

No. 681,848.

Patented Sept. 3, 1901.

G. F. GODLEY.  
LUBRICATOR.

(Application filed June 4, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

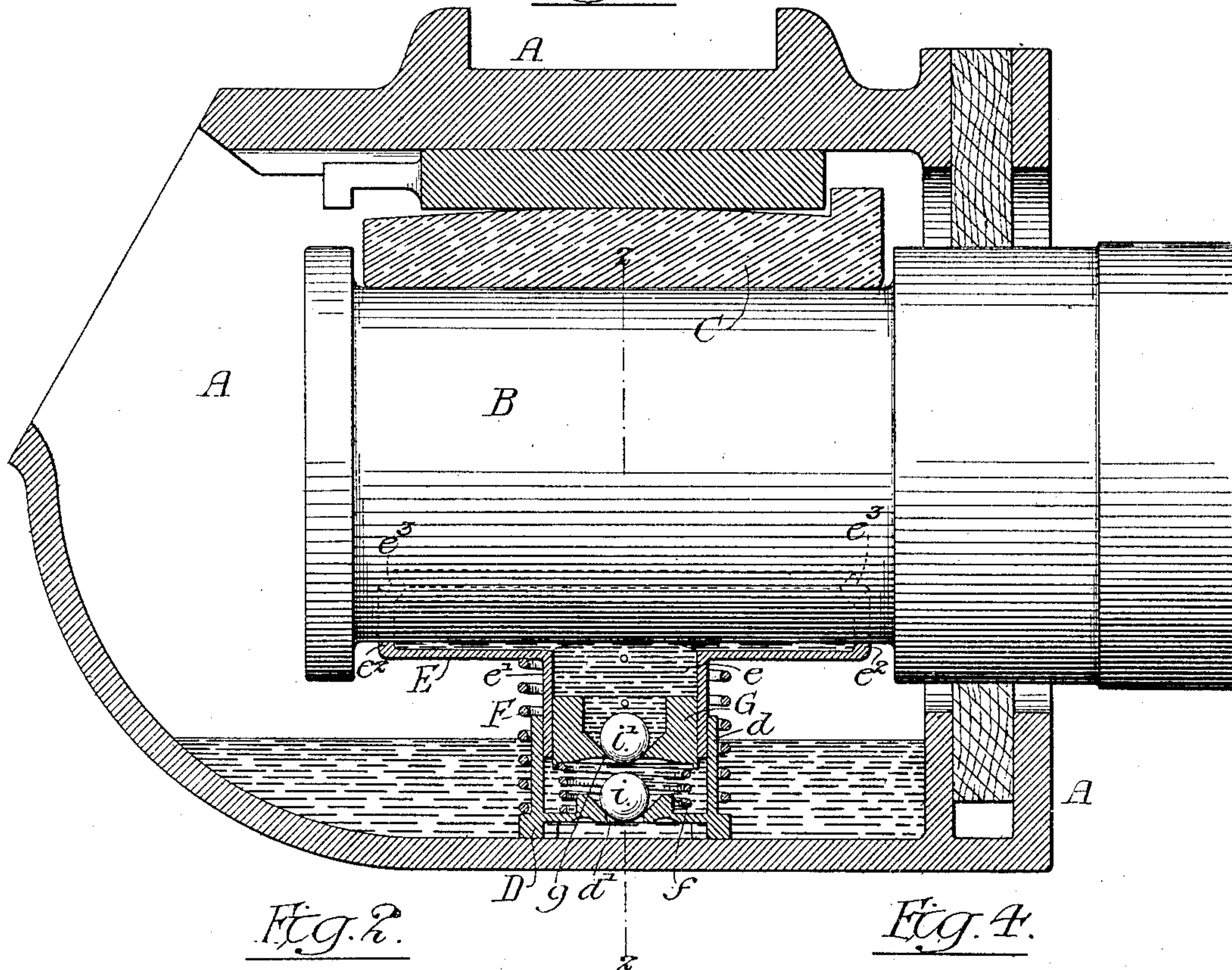


Fig. 2.

