

(No Model.)

2 Sheets—Sheet 1

G. H. COLE.
MECHANICAL OILER FOR SHAFTING.

No. 553,512.

Patented Jan. 28, 1896.

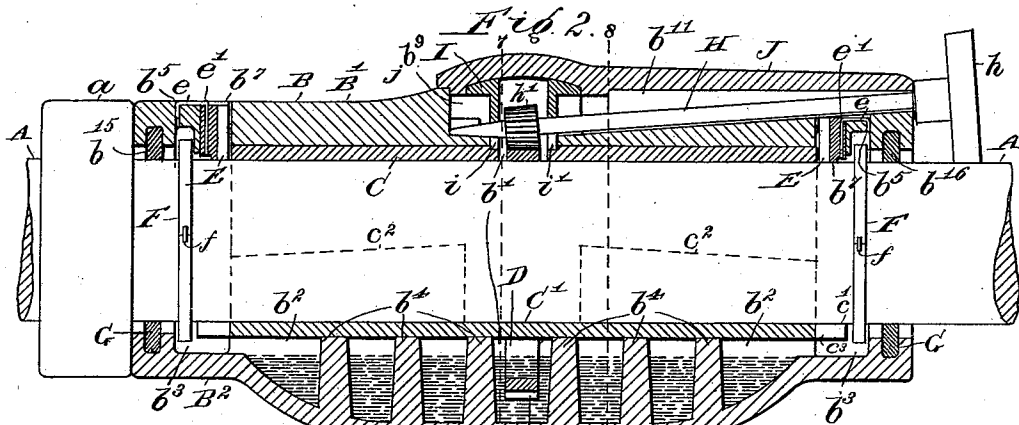
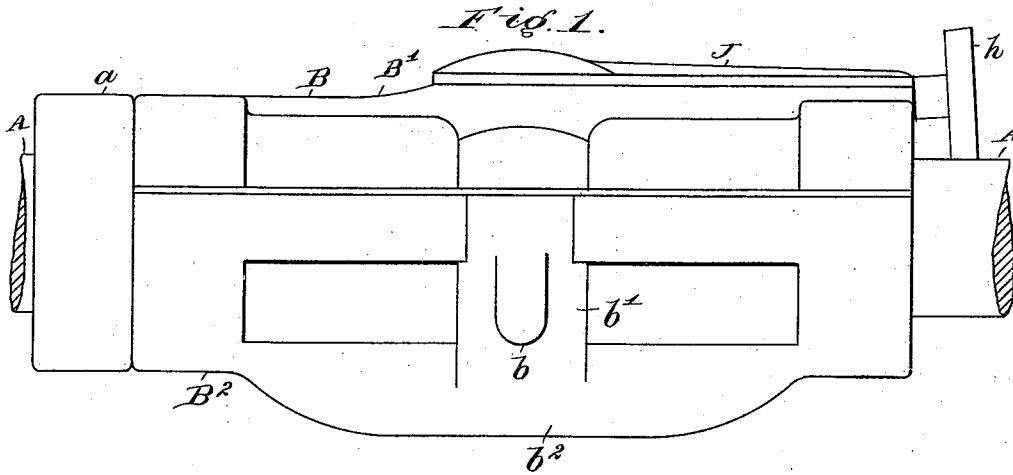


Fig. 3.

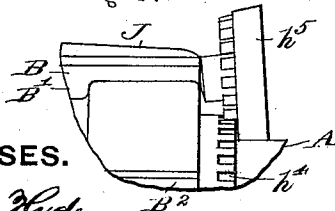
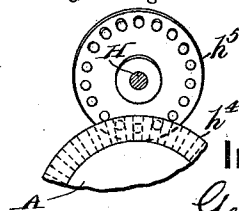


Fig. 4.



WITNESSES.

Kirkley Hyde.

