

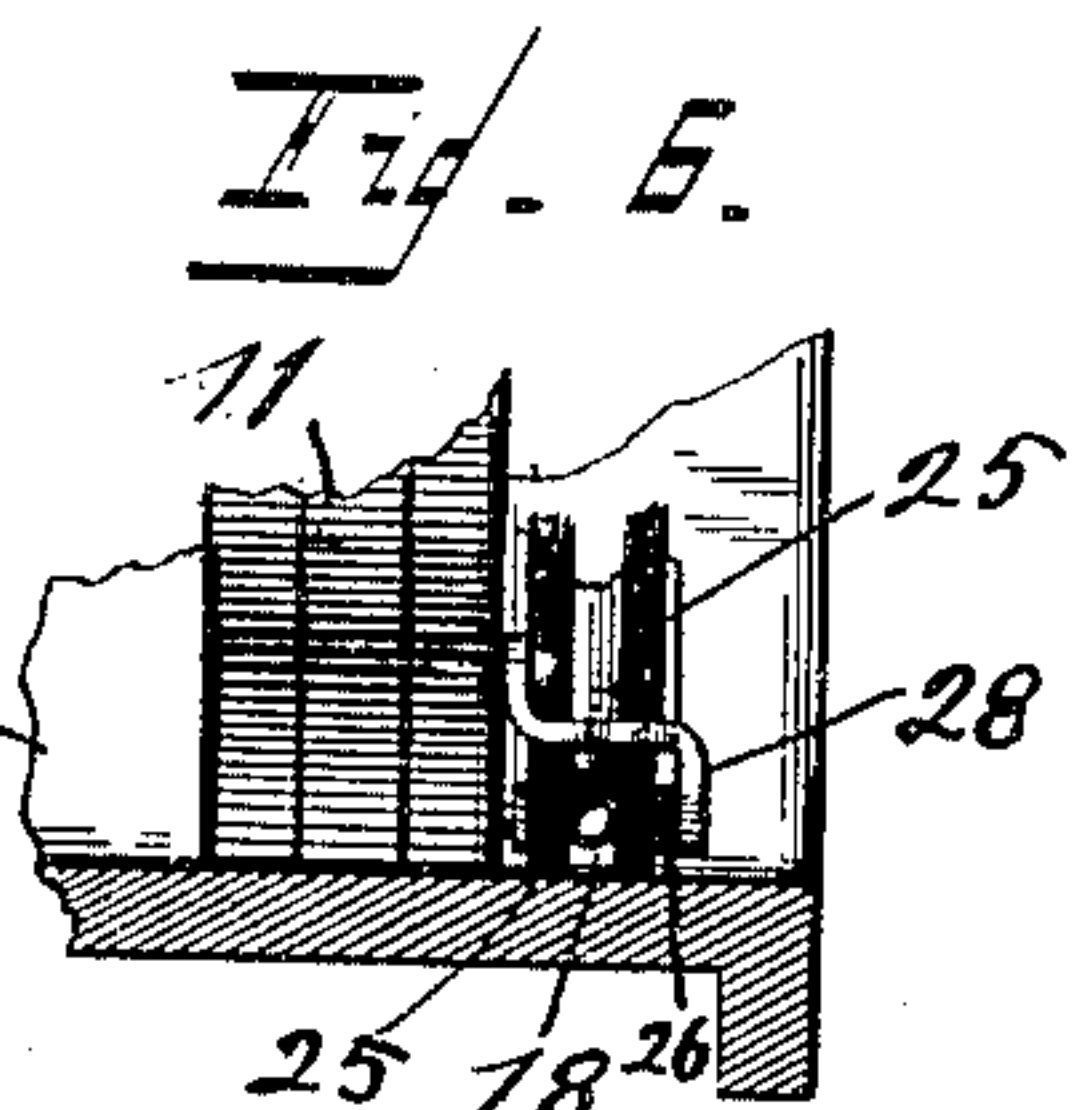
