

D. Harrigan,
Lubricating Cup.
N^o 86,540. *Patented Feb. 2, 1869.*

Fig. 1.

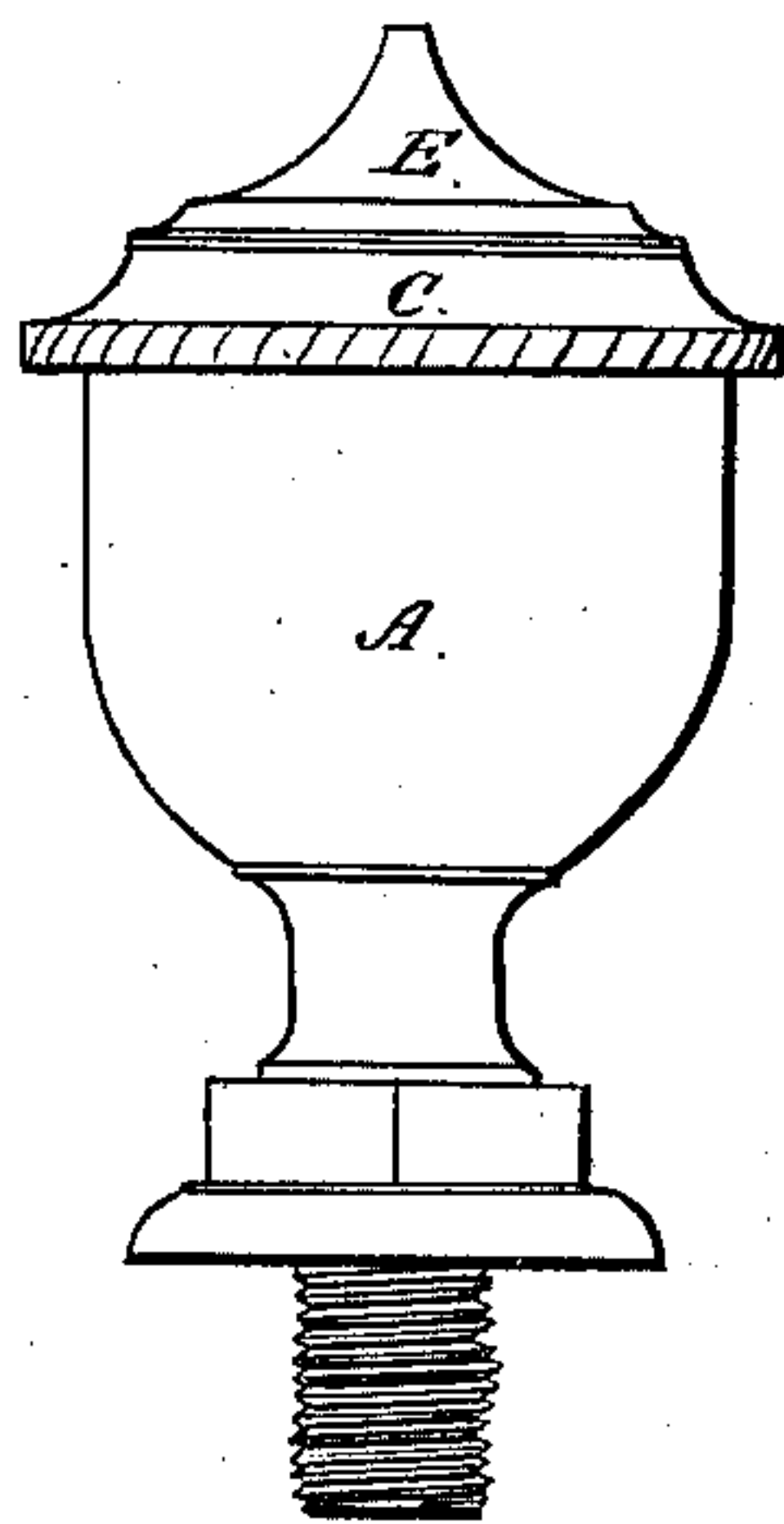
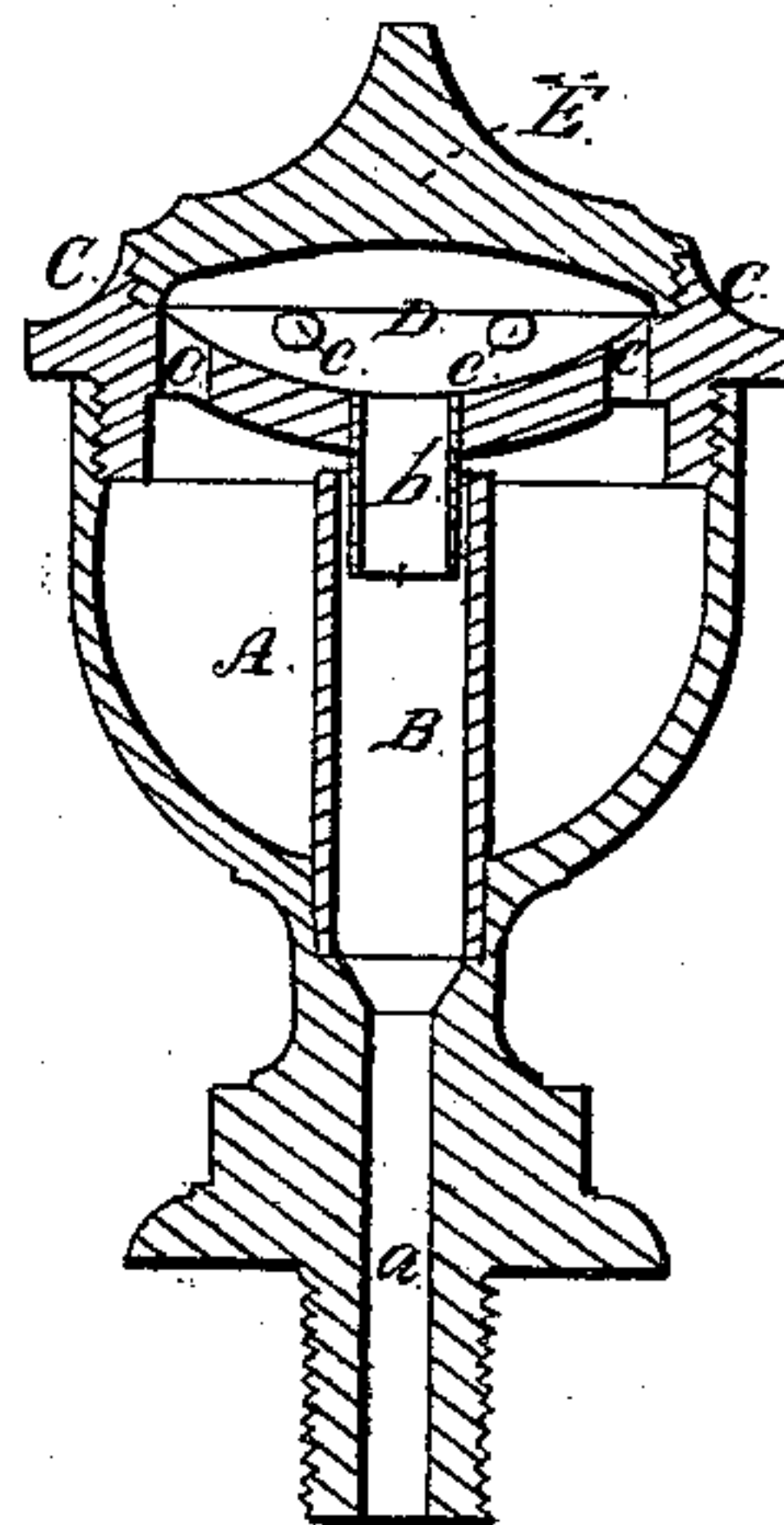


