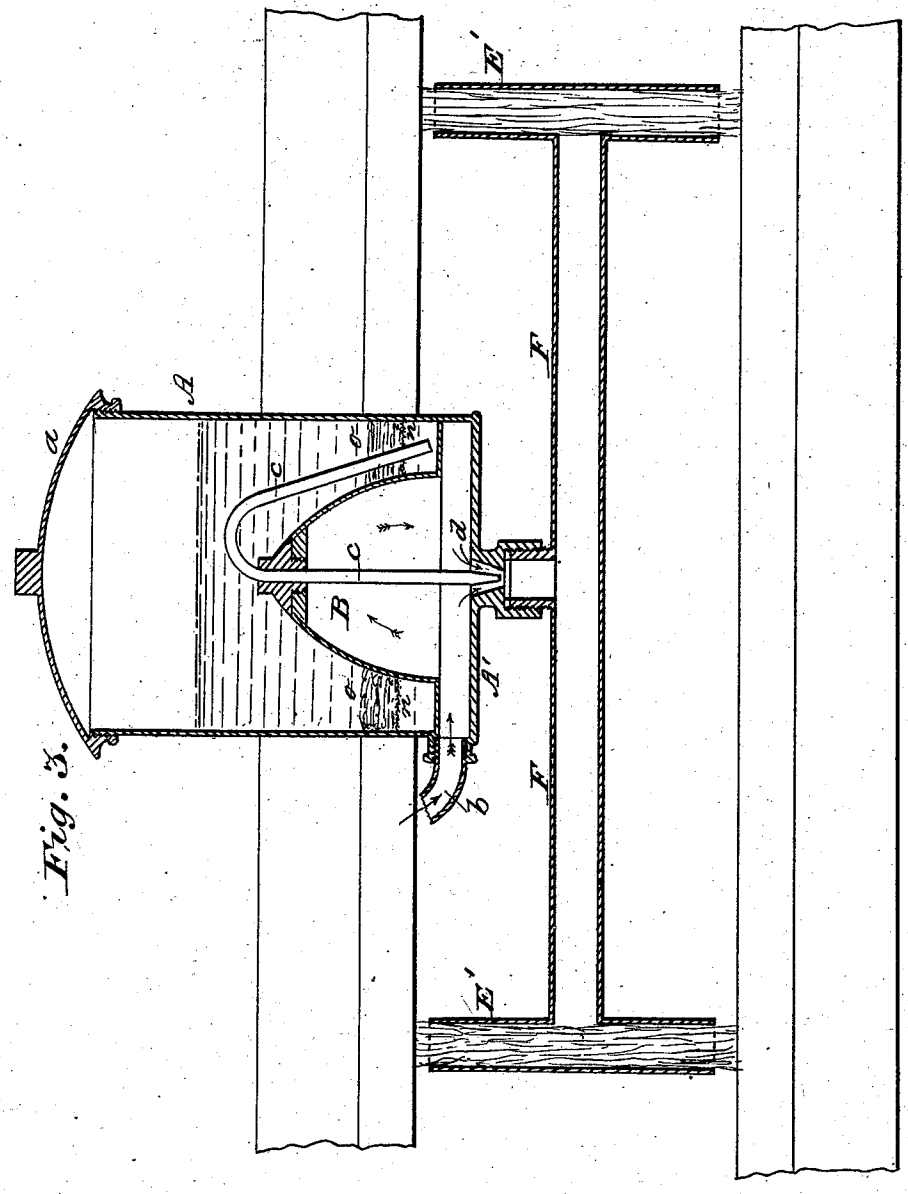


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM S. GERMEYER AND JOHN A. DURNIN, OF CARLISLE, PA.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 294,315, dated February 26, 1884.

Application filed August 8, 1883. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM S. GERMEYER and JOHN A. DURNIN, both citizens 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 we 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.

Our invention relates to improvements in automatic lubricators for locomotive, marine, portable, stationary, and other engines; and the object is to produce a very simple, effective, economical, and reliable lubricator, in which the oil or other lubricant will always remain in a fluid state, and will not congeal or become hardened, and therefore inoperative.

The invention consists in the construction and arrangement of parts of an automatic lubricator, 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 our improved lubricator attached to a steam chest and cylinder of an engine. Fig. 2 is a section of part of the lubricating device for the piston-rod. Fig. 3 is a section of a lubricator connected to the guides of the engines. Fig. 4 is a modified form of needle-valve.

