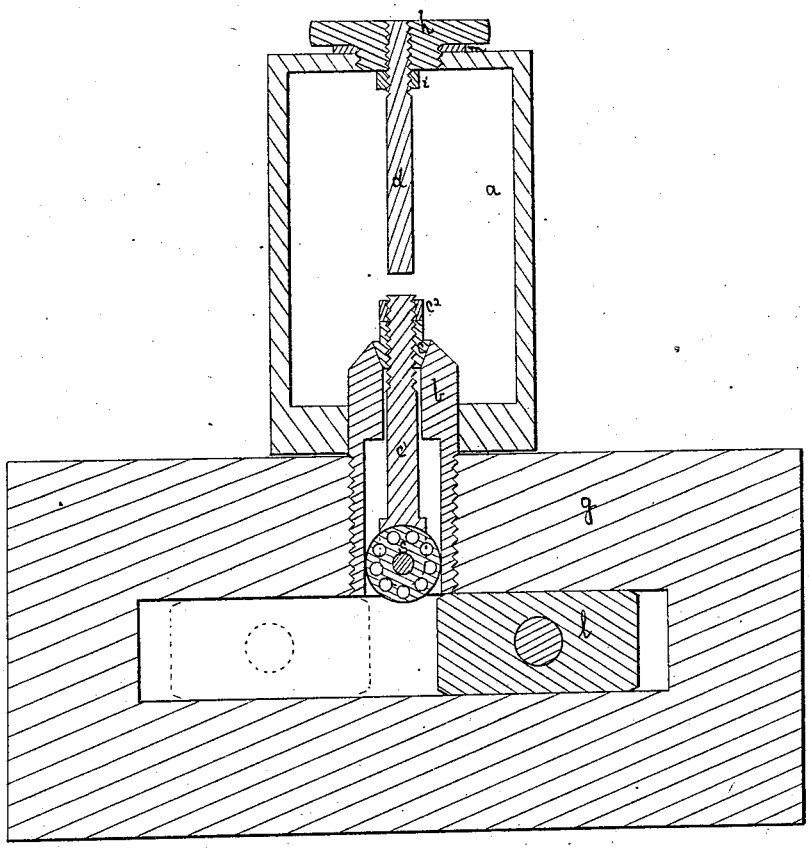
J. VAIR.

OIL-CUPS.

No. 183,606. Patented Oct. 24, 1876.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES VAIR, OF RAVENNA, OHIO.

IMPROVEMENT IN OIL-CUPS.

Specification forming part of Letters Patent No. **183,606**, dated October 24, 1876; application filed September 22, 1876.

To all whom it may concern:

Be it known that I, JAMES VAIR, of Ravenna, Portage county, Ohio, have invented a new and useful Improvement in Oil-Cups, of which the following is a specification:

The object of my invention is to lubricate the guides and cross-heads of locomotives and similarly-operating machinery in such a manner that the oil will flow only when the machinery is in operation, and the quantity of its flow will be regulated by the speed of the machinery.

Figure 1 represents a vertical section of the device.

In the bottom of the oil-cup *a* the hollow standard *b* is firmly inserted. The lower end of the standard *b* is threaded and screwed through a hole in the top of the guide *g*. The valve *c* is shaped like an inverted cone, and its seat in the top of the standard *b* is shaped to fit it. The outside of the top of the standard *b* slopes downward, so as to prevent any dirt or sediment in the oil from entering or settling between the valve *c* and its seat. The upper part of the valve-rod c^1 is threaded, and there is a corresponding female thread in a hole through the valve. The upper end of the valve *c* does not enter the valve-seat, and is shaped like a nut, so that the valve may be screwed on the valve-rod c^1. The set-screw c^2 is screwed on the valve-rod c^1, against the top of the valve, to hold it in position. The valve-rod c^1 extends downward through the hollow standard *b*, and in the lower end is placed the roller *s*. The valve *c* is adjusted on its rod c^1, so that the bottom of the roller *s* will project slightly beneath the lower side of the upper part of the guide *g*. Each end of the cross-head *l*, in its reciprocating motion in the guide *g*, alternately strikes the roller *s*, and lifts it and the valve *c*, and when the cross-head *l* has passed the roller *s* the valve *c* falls again into its seat. The cover *h* is screwed in the top of the oil-cup *a*, with packing *m* between the cover and the top of the oil-cup, to make it air-tight. The oil-cup should not be quite filled with oil, but a space should be left for air. When the valve and its rod are raised by the cross-head *l*, the air in the oil-cup is proportionately compressed, and thereby the oil is forced downward along the rod c^1, through the hollow standard *b*, onto the roller *s*, by which it is distributed on the cross-head *l*. As the oil is forced downward only when the roller *s* is raised by the end of the cross-head *l*, a sufficient quantity of oil will flow down the ends of the cross-head to lubricate its lower side. When in rapid motion the stroke of the cross-head against the roller *s* will throw it above and off the cross-head, and thereby increase the quantity of oil forced from the cup at each stroke. This quantity is regulated by the adjustment of the stop *d*, against the lower end of which the valve *c* strikes when the valve is thrown up. The stop *d* is adjusted by screwing it up and down in the cover *h*. The set-nut *i* on the threaded part of the stop *d* is used to hold the stop firmly in position by screwing the set-nut *i* against the under side of the cover *h*. There are holes through the roller *s* from side to side, to hold oil. As the oil flows down on the roller these holes become filled with it and enable the roller to more evenly distribute the oil on the cross-head. The roller *s* is revolved by the cross-head passing under it, and therefore does not scrape the cross-head or push the oil before the roller, but evenly deposits it on the upper side of the cross-head. The upper side of the cross-head is slightly inclined at the ends, so as to more easily lift the roller *s*. The reciprocating motion of the valve *c* and its rod in the oil-cup tends to prevent the oil from congealing, and when the cross-head is at rest the flow of oil nearly or quite ceases, because it is only forced from the oil-cup by the upward movement of the valve *c* and its rod. The stroke of the cross-head against the roller *s* is adjusted by turning the valve *c* on its threaded rod c^1, and thereby raising or lowering the roller *s*.

I claim as my invention—

The roller *s*, in combination with the valve *c*, substantially as described.

JAMES VAIR.

Witnesses:

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