ALMON N. ALLEN & RODNEY H. DEWEY.

Improvement in Lubricators for Steam Valves and Pistons.

No. 120,476. Patented Oct. 31, 1871.

Fig: 1.

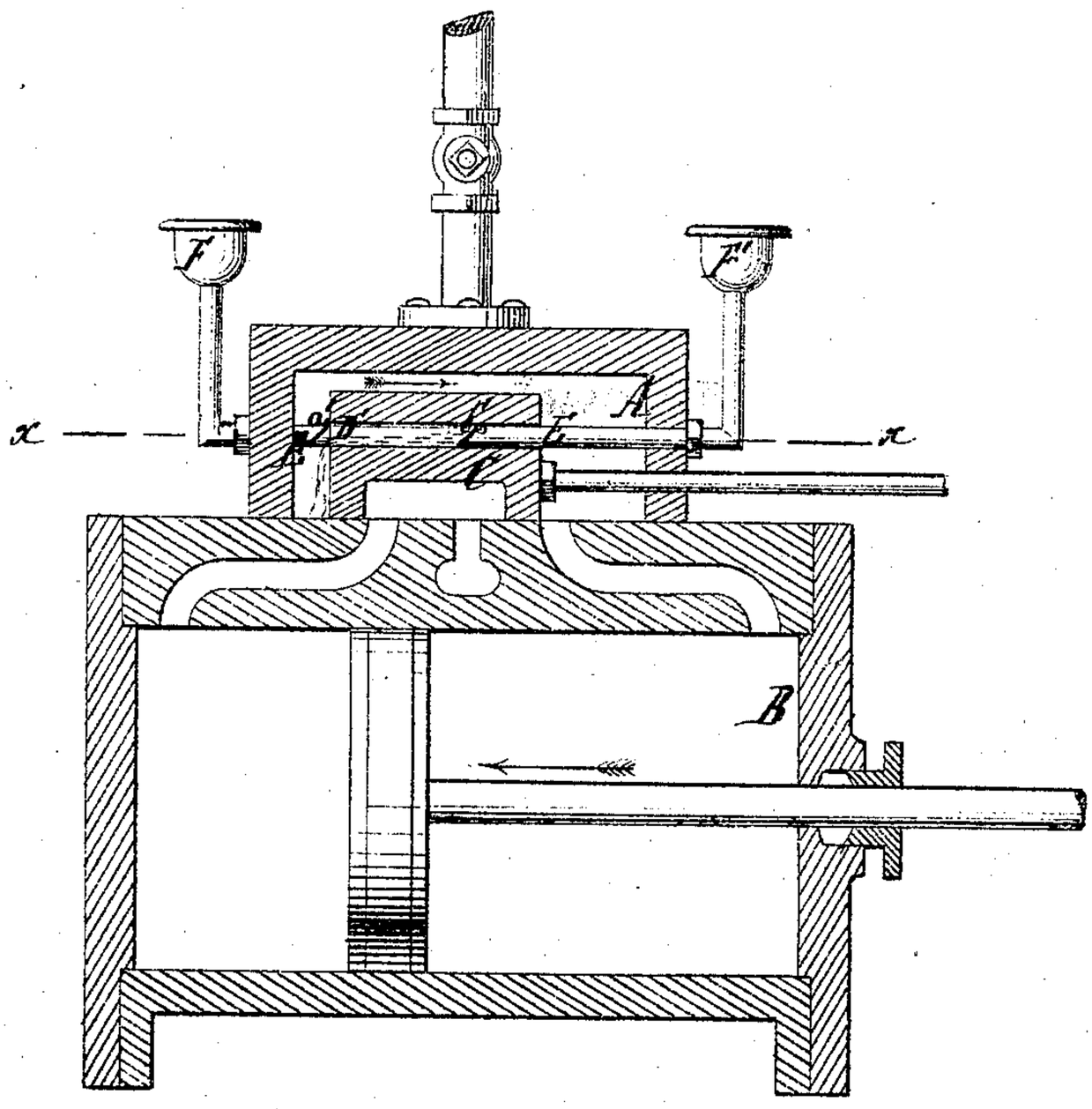
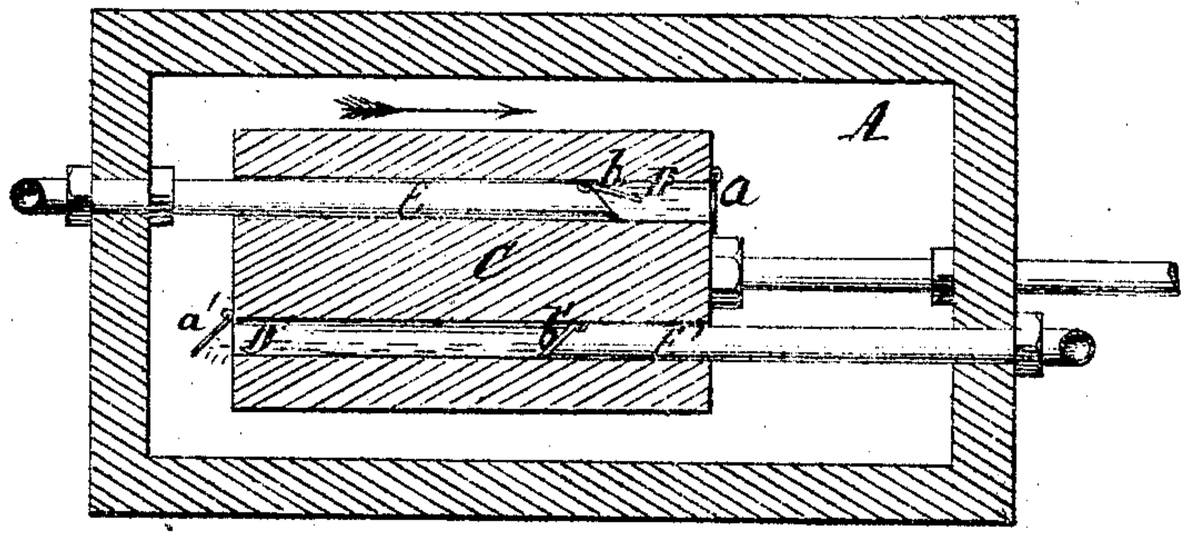