In the drawings, A represents the reservoir or holder for containing the oil, tallow, or other lubricating matter. It is provided with a removable cap, *a*, having a suitable head or handle for operating it by. In the lower part of this reservoir is arranged a conical or other shaped vessel, B, connected at one side with a steam-pipe, *b*, leading to any desired part of the steam-space of the boiler. Into the top of the vessel B is inserted a siphon-shaped pipe, *c*, connecting at one end with the lubricant near the bottom of the reservoir, while its other end projects into an opening, *d*, in the bottom A'.

To a suitable nipple, *e*, is screwed a needle-valve, C, by which the exact amount of lubricant can be regulated. The valve-casing of this valve may be made of glass, or it may be provided with a sight-hole and glass, *f*, (shown in Fig. 4,) so that the amount of oil, &c., passing through the central opening, *g*, of the valve can be observed at all times. We prefer the latter construction, as an ordinary valve-casing can be thus easily changed. The handle *h* of the valve may be provided with a pointer and a dial-plate on the valve to indicate the position of the valve. In the side of the reservoir A is placed a flat glass indicator, *i*, to denote the amount of lubricant in said reservoir. The lower end of the valve C is secured to a screw-plug, D, which is screwed into the steam-chest. On the opposite side or other part of the reservoir A is arranged a nipple, *k*, to which a pipe, *l*, is attached. This pipe is provided with a ball-and-socket, swivel, or other joint, E, so that it can be turned in any direction, as desired. At the end of the pipe *l* is placed a hollow ball or receptacle, *m*, which is filled with asbestus to convey the lubricant onto the piston-rod of the engine. The end *l'* of the pipe *l* in Fig. 1 connects with the end *m'* of the pipe *l*. (Shown in Fig. 2.)

In the modification shown in Fig. 3 the reservoir A is attached to a horizontal pipe, F, which has branches F' of T shape at each end, extending close to the guides of the engine, so that they can also be properly lubricated at all times. In the branches, or in both pipe and branches, is arranged asbestus fibers, to convey the lubricant by capillary attraction against the guides.

If desired, the conical vessel B and steam-pipe *b* and siphon-pipe *c* may be dispensed with in this instance, and an ordinary lubricator may then be connected to the pipe F, with its branches and asbestus filling.

Near the bottom of the reservoir A is arranged a screen, *n*, upon which is placed loose asbestus *o*, to prevent any impurities that might be in or have settled from the lubricating material from being drawn by the siphon-pipe into the opening *g*, and thus be forced into the steam-chest of the engine. A wire screen is also preferably arranged over the nipple *k* for a similar purpose.

The operation is as follows: The reservoir A being attached to the steam-chest, and the steam-pipe *b* connected to the steam-space of the boiler, the steam will fill the vessel B, and,

upon the principle of the injector, will draw the lubricant from the reservoir A and force it through the hole *g* into the steam-chest. At the same time the lubricant passes through the pipe *l* and lubricates the piston-rod. The amount of oil through the opening *g* is regulated by the needle-valve C, and can always be observed through the glass plate *f* or the body of the valve. The steam serves to always keep the oil, tallow, or other lubricant in a fluid condition and prevents it from freezing.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a lubricator, a reservoir provided with a receptacle for steam connected to the steam-space and having a siphon-connection with the lubricant in said reservoir, and acting as an injector to force the lubricant to the desired place, substantially as specified.

2. In a lubricator, a reservoir provided with a steam-receptacle, and having a siphon-connection with the lubricant in said reservoir, and acting as an injector to force the lubricating material regulated by a needle-valve to the desired place, substantially as shown, and for the purpose set forth.

3. A lubricator provided with a steam-receptacle, as shown, and having a pipe provided with a universal joint and a receptacle for asbestus at its lower end for lubricating the piston-rod, substantially as described.

4. The combination of a reservoir, A, provided with a steam-receptacle, B, connected to the steam-space of boiler, and by siphon-pipe *c* to lubricant in reservoir, with the openings *d* and *g*, arranged substantially as set forth.

5. The combination of a reservoir, A, constructed, as shown, with the wire screen *n* and asbestus filling *o*, all arranged as and for the purpose specified.

6. The combination of a reservoir, A, provided with steam and siphon connections, as shown, with a pipe, F, having branches F′, and the guides of an engine, substantially as and for the purpose set forth.

7. The combination of a reservoir, A, provided with steam and siphon connections, as shown, with opening *g* and needle-valve C, provided with sight-glass *f*, all substantially as specified.

8. The automatic lubricator herein described, consisting of reservoir A, steam-receptacle B, steam-pipe *b*, siphon-pipe *c*, opening *d*, needle-valve C, having sight-hole *f*, and handle *h*, provided with indicator, and a pipe leading to the piston-rod, all substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM S. GERMEYER.
JOHN A. DURNIN.

Witnesses:
D. B. SAXTON,
GUY DEMOTT,
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FLORMAN H. PORTER.