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INVENTOR

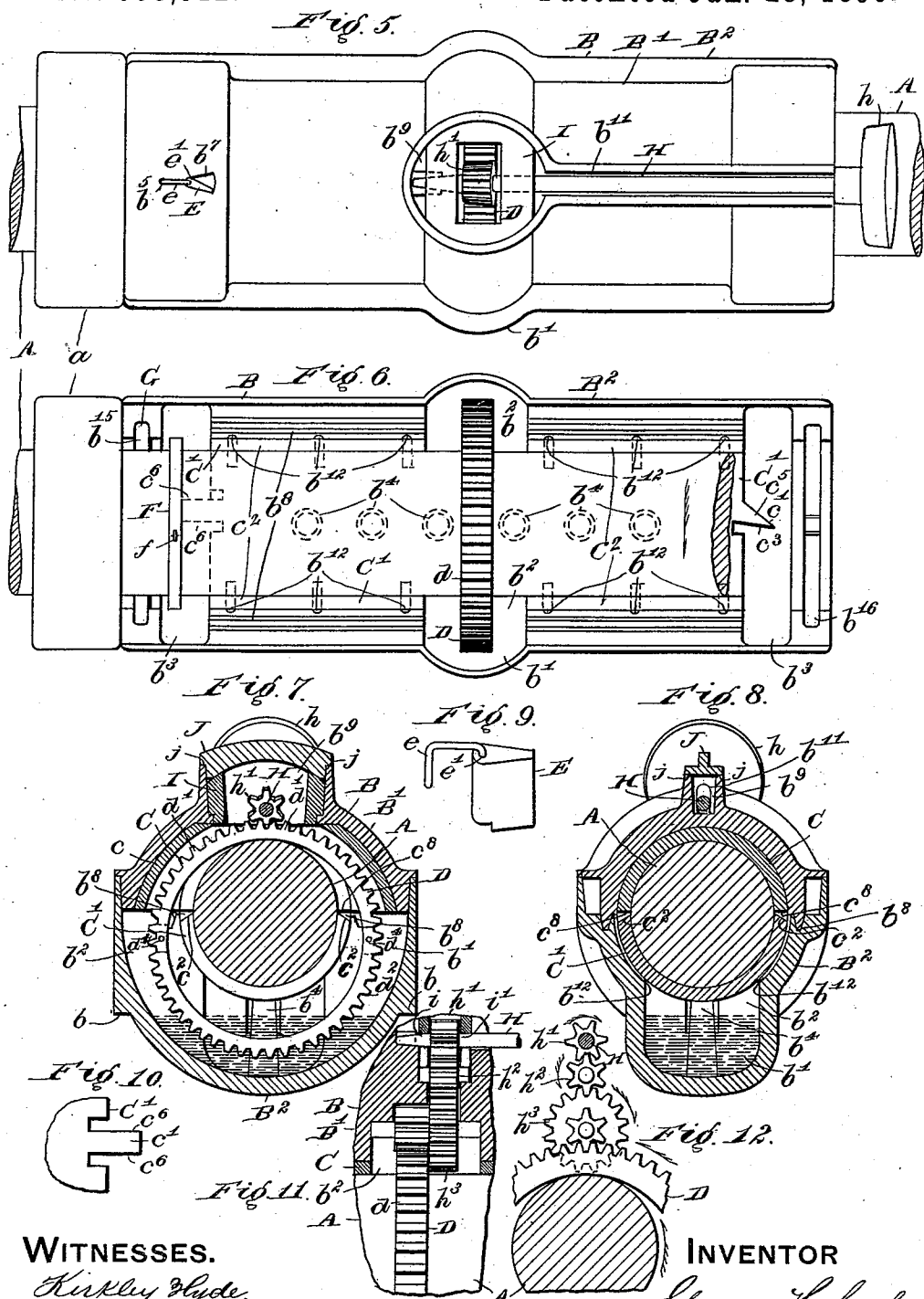
George H. Cole,

By Albert M. Moore,
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Kirkley Hyde.
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INVENTOR

George H. Cole,
By Albert M. Moore,
His ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE H. COLE, OF LOWELL, MASSACHUSETTS.

MECHANICAL OILER FOR SHAFTING.

SPECIFICATION forming part of Letters Patent No. 553,512, dated January 28, 1896.

Application filed February 27, 1895. Serial No. 539,845. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. COLE, 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 Shafting, of which the following is a specification.

My invention relates to mechanical oilers for shafting; and it consists in the combinations hereinafter described and claimed, the object of the same being to feed the oil continuously in large quantities from a reservoir in the journal-box to the journal-bearing, to return the surplus oil to said reservoir, and to prevent the oil from getting beyond the ends of the journal-box, running to waste and dirtying the shafting and the floor beneath and articles resting upon the floor.

