

No. 896,895.

PATENTED AUG. 25, 1908.

C. COMSTOCK.  
LUBRICATOR.

APPLICATION FILED OCT. 12, 1907.

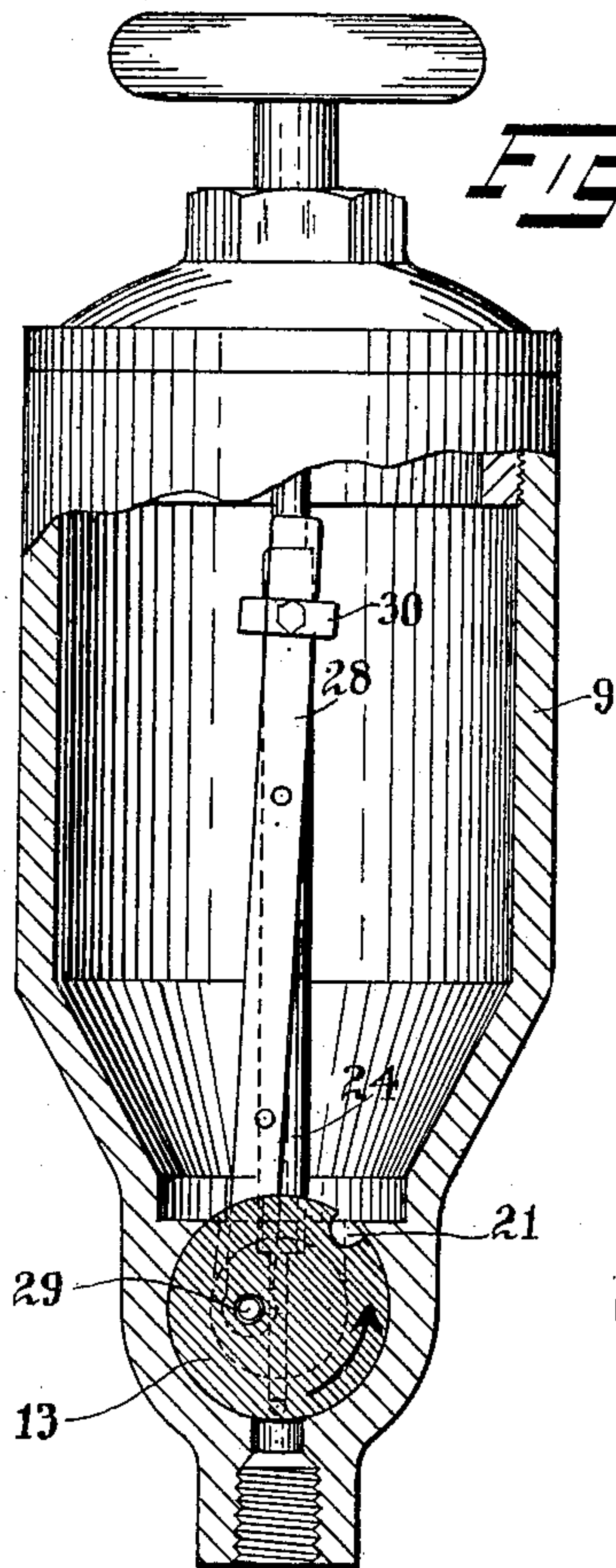


FIG. 2.

