

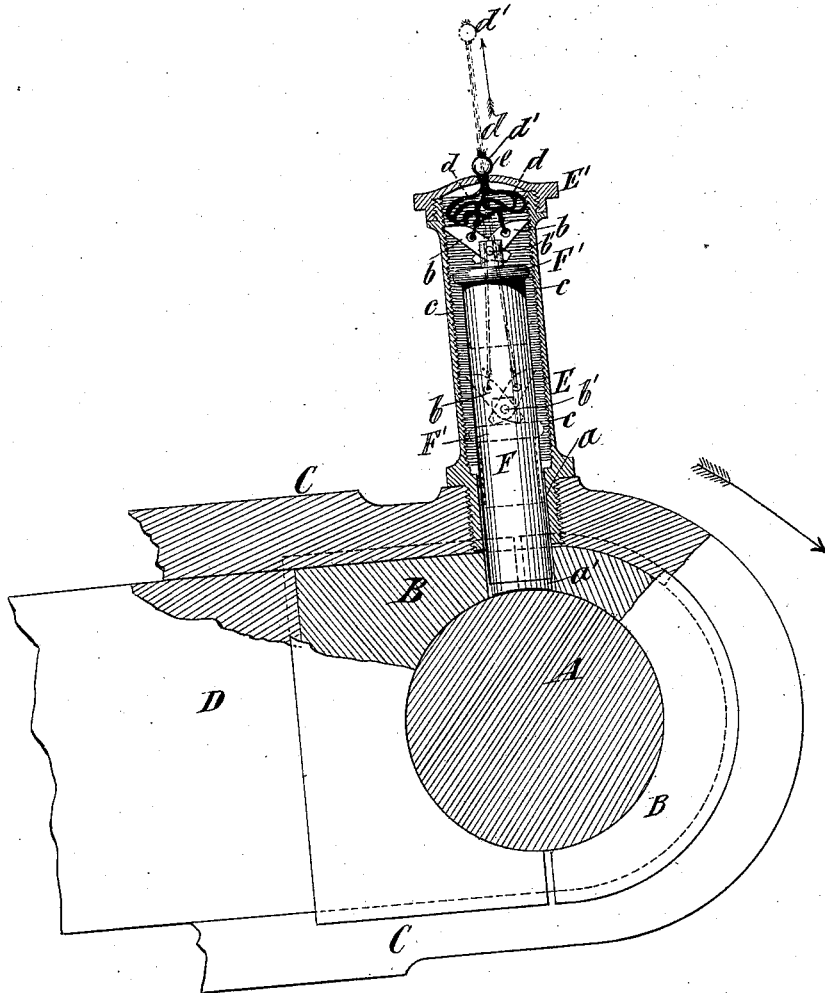
(No Model.)

W. J. FAUL.

LUBRICATING DEVICE FOR CONNECTING RODS.

No. 301,973.

Patented July 15, 1884.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM J. FAUL, OF BROOKLYN, NEW YORK.

LUBRICATING DEVICE FOR CONNECTING-RODS.

SPECIFICATION forming part of Letters Patent No. 301,973, dated July 15, 1884.

Application filed December 26, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. FAUL, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Lubricating Devices for Connecting-Rods and other Moving Boxes in Machinery, of which the following is a specification.

My invention relates to grease-cups or lubricating devices in which the lubricating material is in the form of a stick or cartridge, usually of cylindric form, which will remain solid during ordinary atmospheric temperatures, but will readily soften or fluidize at the end which is exposed to wear by friction. Such a cartridge has been placed in a case applied to the journal box or bearing to be lubricated or in the oil-hole of such a box or bearing, with its inner or lower end in contact with the journal or shaft, and as the cartridge becomes fluidized at the inner or lower end by frictional contact with the journal or shaft it is fed downward upon the journal or shaft by reason of gravitation or by a small weight applied to its upper end. Although such a cartridge can be successfully employed for lubricating bearings which are stationary, it has not been advantageous for the crank ends of connecting-rods and many other boxes which have movement, because the cartridge, if made to fit loosely enough to insure its descent by gravitation, would be thrown up and down in its case, and would become knocked to pieces or so distorted that it would be liable to be held permanently out of contact with the crank-pin or journal.

The object of my invention is to enable a lubricating cartridge or stick to be successfully used for connecting-rods and other moving boxes.

The invention consists, essentially, in the combination, with a case for containing a grease cartridge or stick, and in which the cartridge or stick will descend by gravitation, of a follower capable of movement with the cartridge or stick in said case, and a retaining device which will form such an engagement between the said follower and the case that, while it leaves the follower and cartridge or stick free to descend, it will so retain them in the position to which they have descended as to prevent the

cartridge or stick from being thrown upward. The aforesaid retaining device may be carried by the follower, and it will then engage with the interior of the case to prevent upward movement of the cartridge or stick. Such a combination of parts is included in my invention.

