

O. N. TERRY.
GREASE PLUG.
APPLICATION FILED APR. 7, 1908.

1,009,113.

Patented Nov. 21, 1911.

2 SHEETS-SHEET 1.

Fig. 1.

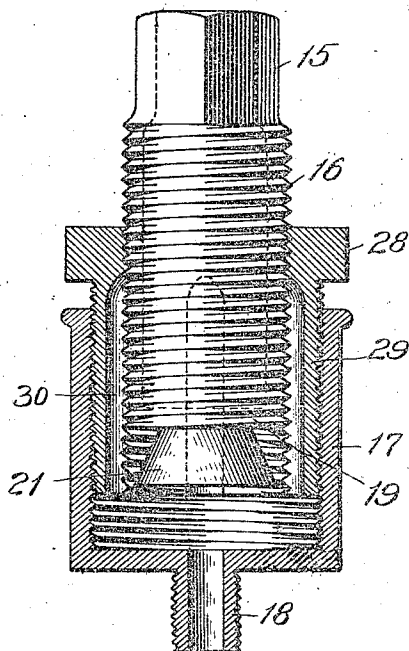


Fig. 2.

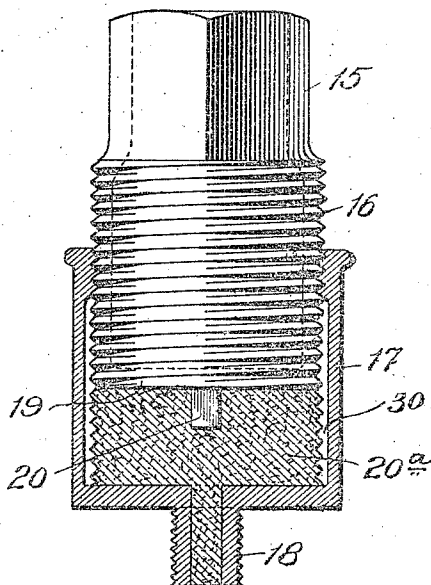


Fig. 4.

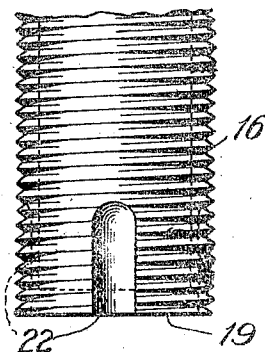


Fig. 3.

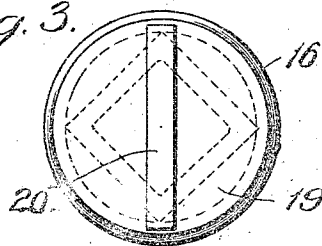
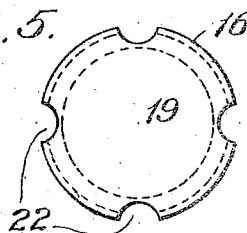


Fig. 5.



Witnesses:

John Enders
Eugene M. Anderson

by

Shuridan Wilkinson, Scott & Richmond
J. Geo. L. Wilkinson Attys.

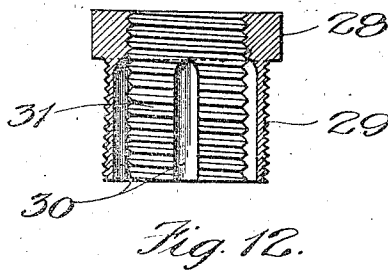
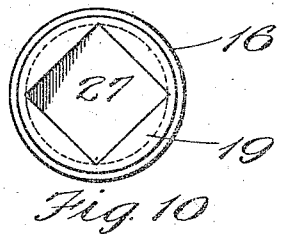
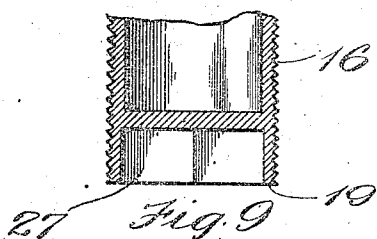
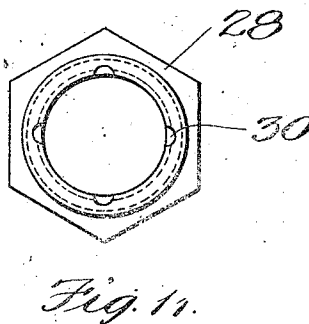
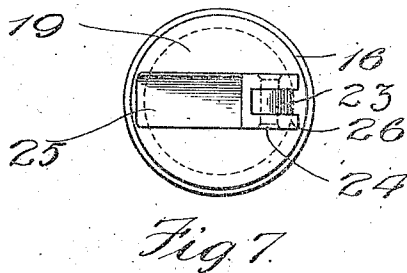
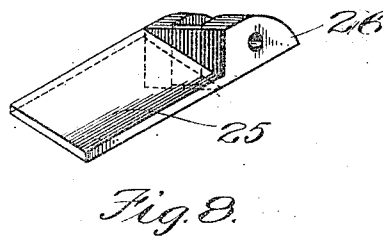
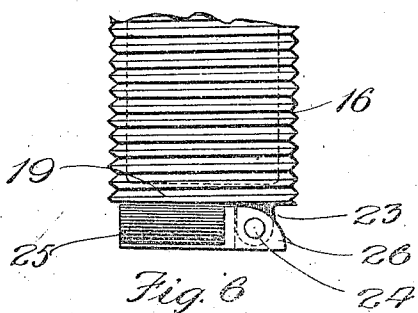
Inventor:

Otis N. Terry.

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2 SHEETS—SHEET 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

OTIS N. TERRY, OF LINCOLN, NEBRASKA, ASSIGNOR OF ONE-HALF TO ROBERT D. SMITH, OF BOSTON, MASSACHUSETTS.

