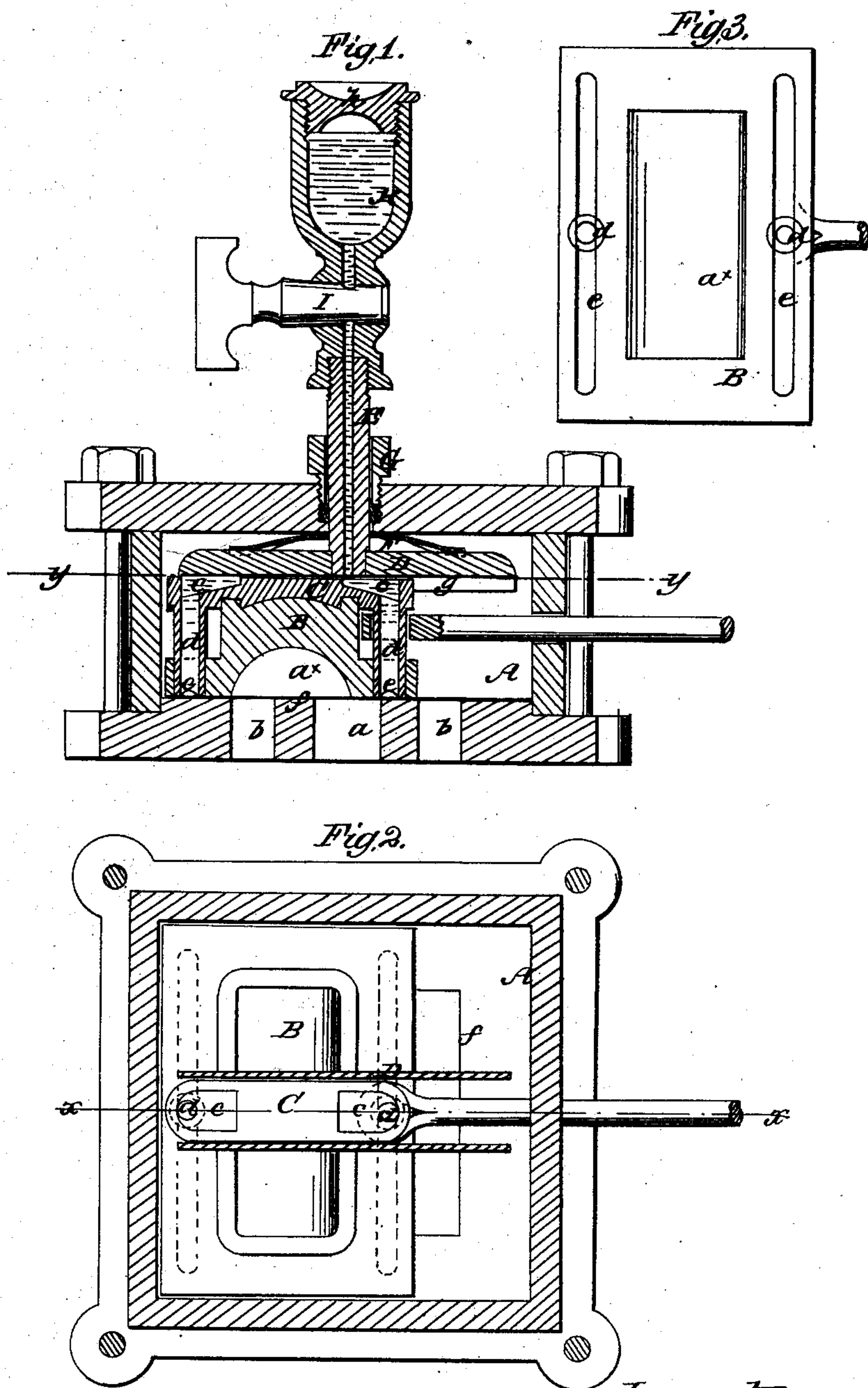


*S. H. Badger,*

*Lubricator.*

*N<sup>o</sup> 69,957.*

*Patented Oct. 22, 1867.*



*Witnesses:*  
*Geo. Encke.*  
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# UNITED STATES PATENT OFFICE.