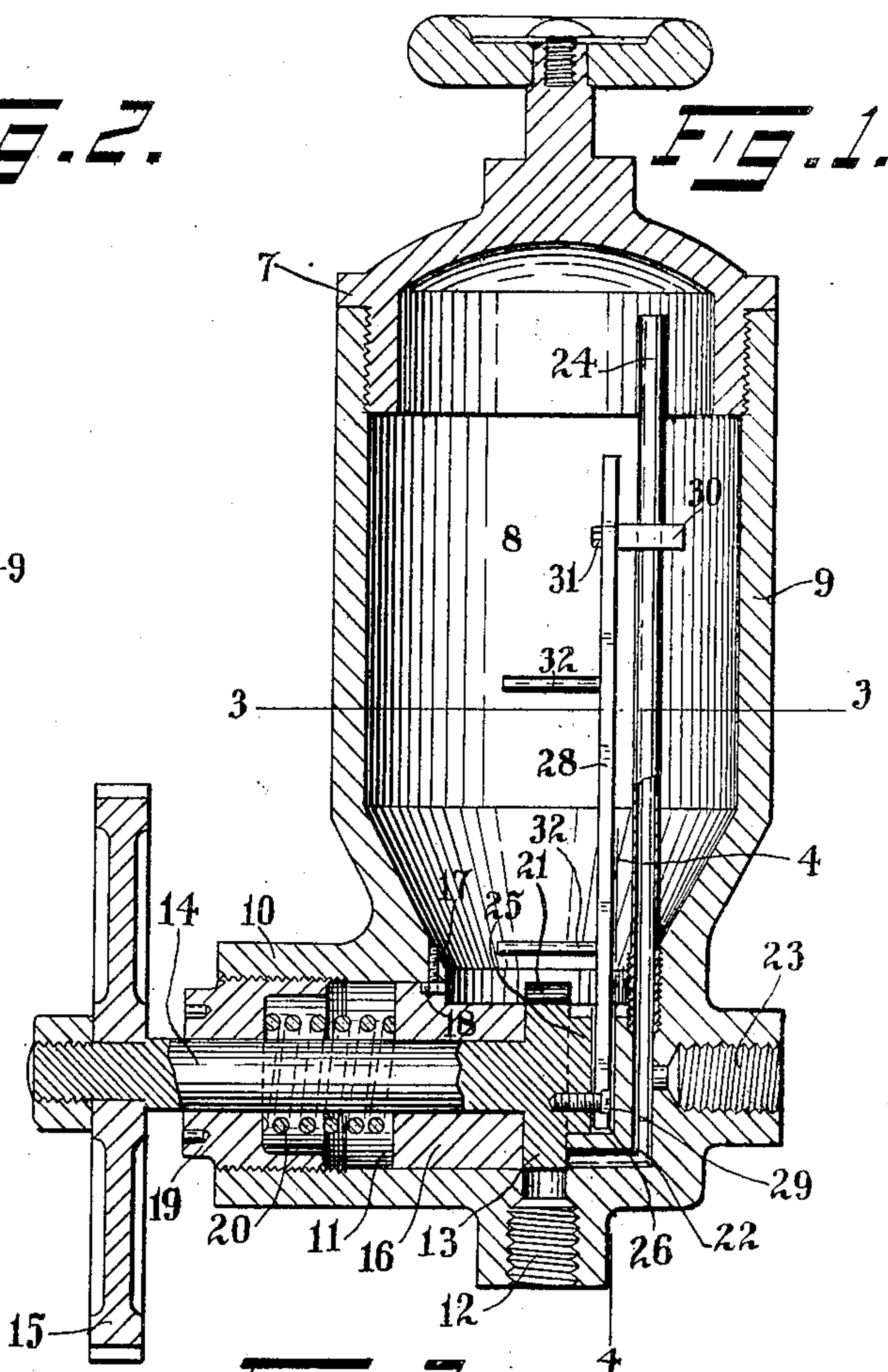


FIG. 1.

