(No Model.)

# C. HILDEBRAND.

## JOURNAL LUBRICATOR.

No. 375,291. Patented Dec. 20, 1887.

Fig. 1

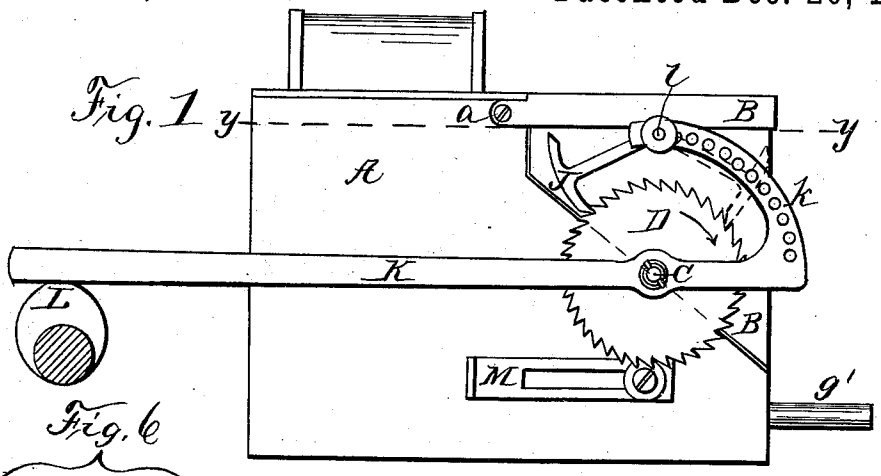



Fig. 6

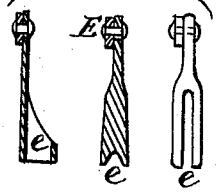



Fig. 2.

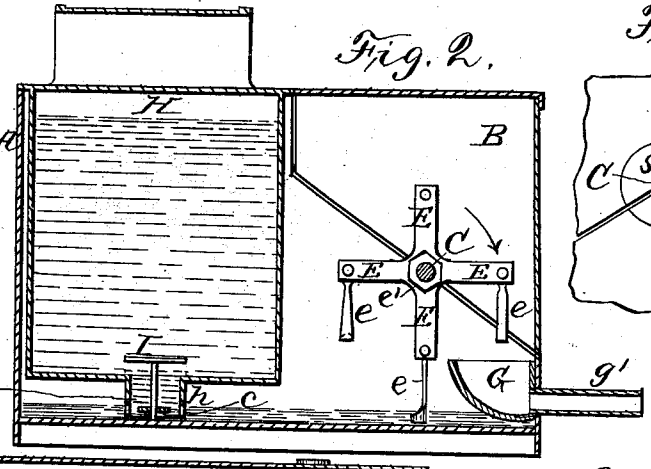



Fig. 4

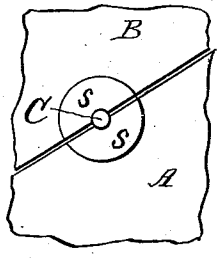



Fig. 7

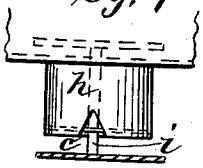



Fig. 3.

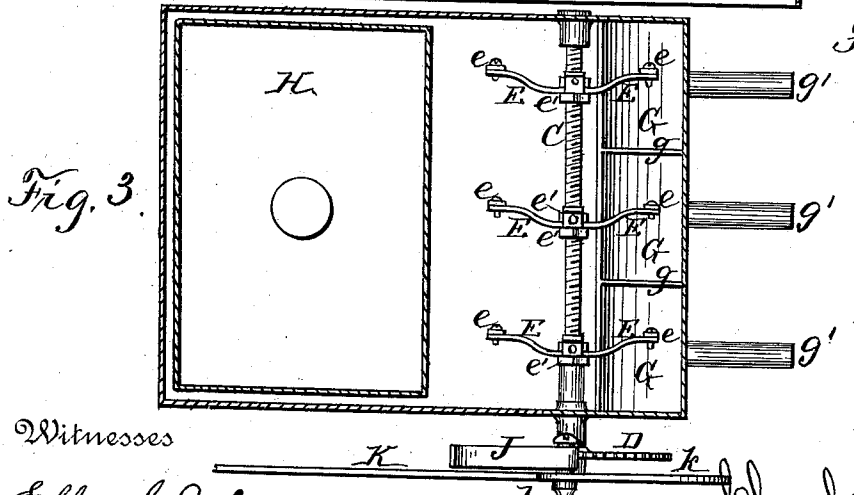
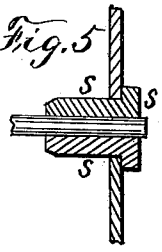