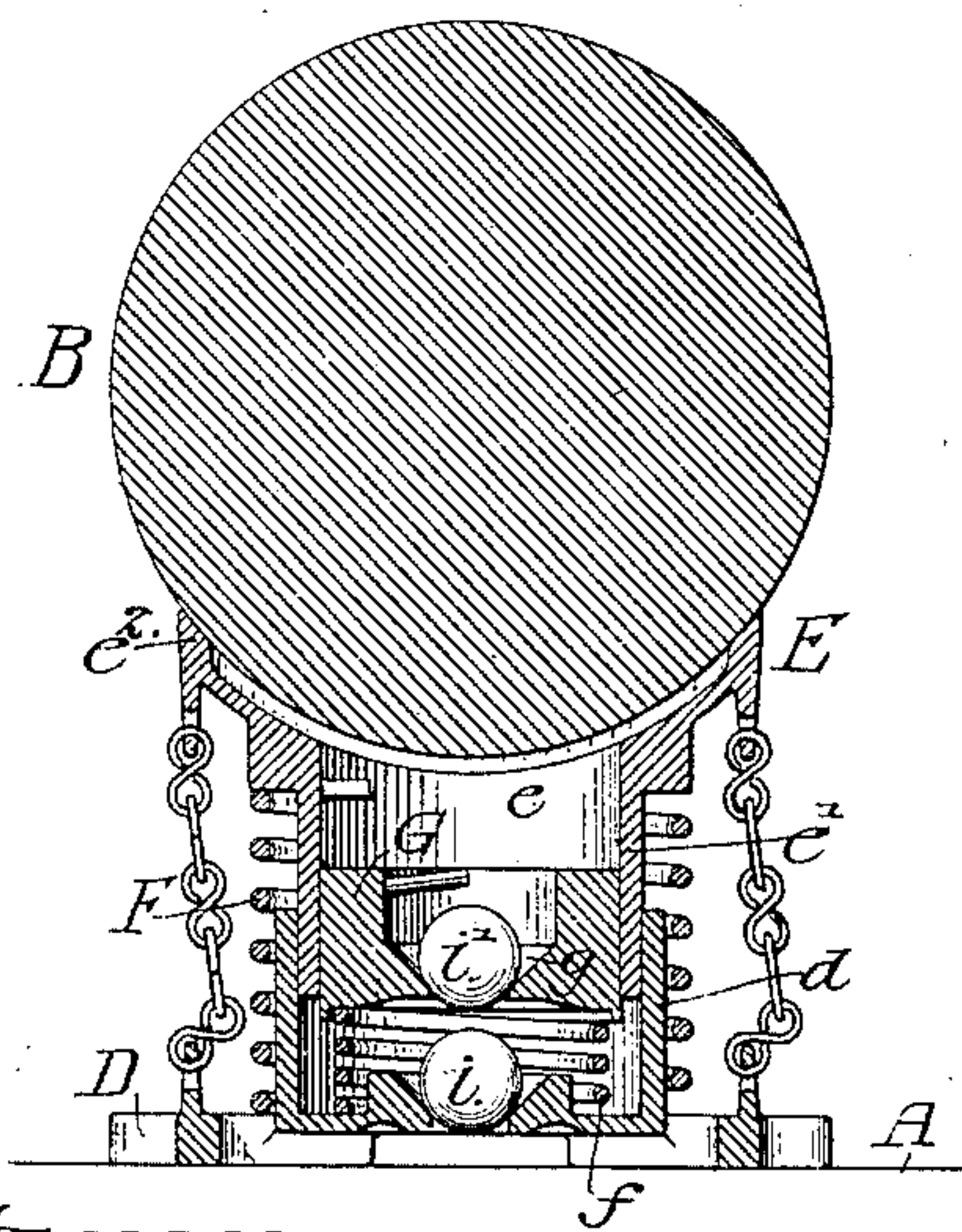
