

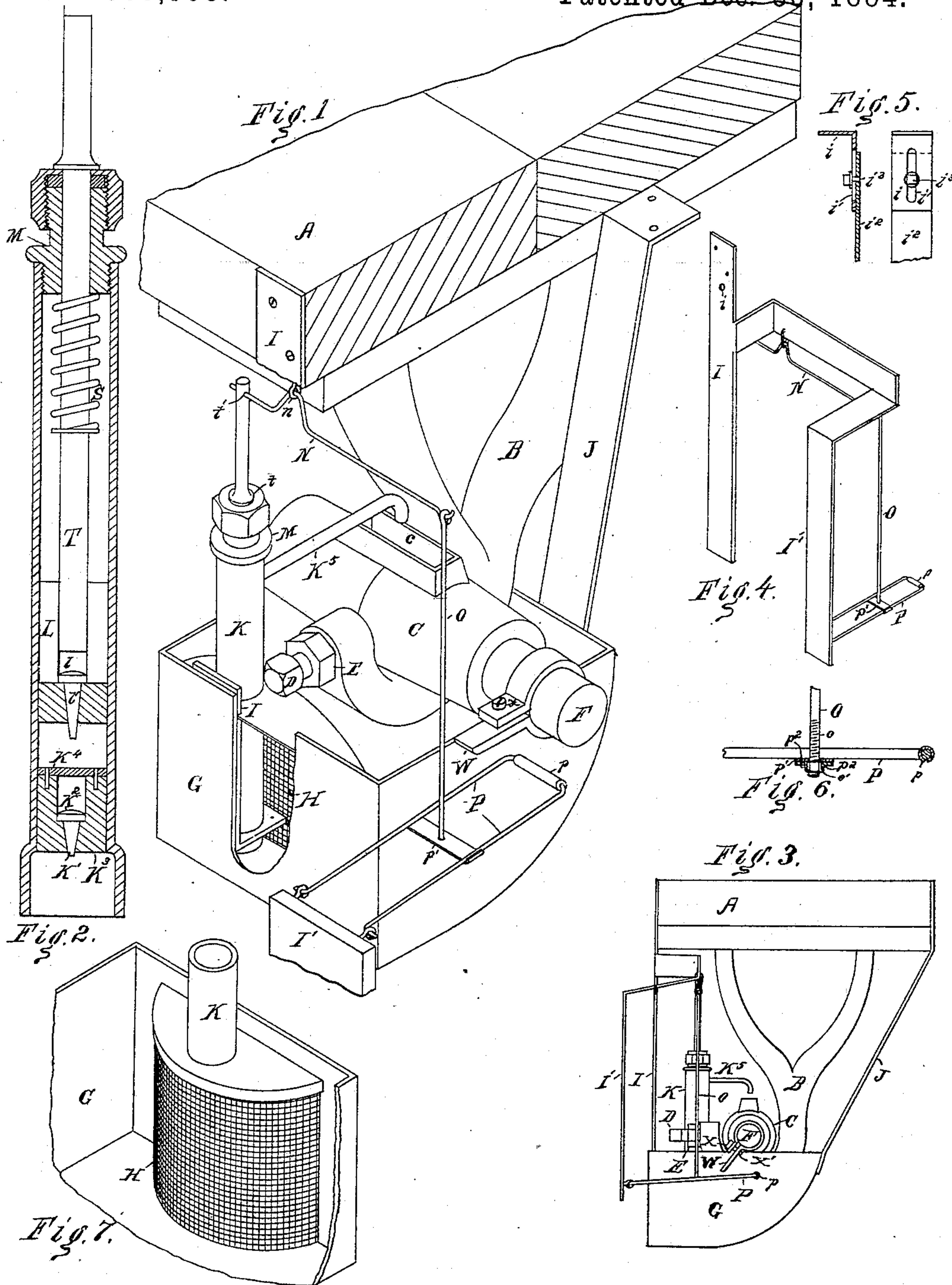
(No Model.)

H. P. HUMPHREY.

MECHANICAL OILER FOR BEARINGS.

No. 309,953.

Patented Dec. 30, 1884.



Witnesses

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UNITED STATES PATENT OFFICE.

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MECHANICAL OILER FOR BEARINGS.

SPECIFICATION forming part of Letters Patent No. 309,953, dated December 30, 1884.

Application filed October 1, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY P. HUMPHREY, a citizen of the United States, residing at Lowell, in the county of Middlesex and Commonwealth of Massachusetts, have invented a certain new and useful Improvement in Mechanical Oilers for Bearings, of which the following is a specification.

My invention relates to means of supplying a uniform quantity of oil to a journal at each revolution of its shaft; also to means of regulating the quantity of oil supplied to the shaft at a single revolution of the shaft or a single stroke of the pump; also to means of supporting the drip-pan and oiler.

In the accompanying drawings, Figure 1 is an isometric view of a hanger with swing journal-box, shaft, wiper, drip-pan, oil-pump, levers, and connecting-rod, a part of the drip-pan being broken away to show the strainer; Fig. 2, a vertical central section of the pump. Fig. 3 is a side elevation of the parts shown in Fig. 1. Fig. 4 is an isometric view of the strap which supports the drip-pan and levers, showing said levers and the connecting-rod. Fig. 5 at the left shows in section and at the right in elevation an adjustable angle-iron or foot of the strap. Fig. 6 is a longitudinal central section of part of the lower lever, showing also the lower part of the connecting-rod and the nut and nut-lock. Fig. 7 is an isometric view of part of the drip-pan, showing the strainer and its cover and the lower end of the pump.