The invention also consists in novel details in the construction of the case and retaining device, as more fully hereinafter described, and referred to in the claims.

The accompanying drawing is a partly sectional side view of the crank end of a connecting-rod and a lubricating device applied there- to and embodying my invention.

A designates the crank pin or wrist.

B designates the brasses, and C is the strap whereby the brasses are confined and secured to the end D of the rod.

E designates a case, which is usually of cylindric form, and which is secured in the strap C, so that it will stand nearly upright or at right angles to the longitudinal center of the rod D. As here shown, the case is screwed into the strap, and the bore *a* of the lower part of the case is coincident with a similar hole, *a'*, which extends through the brasses B.

F designates the lubricating cartridge or stick, which is of grease or other lubricating material, and will retain its solid form under ordinary atmospheric temperatures. It is of such size that it can move freely in the bore *a a'*, and its lower end is always in contact with the crank-pin A. By frictional contact with the crank-pin the cartridge or stick is softened or fluidized at the lower end, and as it is thus consumed it is fed down by gravitation. The cartridge may consist of a simple stick of grease, or it may have a shell of paper or other material, which will be reduced by friction jointly with the grease or lubricating material of which the cartridge is composed. Such a cartridge is shown and described in my Letters Patent No. 214,640, granted April 22, 1879. It is obvious that if the cartridge fits loosely enough in the bore *a a'* to insure its proper feed by gravitation, it would be thrown up and down in the case by the rapid rotary movement of the connecting-rod, and would soon be knocked to pieces or so distorted that it would stick in the case and be

inoperative. To prevent this I employ a follower, which will descend freely in the case with the cartridge or stick, and a retaining device, which will form such an engagement 5 between the follower and case as to prevent the cartridge or stick from being thrown upward in the case. In this example of my invention the cartridge or stick has a shell of paper or other material, as above described, 10 and at the upper end thereof is a follower or cap, F'. Said follower or cap carries a retaining device, consisting of two pawls or dogs, b, which are pivoted thereto at b'. The interior of the case E is roughened, as at c, by forming circular 15 grooves or a continuous screw-thread on its interior, or in any other suitable manner, so that the points of the pawls or dogs b may engage with or catch into the case, and thus hold the follower or cap and cartridge or stick 20 against upward movement in the case.

I have shown in full lines the normal position of the pawls and in dotted lines the position of the pawls when it is desired to pull up the cartridge for any reason. The pawls have 25 attached to them a string or other connection, d, whereby they may be lifted, and this string or connection may pass through an aperture, e, in the cover E'.

Normally the pawls or dogs b rest against 30 the roughened interior of the case, as shown in full lines, and while they do not in any degree retard the downward movement of the follower or cap and cartridge or stick, they will on any tendency of the cartridge or stick 35 to move up in the case take into or engage with the interior of the case, and thus prevent the cartridge from such upward movement.

When it is desired to raise the follower or cap F' in the case for the purpose of introducing 40 a fresh cartridge or stick, or for any other purpose, the string or connection d is pulled upward, and lifts the pawls or dogs b, so as to disengage their points from the interior of the case, as shown in dotted lines, where- 45 upon the follower or cap will be readily raised out of the case. Normally the string d lies coiled within the case, and it has at the end a

button, d', which prevents it from dropping through the aperture e.

By my invention the cartridge is allowed 50 perfect freedom to descend in the case, and yet it is prevented from being thrown upward in the case.

What I claim as my invention, and desire to secure by Letters Patent, is— 55

1. The combination, with a case for containing a grease cartridge or stick, and in which the cartridge or stick will descend by gravitation, of a follower capable of movement with the cartridge or stick in said case, 60 and a retaining device, forming an engagement between said follower and case to prevent the cartridge or stick from being thrown upward or returning in the case, substantially as herein described. 65

2. The combination, with a case for containing a grease cartridge or stick, and in which the cartridge or stick will descend by gravitation, of a cap or follower capable of movement with the cartridge or stick in said case, 70 and a retaining device carried by the follower, and adapted to engage with the interior of said case to prevent the upward movement of the cartridge or stick in the case, substantially as herein described. 75

3. The combination, with the case E, having a grooved or roughened interior, of the cap or follower F' and its attached pawls or dogs b b, for engaging automatically with the grooved or roughened interior of said case to prevent 80 upward movement of the follower in said case, substantially as herein described.

4. The combination, with the case E, having a grooved or roughened interior, of the cap or follower F' and its attached pawls or dogs b b, 85 for engaging automatically with the grooved or roughened interior of the case, and the cord or connection d, for disengaging said pawls or dogs from the case, substantially as herein described.

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Witnesses:

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