2 Sheets—Sheet 1

O. A. HAYNES.

Oiler for Slide-Valves of Locomotives.

No. 207,033. Patented Aug. 13, 1878.

FIG. 1.

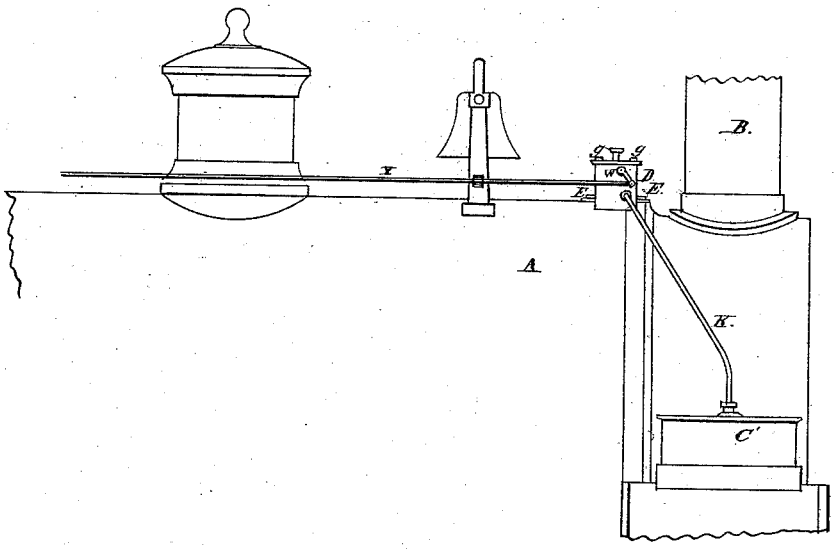
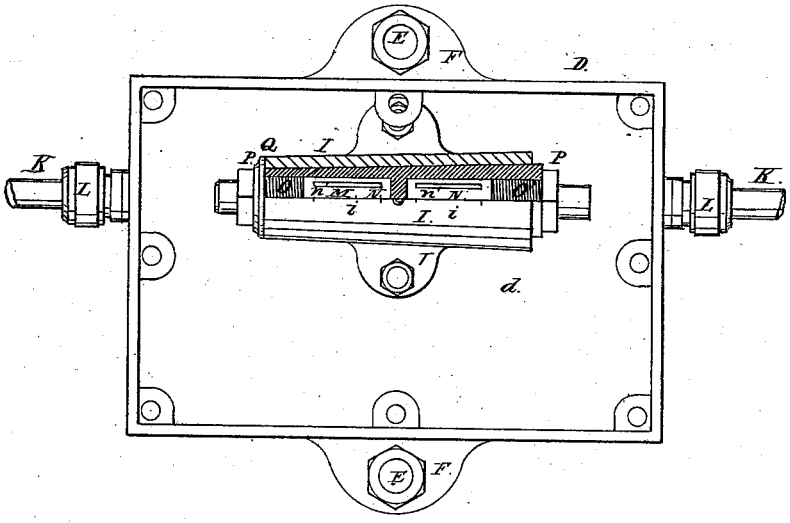


FIG. 2.



Witnesses:
Geo. H. Knight
Walter Allen

Inventor:
Orville A. Haynes
By Knight Bro's
Attys.

2 Sheets—Sheet 2.

O. A. HAYNES.

Oiler for Slide-Valves of Locomotives.

No. 207,033. **Patented Aug. 13, 1878.**

FIG. 3.

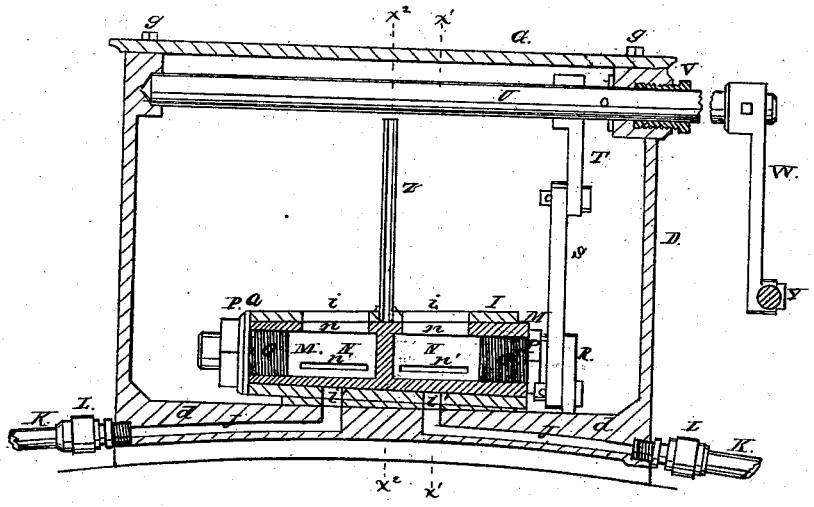


FIG. 4.

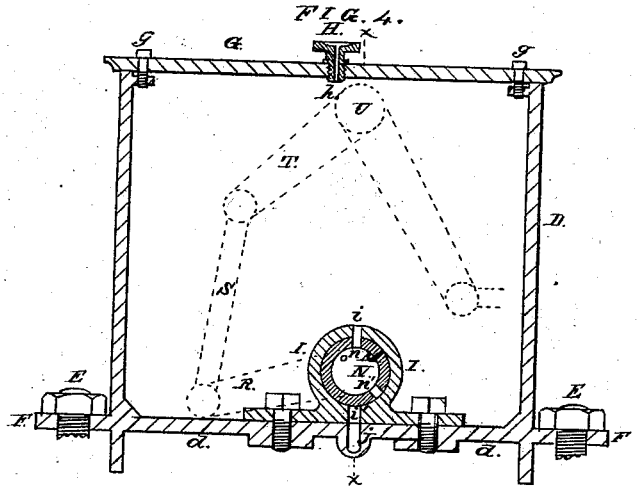
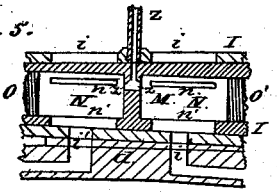


FIG. 5.