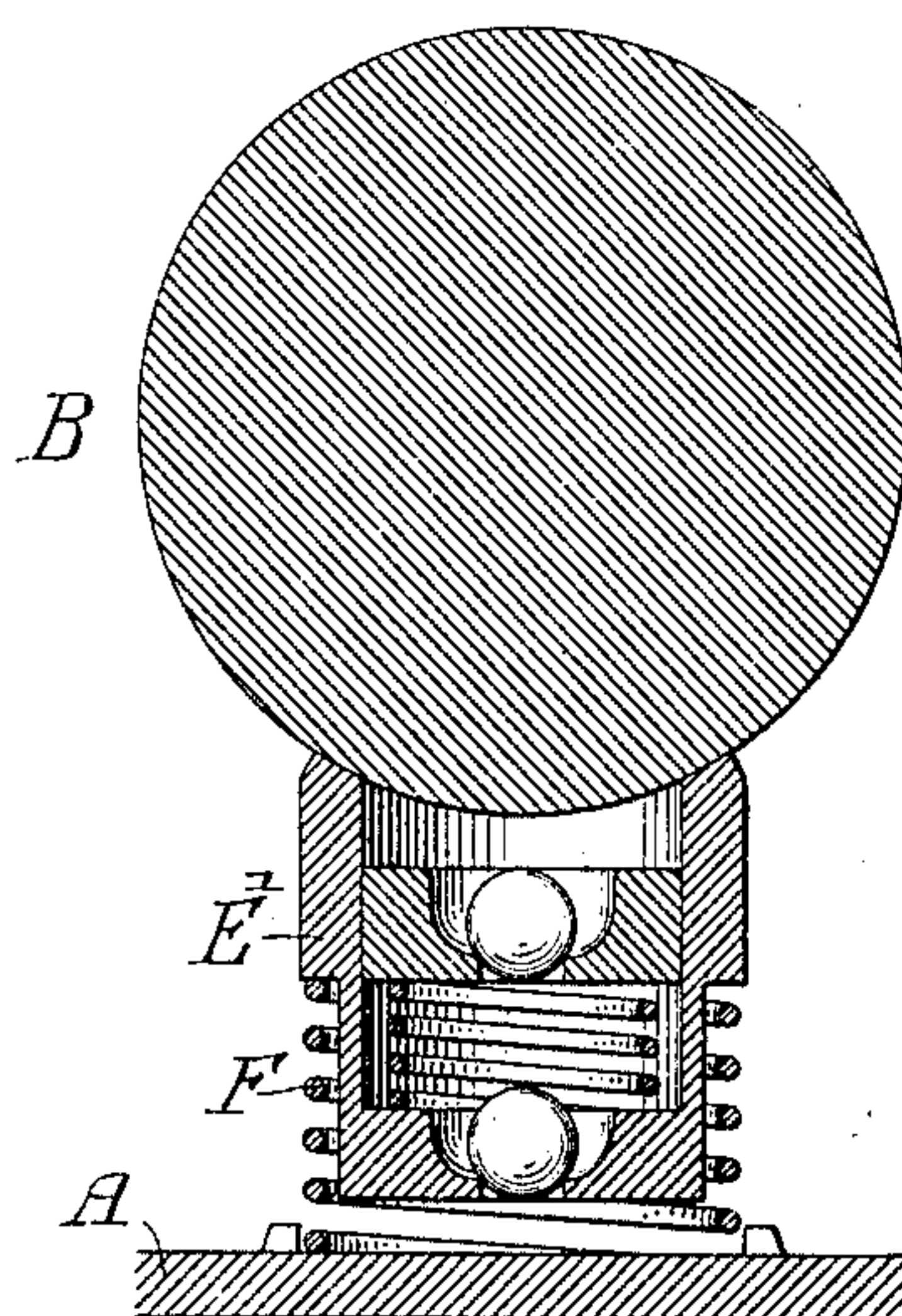