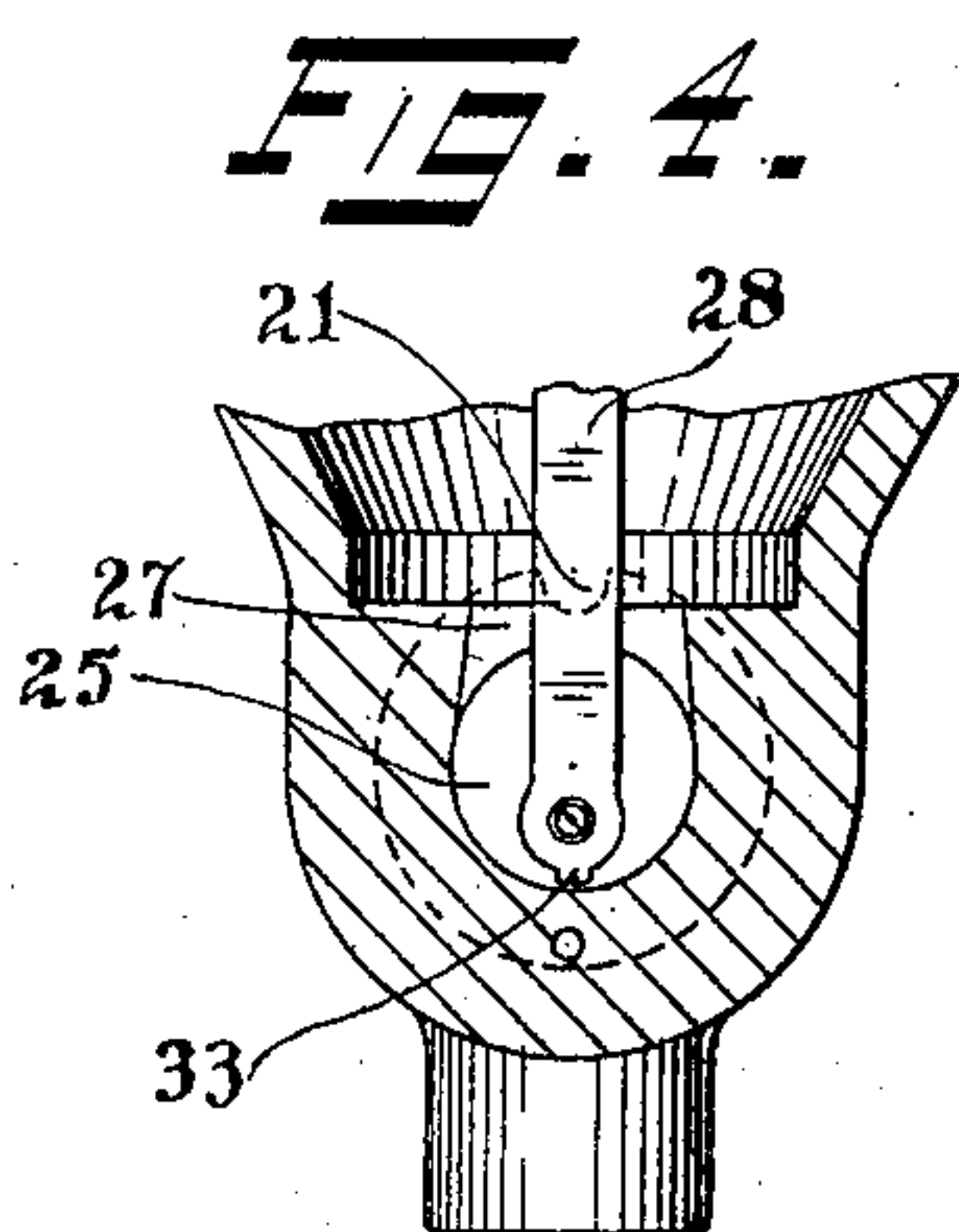


FIG. 4.

