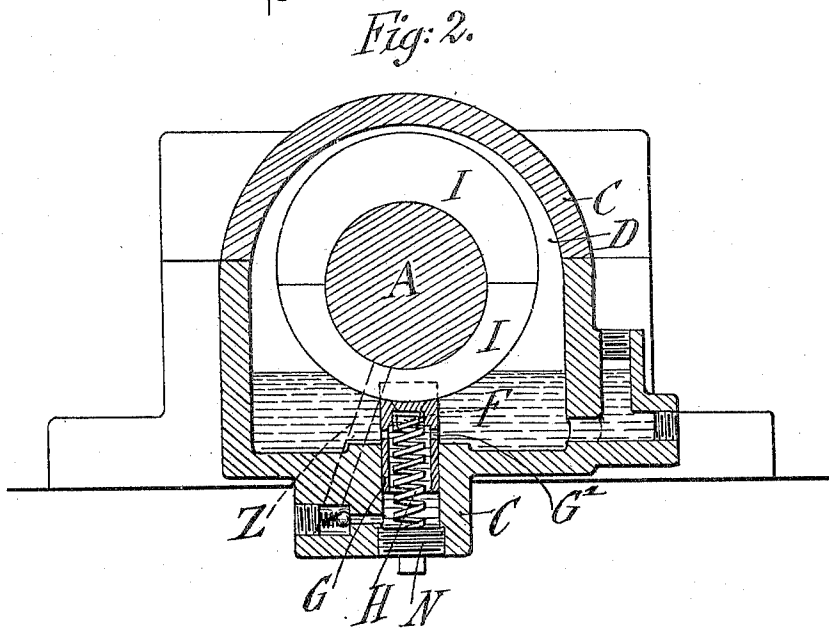
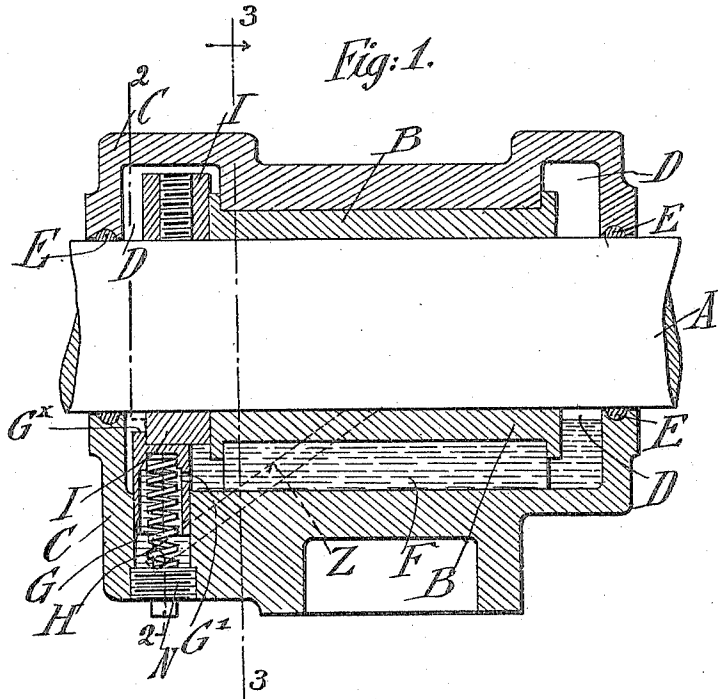


E. TILSTON.
FORCE FEED LUBRICATOR.
APPLICATION FILED APR. 28, 1906.

948,192.

Patented Feb. 1, 1910.

2 SHEETS—SHEET 1.



Witnesses:
James E. Cook
H. J. Scherrie.

Inventor
Edward Tilston
By his Attorneys
James E. Cook

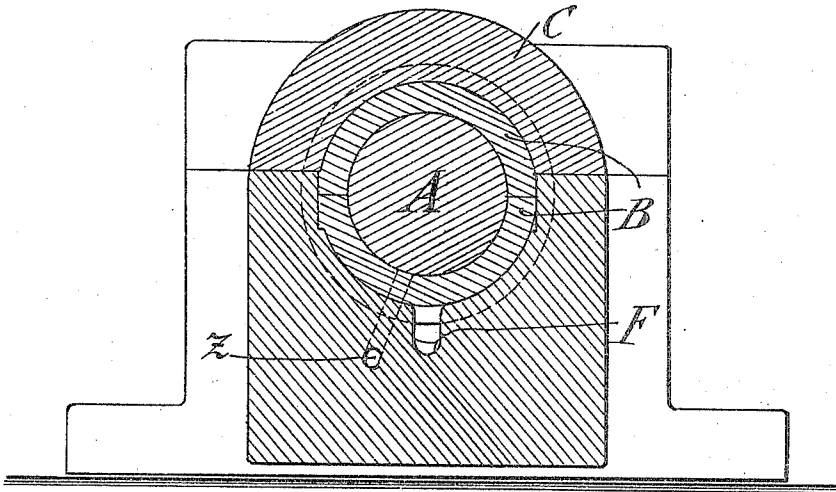
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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE

EDWARD TILSTON, OF MANCHESTER, ENGLAND.