Fig. 5




Witnesses

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# UNITED STATES PATENT OFFICE.

CHARLES HILDEBRAND, OF YOUNGSTOWN, OHIO.

## JOURNAL-LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 375,291, dated December 20, 1887.

Application filed June 29, 1887. Serial No. 242,895. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES HILDEBRAND, a citizen of the United States, residing at Youngstown, in the county of Mahoning and State of Ohio, have invented new and useful Improvements in Journal-Lubricators, of which the following is a specification.

This invention relates to means for automatically lubricating the journals and bearings of machinery, and has for its object the production of a lubricator which will be simple, cheap, efficient, and reliable; which will lubricate two or more journals from a single reservoir; which will supply the lubricant in desired quantities; which will supply the lubricant from a reservoir to a supplemental or intermediate receiver proportionately as the lubricant is used from such receiver for maintaining the lubricant at a predetermined or fixed level therein, so that the dippers or dip-arms will always receive an equal amount of lubricant and deposit an equal amount in the conveying ducts or tubes which lead to the journals or bearings; which will be adjustable to regulate the feed of lubricant; which will have an automatic friction-brake, thereby reducing the number of parts by dispensing with a detent-pawl, and which will have means for throwing the lubricator out of gear and holding it out of gear when desired.

In the drawings, Figure 1 is a side view of a lubricator of my construction embodying my improvements; Fig. 2, a central longitudinal section, and Fig. 3 a horizontal section on the line *y y* of Fig. 1. Figs. 4 and 5 show the friction-bearing brake for the bucket-shaft. Fig. 6 shows different forms of dippers, and Fig. 7 shows the air-vent *c* of the reservoir-tube.

The case, which may be of approved pattern, is composed of two parts, A and B, which are fitted together by a miter-joint, as shown, and are connected at their upper ends by a hinge-joint, *a*, in such manner that the part B can swing upward and rest upon the part A.

The shaft C, journaled in bearings between the parts A and B, is extended out at one side of the case, and has the ratchet-wheel D keyed to said extended end. The bearings *s* for the shaft are divided into two halves, and each half is carried by its respective parts A and B of the case, and the parts are normally separated at the joint, so that the shaft is gripped by the halves of the bearings with sufficient friction to prevent the shaft C being carried too far forward when impelled by the mechanism, presently to be described, or from retrograde movement when said mechanism is moving back to obtain a fresh purchase on the ratchet-wheel of the shaft previous to propelling it forward. This shaft is preferably screw-threaded, and is provided with a series of supports or arms, E, at different points in its length, which carry dips or buckets *e*, pivotally connected with their outer ends. These supports may be disks, and the dips may be disposed around its periphery; but they are preferably composed of radial arms forming spiders, which are adjustably held on the shaft between two sets of nuts, *e' e'*, one on each side of each of the spiders.

The ends of the arms composing the spiders are bent to one side of the plane of the middle portion of the spiders to give clearance for the dips or buckets in the operation of the device and to prevent their discharging the oil upon the arms by coming in contact with the same. By having the shaft screw-threaded the spiders can be readily adjusted along its length and to any desired angle, so as to evenly distribute the weight around the shaft.

The lower forward portion of the case is provided with a series of oil-receiving chambers, G, which may be separate vessels placed therein or a trough subdivided into a series of compartments by the partitions *g*.

