

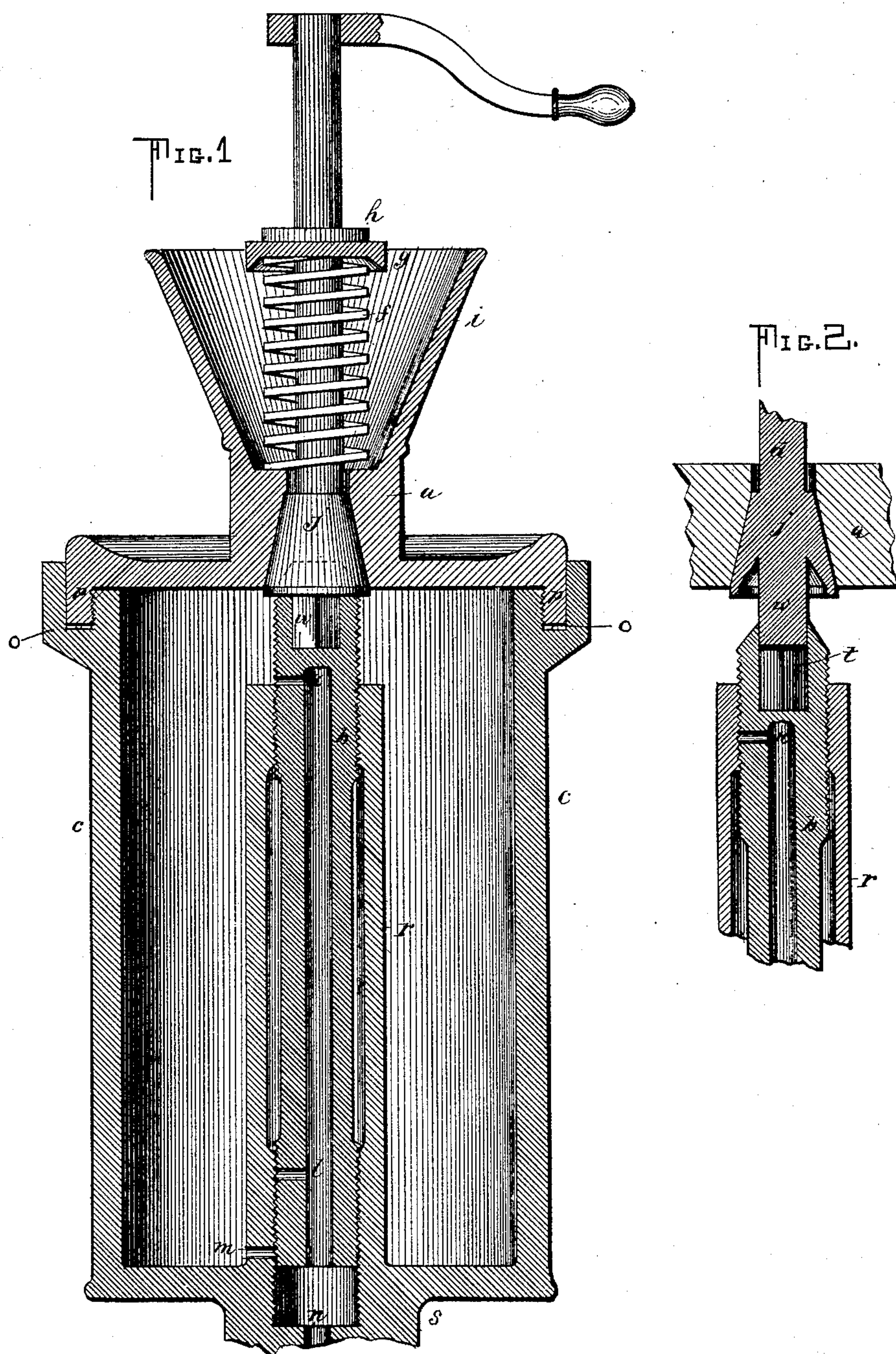
(No Model.)

T. W. KINKAID.

LUBRICATOR.

No. 327,398.

Patented Sept. 29, 1885.



WITNESSES

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UNITED STATES PATENT OFFICE.

THOMAS W. KINKAID, OF THE UNITED STATES NAVY.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 327,398, dated September 29, 1885.

Application filed July 29, 1885. (No model.)

To all whom it may concern:

Be it known that I, THOMAS W. KINKAID, of the United States Navy, a citizen of the United States, have invented new and useful Improvements in Lubricators, of which the following is a specification.

My invention relates to improvements in that class of steam-chest oil-cups, in which a slow and regular feeding of the oil is secured by means of the condensation of a small quantity of steam, which enters the oil-cup from the steam-chamber to which the oil is to be supplied, and which, after condensation, displaces the oil and elevates it to a feeding-aperture in the upper part of the cup.