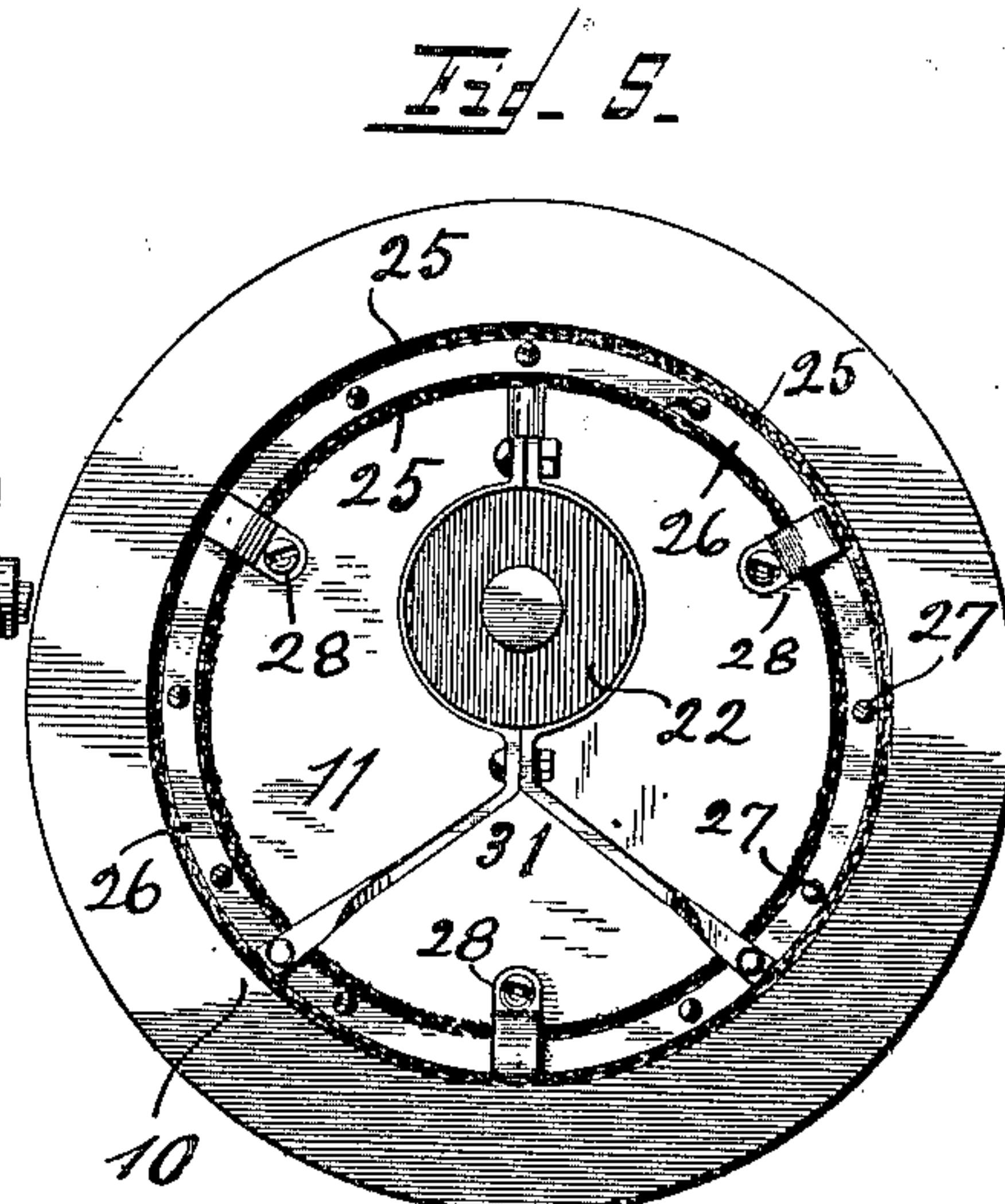