The short tubes *g'* extend from each of these chambers, and are adapted to carry the lubricant to the parts to be lubricated. The chambers are so arranged that the dips or buckets in their travel will rest against the inner sides of the walls of said chambers and deposit the lubricant thereon.

The reservoir H is provided at its bottom with the depending tube *h*, which opens into the reservoir and is closed by the valve I, having the stem or rod *i*, which projects below the end of the tube and is adapted to strike the bottom of the case when the reservoir is placed therein and lift the valve from its seat for allowing the lubricant to escape into said case or inter-

mediate receiver till it closes the air-vent *c* in the side of the tube, when the flow will cease until such air-vent is again disclosed by the subsidence of the lubricant in the intermediate receiver caused by the utilization of the same.

The mechanism for operating the lubricant-feeding devices consists, essentially, of the pawl J, the lever K, and the cam L, or equivalent device, for vibrating the lever, which is mounted on the shaft C and has its forward end *k* curved upwardly and rearwardly on the arc of a circle of which the shaft is the center, and this curved end *k* is provided with a series of openings, in any one of which the pawl J is pivotally connected by the bolt *l* or other device.

The pawl is double-ended and reversible for throwing either end in contact with the ratchet-wheel, according as desired. By having the pawl adjustably connected with the lever its length of stroke can be regulated for controlling the amount of feed of the lubricant.

The device can be thrown out of gear by means of the stop M, which can be turned up and will disengage the lever K from the cam L or other actuating device.

In practice the device is placed at a higher level than the parts to be lubricated, and the shaft is rotated by the devices hereinbefore described, carrying the spiders or supports around in a circle. The dips or buckets in their travel pass into the lubricant in the intermediate chamber, and, taking up a certain quantity, deposits it in the chambers, from which it is conveyed to the parts to be lubricated.

Referring to Fig. 1, it will be understood that the cam-shaft may be operated by any part of the mechanism to be lubricated, and connected therewith in any suitable manner.

I claim—

1. The combination, with the case having an intermediate receiver and the oil-receiving chambers, and the devices composed of the shaft, the supports, and dips for carrying the oil from the intermediate receiver to the oil-receiving chambers, of the reservoir provided with an automatically-operated valve and discharge-tube, which latter has an air-vent which is closed by the lubricant in said intermediate chamber for maintaining the lubricant at a fixed level in said receiver, substantially as set forth.

2. The combination, with the case having two parts which are hinged together, and the two-part bearings having one part carried by each part of the case, of the intermittently-operated feed-shaft journaled in said bearings and held by friction between said parts of the bearings, substantially as described, for the purpose specified.

3. The combination, with the case and the shaft, of the supports composed of a group of radial arms forming spiders, and having the ends of the arms of each spider bent to one side of the plane of the middle portion thereof, and having the dips or buckets pivotally connected with said ends of the arms upon the sides of the same bent farthest from the middles, substantially as described.

4. The combination, with the shaft screw-threaded about its entire length, and the supports carrying the dips or buckets mounted thereon, of the nuts located on each side of the supports for clamping them at an adjusted position to the shaft, substantially as set forth.

5. In an automatic lubricating device, the combination of a ratchet-wheel secured upon the lubricant-feeding shaft, a rocking lever fulcrumed upon the lubricant-feeding shaft and having one arm formed with a segmental bar concentric with the fulcrum and provided with a number of perforations, and an anchor-shaped or double-ended pawl adjustably pivoted by a pin or bolt in one of the said perforations and engaging the teeth of the ratchet-wheel with either end, being reversible, as and for the purpose shown and set forth.

6. In an automatic lubricating device, the combination of the lever K, operating the feeding device, an eccentric-cam, L, engaging one end of the said lever, rocking the same when revolved, and a stop, M, adjustably secured upon a screw in a longitudinal slot of the stop, and having a bent end engaging and supporting the lever out of the reach of the cam, as and for the purpose shown and set forth.

CHARLES HILDEBRAND.

Witnesses:
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