Fig. 3.



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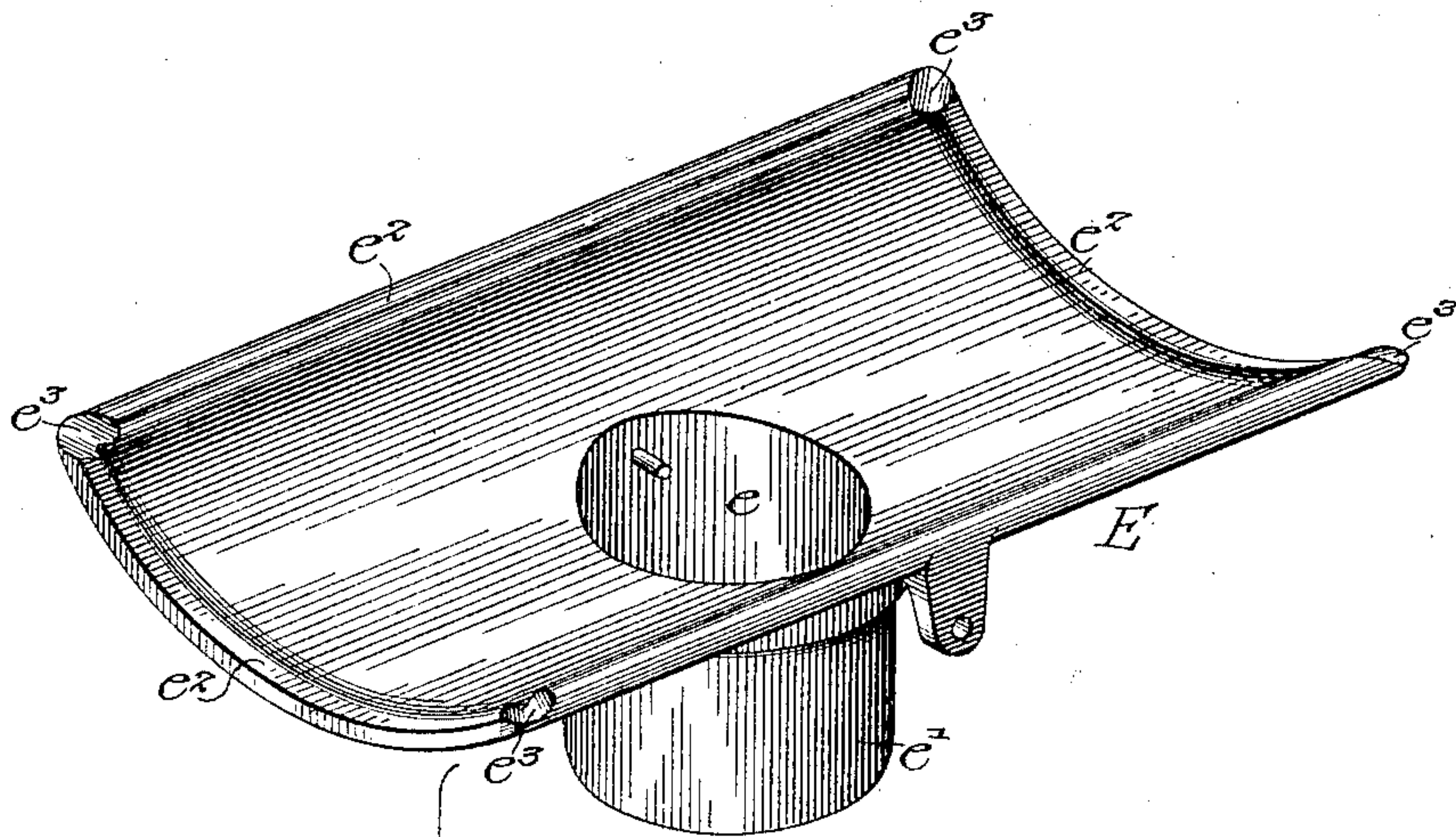


Fig. 3.