GREASE-PLUG.

1,009,113.

Specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed April 7, 1908. Serial No. 425,682.

To all whom it may concern:

Be it known that I, OTIS N. TERRY, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Grease-Plugs, of which the following is a specification.

The object of my invention is to provide an improved closure for grease cups which shall be held in place by engagement with the grease in the cup. This object and others will be made apparent in the following specification and claims, taken in connection with the accompanying drawings, in which—

Figure 1 is an axial section of a grease cup having a grease plug embodying one form of my invention. Fig. 2 is an elevation (partly in section) of a modification. Fig. 3 is an end view of the plug shown in Fig. 2. Figs. 4 and 5 are, respectively, an end elevation and end view of another modification. Figs. 6, 7 and 8 are, respectively, an elevation, end view and perspective view of a fourth form. Figs. 9 and 10 are, respectively, longitudinal sections and end views of a fifth form. Fig. 11 is a bottom end view of a bushing which may be used with an ordinary grease plug and grease cup; and Fig. 12 is an axial section of the same.

In lubricating machinery with more or less solid lubricants or greases, it is common to have a grease cup, which is represented by the reference numeral 17, having a nipple 18 adapted to be connected to a duct leading to the part to be lubricated. This cup is closed by a plug 16. The parts described thus far are old in the art. The plug 16 may close the cup 17 by having a screw threaded engagement therewith, or with a bushing as shown in Fig. 1. In such case the top end 15 of the plug is preferably squared to permit the application of a wrench. To save weight and material the plug 16 may preferably be made hollow. Considerable difficulty has been experienced with grease plugs on account of their tendency to become loose by jarring.

My invention consists in so modifying an ordinary grease plug as to prevent it from becoming detached from the grease cup.

Broadly speaking, my invention consists in so extending the surface of the end of

the grease plug in contact with the grease that there shall be a considerable area of contact, whereby the grease will hold the plug from escaping.

Of the many forms which my invention may take I have illustrated a few in the accompanying drawings, throughout which the reference numeral 19 represents the ordinary flat end of the grease plug. In Figs. 2 and 3 this is extended in the form of a rib or vane 20 which is surrounded by the grease 20^a. In Fig. 1, the end surface 19 is increased by a conical projection 21. In Figs. 4 and 5 the surface in contact with the grease is increased by cutting short longitudinal channels 22 around the sides of the plug 16. In Figs. 6, 7 and 8 a vane 23 has one end 26 adapted to receive a pivot pin 24 which also engages a projection 23 from the end surface 19. This vane is oblique as is shown clearly in Fig. 8, the inclination being such that when the plug is being screwed into the grease cup the vane 25 rides upon the grease, but as soon as the plug starts to unscrew the vane 25 digs down into the grease thus engaging it and thereby preventing the escape of the plug. In Figs. 9 and 10 a recess 27 extends into the end 19 of the plug thus increasing the surface in contact with the grease. This recess may advantageously be of square or other polygonal form. In Figs. 1 and 11 I have shown a bushing 29 adapted to be screwed into the mouth of the grease cup and to receive the grease plug. This bushing has a flange 28 adapted to receive a wrench, and in its inner side longitudinal grooves 30 are cut so as to permit the grease to enter them and come in contact with the sides of the externally screw threaded cylindrical grease plug which may be screwed down in engagement with the internal screw threads 31. This bushing, in combination with the form of plug illustrated in Fig. 1, is very effective. The bushing 29 when screwed into a grease cup serves to provide the latter with interior longitudinal grooves, as mentioned in some of the following claims. It is obvious that the grease cup might be constructed integrally with such grooves, thus doing away with the necessity for the bushing. When thus combined, the grease is forced along the grooves 30 and fills into the

space behind the conical projection 21. The combination of a grease cup and plug with this form of bushing is shown in Fig. 1.

Many more forms of my invention might readily be devised in view of the disclosure herein given, but it is thought that this will be sufficient to illustrate the principle involved. The adhesion of the grease to the end of the grease plug or the stiffness of the grease, or both of these properties, are taken advantage of to prevent the escape of the plug either by rotation thereof or by direct withdrawal.

I claim:

1. In combination, a grease cup and a grease plug fitting within said cup and having screw threaded engagement therewith, said grease cup being provided with interior longitudinal grooves with the ends of said grooves adjacent to said plug.

2. In combination, a grease cup having interior screw threads, a grease plug having exterior screw threads engaging said cup, the said grease cup being provided with interior longitudinal grooves cutting across said screw threads.

3. In combination, a grease cup, a grease plug having screw threaded engagement with the grease cup, and having on its end an extended area to come in contact with the grease, said grease cup being provided

with longitudinal interior grooves adapted to permit the grease to flow up around the extended end of the grease plug.

4. In combination, a grease cup, a grease plug having screw threaded engagement therewith, a frusto-conical projection on the inner end of the grease plug, being joined thereto by its smaller base, and said grease cup being provided with longitudinal grooves in the inner wall of the grease cup.

5. In combination, a grease cup and a grease plug fitting within said cup and having screw threaded engagement therewith, said grease cup being provided with interior longitudinal grooves with the ends of said grooves adjacent to said plug, and means acting between the plug and the grooves provided in the cup to prevent rotation of the plug relatively to the cup.

6. In combination, a grease cup having interior screw threads, an interiorly and exteriorly screw threaded bushing therein, said bushing having longitudinal grooves on the inside thereof, and a screw plug engaging said bushing.

In testimony whereof, I have subscribed my name.

OTIS N. TERRY.

Witnesses:

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