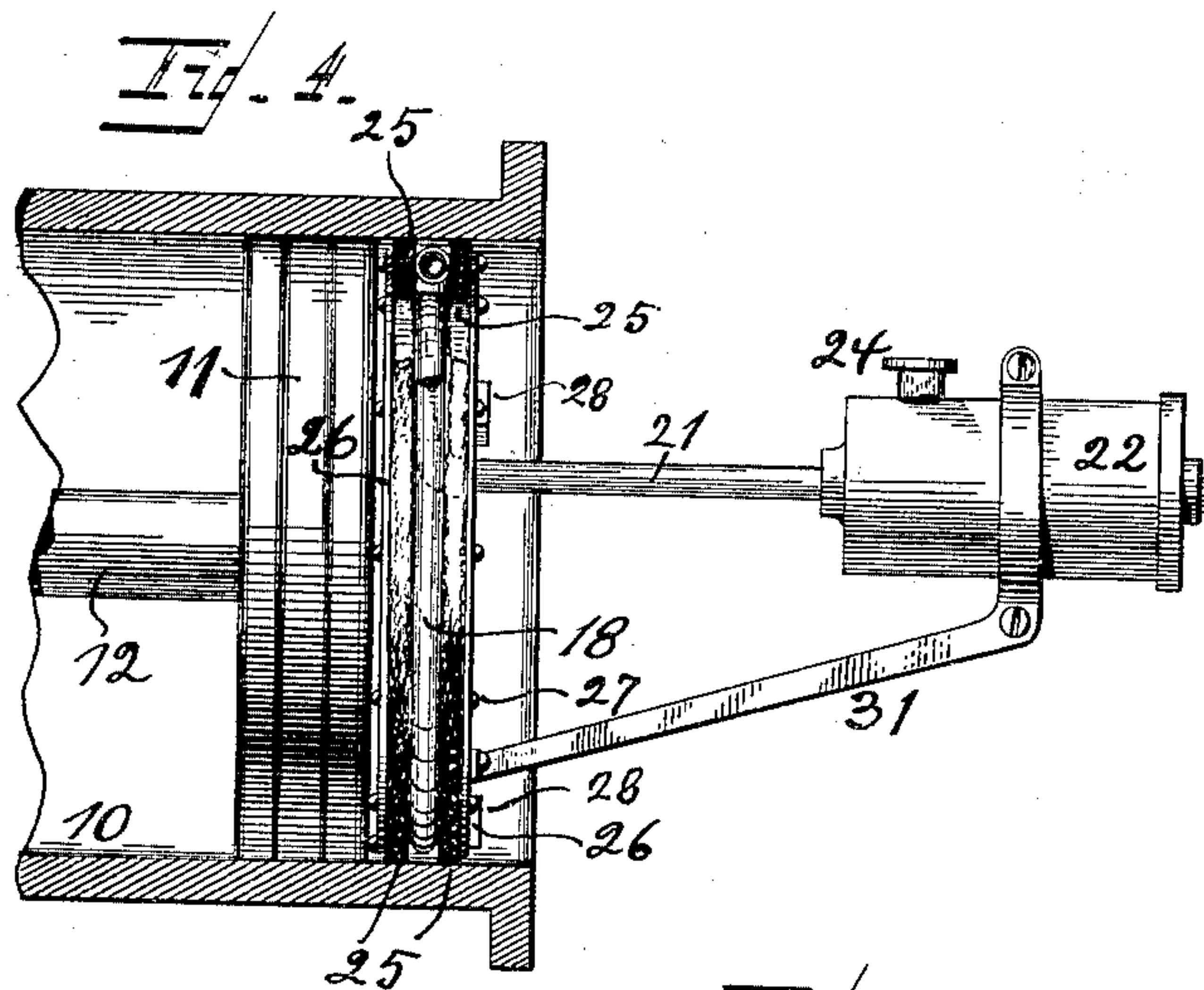