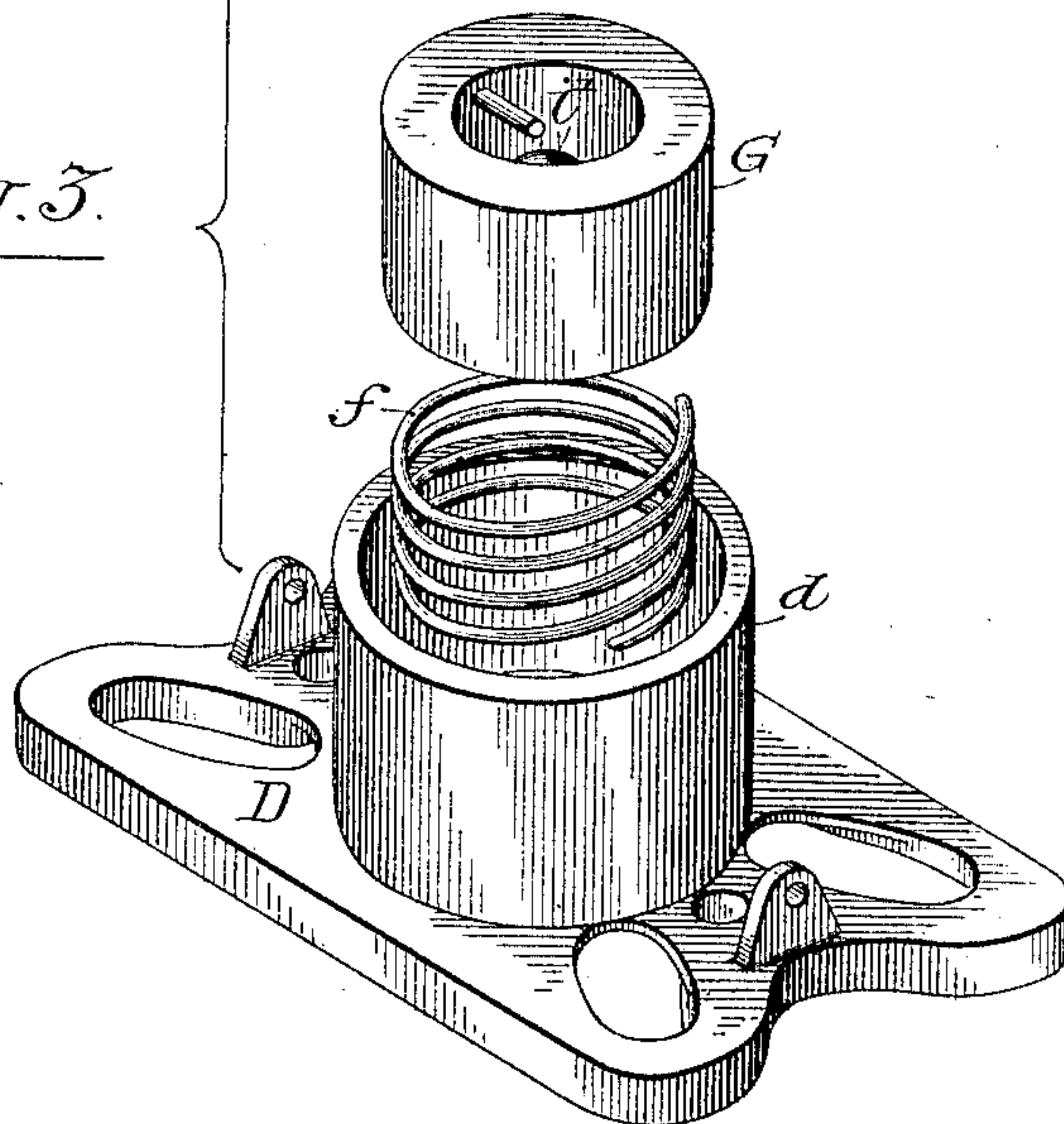