Fig. 2.



Witnesses.
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United States Patent Office.

DENNIS HARRIGAN, OF SOMERVILLE, ASSIGNOR TO HIMSELF AND
JOHN H. WIGGINS, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 86,540, dated February 2, 1869.

IMPROVEMENT IN OIL-CUPS OF CONNECTING-RODS OR MOVABLE BEARINGS OF MACHINERY.

The Schedule referred to in these Letters Patent and making part of the same.

To all persons to whom these presents may come:

Be it known that I, DENNIS HARRIGAN, of Somerville, in the county of Middlesex, and State of Massachusetts, have made a new and useful invention, having reference to Oil-Cups of Connecting-Rods or Movable Bearings of Machinery; and do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, in which—

Figure 1 is an elevation, and

Figure 2, a vertical section of one of my said oil-cups.

The cup is intended to be used without a wick to raise the oil into the discharging-conduit.

It is well known that with those cups which depend on a wick to raise the oil from the reservoir to and discharge it into the eduction-pipe, there is much waste of oil while the cup or device, to which it may be attached, may be at rest, for, during such period, the flowage of the oil continues, through the capillary action of the wick, as it does when the cup may be in motion. When the cup may be at rest, there is no necessity for such flowage, as the bearing to which the cup may be applied, then requires no lubrication.

My cup, when at rest, discharges no oil, and it is only when it is in revolution that oil will flow out of it, the flowage of it resulting from the action of centrifugal force, generated in the oil by the orbital rotary motion of the cup.

The body or oil-reservoir A of the cup is furnished with a tube, B, to extend from its bottom, and from the discharge-conduit *a*, leading down from such bottom.

The cover C, of the said reservoir, I make conical or convex on its lower surface, or that surface which is next to the mouth or top of the tube B, the same being so that, when oil is dashed from the reservoir against such surface, such oil, by flowage down the surface, and by the forces of cohesion and gravity, may be directed by it into the mouth of the tube B.

Within the cover C, and over the oil-reservoir, I form a chamber, D, having a concave bottom and a conduit, *b*, leading therefrom to or directly over the mouth of the pipe B.

I make one or more holes, *c*, through the said bottom, and near the circumference thereof.

Such chamber may be provided with a cap, E, fitted to it by means of screws, or other suitable devices, which will admit of removal of the cap. When provided with the removable cap, the chamber may be cleansed of any sediment, or foreign matter, which, at any time, may have collected therein.

If we suppose the oil-cup, so made, to be screwed

upon a connection-rod of a steam-engine, and there used for the purpose of lubricating the crank-pin laid hold of by such rod, we shall see that, while the crank-pin may be revolved in an orbit, or circular path, the cup will be carried through a similar orbit, or path, and in consequence thereof, oil, when within the reservoir, will be thrown up against the convex surface of the cover C.

Much of this oil will find its way through the opening *c*, and into the chamber D, from whence it will flow through the duct *b* into the tube B, and, by the duct *a*, will be discharged upon the crank-pin. But while the crank-pin may be at rest, no oil will be discharged upon it.

The cup may be made with the convex or tapering surface or bottom of the cover, and without the chamber D. In some cases, it will work well when so made, but I prefer the addition of the chamber, with the ducts leading into and out of it, and arranged, with respect to the tube B, in manner substantially as represented, as it will readily be seen that, with the said additions, the operation of the cup will be greatly improved.

The convexity of the surface or bottom of the cover should have a form, which, through the action of the forces of cohesion and gravity, when the cup may stand in an upright position, shall direct oil, after having been splashed on such convex surface, towards and cause it to drop into the mouth of the tube B.

Another mode in which I have contemplated the application of my invention is to have a simple tunnel, hollow conic frustum, or concave dish, arranged within the cup, and over the tube B, and supported within the cup by arms, or any suitable means, the whole being so that oil, when thrown up toward the cover of the cup, may pass up about the circumference of the tunnel, frustum, or dish, and thence into the tunnel, frustum, or dish, and thence out of a duct, leading out of it to and over the mouth of the tube B. This would save the necessity of more than one cover to the cup.

I therefore claim as my invention—

The combination and arrangement of the convexity, or convex surface or bottom of the cover C, with the cup and its internal tube B.

Also, the combination and arrangement of the cup A, the tube B, the cover E; and the chambered cover C, provided with the ducts *c b*, arranged with the tube B, substantially as specified.

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Witnesses:

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