Fig: 2.



Witnesses:
E. F. Kastenhuber
C. Wahlers.

Inventors:
Almon N. Allen
Rodney H. Dewey
per
Van Santvoord & Hauff.
Attys

UNITED STATES PATENT OFFICE.

ALMON N. ALLEN AND RODNEY H. DEWEY, OF PITTSFIELD, MASSACHUSETTS.

IMPROVEMENT IN LUBRICATORS FOR STEAM-VALVES AND PISTONS.

Specification forming part of Letters Patent No. 120,476, dated October 31, 1871.

To all whom it may concern:

Be it known that we, ALMON N. ALLEN and RODNEY H. DEWEY, of Pittsfield, in the county of Berkshire and State of Massachusetts, have invented a new and Improved Lubricator for Steam-Valves and Pistons; and we do hereby declare the following to be 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 drawing forming part of this specification, in which drawing—

Figure 1 represents a longitudinal vertical section of this invention. Fig. 2 is a horizontal section of the same in the plane *x x*, Fig. 1.

Similar letters indicate corresponding parts.

This invention consists in the arrangement of one or more pump-cylinders in or on the back or any other part of the slide-valve of a steam-engine, in combination with a corresponding number of tubular pistons connecting with oil-cups situated on the outside of the steam-chest, each cylinder and tubular piston being provided with a valve in such a manner that when the slide-valve moves in one direction one or more of the cylinders in its back sucks in a quantity of oil from their oil-cups, and when the slide-valve moves in the opposite direction the oil previously sucked in is forced out into the steam-chest and spread on the valve-seat and distributed in the cylinder, thereby lubricating the valve and the piston.

In the drawing, A designates the steam-chest of a cylinder, B, of a steam-engine. In this steam-chest works the slide-valve C, which may be of any desired construction. In or on the back or side of this slide-valve we form one or more pump-cylinders, D D′, into which are fitted tubular pistons E E′, which extend out through the opposite ends of the steam-chest and connect with oil-cups F F′. The cylinders D D′ are provided with valves *a a′* at their open ends, and the tubular pistons E E′ are provided with valves *b b′*, all these valves being made to open outward. If the slide-valve moves in the direction of the arrow marked near it in Figs. 1 and 2 of the drawing, the valve *b* opens and the valve *a* closes and the cylinder D fills with oil sucked in from the oil-cup F, at the same time the valve *b′* closes and the oil contained in the cylinder D′ is forced out through the valve *a′*. When the slide-valve moves in the opposite direction of the arrow the valves *a a′ b b′* are reversed, the cylinder D′ takes oil from its cup F′, and the oil contained in the cylinder D is forced out, and by these means a quantity of oil is distributed on the seat of the slide-valve at each stroke of the piston sufficient to lubricate the slide-valve and the piston, a portion of the oil deposited on the valve-seat being carried into the cylinder by the suction of the piston or by the steam rushing into the cylinder.

It is obvious that the number of pump-cylinders in the steam-chest can be still further increased, but two such cylinders arranged in opposite directions are sufficient to effect the desired object.

Our lubricating-mechanism is of particular value for locomotive-engines, in which the pistons and slide-valves are many times in motion while steam is shut off, and in this case lubrication is particularly required.

The communication between the oil-cups F F′ and the steam-chest may be regulated by suitable stop-cocks, so that no more lubricating material is sucked into the steam-chest than necessary to produce the desired effect.

What we claim as new and desire to secure by Letters Patent, is—

The combination of one or more tubular pistons, E E′, with oil-cups F F′ and cylinders D D′, formed in or on the slide-valve of a steam-engine, substantially in the manner herein shown and described.

ALMON N. ALLEN.
RODNEY H. DEWEY.

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.

(150)