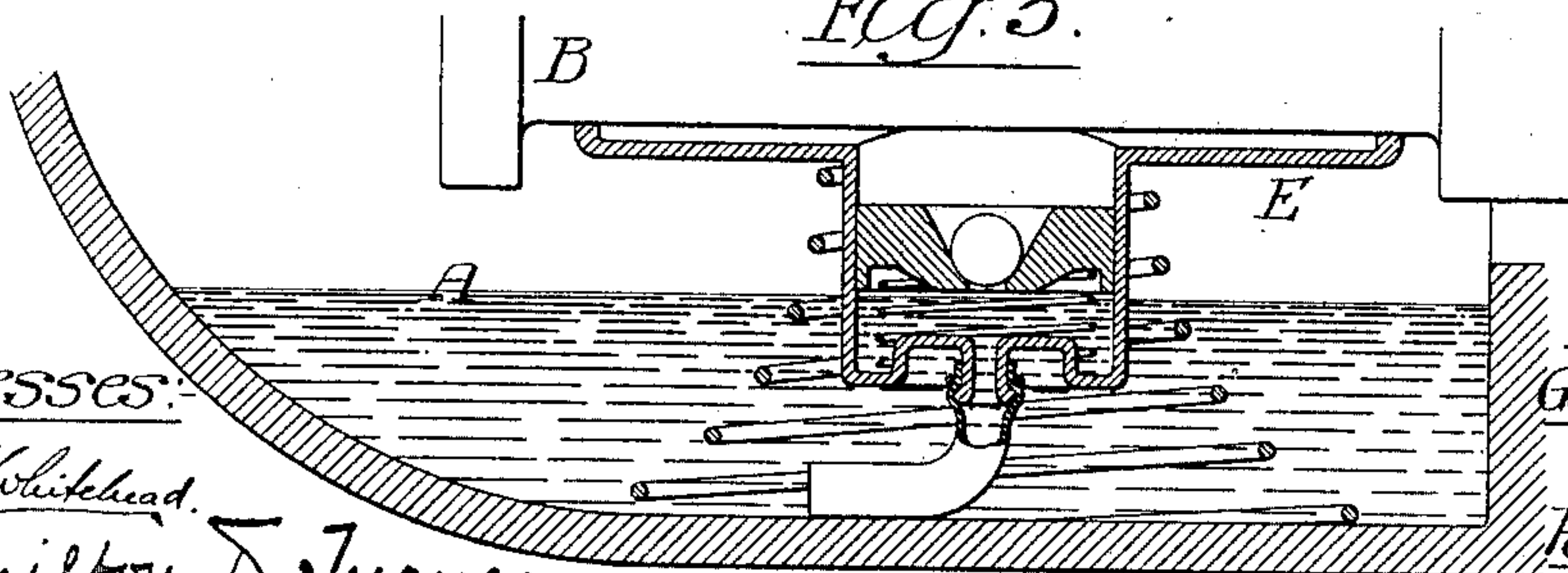


