H. ALLTON.
Lubricator.

No. 204,874. **Patented June 18, 1878.**

Fig. 1.

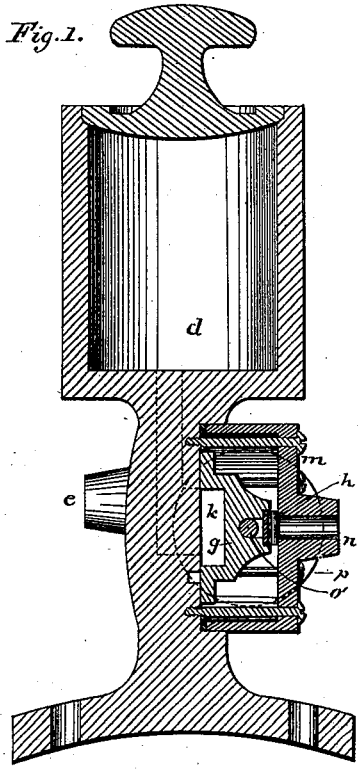


Fig. 2.

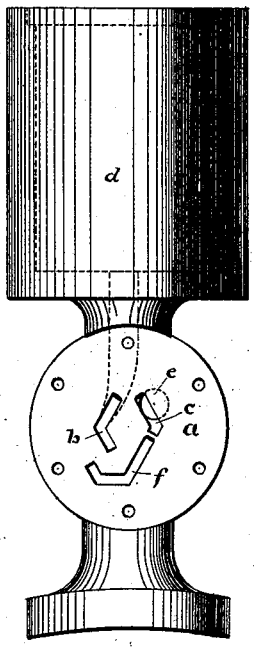


Fig. 3.

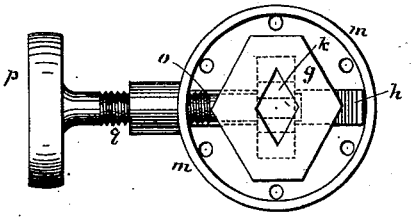


Fig. 4.

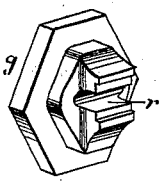
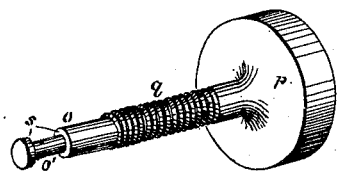


Fig. 5.



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UNITED STATES PATENT OFFICE.

HIRAM ALLTON, OF COLUMBUS, OHIO.

IMPROVEMENT IN LUBRICATORS.

Specification forming part of Letters Patent No. **204,874**, dated June 18, 1878; application filed November 14, 1877.

To all whom it may concern:

Be it known that I, HIRAM ALLTON, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Lubricators for Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The invention relates to a feeder for delivering a fixed and certain quantity of oil from the oil cup or reservoir to a steam-pipe, from which it is conveyed to the main valves of the engine under the pressure of live steam.

The object of my invention is to provide a simple and effective device for delivering the oil in measured quantities from the reservoir to the connecting steam-pipe whenever it is desired to oil the valves.

My invention consists in constructing a sliding feeder placed within a steam-chest, said feeder having a cavity or small measuring-chamber in its face and sliding on a plate, which has two ports, one communicating with the oil cup or reservoir, and the other with a steam-pipe leading to the main valves. The plate also has a channel or groove cut in its face, which forms a communication between the steam-chest outside of the sliding feeder and the measuring-chamber of the feeder when the said chamber is placed over the port communicating with the main valves of the engines. In this position the steam passes through the measuring-chamber, and carries with it to the main valves the oil contained in the same. When the position of the feeder is changed, and the measuring-chamber is over the port leading to the oil-reservoir, it is shut off from communication with the steam-chest which surrounds it.

Figure 1 is a vertical central section through the oil-reservoir, feeder, and steam-chest. Fig. 2 is a side elevation of the lubricator, with the steam-chest and feeder removed. Fig. 3 is a view of the face of the feeder and steam-chest; and Figs. 4 and 5 are perspective views of the feeder and spindle for operating the same.

The plate *a* has two ports, *b* and *c*, the first communicating, by a passage, (shown in dotted lines in Figs. 1 and 2,) with the oil-reservoir *d*; the second with the steam-pipe *e*, which leads to the valve-chest of the main valves.

The ports are preferably arranged as narrow angular openings, forming portions of the sides of a rhomb, and the channel *f*, cut in the face of the plate *a*, is an extension of one side of the rhomb, of which a portion of the port *c* is a part. The channel *f* extends some distance outside of the rhomb, which would be formed by the continuation of the lines of the ports *b* and *c*, so that a portion of it will be clear of the feeder *g* when the measuring-chamber *k* is over the port *c*, and the channel *f* is entirely covered by the face of the feeder *g* when the chamber *k* is over the port *b*.

It is evident that the arrangement and shape of the ports *b* and *c* and channel *f* may be varied without deviating from the principle of the invention.

The feeder *g* slides on the plate *a*, and is held against it by the spring *h*, the center of which bears against the back of the feeder, and the ends against the front of the steam-chest *m*. The steam-chest *m* is bolted to the plate *a*, and a steam-pipe from the boiler is attached to the pipe *n*. The spindle *o*, for operating the feeder, passes through the side of the steam-chest. It has the hand-wheel *p* and the screw *q*, with proper packing to make it steam-tight. The contracted portion *o'* of the spindle rests in the notch *r* in the back of the feeder, and the shoulders *s s* bear against the sides of the feeder. A few turns of the hand-wheel *p* shifts the feeder from communication with the port *b* to the port *c*, and the oil contained in chamber *k* is carried by the steam, which, entering through the pipe *n* to the steam-chest *m*, passes through the channel *f* into the measuring-chamber *k* and out through the port *c* and steam-pipe *e* to the main valves of the engine.

After each use of the lubricator the hand-wheel *p* should be turned back, so that the feeder stands over the port to the main oil-reservoir. A small quantity of steam will be carried back each time by the chamber *k*, which will pass up into the oil-cup and condense.

With this lubricator the small safety or check valve, which is generally used where the oil-pipe is coupled to the engine's steam-chest

cover to keep the strain of the steam from the oil-cup, should be slightly modified. It should have a flange placed on the top of the stem, and the steam-surface of the top flange should be slightly in excess of that of the lower flange, so as to give the steam through the oil-cup the most power. This check-valve will then close up when the feeder is not in use.

There is no time when the pressure of steam against the face of the feeder will be greater than that used over the feeder. Usually the pressure over the feeder will be the strongest, and they will be equal only when the engine works on full throttle. A light spring, *h*, strong enough to keep it from leaking oil when there is no pressure of steam on the feeder, is all that is necessary to hold the feeder against the plate *a*.

I am aware of the fact that engine-lubricators which employ the steam to convey the oil to the working parts of the engine have been used before, and I do not claim, broadly, the idea of thus conveying the oil as my invention; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The sliding feeder *g*, having the measuring-chamber *k*, in combination with the plate *a*, provided with the ports *b* and *c* and channel *f*, substantially as described, and for the purpose set forth.

2. The combination of the steam-chest *m*, having steam-pipe *n*, plate *a*, with ports *b* and *c*, and channel *f*, oil-reservoir *d*, and sliding feeder *g*, substantially as described, and for the purpose set forth.

3. The combination of the sliding feeder *g*, steam-chest *m*, spring *h*, and operating-spindle with the plate *a*, having the ports *b* and *c*, and channel *f*, substantially as described, and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HIRAM ALLTON.

Witnesses:
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