

JOSEPH H. WILKINSON.

Improvement in Automatic Oil-Cup.

No. 127,205.

Patented May 28, 1872.

Fig. 1.

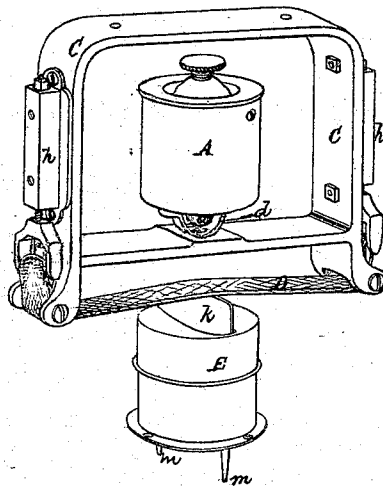
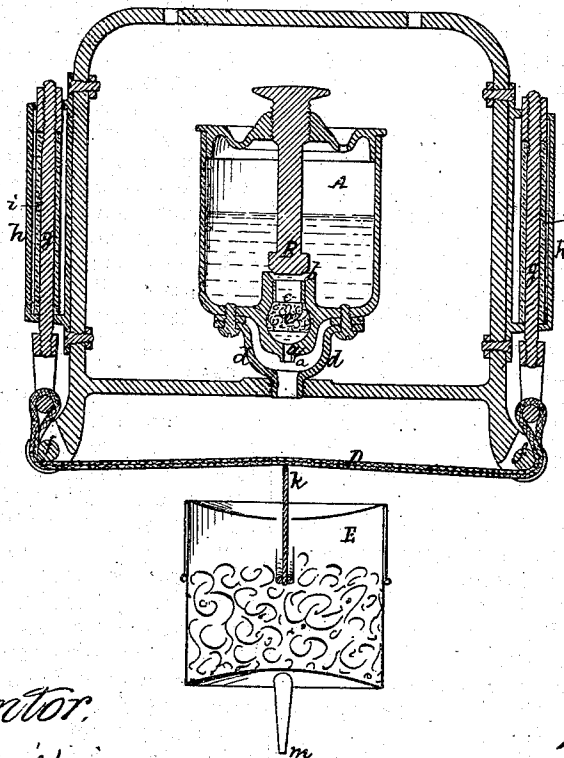


Fig. 2.



Inventor.

Joseph H. Wilkinson
by his attorney

Muesk.

Witnesses.

Chas B. Nottingham.
Thomas L. Smith.

UNITED STATES PATENT OFFICE.

JOSEPH H. WILKINSON, OF SOUTH NEW MARKET, NEW HAMPSHIRE,
ASSIGNOR TO REUBEN HAWORTH, OF SAME PLACE.

IMPROVEMENT IN AUTOMATIC OIL-CUPS.

Specification forming part of Letters Patent No. 127,205, dated May 28, 1872.

To whom it may concern:

Be it known that I, JOSEPH H. WILKINSON, of South New Market, in the county of Rockingham and State of New Hampshire, have invented certain new and useful Improvements in Automatic Oil-Cups or lubricating devices, of which the following is a specification, reference being had to the accompanying drawing, in which—

Figure 1 is a perspective view of a lubricating apparatus in which my invention is embodied. Fig. 2 is a vertical central section of the same.

My invention is designed particularly with reference to the oiling of the crank-pin journals of marine and other engines.

In Letters Patent granted to me on the 12th April, 1870, No. 101,954, devices were described which were designed for this same purpose. In said Letters Patent the oil-vessel is represented as moving with the crank; but further experiments have demonstrated to me that no device in which the vessel containing the oil moves with the crank can be considered perfect; and, also, that a perfect lubricating arrangement for a crank-pin journal must be so constructed as to allow the engineer or attendant to see exactly the amount of oil flowing to the bearing, and so arranged as to allow of a greater or less amount, at the will of the attendant, to flow steadily to said bearing. In marine engines especially this is very necessary, as in heavy weather a much greater supply of oil is required.

The manner in which I have accomplished these objects will be understood by reference to the accompanying drawing.