Fig. 4.



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# UNITED STATES PATENT OFFICE.

GEORGE F. GODLEY, OF PHILADELPHIA, PENNSYLVANIA.

## LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 681,848, dated September 3, 1901.

Application filed June 4, 1900. Serial No. 19,050. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE F. GODLEY, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain  
5 Improvements in Lubricators for Car-Axles, &c., of which the following is a specification.

My invention relates to certain improvements in car-axle and other bearing lubricators in which there is a sufficient amount of  
10 vibration to cause the piston to pump the lubricant to the bearing.

The object of my invention is to so construct the lubricator that it will pump the lubricating liquid from the reservoir below  
15 the axle to the surface of the axle or other bearing to be lubricated.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a car-axle box, illustrating my invention. Fig. 2 is a  
20 transverse sectional view of the axle and pumping device on the line 2 2, Fig. 1. Fig. 3 is a detached perspective view of the mechanism of my invention, and Figs. 4 and 5 are views of modifications of my invention.

25 A is the car-axle box, which may be of the usual construction.

B is the axle in the present instance.

C is the bearing for the axle. This bearing can be made in any of the usual forms and  
30 is situated between the axle and the top of the box. Resting on the bottom of the box in the present instance is a frame D, having a tubular projection *d*. In the base of this frame D, within the tubular projection, is an  
35 opening *d'*, covered by a valve *i*. The valve in the present instance is a ball which rests in a socket in the casing, although any other form of valve may be used without departing  
40 from my invention. The base of the frame is open, so that oil can gain access to the opening in the bottom of the casing and pass up into the chamber formed by the tubular projection.

E is a plate curved to fit the under side of the axle B. This plate has an opening *e* at  
45 the center, and surrounding the opening is a deep flange *e'*, which extends a sufficient distance to overlap the flange *d* of the frame D. A spring F is mounted between the frame D  
50 and the plate E, so as to keep the plate always in contact with the lower portion of the

axle. Thus there is a pump-chamber formed by the flange portion of the frame D and the flange of the plate E. Surrounding the upper edge of the plate is a bearing-rib *e''*, having openings *e'''*, preferably at each corner,  
55 as shown in Fig. 3. The rib forms a pocket for the lubricant that is pumped up to the axle, thus insuring the lubrication of the entire bearing of the axle. Snugly fitting the  
60 pump-chamber is a piston G. This piston is supported by a light spring *f*, resting on the base of the frame, the spring being proportioned to the amount of vibration or jar that is given to the car, so that the piston will  
65 have a limited reciprocating motion within the chamber formed by the two extensions *d* and *e'*. In the piston is a passage *g*, and closing this passage is a valve *i'*, preferably of the ball form shown. This ball-valve rests  
70 in a socket and is prevented from jumping out of the socket by a pin or other retainer. In a car-axle, for instance, there is a considerable vibration not only due to the car passing  
75 over frogs and switches, but also due to the movement of the trucks, and by making the spring *g* just sufficient to support the piston, which I may term a "floating" piston, the piston will be given a limited vertical recip-  
80 rocating motion. Therefore if a lubricant which will flow is placed in the bottom of a car-axle box, as indicated in Fig. 1, it will be drawn into the chamber of the frame D under the piston by the action of the pis-  
85 ton. When the piston is elevated, it will cause the lubricant to flow into the chamber, and when it is depressed the valve *i* will check the flow; but the depression of the piston will cause the lubricant within the chamber to  
90 pass up through the opening *g* in the piston and enter the space above the piston. As soon as the piston is elevated again the valve *i'* closes the opening in the piston and the lubricant is forced up into the chamber of the  
95 plate E. As the jarring of the axle-box is constant, the movement of the piston is constant, so that there will be a steady flow of lubricant from the bottom of the box to the under side of the axle, the excess of lubricant flowing out through the channels at the  
100 four corners of the frame, thereby lubricating the collars of the journal. The piston



and the openings are so proportioned that there will be a steady flow of lubricant to the under side of the axle.

It will be understood that my invention can be applied to any bearing where there is sufficient movement to cause a reciprocation of the piston and where a continuous flow of the lubricating material is desired and that the plate E can be modified without departing from my invention, which is essentially a cylinder communicating with the oil-reservoir at the base and with a portion of the axle or bearing at the upper end with a floating piston within the cylinder actuated by the jar or movement of the box or the support therefor.

In Fig. 4 I have shown a modification of my invention in which a single cylinder E' is used in place of the flanged frame D and the flanged plate E. This cylinder extends from the under side of the axle to a point below the surface of the lubricant in the bottom of the box and is supported by a spring F. The cylinder has an opening in the bottom provided with a valve, and within the cylinder is a spring-supported piston having a valved opening therein. This construction may be used where the motion is limited; but I prefer to use the construction shown in Fig. 1 under ordinary circumstances.