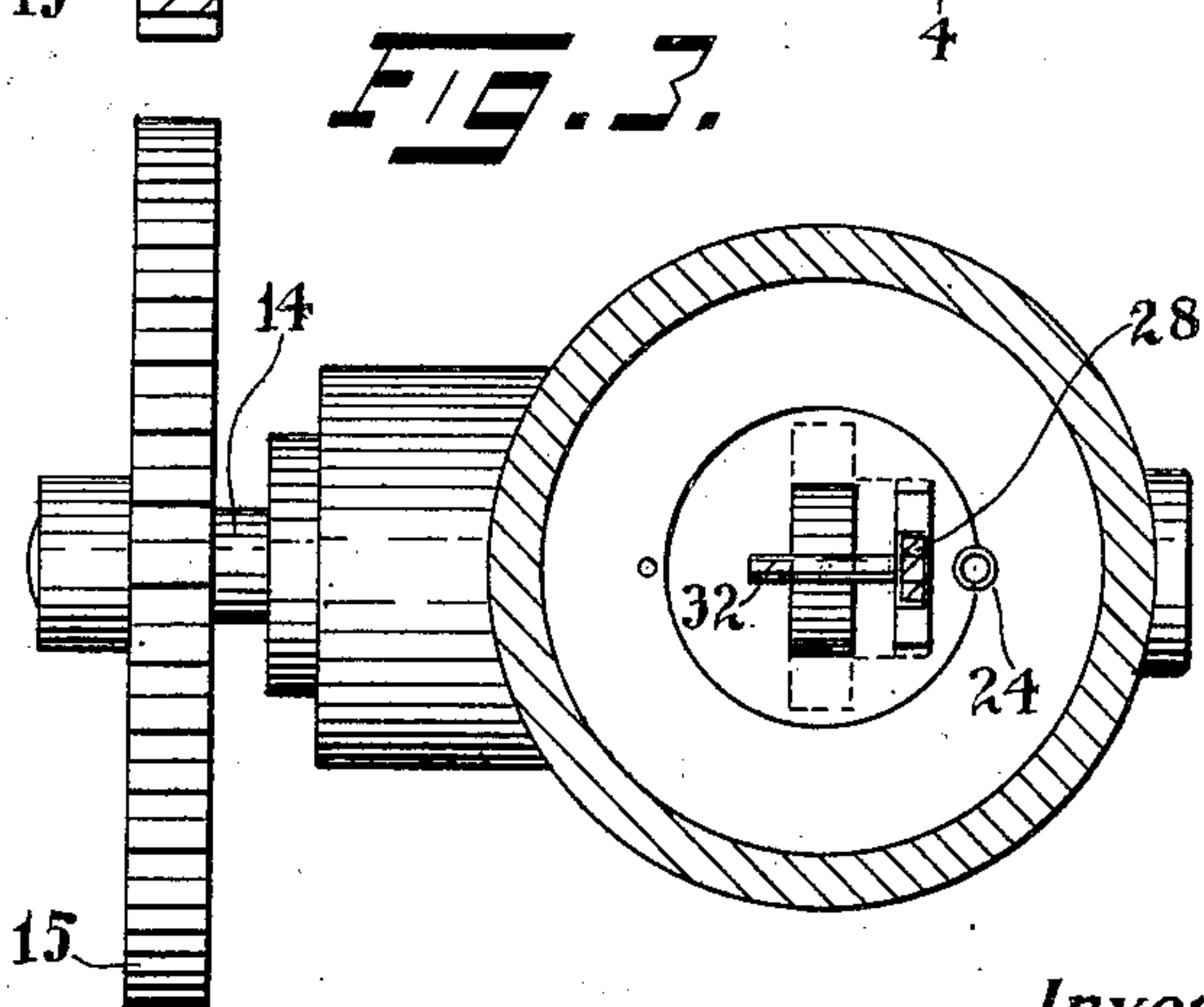


FIG. 3.

Witnesses.  
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# UNITED STATES PATENT OFFICE.

CHESTER COMSTOCK, OF RIDGEWOOD, NEW JERSEY.

## LUBRICATOR.

No. 896,895.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed October 12, 1907. Serial No. 397,061.

*To all whom it may concern:*

Be it known that I, CHESTER COMSTOCK, a citizen of the United States, residing in Ridgewood, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Lubricators, of which the following is a specification.

This invention has reference to feeding devices for lubricating purposes, especially designed for feeding lubricant in a comminuted or pulverulent condition.

The object of the invention is to provide a device for feeding such material, especially in the form of graphite or powdered mica, in certain small quantities at intervals, and under considerable pressure.

It is especially designed for feeding graphite to air compressors and to explosive engines.

