April 3, 1928.

1,664,936

K. E. LYMAN

SPRING ACTUATED LUBRICATOR

Filed Jan. 11, 1923

Fig. 1

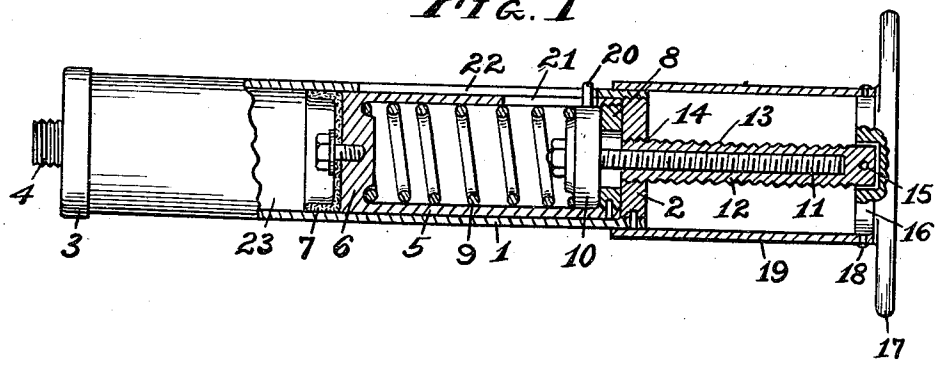


Fig. 2

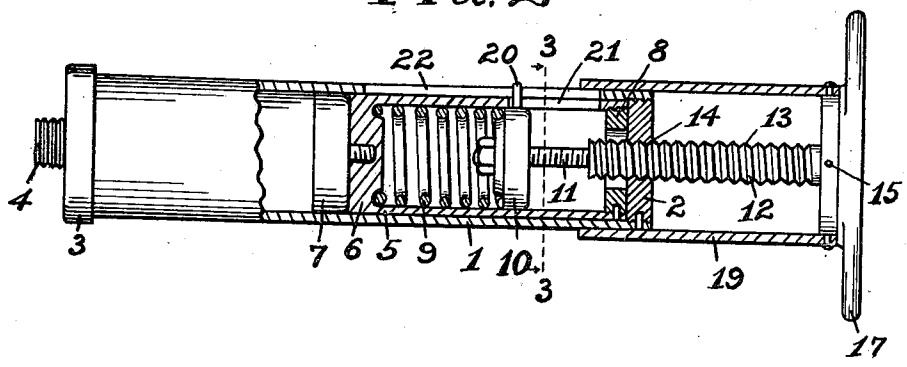
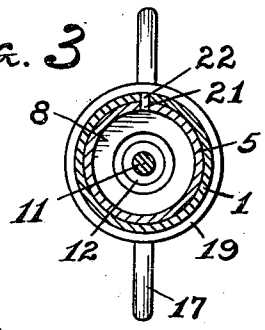


Fig. 3



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UNITED STATES PATENT OFFICE.

KENT E. LYMAN, OF CLEVELAND, OHIO.

SPRING-ACTUATED LUBRICATOR.

Application filed January 11, 1923. Serial No. 612,093.

This invention relates to lubricators for high pressure lubrication, and more especially to lubricators having spring power for producing the expelling force.

The main object of the invention is to provide a lubricator of simple and practical construction, which is conveniently and easily operated to exert a pushing force upon the power spring for compressing the same, which spring will produce great pressure for expelling the contents of the lubricator.

In order that the invention may be clearly understood, the same will be hereinafter fully described as illustrated in the accompanying drawings, and the novel features thereof will be distinctly pointed out in the appended claims.

In the drawings similar characters of reference are used to designate corresponding parts.

Figure 1 illustrates a longitudinal sectional view of a lubricator constructed in accordance with my invention,

Fig. 2 is a similar view, the power spring having been compressed, and

Fig. 3 is a cross sectional view taken on line 3—3 of Fig. 2.

Referring to the drawings, 1 represents a tubular body or barrel having a closed rear end 2, and a cap 3 closing its forward end. Said cap is provided with threaded boss 4 for the attachment thereto of a suitable nozzle having a spring pressed shut-off valve not shown. Slidably mounted in the tubular body 1 is a tubular plunger member 5 having a closed forward end 6 to which is fixed a suitable cupped leather 7, and a rear end 8.