I employ an oil-reservoir or vessel, A, of otherwise ordinary or suitable construction, but provided at the bottom with an eduction-port, *a*, that is opened or closed to a greater or less extent by means of a suitable valve, B, resting upon a valve-seat, *b*, and opening or closing the eduction-port at the pleasure of the attendant. The screw-threaded valve-stem extends up through the cover of the oil-vessel, and is operated by means of a handle in the usual way. Between the valve-seat *b* and eduction-port *a* I form a chamber, *c*, in which I insert or place layers of woollen cloth or other suitable material, by means of which not only

is too free flow of oil prevented when the port is opened too much, but the quantity of oil flowing, when the port is open to a given point, can be regulated and a standard fixed according to the judgment of the engineer.

By this arrangement the flow of oil can be made comparatively uniform, no matter what quantity of oil may be in the cup, which is not the case in oil-cups usually employed with a marine engine, and supplying oil to the bearing by means of capillary action, caused by a wick floating in the oil, with one end descending through a tube in the center of the cup.

My experiments with cups of the kind last described show that, when the cup is full, say fifty drops will be delivered to the bearing in a given time, while when the cup is nearly empty not more than one or two will flow in the same space of time.

I support the oil-cup on a frame, C, which is (supposing the device to be used with a horizontal-working engine) secured immovably in place immediately above and at a suitable distance from the upper center of the crank. In order to support the oil-cup in such a way that the flow of oil may at all times be seen by the attendant, which is indispensable for the proper regulation of the lubricating operation, I form on or attach to the lower part of the cup a yoke or open frame, *d*, or the equivalent of the same, which rests upon and is attached to the bottom of the frame C; and the eduction-port *a* is elevated far enough above the said yoke to allow oil dropping from it (the port) to be seen at all times; or, even if the eduction-port were itself concealed, the flow of oil might be noted as it falls through the opening *e* in the frame C onto the band D, hereinafter described.

To catch the oil flowing from the cup I provide on each side of the frame C a friction-roller, *f*, (crowning in its center;) and beneath and partly around these rollers I place a suitable piece of cloth belting, D, or other porous material, which is stretched and held tight by being attached to spindles *g* on the sides of the frame, inclosed in boxes *h* and surrounded by rubber or other suitable springs *i*, which serve to draw the spindles up, and thus to keep the belting tight. The oil from the cup drops upon this belting.

In order to take the oil from the belting I secure on the crank-strap of the engine a cup, E, in the center of which I place a blade or wiper, k. The opening in the top of the cup, through which the wiper passes, is sufficiently large to allow the oil taken from the belting by the wiper to run down into the cup. This cup, which I call the "wiper-cup," moves with the crank-shaft, and while the engine is in motion is intermittently brought in contact with the belting, the under side of which is scraped by the wiper, which removes a quantity of oil therefrom.

The wiper-cup should be partly filled with woolen waste, or other suitable material, to arrest any foreign matter passing to the journals, and also to distribute to the ports or nozzles *m* of the cup an equal amount of oil.

In conclusion, I would state that I do not claim a cup having a wiper in its center and attached to the crank-shaft of an engine; nor do I claim a frame suspended over the crank and holding securely a vessel containing lubricating material; but

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

1. The lubricating device, arranged, substantially in the manner herein shown and de-

scribed, so that the flow of oil therefrom can be actually seen, whether the cup be used to oil a movable bearing or placed over a fixed bearing.

2. The combination, with the oil-cup and its supporting-frame, of the belting or strap of porous material receiving the oil from the cup, and the springs or their equivalents for maintaining the tension of said belting, substantially as shown and described.

3. The combination, with the belting, receiving oil from the oil-reservoir and maintained tight or stretched by spring or equivalent mechanism, of a wiper-cup attached to the crank-strap or other moving portion of the journal to be oiled, and arranged to be brought intermittently in contact with said belting, substantially as shown and described.

4. The combination of the oil-cup, its supporting-frame, the belting or porous strap, and mechanism for keeping the same stretched, and the wiper-cup, said parts being constructed and arranged for joint operation, substantially as herein shown and described.

JOSEPH HANDFORTH WILKINSON.

Witnesses:

FRED. CURTIS,
W. E. BOARDMAN.