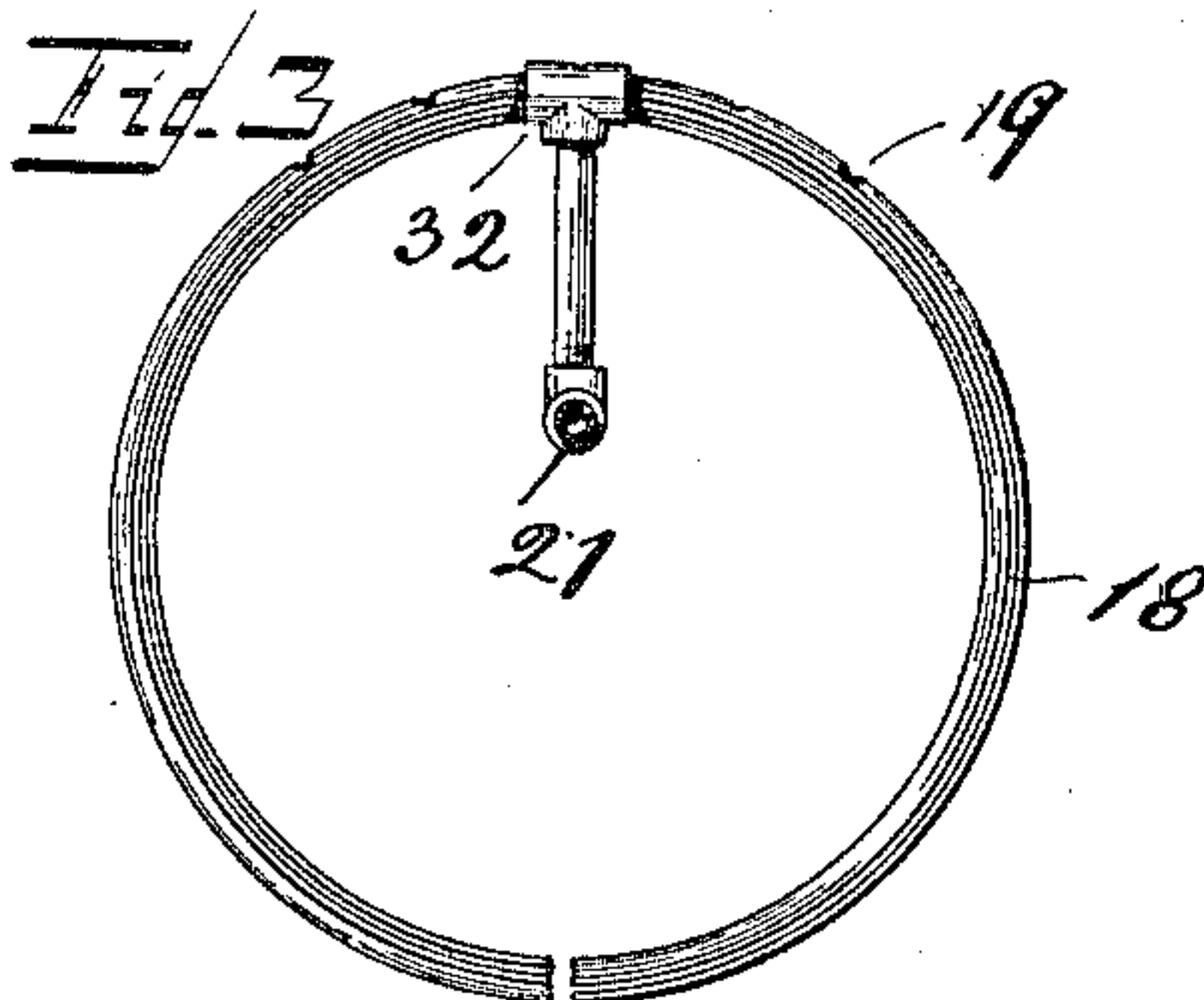