Arranged within the tubular plunger member 5 is a suitable power spring 9, which is adapted to force said plunger member forwardly for expelling the contents of the lubricator. In order to conveniently and easily compress the plunger spring 9, a compression head 10 is slidably mounted within the tubular plunger member 5 adjacent its rear end 8, and said head is fixed to a threaded stem 11 mounted in a rod 12, which is provided with external threads at 13 for engaging the threads of an opening 14 in the rear end 2 of the tubular body 1. The stem 11 is preferably provided with left-hand threads and the rod 12 with right-hand threads. The rear end 8 of the tubular plunger member 5 is provided with an opening of sufficient diameter to freely admit the threaded rod 12. The forward end of the externally threaded rod 12 is attached at 15 in an enlarged recess of a cylindrical head 16 having a cross-arm 17 for serving as a handle to rotate said threaded rod. Fixed to the cylindrical head 16 by screws 18 is a tubular sleeve 19, which is adapted to enclose the threaded rod 12 and slide longitudinally over the tubular body 1 as said threaded rod advances. To prevent the compression head 10 and also the tubular plunger member 5 from rotating when the rod 12 is being turned by the handle 17, a pin 20 is fixed into said head and is adapted to slide in longitudinal slots 21 and 22 of such lengths in the tubular plunger member 5 and tubular body 1 respectively for permitting full movement of said head.

The power spring 9 is made somewhat greater in length than the distance between the forward end 6 of the tubular plunger member 5 and the compression head 10, so that when the tubular plunger is at the outer limit or beginning of its travel, as shown in Fig. 1, said power spring is under compression. The space 23 of the plunger body 1 in front of the cupped leather 7 is filled with grease or the like and the spring pressed shut-off valve in the nozzle is closed. The handle 17 is rotated, and this turns the threaded rod 12, which acting upon the threaded stem 11 forces the head forward thus compressing the coiled power spring 9 as shown in Fig. 2. As the threaded rod 12 advances, the sleeve 19 also advances. Upon the opening of the spring pressed shut-off valve in the nozzle, the tubular plunger member 5 will be forced forwardly by the action of the coiled power spring 9, and the contents of the lubricator will be expelled until said shut-off valve closes, or the rear end 8 of the tubular plunger member 5 engages the compression head 10. This same operation may be repeated until the tubular plunger member has reached the forward limit of its movement. By rotating the handle 17 in the reverse direction, the tubular plunger member 5 will be returned to its original position.

Although the construction for the lubricator disclosed is capable of carrying out the intended purposes, it is to be understood

that slight changes in the details of construction may be made within the scope of the claims.

Having fully described my invention, what I claim is:

1. In a lubricator, the combination of a tubular body, the tubular body having a rear end, a tubular plunger having a rear end slidably mounted in the tubular body, a coiled spring in the tubular plunger, a head slidably mounted in the tubular plunger near its rear end, and means for forcing the head forwardly to compress the coiled spring, substantially as described.

2. In a lubricator, the combination of a tubular body, the tubular body having a rear end, a tubular plunger having a rear end slidably mounted in the tubular body, a coiled spring in the tubular plunger, a head slidably mounted in the tubular plunger near its rear end, a rod threaded in the rear end of the tubular body for forcing said head forwardly for compressing the coiled spring, and means for preventing the rotation of said head and tubular plunger and tubular body relative to each other, substantially as described.

3. In a lubricator, the combination of a tubular body, the tubular body having a rear end, a tubular plunger having a rear end slidably mounted in the tubular body, a coiled spring in the tubular plunger, a head slidably mounted in the tubular plunger near its rear end, a rod threaded in the rear end of the tubular body for forcing said head forwardly for compressing the coiled spring, the tubular body and tubular plunger being provided with adjacent longitudinal slots, and the head having a pin projecting therefrom for sliding in said slots to prevent rotary movement of said head and tubular plunger and tubular body relative to each other, substantially as described.

4. In a lubricator, the combination of a tubular body, the tubular body having a rear end, a tubular plunger having a rear end slidably mounted in the tubular body, a coiled spring in the tubular plunger, a head slidably mounted in the tubular plunger near its rear end, a rod threaded in the rear end of the tubular body for forcing said head forwardly and compressing the coiled spring, the rear end of the tubular plunger being provided with an opening for freely receiving the rod, a threaded stem extending from the head, the stem being threaded in said rod, and means for preventing the rotation of said head and tubular plunger and tubular body relative to each other, substantially as described.

5. In a lubricator, the combination of a tubular body, the tubular body having a rear end, a tubular plunger having a rear end and slidably mounted in the tubular body, a coiled spring arranged within the tubular plunger, a head slidably mounted in the tubular plunger at its rear end, a rod provided with right hand threads and threaded in the rear end of the tubular body, the rear end of the tubular plunger being provided with an opening for freely receiving the rod, a stem extending from said head, the stem being provided with left-hand threads and mounted in said rod, and means for preventing the rotation of said head and tubular plunger and tubular body relative to each other, substantially as described.

In testimony whereof I affix my signature.

KENT E. LYMAN.