FORCE-FEED LUBRICATOR.

948,192.

Specification of Letters Patent.

Patented Feb. 1, 1910.

Application filed April 23, 1906. Serial No. 314,296.

To all whom it may concern:

Be it known that I, EDWARD TILSTON, a subject of the King of Great Britain, residing in Manchester, county of Lancaster, England, have invented certain new and useful Improvements in Force-Feed Lubricators, of which the following is a specification.

This invention aims to provide an improved force feed lubricator of the type in which a lubricant pump actuated by the part to be lubricated is employed; and with this end in view the invention consists in the novel features of construction and combinations of parts to be hereinafter described and claimed.

In the accompanying drawing, Figure 1 is a vertical longitudinal section of a force feed lubricator constructed in accordance with the invention, Fig. 2 is a section on line 2, 2, Fig. 1. Fig. 3 is a sectional view taken on the line 3, 3, of Fig. 1.

Referring to the drawing, the shaft A, which is to be lubricated, rotates in a bearing B, which is preferably formed of the usual brasses, these being mounted in a casing C, which incloses the entire bearing and is provided at the ends with packings E to prevent the escape of the lubricant along the shaft.

The casing C is formed with a transversely extending chamber D at each end, and these chambers are in communication with each other by means of a longitudinal channel F which extends directly beneath the bearing B, as shown. Operating in a bore at the lower part of one of the chambers D is an oil pump G adapted to pump the oil which is placed in the casing to the bearing and shaft, and preferably consisting of a thimble or sleeve closed at the top and provided with a side-opening G¹ adapted to be moved into and out of the pump-barrel formed by said bore. This movement of the oil pump is produced by an eccentric I fixed to the shaft in any suitable manner within the same chamber D in which the oil pump is located, and engaging the upper end of the pump-sleeve, as shown. Said sleeve is returned after its depression by the eccentric by means of a helical spring H located within the sleeve and seated against a screw-plug N screwed in the mouth of the bore or pump-barrel. Where the sleeve forms contact with the eccentric the former is provided with a shoulder G^x engaging the

side-face of the eccentric and preventing the rotative movement of said sleeve in the pump-barrel. The lower part of the pump-barrel or bore is connected by means of a passage Z with the bearing B in order to conduct oil to said bearing, and said passage is preferably formed of a bore extending directly through the casing and bearing from the lower part of the pump-barrel to a point in the bearing under the shaft.

The rotation of the shaft produces, through the rotation of the eccentric I, the reciprocation of the pump-sleeve or thimble, the latter being maintained in engagement with the eccentric by means of the spring H, as will be understood. The oil which is contained in the lower part of the casing and, more specifically, in the longitudinal channel F is taken through the side-opening G¹ of the pump and driven through the passage Z to the lower part of the bearing, where it spreads itself over the entire bearing surface of the bearing and shaft. The oil then finds its way downward at the sides of the bearing and back into the longitudinal channel F and chambers D, whence it is again pumped back to the bearing surfaces just indicated. This operation is repeated as long as the shaft rotates, and of course the speed of the shaft controls the operation of the pump and therefore the amount of lubrication.

What I claim is:—

1. In a force feed lubricator for bearings, the combination, with a shaft and a bearing therefor, of a casing inclosing the bearing and provided at the ends of the latter with chambers forming oil-collecting chambers, said chambers being connected by means of a channel extending longitudinally below the bearing, a pump-barrel formed by a bore in the casing communicating at its upper part with one of said chambers and said longitudinal channel, a pump piston operating in said barrel, pump-actuating means mounted on the shaft within said last-named chamber, and a passage leading directly through the casing and the bearing from the lower part of said pump-barrel to a point in the bearing under the shaft.

2. In a force feed lubricator for bearings, the combination, with a shaft and a bearing therefor, of a casing inclosing the bearing and provided at the ends of the latter with chambers forming oil-collecting chambers, said chambers being connected by means of

a channel extending longitudinally below the bearing, a pump-barrel formed by a bore in the casing communicating at its upper part with one of said chambers and said longitudinal channel, a pump piston operating in said barrel and comprising a thimble having a side-opening adapted to be moved into and out of said pump-barrel, pump-actuating means mounted on the shaft within said last-named chamber, and a passage leading directly through the casing and the bearing from the lower part of said pump-barrel to a point in the bearing under the shaft.

3. In a force feed lubricator for bearings, the combination, with a shaft and a bearing therefor, of a casing inclosing the bearing and provided at the ends of the latter with chambers forming oil-collecting chambers, said chambers being connected by means of a channel extending longitudinally below

the bearing, a pump-barrel formed by a bore in the casing communicating at its upper part with one of said chambers and said longitudinal channel, a pump piston operating in said barrel and comprising a thimble having a side-opening adapted to be moved into and out of register with the said last-named chamber, pump-actuating means mounted on the shaft within said last-named chamber, and a passage leading directly through the casing and the bearing from the lower part of said pump-barrel to a point in the bearing under the shaft, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EDWARD TILSTON.

Witnesses:

H. D. JAMESON,
FREDK. L. RAND.