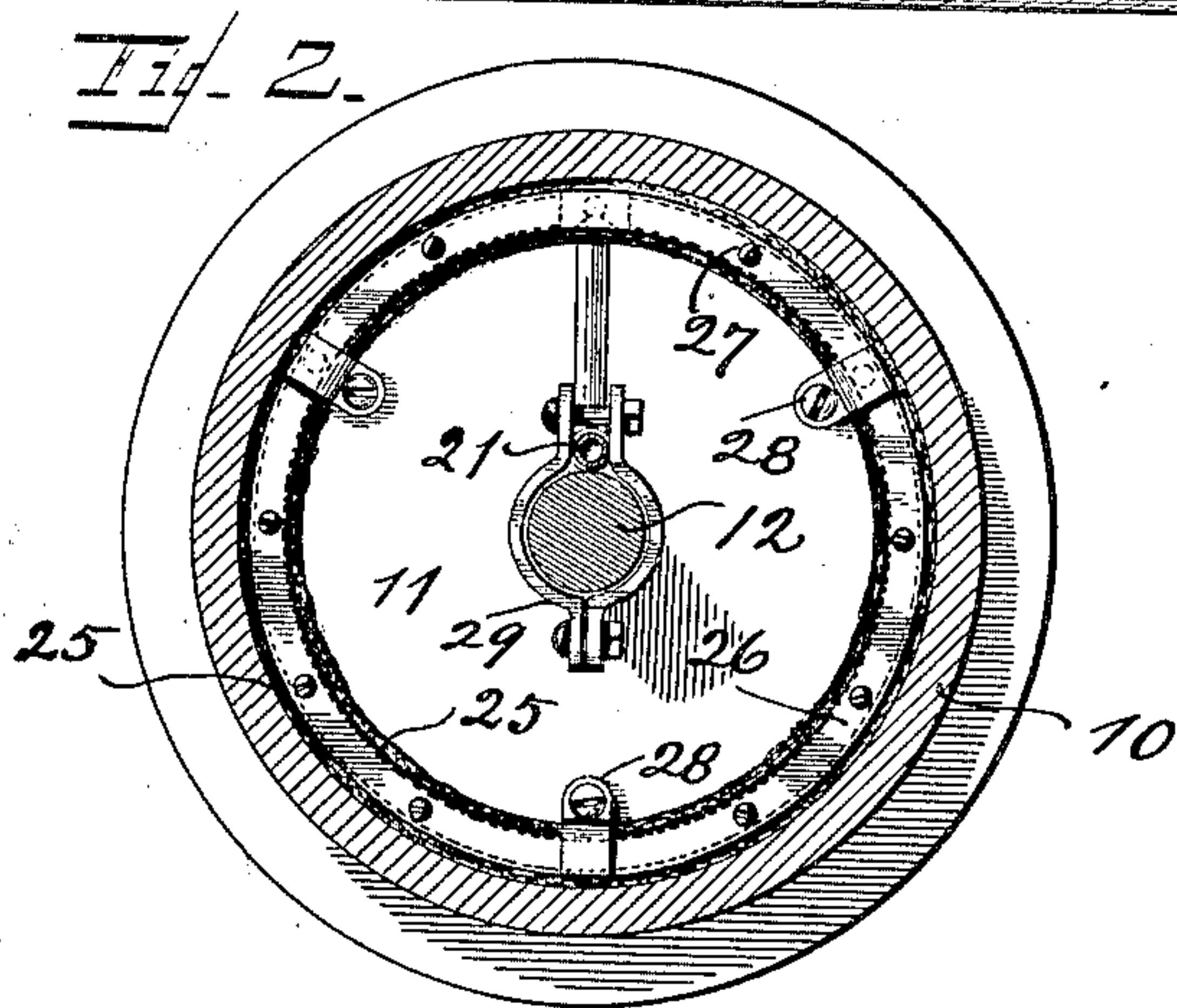