In the accompanying drawings, on two sheets, Figure 1 is a plan of a piece of shafting provided with a collar and arranged in a journal-box, said box and my improvement; Fig. 2, a vertical central longitudinal section of said journal-box and the toothed oiler-ring, showing said shafting and the oiler-shaft pulley and pinion in front elevation; Fig. 3, a front elevation of a part of the journal-box, shafting, and oiler-shaft, showing the oiler-shaft provided with a face-wheel and the shafting provided with a fast gear; Fig. 4, a side elevation of said face-wheel and fast gear; Fig. 5, a plan of the journal-box, shafting and movable deflector, the cover being removed to show the oiler-shaft and its pinion and the oiler-ring; Fig. 6, a plan of the lower half of the journal-box, the shafting and collar, the oiler-ring, the wipers, a stop-ring and packing-ring, one of said wipers, the posts which support the lower half of the Babbitt metal lining and the oil-passages which lead from the opening between the babbittings to the reservoir, being shown in dotted lines; Figs. 7 and 8, vertical transverse sections on the lines 7 7 and 8 8, respectively, in Fig. 2; Fig. 9, a front elevation of the adjustable oil-deflector detached; Fig. 10, a plan of the oil-wipers and adjacent parts of the lower babbitting; Figs. 11 and 12, respectively, a front elevation and a side elevation of a part of the oiler-ring and the pinions connecting said ring and the oiler-shaft, by which the

surface speed of said oiler-ring may be made different from that of the shafting to be oiled, parts of the cap of the journal-box being shown in central longitudinal section in Fig. 11, and the shafting being in front elevation in Fig. 11 and in vertical cross-section in Fig. 12.

The piece of shafting A may be provided with a fixed collar *a* to prevent end movement of said shafting in the usual manner.

The journal-box B consists of a cap B' and a lower half B², in which the shafting A is supported. The lower half B² is provided with ears *b*, by which the box B is supported in the usual manner in any hanger. Said lower half B² is provided also with an oil-reservoir *b*², which extends nearly from end to end of the same, and with vertical posts *b*⁴, preferably cast or otherwise formed in one piece therewith, upon which posts rests the lower babbitting C', the upper portions of said babbitting being held between the sides of said lower half.

The box B has an annular enlargement *b*' at the middle thereof to receive the toothed oiler-ring D, hereinafter described, and to allow the same to run freely out of contact with said box and the lining or babbitting C of the cap B', which lining C has the same thickness at *c* within said enlargement *b*' as where said lining comes in contact with the shafting A. Just outside of the babbitting or lining C' said lower half is also provided at each side thereof and at each side of the enlargement *b*' with a horizontal groove *b*⁸, which extends from said enlargement to the ends of said lining, said grooves *b*⁸ receiving the lower edges of the cap B' and discharging any oil which may work into said grooves *b*⁸ into cylindrical drip-receiving chambers *b*⁸ cast in and continuous in both halves of the box B, Figs. 2 and 6. The outer edges of the lower lining C' are beveled at *c*² to form with the inner face of the lower half of the box grooves which descend slightly from the middle toward the ends of said box, as indicated by the dotted line *c*² in Fig. 2, so that any oil which is caught between said lining C' and the lining C of the cap B runs along in the spaces between said beveled edges *c*² and the horizontal edges *c*⁸ of the lining C and is discharged into the reservoir *b*² through grooves *b*¹², formed in the

inner faces of the lower half B² and reaching from the top of said lower lining C' to the top of said reservoir.

The ends of the lower lining C' are provided 5 with projections c' or wipers, Figs. 2. and 6, which remove the oil from the shafting A and allow the same to fall into the reservoir in order to prevent, as far as possible, the oil from crawling along on said shafting and out 10 of the ends of the journal-box. If the shafting is intended to run always in the same direction the front side c³ of the wiper c', or side toward which the oil is carried, should be inclined to the axis of said shafting in such a 15 manner as to direct the oil toward the body of the lining C', and the rear side c⁵ of said wiper should also be inclined in the same direction, as shown at the right in Fig. 6; but if the shafting is intended to run in each direction, at will, both sides c⁶ of said wiper should 20 be parallel with said axis. I also provide near each end of the box B, in the top of the cap B' and just beyond the ends of the lining C, a nearly triangular hole b⁷, Fig. 5, in which 25 is placed a deflector E, preferably of metal, and hinged to said cap B' by a staple-shaped hook e, one arm of which enters a vertical hole e' in said deflector near the outer edge of said deflector, and the other arm of which 30 hook e enters a hole b⁸ in the cap B', Figs. 2 and 5, in such a manner as to allow said deflector to be swung by the friction of the shafting A on the bottom thereof to cause oil carried by said shafting beyond the ends of 35 the lining to be turned toward said lining.