In the accompanying drawing representing one embodiment of my invention, Figure 1 is a vertical, longitudinal section. Fig. 2 is a vertical section taken at right angles to the section of Fig. 1, shown partly in elevation. Fig. 3 is a crosssection on the line 3—3 indicated in Fig. 1; and Fig. 4 is a fragmentary section on the line 4—4 indicated in Fig. 1.

In the construction shown, a cup or receptacle 9 has its base or bottom portion 10, somewhat elongated and provided with a chamber formed by a transverse bore 11 whose upper portion is open to the receptacle. This bore terminates a short distance beyond the axis of the receptacle. At the lower part of the bottom member, is an outlet passage 12 leading to the chamber 11.

In the chamber 11, is located the feed member, shown as comprising a disk 13, having a stem 14; and the latter is rotated by any suitable means. It is shown as provided with a ratchet wheel 15, by which it may be advanced step by step in any desired manner. The feed member is rotatably supported in the bore in any suitable manner, and shown as provided with a collar 16 fitting in the bore and surrounding the stem 14, being locked from rotation by a screw pin 17, fitting in a slot 18 in the collar, permitting endwise movement of the collar and feed member. A nut member 19 screws in the outer threaded end of the bore and forms a bearing for the stem 14; and a coil spring 20 is placed between the nut member 19 and the

collar 16, and serves to press the collar against the disk 13, and the latter will be pressed against the end of the chamber in the bottom member 10.

The disk 13 is provided with a recess 21 in its periphery, that on rotation of the disk, will alternately be exposed to the receptacle chamber 8 and to the outlet 12. In the receptacle bottom 10 is provided a passage 22, having one end normally closed by the end face of the disk adjacent its periphery. But when the recess 21 of the disk is brought to register with the outlet 12, the passage 22 will be uncovered and will register laterally with the recess. The passage 22 connects with an inlet 23 in the bottom 10, and this is supplied with a suitable fluid under pressure, such as compressed air or steam. During the rotation of the disk, its recess 22, while at the upper part of the disk will travel across the bottom of the receptacle freely exposed, and graphite or other material in the receptacle will pass into the recess. The recess will then be covered by the wall of the socket in which it rotates, until it registers with the outlet 12. But at this time, the side of the recess is exposed to the passage 22, containing air or steam under pressure, which will force the graphite from the recess and out through outlet 12. The continued movement of the feed disk will cause the recess to be again closed, and the disk will close the passage 22. The rotation of the feed disk will cause the recess to take up another charge of the graphite, that will be again discharged in the same manner.

Where any considerable fluid pressure is supplied through the inlet 23, it is desirable to have this pressure act on the graphite or other substance in the chamber 8 of the receptacle. In the construction shown, a conduit 24 extends upward through the receptacle and connects with the passage 22, its extremity opening into the upper part of the receptacle. This will act to force the graphite down to the recess in the feed member, and will prevent any vacuum being formed, with a tendency for the atmospheric air, or the air or steam under pressure, to escape back into the receptacle and interfere with the feeding of the graphite. It is also desirable to provide a mechanical means for causing the graphite to be taken up by the recess



in the feed member. An agitator bar is shown, that is preferably actuated from the feed member directly. The disk is shown as provided with a circular extension 25 at its inner end, that rotates in a corresponding socket 26 in the end of the chamber 11. A slot 27 is formed leading from the chamber 8 into this socket, beyond the end of the extension 25, and the latter only projects about half way into the socket. A bar 28 projects through the slot 27 into the socket 26, and is pivoted to the disk extension 25 by a screw pin 29, beyond its axis. This bar extends upward through the receptacle adjacent the conduit 24, and is guided to have a reciprocating or pitman-like movement by means of a guide 30 slidable on the conduit 24 and pivoted to the bar 28 by a pin 31. The bar may be provided with arms 32 projecting transversely, that will serve to stir up the graphite and cause it to feed downward by gravity as well as from the fluid pressure supplied at the top of the chamber 8 through the conduit 24.