A is the ceiling or overhead flooring of a mill or machine-shop, to which is secured the hanger B, having a swinging journal-box, C, held in place by the set-screw D and check-nut E, the box C surrounding and supporting a shaft, F, all in the usual manner.

G is a drip-pan, which may be of tin-plate and of any convenient shape, but preferably with a bottom which curves or slopes downward from back to front. Inside of the pan is a curved wire-cloth strainer, H, secured by solder to the bottom and front side of the pan. The pan should be a little longer than the box C, and is secured to the under side of the floor above by a wrought-iron strap, I. This strap is secured to the inside of the pan by solder, preferably, or by rivets or other convenient means, and its lower end is bent out horizon-

tally, and is provided with an opening to receive the lower end of the pump K, which, after insertion in said strap, is soldered there- to. The length of the strap I may be varied by making it in two pieces, the upper one, *i*, being slotted at *i'*, and the lower or main portion, *i''*, of the strap being provided with a screw-threaded hole, into which the bolt *i'''* is turned after being passed through said slot *i'*, so that the two parts of the strap may be adjusted vertically to suit the length of the hanger B. This enables the strap I to be attached to the pan and to be kept in stock, instead of being made to order for each variation in the length of the hanger. The upper part of the strap may be bent over into an angle-iron or foot, as shown in Fig. 5, to be attached to the under side of the ceiling-floor or to a beam. The strap supports not only the pan and oiler, but other straps may be soldered or riveted to it to support the levers which operate the oiler, as hereinafter described. The back part of the pan is held up by a strip, J, of tin, soldered at its lower end to the pan and at its upper end nailed or screwed to the floor A. The peculiar construction of the pump forms the subject of another application pending herewith, and is not herein claimed. A lever, N, consisting of a stout wire pivoted at *n* to the floor overhead, passes through an eye or hole, *t'*, at the upper end of the piston-rod, the other end of said lever being pivoted to a connecting-rod, O, the lower end of the connecting-rod being attached to the lower lever, P. This lever P may be made in various ways, but, as shown in the drawings, is a piece of wire bent into a U shape, the ends of the wire being pivoted to the strap I' and the end of the lever nearest the shaft being covered with leather *p*, against which at every revolution of the shaft a wiper, W, secured to the shaft, strikes. This wiper may be merely a strap of iron, as shown, around the shaft, and having its ends held together by a bolt, *x*, and nut *x'*, one or both of these ends reaching out far enough to wipe or strike upon the free end of the lever P. The connecting-rod O is screw-threaded at *o* at its lower end, (see Fig. 6,) and is passed down through a hole in a cross-bar, *p'*, connecting the sides of said lever, and is provided with a nut, *o'*, below the levers, so that the free

end of the lever may be raised or lowered to increase or diminish the length of the stroke. The nut o' is prevented from turning by a nut-lock, which consists of one or more ribs or points, p^2 , rigidly secured on the under side of the cross-bar p' , which hang down against one or more of the straight sides of said nut and prevent its being turned except when the lever P is lifted (by hand) far enough to raise said ribs or points above said nut.

The operation is as follows: Each revolution of the shaft causes the wiper to depress the lever P, and through the connecting-rod O and lever N to raise the piston of the pump, and to throw the oil out of the spout of the pump into the journal-box C, and the piston is then thrown down by the expansion of the spiral spring S to be in readiness for another stroke. Any surplus oil running out of the box C drips into the pan and passes through the streamer, and eventually through the pump again to the journal-box, and the operation is repeated continuously.

It is evident that the oiler above described conveys the same quantity of oil to the shaft at each revolution of the same whether the shaft revolves at a high or a low speed, that the spring will return the piston to the bottom of the stroke in readiness for another stroke, no matter how fast the shaft revolves, and that the amount of oil may be regulated by varying the length of the stroke so that a pump of one size will be large enough for a large bearing and not too large for a small one, and that by putting several wipers on the same shaft several strokes of the pump may be given at every revolution of the shaft.

I claim as my invention—

1. The combination of an oil-pump, levers, connecting-rod, and means, substantially as described, for supporting the same and the

wiper, and means, substantially as described, for rotating the same, as and for the purpose specified.

2. The combination, with the pump, and means, substantially as described, for operating the same, of means, substantially as described, for regulating the length of the stroke of the pump, as and for the purpose specified.

3. The combination of the pump, the levers, the rod connecting said levers, means, substantially as described, for operating said levers, and means, substantially as described, for varying the length of said connecting-rod, as and for the purpose specified.

4. The combination of the pump, the levers, the rod connecting said levers and provided with a screw-thread, and the nut turning on said rod, and means, substantially as described, for operating said levers, as and for the purpose specified.

5. The combination of the pump, the levers, the lower lever having turned-down edges, the rod connecting said levers and provided with a screw-thread, and the nut, and means, substantially as described, for operating said levers, as and for the purpose specified.

6. The combination of the drip-pan and a mechanical oiler, and the strap adjustable in length and adapted to support said drip-pan and oiler, as and for the purpose specified.

7. The combination of the drip-pan and the mechanical oiler, and the strap formed in two parts, one of which is slotted and the other of which is provided with a threaded hole, and the screw-bolt, as and for the purpose specified.

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Witnesses:

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