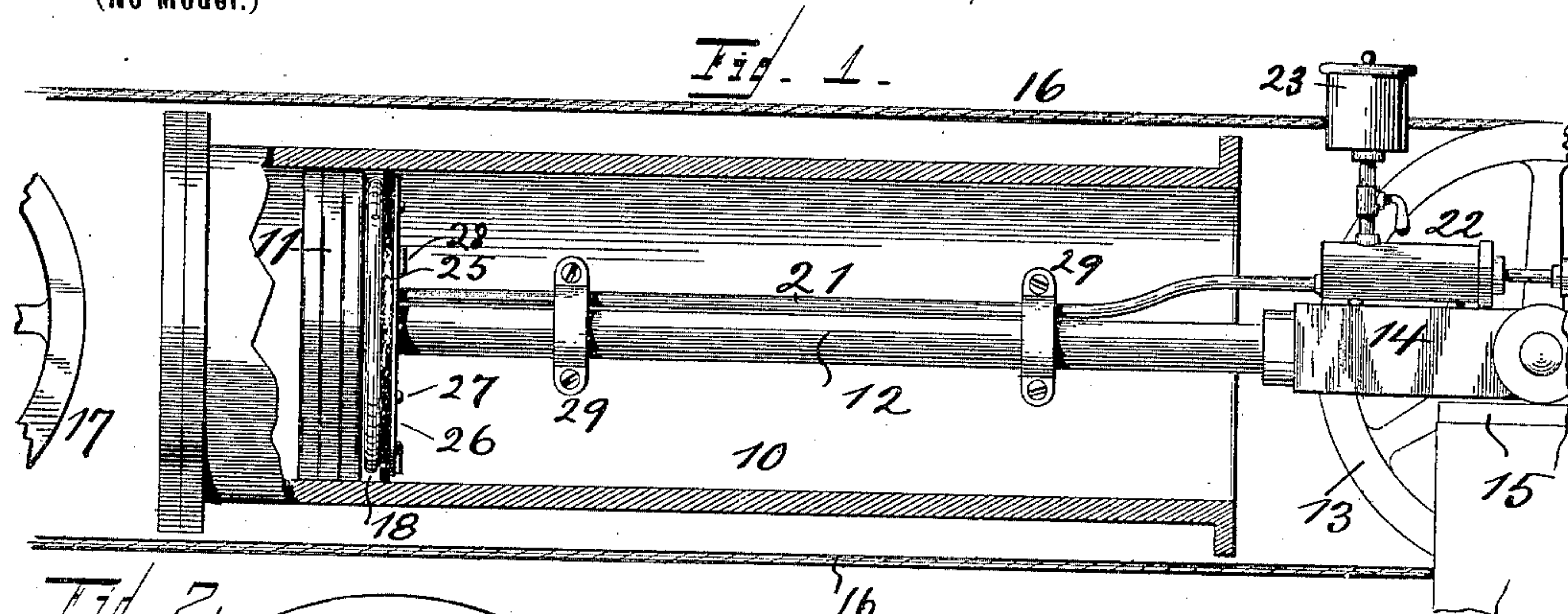
No. 672,249.