The agitator 28 has its pivot pin located on the opposite end of a diameter passing through the recess 21, whereby they will travel in opposite directions. From this arrangement, it follows that when the feed disk is moving in the direction of the arrow indicated in Fig. 2, and the recess 21 is just opening to the chamber 8 to receive the graphite, the agitator bar is moving downwardly, and is also moving transversely from the opposite portion of the receptacle, toward the portion adjacent the recess. This applies particularly to the lower portion of the bar in the chamber 8, and to the lower arm 32 thereon. The latter will now be moving toward the recess, and will feed the graphite into the recess; while the recess will be moving in the opposite direction and assist in this feeding operation. Obviously, when the recess is moving in the other direction transversely, the bar will have its movement reversed and will tend to shift the graphite in the other direction, and to insure the lower portion of the receptacle receiving the full supply of the graphite. The bar 28 may have a lug or projection 33 on its lower end, to prevent the graphite from packing in the portion of the socket 26 in which the lower end of the bar operates.

In the operation of the device, the chamber 8 in the receptacle is filled by removing the top 7, and the latter as replaced and screwed down tightly, to form substantially a hermetic seal. The inlet 23 is connected with any suitable supply of compressed air, steam or other fluid under pressure. The outlet 12 is connected with the cylinder or other place or bearing to be lubricated. Then the wheel 15 is connected with a suitable part of the engine or other device, whereby it can be turned by intermittent steps. It can be connected with the shaft

of the engine, and the graphite supply will be directly in proportion to the speed of the engine, as a fixed amount governed by the capacity of the recess 21, is supplied to the outlet 12 at each rotation of the feed member. To increase the supply, the feed member must be rotated at a greater speed relative to the shaft, or analogous member. The pressure of the fluid supply at the inlet 23 must be greater than or at least equal to the back pressure that will exist in the outlet 12, from the cylinder or other elements supplied, as otherwise the back pressure would blow the graphite back through the passage 22.

Having thus described my invention, I claim:

1. A device for feeding lubricant, comprising a receptacle having a chamber in its bottom and an outlet from the chamber, a feed member movable in said chamber and provided with a recess alternately exposed to the receptacle and to the outlet upon movement of the feed member, the receptacle bottom having an admission passage for fluid under pressure, which passage is normally closed by the feed member but which registers with the recess therein when the member is shifted to bring the recess to register with the outlet, and an agitator in the receptacle movable relative to the feed member for directing the lubricant toward the feed member.

2. A device for feeding lubricant, comprising a receptacle having a chamber in its bottom and an outlet from the chamber, a feed member movable in said chamber and provided with a recess alternately exposed to the receptacle and to said outlet upon movement of the feed member, the receptacle bottom having an admission passage for fluid under pressure, which passage is normally closed by the feed member but which registers with the recess therein when the member is shifted to bring the recess to register with the outlet, and an agitator in the receptacle movable relative to the feed member for directing the lubricant toward the feed member and operably connected with the feed member.

3. A device for feeding lubricant, comprising a receptacle having a chamber and an outlet from the chamber, a feed member movable in said chamber and provided with a recess alternately exposed to the receptacle and to said outlet upon movement of the member, the receptacle bottom having an admission passage for fluid under pressure, which passage is normally closed by the feed member but which registers with the recess therein when the member is shifted to bring the recess to register with the outlet, and an agitator member in the receptacle operably connected with the feed member for movement in the receptacle adjacent the path of



movement of its recessed portion and in a direction the opposite of that in which the recessed portion moves when exposed to the receptacle.

5 4. A device for feeding lubricant, comprising a receptacle having a chamber in its bottom and an outlet from the chamber, a feed member rotatable in the chamber and projecting into the receptacle, the feed member  
10 being provided with a recess exposed to the contents of the receptacle during a part of the rotation of the feed member, the recess when exposed occupying a portion of the projecting part of the feed member, the feed  
15 member having its recess alternately projecting into the receptacle and exposed to said outlet, and an inlet passage in the receptacle normally closed by the feed member but arranged to register with the recess in the  
20 receptacle when the recess is brought to register with said outlet.