As a further precaution against the oil reaching the ends of the journal-box, I surround the shafting A, between the deflectors E and the ends of said box, with stop-rings F, of 40 any material, which fit said shafting closely and prevent the oil from passing between said shafting and said rings F, and which may be readily secured in place, preferably using leather strips, the ends of which are fastened 45 by wire belt-hooks f' of ordinary construction. Such oil as, notwithstanding the wipers c' and deflectors E, reaches the stop-rings F will be thrown by centrifugal force from the circumferences of said stop-rings into the 50 box B and flow back to the reservoir.

Dust and lint are excluded from the box B by means of packing rings or strips G inserted in grooves b¹⁵ b¹⁶, substantially in the manner shown in my Patent No. 515,749, 55 dated March 6, 1894.

The oiler-ring D surrounds the shafting A and rests thereon, as described in said previous patent, but instead of being a mere ring carried by the direct friction of said 60 shafting thereon is an annular gear, driven by an oiler-shaft H, provided with a pinion h', which may directly engage the teeth d of said ring D, as shown in Figs. 2, 5 and 7, said oiler-shaft H being rotated by a wheel which 65 may be a friction-wheel h, fast on said shaft H and driven by contact with the shafting A, as shown in Figs. 1, 2 and 5, or a gear h⁵,

fast on said shaft H and engaging another gear h⁴, fast on the shafting A, as shown in Figs. 3 and 4, where the gear h⁵ is represented 70 as a face-gear or contrate-gear and the gear h⁴ is represented as a ring having teeth on the edge thereof.

The arrangement shown in Figs. 3 and 4 gives to the oiler-ring a positive motion in the 75 same direction of revolution as that of the shaft, causing the contiguous surfaces of said oiler ring and shaft to travel in the same direction.

By using any other odd number of engag- 80 ing pinions in place of the pinion h' to connect the oiler-shaft and the oiler-ring, said ring will still be caused to rotate in the same direction as said shafting A, and by making one of these pinions a compound pinion or a 85 compound gear, as shown at h³, Figs. 11 and 12, the speed of said ring may be reduced below that of said shafting, which lessens the liability of the oil to be so violently agitated as to be driven beyond the journal-surface 90 of the shafting to become filled with air-bubbles, which diminish the lubricating quality of the oil.

A guide-cap I, Figs. 2, 5, 7, and 8, is provided with notches i i' to allow said guide- 95 cap to be placed down in the chamber b⁹ of the cap B' and over the pinion h', or over the series or train of pinions shown in Figs. 11 and 12, and prevents any endwise movement of the oiler-shaft, which lies loosely in a groove 100 b¹¹, reaching down from said chamber b⁹ to the end of the box B, said chamber b⁹ and groove b¹¹ being closed by a suitable cover J, having a suitable shape to fill said chamber and having a flange j to rest upon the top of 105 the cap B'.

The oiler-ring D, for convenience of application to the shafting, may be made in two parts d' d², "halved together" at d³ and secured to each other by pins d⁴. (Shown in 110 Figs. 6 and 7.)

I claim as my invention—

1. The combination of a journal-box having a suitable reservoir, a toothed ring or annular gear adapted to surround and rest upon a 115 piece of shafting supported in said journal-box, and to enter the oil in said reservoir, an oiler-shaft having a fast pinion adapted by its rotation to rotate said oiler-ring and having a wheel fast thereon and adapted to engage said piece of shafting and to be rotated thereby, as and for the purpose specified. 120

2. The combination of a journal-box having a lower half provided with a suitable reservoir and having a cap provided with a chamber, a 125 toothed ring or annular gear adapted to surround and rest upon a piece of shafting supported in said journal-box, and to enter the oil in said reservoir and an oiler-shaft having a fast pinion adapted by its rotation to 130 rotate said oiler-ring and to enter said chamber and having a wheel fast thereon and adapted to engage said piece of shafting and to be rotated thereby, and a guide-cap, hav-

ing notches and adapted to be placed in said chamber over said pinion and oiler shaft, as and for the purpose specified.

3. The combination of a journal-box, having
5 a lining shorter than said box and having a cap, provided with a hole arranged between the end of said lining and the adjacent end of said box, and a deflector arranged in said hole and hinged at the side of said hole far-
10 thest from said lining and resting upon a piece of shafting, supported in said journal-box, and adapted to be turned by the fric-

tional contact of said shafting, to direct oil escaping from said lining along said shafting back toward said lining, as and for the pur- 15
pose specified.

In witness whereof I have signed this specification, in the presence of two attesting witnesses, this 21st day of February, A. D. 1895.

GEORGE H. COLE.

Witnesses:

ALBERT M. MOORE,
EUGENE F. CARDELL.