In Fig. 5 I have shown a still further modification in which the cylinder is supported on a flaring spring and a flexible tube extending from the cylinder into the lubricant. In this instance only one valve is used. On the frame D and on the plate E at each side are lugs, and chains may be used to couple the lugs of the frame to those of the plate, as shown in Fig. 2, when it is desired to fasten the parts together.

I claim as my invention—

1. The combination of a box, a reservoir in the bottom of the box, a journal mounted above the reservoir, a bearing for said journal, a cylinder extending from the reservoir to the under side of the journal, and an independent pumping mechanism within the cylinder operated by the jar or other movement of the car, substantially as described.

2. The combination in a lubricator for car-axle or other bearings, of a journal, a reservoir for the lubricant below the journal, a cylinder between the reservoir and the journal, a piston within the cylinder, a spring supporting said piston, and a valve for controlling the flow of the lubricant to the journal, substantially as described.

3. The combination in a lubricator for car-axle and other bearings, of an axle, a reservoir below the axle, a cylinder between the reservoir and the axle, a spring-supported piston within the cylinder, said piston having a passage, and a valve for controlling the flow of the lubricant to the axle or other bearing, substantially as described.

4. The combination of a car-axle box or other bearing, a journal mounted therein, a frame having an opening, a plate, the frame

and plate having overlapping flanges forming a cylinder between the reservoir in the bottom of the box and the axle, a spring-supported piston within the cylinder thus formed, said piston having an opening, and a valve therefor, substantially as described.

5. The combination of a car-axle box or other bearing, a journal mounted therein, a frame having an opening, a plate, the frame and plate having overlapping flanges forming a cylinder between the reservoir in the bottom of the box and the axle, a spring-supported piston within the cylinder thus formed, said piston having an opening, a valve for the piston-opening, and a valve for the opening in the frame, substantially as described.

6. The combination of a car-axle box shaped to contain a lubricant in the bottom thereof, an axle within the box, a frame mounted in the bottom of the box and having an upwardly-projecting flange, a plate having a downwardly-projecting flange, one flange overlapping the other forming a cylinder between the reservoir in the bottom of the box and the axle, means for keeping the plate in contact with the axle, a piston within the cylinder, a spring supporting said piston, said frame having an opening therein, a valve closing said opening, a piston having an opening therethrough, and a valve closing the opening, substantially as described.

7. The combination of a car-axle box, an axle, a bearing for said axle, a frame mounted in the bottom of the box and having an upwardly-extending flange, an opening in the frame, a valve closing said opening, a plate in contact with the under side of the axle and having a chamber formed therein for the reception of a lubricant and having a downwardly-projecting flange overlapping the flange of the frame, a piston mounted in the flange of the frame, a spring supporting said piston, said piston having an opening, and a valve closing the opening, substantially as described.

8. The combination of a box, an axle mounted in said box, a bearing for the axle, a plate supported so as to rest against the under side of the axle, said plate having a rib forming a chamber for lubricating material directly under the axle, a cylinder extending from the plate to the reservoir in the bottom of the box, a spring-supported piston within the cylinder, said cylinder having an inlet and an outlet, and valves therefor, so that on the movement of the piston the lubricant will be pumped from the reservoir to the axle, substantially as described.

9. The combination in a lubricator, of a box, a journal, a frame, a plate conforming to the shape of the journal, a spring mounted between the plate and the frame tending to keep the plate in contact with the journal, a piston within the cylinder formed by the plate and frame, and a valve or valves controlling the flow of lubricant to the journal, substantially as described.



10. The combination of a journal, a reservoir below the journal, a plate mounted under the journal, a cylinder extending from the plate to the lubricant-reservoir, and a  
5 pump for pumping the lubricant from the reservoir to the journal, said plate having a flange so as to form a chamber for lubricating material between the plate and the journal, the flange having openings at each corner  
10 whereby the lubricating material will escape

and lubricate the collars of the journal, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE F. GODLEY.

Witnesses:

HERSCHEL RHINE,  
JOS. H. KLEIN.