5 5. A device for feeding lubricant, comprising a receptacle having a chamber in its bottom and an outlet from the chamber, a feed  
25 member rotatable in the chamber and projecting into the receptacle, the feed member being provided with a recess exposed to the contents of the receptacle during a part of the rotation of the feed member, the recess  
30 when exposed occupying a portion of the projecting part of the feed member, the feed member having its recess alternately projecting into the receptacle and exposed to said outlet, an inlet passage in the receptacle  
35 normally closed by the feed member but arranged to register with the recess in the receptacle when the recess is brought to register with said outlet, and a passage connecting the said inlet with the upper part of the  
40 receptacle.

6. A device for feeding lubricant, comprising a receptacle having a chamber in its bottom and an outlet for the chamber, a feed  
45 member rotatable in the chamber and having a portion of its periphery projecting into the receptacle, the feed member being provided with a recess exposed to the contents of the receptacle during a part of the rotation of the feed member, the recess when exposed occupying a portion of the exposed part of the  
50 periphery, the feed member having its recess alternately projecting into the receptacle and exposed to said outlet, and a passage in the receptacle normally closed by the feed member but arranged to register with the recess in the  
55 receptacle when the recess is brought to register with said outlet.

7. A device for feeding lubricant, comprising a receptacle having a chamber in its bottom and an outlet for the chamber, a feed  
60 member rotatable in said chamber and provided with a recess alternately exposed to the receptacle and to the outlet upon movement of the feed member, the receptacle bottom

having an admission passage for fluid under 65 pressure, which passage is normally closed by the feed member but which registers with the recess therein when the member is shifted to bring the recess to register with the outlet, and an agitator member comprising a bar 70 having one end pivoted eccentrically to the rotatable feed member and its other end guided to reciprocate, the bar having an arm projecting across the receptacle above the feed member. 75

8. In a device for feeding lubricant, a receptacle having a chamber in its bottom, and an outlet for said chamber, a feed member rotatable in said chamber in the receptacle and provided with a recess that is alternately 80 exposed to the receptacle and to the said outlet upon turning of the feed member, a passage in the receptacle bottom normally closed by the feed member but arranged to register with the said recess when the member is shifted to have the recess register with the outlet, the device having an inlet to said passage for fluid under pressure, a conduit connected with said inlet and opening into the upper portion of the receptacle, and an 90 agitator in the receptacle pivoted to the feed member to be reciprocated upon rotation thereof.

9. In a device for feeding lubricant, a receptacle having a chamber in its bottom and 95 an outlet leading from said chamber, a disk member rotatable in said chamber and having a peripheral recess arranged to be alternately exposed to the receptacle and to said outlet, a passage in the receptacle normally 100 closed by the side of the disk but which registers with the said recess when the recess is exposed to the outlet, the device having an inlet to said passage for fluid under pressure, a conduit connected with said inlet and having its extremity opening into the upper portion of the receptacle, the receptacle having a chamber adjacent one end of the disk feed member, and an agitator bar extending into the latter chamber and pivoted eccentrically 110 to the disk member, said bar being guided at its other end on said conduit to reciprocate upon rotation of the disk.

10. In a device for feeding lubricant, a receptacle having a chamber in its bottom and 115 an outlet leading from said chamber, a disk member rotatable in said chamber and having a peripheral recess arranged to be alternately exposed to the receptacle and to said outlet, a passage in the receptacle normally 120 closed by the side of the disk but which registers with the said recess when the recess is exposed to the outlet, the device having an inlet to said passage for fluid under pressure, a conduit connected with said inlet and having its extremity opening into the upper portion of the receptacle, the receptacle having a chamber adjacent one end of the disk feed 125



member, an agitator bar extending into the latter chamber and pivoted eccentrically to the disk member, said bar being guided at its other end on said conduit to reciprocate upon  
5 rotation of the disk, the bar being pivoted on the feed member to be shifted across the bottom of the receptacle transversely in the op-

posite direction to the movement of the recess in the feed member when exposed to the receptacle.

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Witnesses:

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