SIMON H. BADGER, OF ERIE, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND ROBERT FAULKNER, OF SAME PLACE.

## IMPROVEMENT IN SLIDE-VALVE LUBRICATORS.

Specification forming part of Letters Patent No. 69,957, dated October 22, 1867.

*To all whom it may concern:*

Be it known that I, SIMON H. BADGER, of Erie, in the county of Erie and State of Pennsylvania, have invented a new and Improved Self-Lubricator for Valves; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved self-lubricator designed for lubricating during the working of the engine the surfaces of steam-valves and valve-seats of locomotive and other slide-valves and the pistons working in the steam cylinders adjacent to the valves.

In the accompanying sheet of drawings, Figure 1 is a vertical section of a steam-chest and slide-valve provided with my invention; Fig. 2, a longitudinal section of the same, taken in the line *y y*, Fig. 1; Fig. 3, a detached inner-side or face view of the slide-valve provided with the invention.

Similar letters of reference indicate corresponding parts.

A represents the steam-chest of the cylinder of a steam-engine, and *a* is the exhaust, and *b b* the induction, ports.

B is the slide-valve, provided, as usual, with an exhaust-passage, *a<sup>x</sup>*, in its under or inner side.

These parts, being of usual construction, do not require a special description.

The exterior of the valve B is provided with a cross-piece, C, in each end of which there is a recess, *c*, and these recesses communicate with tubes *d d*, which extend through the valve at each side of the exhaust-passage *a<sup>x</sup>* and communicate with oblong grooves *e e*, which serve as oil-receptacles (see Figs. 1 and 3) in the inner surface or face of the valve, which works over the valve-seat *f*, through which the ports *a b b* are made, as shown clearly in Fig. 1.

D represents what may be termed a "cap," which is a straight bar having a longitudinal groove, *g*, in its under side, to receive the cross-piece C on the exterior. This cap is provided with a tubular stem, E, which passes through the top of the steam-chest, and a spring, F, is interposed between the cap and the top of the chest, to hold the cap steady and cause it to fit snugly on the cross-piece C. The stem E

passes through a stuffing-box, G, in the top of the steam-chest, to prevent the leakage of steam therefrom around the stem.

On the top of the stem E there is screwed an oil-cup, H, having a stop-cock, I, at its lower end, by adjusting which the flow of oil into the stem may be regulated or cut off entirely, as desired.

The oil-cup H is provided with a tightly-fitting cover, *h*.

When the valve is in motion the oil passes from the oil-cup through the stem E, the flow being greater or less as allowed by the stop-cock I, and the oil passes into the recesses *c c* of the cross-piece C, as said recesses are alternately brought in line with the stem, the oil passing down through the tubes *d d* to the grooves *e e* and keeping the face of the valve and valve-seat in a perfectly lubricated state, as well as the interior of the cylinder.

The flow of oil from the oil chamber or cup H is insured by the partial vacuum produced under the motion of the valve and the advent of the steam into the steam-cylinder and its escape or exhaust therefrom. The tightly-fitting cover H, therefore, does not preclude the necessary flow of oil, while it keeps the oil-cup free from dirt, dust, and filth of all kinds, which would have a tendency to wear and abrade the working parts.

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

1. The combination of the cap D, tubular stem E, oil-cup H, cross-piece C, recesses *c c*, and passages *d d*, substantially as and for the purpose specified.

2. The grooves *e e* in the face of the valve communicating with the passages *d d*, substantially as shown and described, for the purpose specified.

3. The combination of the spring F, cap D, and top of the steam-chest with recesses *c c* and passages *d d*, substantially as described, for the purpose specified.

The above specification of my invention signed by me this 24th day of June, 1867.

SIMON H. BADGER.

Witnesses:

BENJAMIN GRANT,  
B. C. BENNETT.