The object of the invention is to simplify the mechanism of such an arrangement, and dispense with several external valves and stuffing-boxes usually found necessary. By dispensing with stuffing-boxes and external valves I secure cheapness of cost in manufacture and freedom from annoyance by leakage.

My improvements are shown in the accompanying drawings, in which Figure 1 is a section through the axis of the cup, which is, as usual, of a cylindrical shape.

In Fig. 1 the conical valve *j* and its stem *d* are not shown in section, but are so shown in Fig. 2, which represents the positions of the moving parts as arranged to drain the cup of the accumulated water.

The cover of the cup (shown in section at *a*) is secured to the body of the cup *c* by means of the screw-thread shown at *p*. The joint is made tight, if necessary, by a layer of packing at *o*. The upper part of the cover *a* is formed into a funnel, *i*, which facilitates the charging of the cup. The conical aperture in the cover is closed by means of the plug *j*, which is secured to the stem *d* by being cast around it, thus making one piece with the stem.

The lower part of the stem *d* is made square in section and matches a square-sectioned socket formed in the top of the tube *b*. Thus, while the stem may have vertical play in the socket, any rotation of the stem causes a corresponding rotation of the tube *b*. A collar, *h*, is secured to the stem, and against it presses a spiral spring, *f*, by means of the washer *g*. The lower end of the spring bears against the

bottom of the funnel *i*. The opening in the cover is thus kept closed, whether there be steam-pressure in the cup or not. A handle, *e*, effects the rotation of the stem *d*.

The fixed tube *r* may be made in one piece with the cup *c*. In this tube is an aperture, *m*. The inner surface of the tube *r* is threaded, but part of the unnecessary thread is cut away, as shown, to avoid unnecessary friction.

The tube *b* has its square socket *t* always engaged with the lower end of the stem *d*; also the outer surface of tube *b* is threaded to work in the funnel-thread of tube *r*. The unnecessary thread is cut away to reduce friction. The tube *b* is pierced by two small apertures, *k* and *l*. The opening *n* leads to the steam-chest.

Fig. 1 represents the tube *b* as screwed up to its extreme upper position. In this position the aperture *l* is closed, as shown. The aperture *k* is opened to the interior of the cup. A globule of oil flows through the aperture *k* and drops to the steam-chest aperture *n*. A bubble of steam at the same time enters the oil-cup through the same aperture *k*. When this small quantity of steam is condensed, by contact with the radiating surface of the cup, it drops to the bottom of the cup and the surface-level of the oil is raised, thereby causing another drop of oil to overflow into *k*, and so on. After the oil has been exhausted it becomes necessary to drain off the accumulated water before attempting to refill the cup with oil. The tube *b* is then screwed down to its extreme low position. The aperture *k* is then closed, as shown in Fig. 2, while the aperture *l* communicates with aperture *m*. The accumulated water then drains through *m*, *l*, and *n* into the steam-chest. The cup being drained, the handle *e* is now rotated until the tube *b* is screwed into one of its intermediate positions, so that both the apertures *k* and *l* are closed. The plug *j* is then depressed against the force of the spring *f*, and the oil is poured into the funnel *i*, whence it flows around the depressed plug *j* into the oil-cup. The plug *j* is then allowed to close, and the tube *b* is screwed up into the feeding position.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A lubricator consisting of the cylindrical cup communicating with the steam-chest, and provided with the central tube, *r*, having an opening near the bottom, the tube *b*, adapted to be adjusted in the said tube *r*, and provided with an opening near each end, and with the socket square in cross-section in its upper end, and a rod having a projection extending into the said socket, for the purpose set forth.
2. A lubricator consisting of the cylindrical cup communicating with the steam-chest, the central tube, *r*, having an opening near its lower end, the tube *b*, placed within and adapted to adjustment up and down in the said tube *r*, and provided with an opening near each end and the square socket in its upper end, the cover *a*, provided with the central conical seat, and the rod *d*, provided with the conical plug and square extension *w*, substantially as described.
3. In a lubricator, the combination of the casing having the central tube, the tube *b*, placed in said central tube, adapted to adjustment up and down therein and provided with the upper square opening, the cover screwed into the annular groove in the top of the cup and provided with the conical valve-seat, and the rod *d*, provided with the conical plug and the square downward projection.

4. The combination, in a lubricator, of the casing provided with the central tube communicating with the steam-chest and provided with an opening near its lower end, the tube adapted to slide in said central tube and provided with openings near its upper and lower ends, the cover *a*, provided with a depending flange taking into an annular groove in the top of the cup, and also provided with the conical valve-seat and funnel-shaped opening, and the rod *d*, provided with the conical plug.

5. The combination, in a lubricator of the casing provided with the tubes, the tube adapted to rotate within the tube *r*, as described, and the cover provided with the conical valve-seat and funnel-shaped opening, and the rod provided with the conical plug, and having the spring *f* coiled around it and exerting an upward strain thereupon.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

THOS. W. KINKAID.

Witnesses:

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