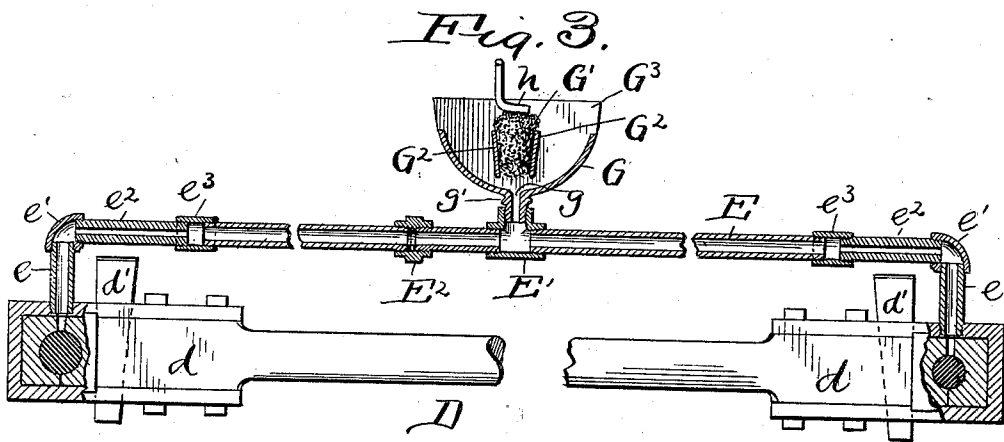
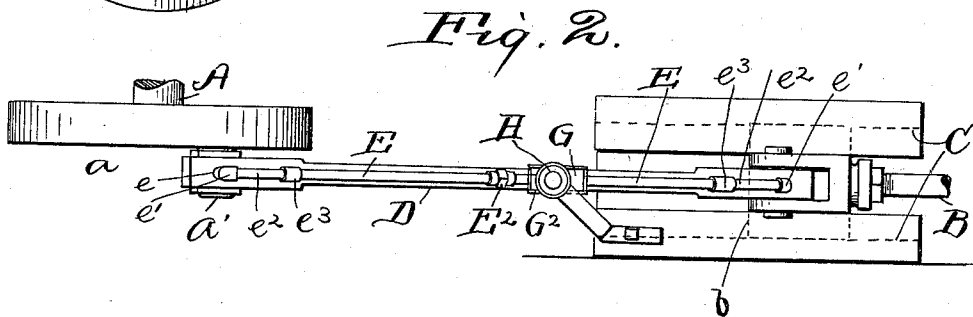
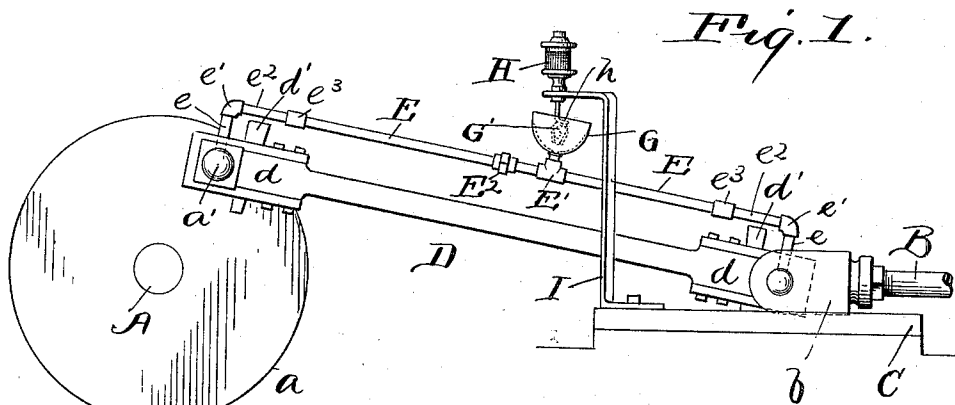


(No Model.)

F. C. KARL.
LUBRICATOR.

No. 561,323.

Patented June 2, 1896.



Witnesses.
E. B. Gilchrist
C. W. Brown

Inventor
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UNITED STATES PATENT OFFICE.

FRANK C. KARL, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO GEORGE C. JULIER, OF SAME PLACE.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 561,323, dated June 2, 1896.

Application filed March 18, 1895. Serial No. 542,096. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. KARL, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and
5 useful Improvements in Lubricators for Reciprocating Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it per-
10 tains to make and use the same.

My invention relates to improvements in lubricators for reciprocating engines; and it consists in certain features of construction hereinafter described, and pointed out in the
15 claim.

In the accompanying drawings, Figure 1 is a side elevation showing my improved lubricating apparatus in connection with the joints between the pitman-heads and piston-rod and
20 wrist of the crank of the engine-shaft. Fig. 2 is a top plan of the same. Fig. 3 is a side elevation of the pitman and lubricating apparatus, mostly in central longitudinal section, with portions broken away to reduce the
25 size of the figure.