Witnesses:
Geo. H. Knight.
Walter Allen

Inventor:
Orville A. Haynes
By Knight Bros
Attys.

UNITED STATES PATENT OFFICE.

ORVILLE A. HAYNES, OF ST. LOUIS, MISSOURI.

IMPROVEMENT IN OILERS FOR SLIDE-VALVES OF LOCOMOTIVES.

Specification forming part of Letters Patent No. **207,033**, dated August 13, 1878; application filed June 14, 1878.

To all whom it may concern:

Be it known that I, ORVILLE A. HAYNES, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Oilers for Slide-Valves of Locomotives, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My improvement relates to a device for applying the lubricant in a given quantity to the slide-valves at the will of the engineer; and it consists of a reservoir which is placed over the top of the locomotive, and which contains a measuring-faucet or oscillating valve, as described, with chambers that are adjustable in size, and which is worked by a rod extending to the cab of the engine. The chambers are connected with the steam-chests on each side by pipes.

In the drawings, Figure 1 is a side view, showing my improvement applied to a locomotive. Fig. 2 shows the valve half in top view and half in horizontal section, with a top view of the reservoir, the cover removed. Fig. 3 is a vertical section at *x x*, Fig. 4. Fig. 4 is a vertical section at x^1 x^1, Fig. 3. Fig. 5 is a detail section of the valve x^2 x^2, Fig. 3.

Figs. 1 and 5 show the valve in position for discharging the oil, and Figs. 2, 3, and 4 show the valve in receiving position.

A is part of a body of a locomotive. B is the smoke-stack. C is a steam-chest. The oil or grease reservoir D is attached to the top of the locomotive by screw bolts or studs E by means of the lugs F. The reservoir has a close top or cover, G, secured by bolts *g*. In the cover G is an air-vent plug, H, that may be removed when filling the reservoir, and which has an air-hole (shown at *h*) to allow the entrance of air to take the place of the oil leaving the reservoir.

The measuring-valve is placed within the reservoir, and is tightly attached to the bottom *d* of the same. The valve consists of a case, I, having inlet-apertures *i* and outlet-apertures *i'*. The former open directly into the interior of the reservoir, and the latter apertures open into pipes J, which extend to the ends of the reservoir, and are there connected to pipes K by union couplings L. The pipes K lead to the steam-chest C upon each side, and convey oil or other lubricant from the reservoir to the slide-valves. The valve proper consists of a frusto-conical plug, M, fitting the interior of the case I, with a ground joint, and having two separate chambers, N N, into which the oil enters through openings *n*, and from which it flows through openings *n'* as the openings *n* are, respectively, brought in communication with those *i*, and openings *n'* brought in connection with those *i'* by the oscillation of the valve.

The oil-chambers are closed at the outer ends by screw-plugs O O', which may be screwed inward or outward to decrease or increase the size of the chambers to regulate the amount of oil furnished to the slide-valve at each movement of the oil-valve.

The plugs have upon them jam-nuts P, which hold them to their adjustment. Upon the plug O is a washer, Q, which acts as a collar, bearing upon the end of the case I to hold the valve in place in the case. Upon the plug O' is an arm, R, by which the valve is worked. The arm is secured by a set-screw, so that it may be adjusted upon the plug when the latter has been screwed inward or outward in regulating the size of the chamber. The arm is in such position that when the measuring-valve is filling its free end rests against the bottom of the reservoir, as shown in the drawings.

When the valve is turned so as to bring the outlet-passages *n'* in connection with the passages *i'*, its movement is arrested by the free end of the arm T coming in contact with the top of the reservoir. The arms R and T are connected by a rod, S, so as to have simultaneous movement. The arm T is fast upon a rock-shaft, U, which passes preferably through a stuffing-box, V, at one end of the reservoir, and outside the reservoir the shaft U carries an arm, W, to whose end is connected a rod, Y, which extends to the cab of the locomotive, so that the engineer can at any time turn the valve I and supply oil to the slide-valves.

Z is an upright air-pipe, whose branches *z* communicate with the chambers N and N, when the oil is discharging therefrom, to supply air to take the place of the oil which runs out. The upper end of the pipe is near the

top of the reservoir, so as to be above the surface of the oil.

The ordinary position of the oil-valve would be as shown in the drawings, Figs. 2, 3, and 4, with the valve-chambers N N open, so as to become filled with oil, and then at any time the engineer can reverse the position of the valve M, and the oil will flow from the chambers to the slide-valves, as described.

I claim as my invention—

1. The valve M, having chambers N, provided with orifices *n n'* at two sides to communicate with similar orifices *i i'* in the valve-case I, central air-passage Z, with branches *z z*, and screw-plugs O O', substantially as and for the purpose set forth.

2. The combination, with the reservoir D and valve-case I, secured to the bottom of said reservoir and containing the chambered measuring-valve M, provided with chambers N, having orifices *n n'* for communicating through orifices *i i'* with pipes J K leading to the slide-valves, of the rock-shaft U, connected at one end by arms R and T and rod S with the valve, and at the other end by arms W to rod Y, through which the valve is operated, as and for the purpose set forth.

ORVILLE A. HAYNES.

Witnesses:
SAML. KNIGHT,
GEO. H. KNIGHT.