Patented Apr. 16, 1901.

J. H. WOODARD.
TRAVELING OILER.

(Application filed Jan. 7, 1901.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES H. WOODARD, OF DAYTON, KENTUCKY, ASSIGNOR TO THE ELEVATOR TRAVELING OILER COMPANY, OF CINCINNATI, OHIO.

TRAVELING OILER.

SPECIFICATION forming part of Letters Patent No. 672,249, dated April 16, 1901.

Application filed January 7, 1901. Serial No. 42,317. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. WOODARD, a citizen of the United States, and a resident of Dayton, Campbell county, State of Kentucky, have invented a certain new and useful Traveling Oiler; and I do declare the following to be a description thereof sufficiently clear, full, and exact to enable others skilled in the art to which it appertains to make and use the same, attention being called to the accompanying drawings, with the reference-numerals marked thereon, which form also a part of this specification.

My present invention is intended to constitute an improvement upon a similar device invented by me and described in Patent No. 649,027, granted May 8, 1900.

This invention relates to devices used for applying lubricant to the wearing-surfaces of operating parts where such has to be done while such parts are in motion and where the particular surfaces are not readily accessible, either on account of location, on account of motion of the parts, or on account of both causes combined.

My invention is devised principally for use in connection with elevator machinery, and it is more particularly intended for lubricating the interior wearing-surface of the pressure-cylinder where such is used. It is quite difficult to apply oil to the inside of such a cylinder with ordinary means, since it can only be done while the moving piston-head is at the extreme end of its instroke, which fact prevents the work to be done from being seen, and therefore causes the oiling to be imperfectly performed, either by insufficient application of the lubricant or by an excessive one, causing waste, or by failing to reach the proper parts or surfaces. Devices traveling with some of the moving parts, like the piston-head, have heretofore been used to overcome to some extent this difficulty; but most of them have been found more or less objectionable, since they fail to properly and evenly distribute the applied lubricant.

My invention therefore provides a device whereby lubricant may be applied at any time and at any position of the piston-head, and particularly while the same is farthest inside, and which application is such that the lubri-

cant is applied only in the proper quantity and to the proper surfaces.

In view of these requirements my invention consists of a device constructed in a certain manner, as set forth in the following specification and particularly pointed out in the claims at the end thereof, the same containing likewise a full description of my invention, together with its operation, parts, and construction, which latter is also illustrated in the accompanying drawings, in which—

Figure 1 shows in a longitudinal section the customary pressure-cylinder of a hydraulic elevator, the same being fitted out with my traveling oiler. Fig. 2 is an enlarged cross-section thereof. Fig. 3, in a detail view, shows the ejector parts of the device. Fig. 4, in a view similar to Fig. 1, shows a modified form of my invention. Fig. 5 shows an end view of the preceding figure, and Fig. 6 is a sectional detail view.

In the drawings, 10 indicates the pressure-cylinder, 11 the piston, and 12 the piston-rod, all forming parts of the actuating mechanism of a hydraulically-operated elevator.

In Fig. 1, 13 indicates the traveling sheaves, of which there are a number mounted side by side in a bearing 14, which is supported on a track 15. This sheave-supporting bearing is connected to the moving head 11 by means of a piston-rod 12, whereby said sheaves are alternately moved in opposite directions by the piston-head.

16 is a part of the hoisting rope or cable which passes repeatedly around sheaves 13 and also around another stationary set of sheaves 17. The free end of this cable passes to and up the elevator-shaft, where it finally connects to the cab or platform therein. The reciprocating movement of the piston-head is caused in one direction by admitting water under pressure back of it, at which time it moves outwardly and increases the distance between the traveling and stationary sheaves, whereby a corresponding amount of rope increasing in multiple is taken up with the ultimate effect of lifting the cab. This performance is reversed when the piston-head is moved in the other direction—that is, into the cylinder—which movement is rendered possible by permitting the escape of the water from

the cylinder, the weight of the descending elevator-cab furnishing the active power of that part of the operation. It is at this time—that is, when the moving head is farthest inside—that lubrication of the interior surface of the pressure-cylinder becomes possible with ordinary appliances, but is rather difficult by reason of the distance from the open end of the cylinder to the point where the lubricant has to be applied, which is seldom less than ten feet, and on account of the darkness prevailing at such point. Traveling oilers overcome to some extent these difficulties, but are more or less incomplete, since they generally fail to properly and evenly apply and distribute the lubricant.

My improved lubricating device consists, first, of means in shape of a discharge-pipe provided with discharge-orifices so located and directed as to cause the lubricant to come in contact with such surfaces only where the application is most advantageous. It consists, secondly, of means whereby this discharge-pipe is supplied, and, finally, it consists of means whereby the ejected lubricant is properly and evenly distributed over the surface traversed by the moving head.

