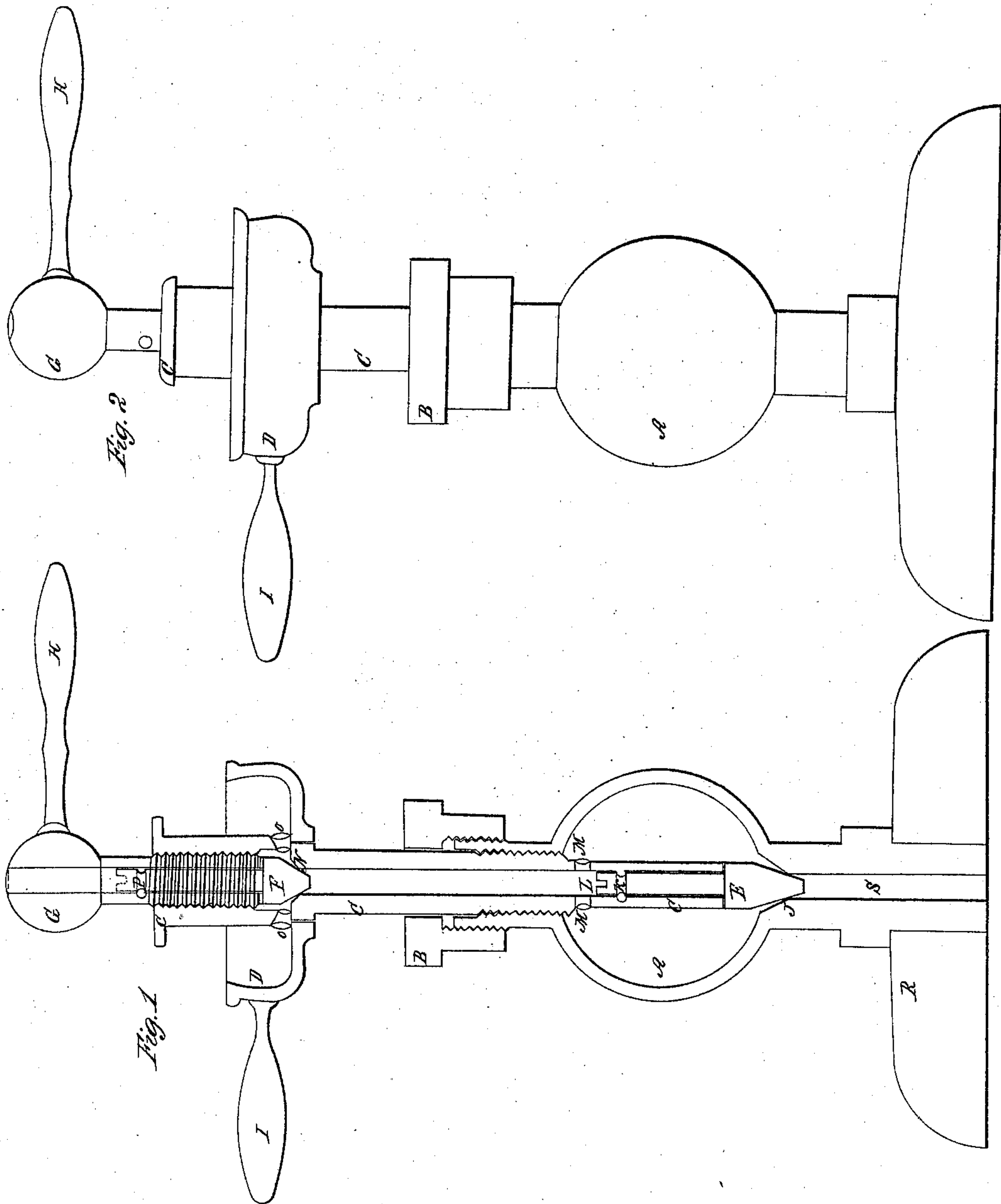


*J. D. Custer,  
Lubricator.*

*N<sup>o</sup> 16,871.*

*Patented Mar. 24, 1857.*



# UNITED STATES PATENT OFFICE.

J. D. CUSTER, OF NORRISTOWN, PENNSYLVANIA.

## METHOD OF LUBRICATING UNDER PRESSURE.

Specification of Letters Patent No. 16,871, dated March 24, 1857.

*To all whom it may concern:*

Be it known that I, JACOB D. CUSTER, of Norristown, in the county of Montgomery, in the State of Pennsylvania, have invented  
5 a new and improved mode of constructing steam-chest and steam-cylinder oil-cups for oiling steam-engine cylinders, steam-hammer cylinders, &c., where oil must be forced in or passed in by a globe or chamber and  
10 two or more stops or their equivalents; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked  
15 thereon.

The nature of my invention consists in forming a chambered oilcup, for oiling steam chests, steam cylinders, steam hammers &c., by using a globe, or oil chamber,  
20 and an upper and lower vertical center stop, or valve, operated by a vertical revolving cup, on a vertical cylindrical stem, a vertical stumping box, vertical screws, and two horizontal handles; all so arranged as to  
25 form unyielding seats and permanent, tight, and durable center valves, which will outlast the best engines.

To enable others skilled in the art to make and use my invention, I will proceed  
30 to describe its construction and operation.

