S. SMITH & I. S. COLLINS.

LUBRICATORS.

No. 180,666. Patented Aug. 1, 1876.

Fig: 1.

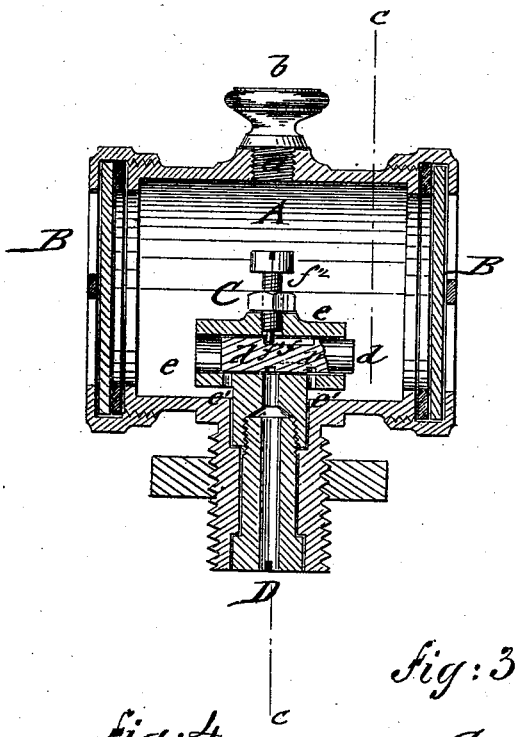

Fig: 2.

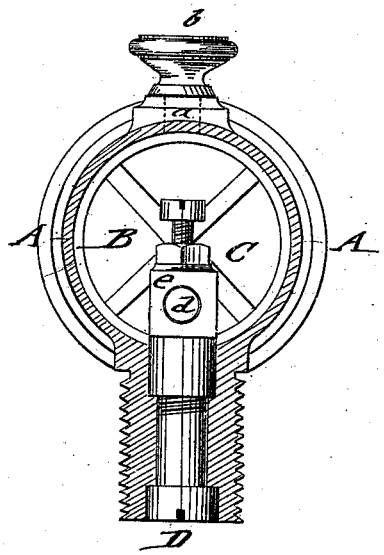

Fig: 3.

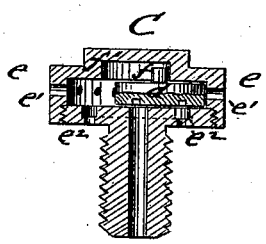

Fig: 4.

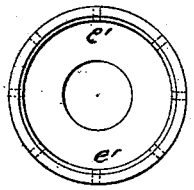

Fig: 5.

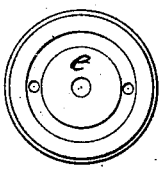

Fig: 6.

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SIMON SMITH AND ISAAC S. COLLINS, OF MAUCH CHUNK, PENNSYLVANIA.

IMPROVEMENT IN LUBRICATORS.

Specification forming part of Letters Patent No. **180,666**, dated August 1, 1876; application filed May 27, 1876.

To all whom it may concern:

Be it known that we, SIMON SMITH and ISAAC S. COLLINS, of Mauch Chunk, in the county of Carbon and State of Pennsylvania, have invented a new and Improved Lubricator, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of our improved lubricator; Fig. 2, a vertical transverse section of the same on line *c c*, Fig. 1; Fig. 3, a vertical central section of a modified form of the feeder; and Figs. 4, 5, and 6, respectively, detail views of cap-base, and sliding disk of the modified shape of feeder.

Similar letters of reference indicate corresponding parts.

The object of our invention is to furnish an improved horizontally-feeding oil-cup or lubricator for connecting-rods, cross-heads, guides, eccentrics, and other parts of steam-engines, which can be regulated to feed a greater or less quantity of oil when the engine is in motion, but which discontinues the oil-supply when the engine is stopped. The lubricator is not liable to get clogged by dirty oil, avoiding thereby the expense for repairing hot pins, and securing a reliable and economical feed of oil.

The invention consists of a horizontal cup of cylindrical shape, with tightly-seated glass heads. The feeding mechanism consists of a horizontally-reciprocating pin or disk, guided in suitable manner, and having recesses or grooves that take up the oil from supply perforations or grooves and convey it to the feed-tube at each oscillation of the part of the engine to which the lubricator is attached.

In the drawing, A represents a feed-cup of cylindrical shape, that is applied in horizontal position to the part of the locomotive or other engine to be lubricated.

The cylinder A is tightly closed at both ends by washers and screw-heads B, that are preferably made of glass, with guard-pieces, to indicate readily and distinctly the quantity of oil at any time in the cup. The cup is filled by a feed-opening, *a*, at the top, which is closed by a screw-plug, *b*.

The oil is fed by a feeding mechanism, C, at the bottom of the cup to the feed-tube D, to which the feeder C is screwed or otherwise attached. The feeder C is made either in the shape of a grooved cylindrical pin, *d*, that slides in a horizontal guide-casing, *e*, as in Figs. 1 and 2, or in the shape of a disk, *d*, that slides in a cylindrical casing, *e*, as shown in Fig. 3.

When the feeder is in the shape of a pin the longitudinal axis of cup and feeder is placed in the direction of motion of the part to which the lubricator is applied, the pin being set into motion by the oscillations of the engine.

The disk-shaped feeder may be applied in horizontal position without reference to the direction of motion, it being operated in the same manner by the oscillatory motions of the engine parts.

The motion of the sliding pin *d* is defined by a top slot, *f*, and guide-pin f^1 of set-screw f^2, and the oil fed to bottom recesses, slots, or annular grooves *d'* of the pin *d* through bottom holes e^1, that are at a distance equal to the length of sliding motion of the pin.

The disk-shaped feeder is supplied with oil through side holes of its casing, being guided by a top pin, *f*, in a circular recess, f^1, of its cap, and taking up the oil from a circular bottom groove and holes, e^2, concentric to and at equal distance from the perforation of the feed-tube at the bottom recesses of the disk.

The motion of the pin or disk in either direction conveys a small quantity of oil that has been taken up by the recesses of the pin or disk to the feed-tube, feeding quicker or slower, according to the speed of the engine. When the engine is stopped the pin is at rest in the sleeve, and discontinues entirely any supply of oil, as there is no possibility of leaking, as in vertically-oscillating feed-pins.

The amount of feed is regulated by the size of the recesses or grooves, and the clogging of the feed-pin prevented by the sliding motion of the same, which tends to push any dust or other impurities of the oil to the outside of the sleeve, so as to exclude it from entering between the pin and sleeve.

The reliable feeding of the pin when the engine is in motion, together with the interruption of the feed when the engine is at rest, provides an economical lubricator, while the

non-liability of the same to interruptions by dirty oil occasions less expense for repairs, and keeps up a regular and perfect action of the feed-cup. The feeding device may be applied to any shape of cup, and utilizes nearly the entire quantity of the same, as the feed mechanism may be arranged close to the bottom of the cup.

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

A feeding device for lubricators, consisting of a horizontally-sliding pin or disk, having recesses, holes, or grooves, with a guide sleeve or casing, having oil-supply holes, and with the feed-tube, substantially in the manner and for the purpose set forth.

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