18 is the discharge-pipe, shaped to conform to the interior size and shape of the cylinder. As a result this shape will assume the form of a ring the outside diameter of which is reduced to provide a space between it and the inner surface of the cylinder to prevent contact therewith. Opposite the inner cylinder-surface and in the outer part of pipe 18 there is a number of discharge-orifices 19, directed so as to discharge against this surface. This discharge-pipe is supplied from a feed-pipe 21, which communicates with a suitable ejecting device 22, preferably in the shape of a pump. This ejecting device may be provided with a supply-tank 23, as shown in Fig. 1, or it may have simply a fill-opening 24, as shown in Fig. 4. In both cases it is provided with a plunger to expel the lubricant. As may be seen in Fig. 1, this plunger is accessible in all positions of the parts, so that lubrication may be readily had at any time by simply actuating this plunger. The lubricant ejected against the inner cylinder-surface is evenly distributed by a spreader 25, in the shape of a ring of suitable soft and preferably-absorbent material or combination of materials, which is in contact with the inner surface of the cylinder. The most suitable material for this spreader is felt, and the same is carried and supported by the discharge-pipe 18, against which it is clamped by a backing in the shape of a ring 26. This ring is held in place by screws 27 passing through it and through the spreader into pipe 18.

In Fig. 1 only one spreader is shown, while in Fig. 4 one is shown on each side of the ejector-pipe. This latter, together with the spreader, is held in place on the piston-head by clamping-dogs 28 taking over all, as shown in detail in Fig. 6. There are usually two

forms of cylinders—one in which the piston-rod projects through the open end of the cylinder, as shown in Fig. 1, and the other in which it does so through the closed end, as shown in Fig. 4. In the first case the ejecting device may then be carried on the piston-rod or on bracket 14. Clamping-rings 29 are also provided to hold pipe 21 to the piston-rod. In the other form, as shown in Fig. 4, there being no piston-rod available, the ejecting device is supported on suitable braces 31. The discharge-pipe is constructed as shown in Fig. 3 and consists of two semicircular pieces bent to the proper shape and each connected to a T-joint 32, which is attached to the upturned end of feed-pipe 21. The lower ends of these semicircular pipe-sections are plugged up to prevent escape of oil. By thus having circular pipe 18 in two semicircular sections in form of an open ring it may be shaped more conveniently and the open ends may be separated to clear the piston-rod to permit attachment of the device to the piston-head.

This oiling device may be used equally as well in connection with cylinders occupying any position other than horizontal, in which case the discharge-orifices of the discharge-pipe would be distributed all around the same.

Having described my invention, I claim as new—

1. In a traveling oiler for lubricating the interior surface of a cylinder, the combination of a circular discharge-pipe having discharge-orifices located so as to discharge against the inner surface of the cylinder, a circular spreader fitted to the circular discharge-pipe and in contact with the inner surface of the cylinder to distribute all around the same the lubricant discharged there-against, a circular backing-ring attached to this latter with the spreader clamped between them, and whereby this latter is held in position all around by these two, means whereby these two members are as a whole attached to the piston-head in a manner to partake of the movement of the same, an ejecting device and a feed-pipe connecting it with the discharge-pipe.

2. In a traveling oiler for lubricating the interior surface of a cylinder, the combination of an ejecting device located so as to be accessible from the outside of the cylinder, a feed-pipe extending into the latter and terminating with its upturned end in front of the piston-head, a T-joint 32, connected to this end, two semicircular pipes each connected to one of the open ends of this T-joint and meeting with their free ends diametrically opposite this latter, thereby forming a circular discharge-pipe, and a circular spreader attached close to this discharge-pipe and traveling in contact with the inner cylinder-surface so as to distribute over this latter the lubricant ejected from the discharge-pipe.

3. In a traveling oiler for lubricating the

interior surface of a cylinder, the combination of a plurality of circular spreaders fitted against this surface, a circular discharge-pipe between them, means whereby the parts
5 are held to each other and attached in position so as to travel with the piston-head, a feed-pipe connected to this discharge-pipe and an ejecting device connected to the feed-pipe and whereby lubricant is supplied into

the space between the spreaders and distributed by them over the interior cylinder-surface.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

JAMES H. WOODARD.

Witnesses:

JAMES N. RAMSEY,
C. SPENGEL.