Figure 1, in the accompanying drawings, is a side view of the oil cup, cut in two; and Fig. 2, is a side view of it, as it appears when in use.

35 The letters of reference refer to like parts on both figures, but in the description it will only be necessary to refer to the letters on Fig. 1.

I construct the globe, or chamber A, of  
40 my oil cups, round, or in any other form, and cast the lower end as usual, with an end to screw into the lid of the steam chest, and a six sided nut shaped collar above it, to take hold of to screw it into the lid of the steam  
45 chest, as shown at R Fig. 1. The opening S under the globe A, I drill in about  $\frac{3}{8}$  of an inch diameter, so as to make it smooth; and the valve seat at J, I cut in with a rose bit, so as to make it true, and in line with  
50 the vertical stem C, C, C. The upper end, or branch of the globe A, I cast with a  $\frac{3}{4}$  inch hole in it, and it is extended up so as to allow room to receive the stuffing box B, which is screwed on it as shown in Fig. 1  
55 below B. On the outside of this branch of the globe, I cut a strong screw, and also a

strong female screw is cut in the stuffing box B, to match it; by this box the packing is screwed down tight on the end of the upper branch of the globe, and tight around  
60 the cylindrical stem C, C, C, so as to make it steam, and oil tight. In the inside of the upper branch of the globe, I cut a  $\frac{7}{8}$  female screw to match a screw on stem C, C, C, but part of the thread of this female screw at  
65 the top of the branch of the globe, is cut out so as to allow the thread of the screw on stem C, C, C, to go down below the top of the branch so as not to cut the packing, and so that when the valve E on the lower  
70 end of the stem C, C, C, is raised up when in operation, the thread of the screw will not come up into the packing and cut it, as shown in Fig. 1 below B.

The revolving cylindrical stem C, C, C, is  
75 cast solid, and a hole is drilled in the top of it down to N, for a  $\frac{3}{4}$  inch screw, and from N to E, a  $\frac{3}{8}$  inch hole is made, so as to form a seat at N for the upper valve F, and make an opening for the oil to pass down into the  
80 globe A through the oil holes O, O, in the bottom of the cup D, and the oil holes M, M, in the stem C, C, C, in the globe. The lower valve E, is fitted in the hole in the lower end of this stem, so as to admit of be-  
85 ing ground into its seat. It is kept in its place by a groove turned in its stem in which a side pin is fitted at K, and at L it has a screw driver notch cut in the top of it, to grind it in its seat by a screw driver  
90 reaching down from the top when the screw G is taken out for that purpose. The oil holes O, O, in the stem C C C in the bottom of the cup D are  $\frac{5}{16}$  of an inch diam. and they are drilled a little descending to the  
95 center. The cup D is riveted on stem C, C, C, near N. It is undercut at the sides so as to discharge upward when the valve F is opened with steam in the globe, so as not to strike the hand operating on handle H, and  
100 the bottom of it is made a little descending to the center, so as to drain it of all the oil. The handle I is screwed in the side of cup D, in a firm manner; the side of the cup being made strong for that purpose, so that  
105 when in operation it will not give at the screw when the lower valve E is forced down in its seat at J.

G is the top valve screw, and it has a  $\frac{3}{8}$  inch hole drilled down through it, in which  
110 the valve F, is fitted, so as to admit of being ground into its seat, as shown at F. It has



a groove and side pin at P, to keep it in place, and a screw driver notch at Q, by which it is ground in its seat by a screw-driver reaching down from the top. On  
 5 the outside of screw G, is a male screw in the screw in the top of the revolving stem C, C, C, by which the valve F is pressed down into its seat at N. The handle H, is  
 10 made long; so as to place the hand out of the way of the discharge when the valve F is opened with steam in the globe.

The upper valve F, may be made solid on the lower end of screw G, so as not to admit  
 15 of being ground into its seat; and also the lower valve E may be made solid on the lower end of the cylindrical revolving stem C, C, C, so as not to admit of being ground in its seat, if desired.

20 When tallow is used, or oil for large engines, I attach a small center stop air valve, to the globe near the top, to cause the tallow, or oil, to enter with less delay. I use  
 25 brass, or any other metal in the construction of my oil cups, and I use gum rings, or any other suitable material, for packing in the stuffing box B.

The mode of operation, of my vertical center stop, revolving cup, steam chest and  
 30 steam cylinder oil cup; is as follows. Screw

it into the lid of the steam chest, so as not to leak at the screw. Put in the gum rings so as to fill the stuffing box B about half full. Screw down the lower valve E, by  
 turning the handle I. Put on the steam. 35 Open the upper valve F, by turning the handle H, and the air valve if one is used. Pour in the oil. Shut up the air valve, and the valve F, and open the lower valve E; and the oil enters the steam chest and cylin- 40 der, and steam takes its place in the globe &c.

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

The vertical revolving cup, attached to 45 the vertical revolving cylindrical stem C, C, C, the grinding, or solid center valve E at the bottom, the screw G, and its grinding, or solid center valve F, the handles I, and H and the stuffing box B, all so combined 50 as to form a substantial vertical center stop revolving cup, steam chest, and steam cylinder oil cup, for steam engines, steam hammers &c., using for that purpose, brass or  
 55 any other metal which may be deemed best; substantially as above described.

JACOB D. CUSTER.

Witnesses:

WM. ROSSITER,  
 BENJAMIN HILLE.