Referring to the drawings, A designates the engine-shaft; *a*, the crank-wheel or crank of said shaft; *a'*, the wrist of the crank; B, the piston-rod; *b*, the slide formed upon the
30 outer end of said rod; C, the slideway for said slide; D, the pitman that establishes operative connection between the piston-rod and crank; *d d*, the pitman-heads, and *d' d'* the keys of said heads.

35 A short pipe or tube *e* is fitted into each pitman-head, which pipes are adapted to deliver the lubricant to the joints between the two heads of the pitman and piston-rod and wrist of the crank. Each pipe *e* at its upper
40 end is connected by an elbow *e'* with a pipe *e*². Pipes *e*² are arranged parallel or approximately parallel with the pitman and preferably in close proximity to the upper ends of the keys of the pitman-heads. Each pipe *e*²
45 is suitably connected by means of a coupling *e*³ with a pipe E, that is arranged in line with the aforesaid pipes *e*². A receptacle G is suitably connected with the central portion of said pipe E, said receptacle being preferably
50 cup-shaped, and the bottom of said receptacle at its central portion being provided with a

downwardly-flanged discharge-opening *g*, which opening is in open relation with the passage-way through pipe E. The flange *g'* of opening G is suitably connected with pipe
55 E, preferably by means of a T E'. Receptacle G, a suitable distance above its discharging-opening, is provided with a suitable lubricant wiping and conveying material G', that is adapted to be engaged by the discharg-
60 ing end of the discharge-spout *h* of oil-cup H, supported in any approved manner from a stationary bracket or standard I. The arrangement of parts is such that once in each
65 rotation of the engine-shaft wiper G' within receptacle G shall be brought into engagement with the discharging end of the spout of the oil-cup and wipe off the drop of lubricant that shall have appeared at said end of
70 the spout, the feed-opening of said cup having such size that lubricant shall not be fed faster from the cup than desired, and the arrangement of parts is, furthermore, such that the lubricant shall be fed to the joint between
75 the pitman and piston-rod during one-half of each rotation of the engine-shaft and shall be fed to the joint between the pitman and crank-wrist during the other half-turn of each rotation of said shaft—that is, lubricant shall
80 be fed to the two joints alternately.

I would remark that the passage-ways through pipes *e*² should be considerably smaller in diameter than the passage-way through pipe E, so that the lower wall of the
85 passage-way through said pipe E shall, in the horizontal position of said pipe, be located below the lower wall of the passage-ways through pipes *e*², whereby a quantity of lubricant will always be stored in said pipe E
90 ready for any case of emergency—such, for instance, as the accidental stoppage of the flow of lubricant from the oil-cup, and as required to maintain the aforesaid joints properly lubricated during the time that the en-
95 gineer inspects the oil-cup and feed-passage-way from said cup and remedies the difficulty. Furthermore, the engineer, if he properly attends to his business, will immediately detect the stoppage of the flow of lubricant from the oil-cup should such stoppage occur,
100 because the discharging-spout of said cup is exposed to view and not concealed, as is the

case with cups secured directly to the pitman-heads.

The means employed for holding the lubricant wiping and conducting material G' within receptacle G consists, preferably, of two bars G^2 , arranged transversely of and suitably secured to opposite sides of said receptacle, said bars being located a suitable distance apart, as shown more clearly in Fig. 3. Receptacle G is also preferably provided with two upright guards G^3 , located at opposite sides, respectively, of the point at which the lubricant-wiper G wipes the lubricant from the discharging end of the spout of the oil-cup and extending a suitable distance above the wiper, the function of which guards is to prevent the throwing of lubricant over receptacle G during the operation of the engine.

I would also remark that pipe E is preferably made in two sections joined together by means of any approved coupling E^2 , upon manipulating which, as required to disconnect the two sections of the pipe, it will be observed that each section of said pipe and the connected pipe e can be turned laterally to one side out of the way of the pitman-heads, and thereby accommodate ready access to the component parts of the pitman-heads, as required, to readjust, renew, or repair said parts, or for other purposes.

I would also remark that pipes e^2 are preferably located in such close proximity to the

keys of the pitman-heads that the latter cannot become accidentally disconnected from said heads.

What I claim is—

In a lubricator for reciprocating engines, the combination with a joint between the crank-wrist and pitman and joint between the pitman and piston-rod, of an upright receptacle G located a suitable distance above the pitman and centrally between the aforesaid joints, two passage-ways leading from the discharging-opening of the aforesaid receptacle to the different joints, respectively, said passage-ways being formed by pipes e^2 connected with the joints and by diametrically-larger pipes E instrumental in connecting said pipes e^2 with the aforesaid receptacle, and said passage-ways together with the receptacle being movable with the pitman, an oil-cup located a suitable distance above the aforesaid receptacle, and suitable substance or material within the aforesaid receptacle for wiping the oil from the discharging end of the passage-way leading from the oil-cup, all arranged and operating substantially as shown, for the purpose specified.

In testimony whereof I sign this specification, in the presence of two witnesses, this 12th day of February, 1895.

FRANK C. KARL.

Witnesses:

C. H. DORER,

L. WARD HOOVER.