

(No Model.)

R. B. MOTHERWELL.

LUBRICATOR.

No. 331,809.

Patented Dec. 8, 1885.

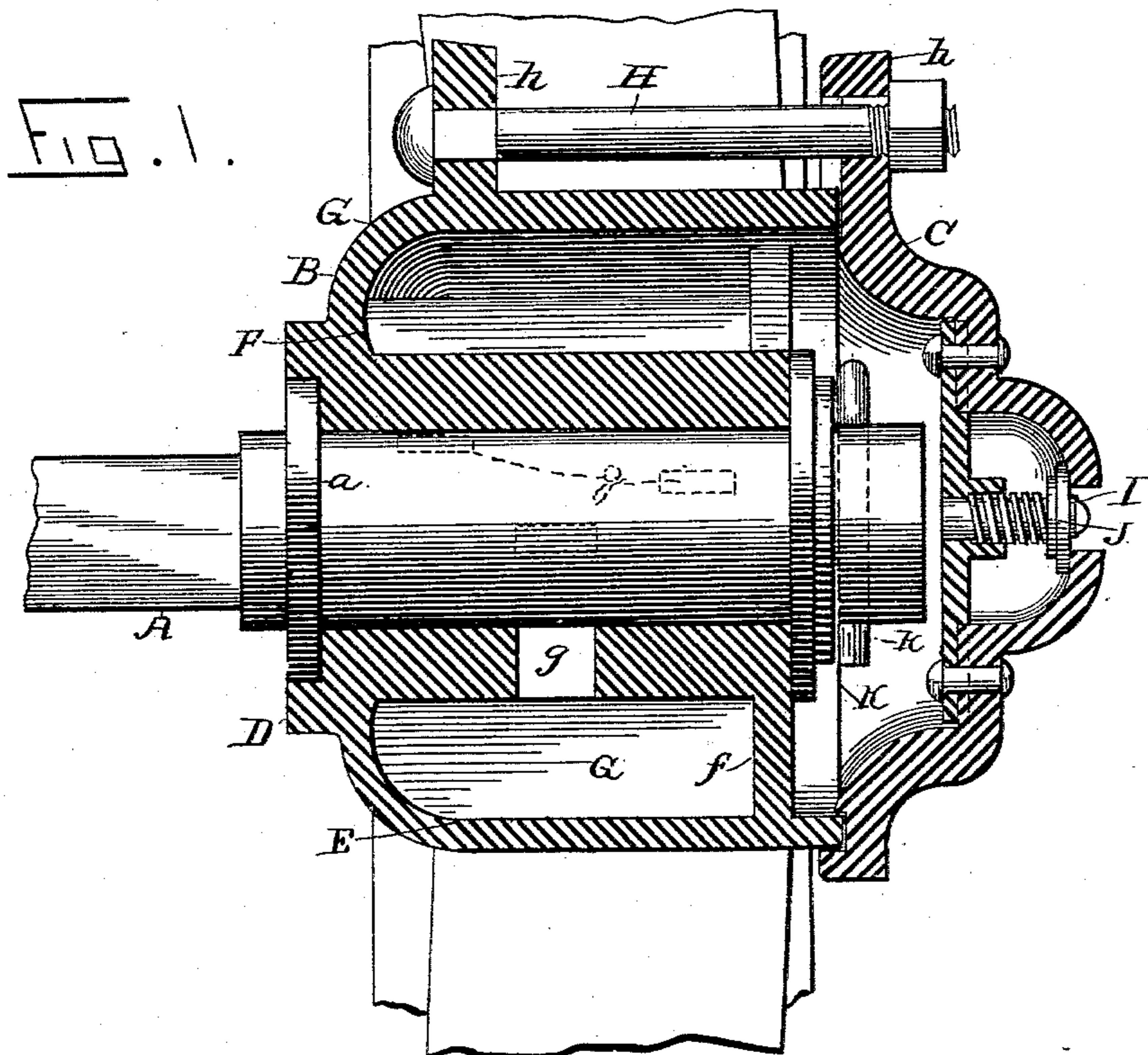
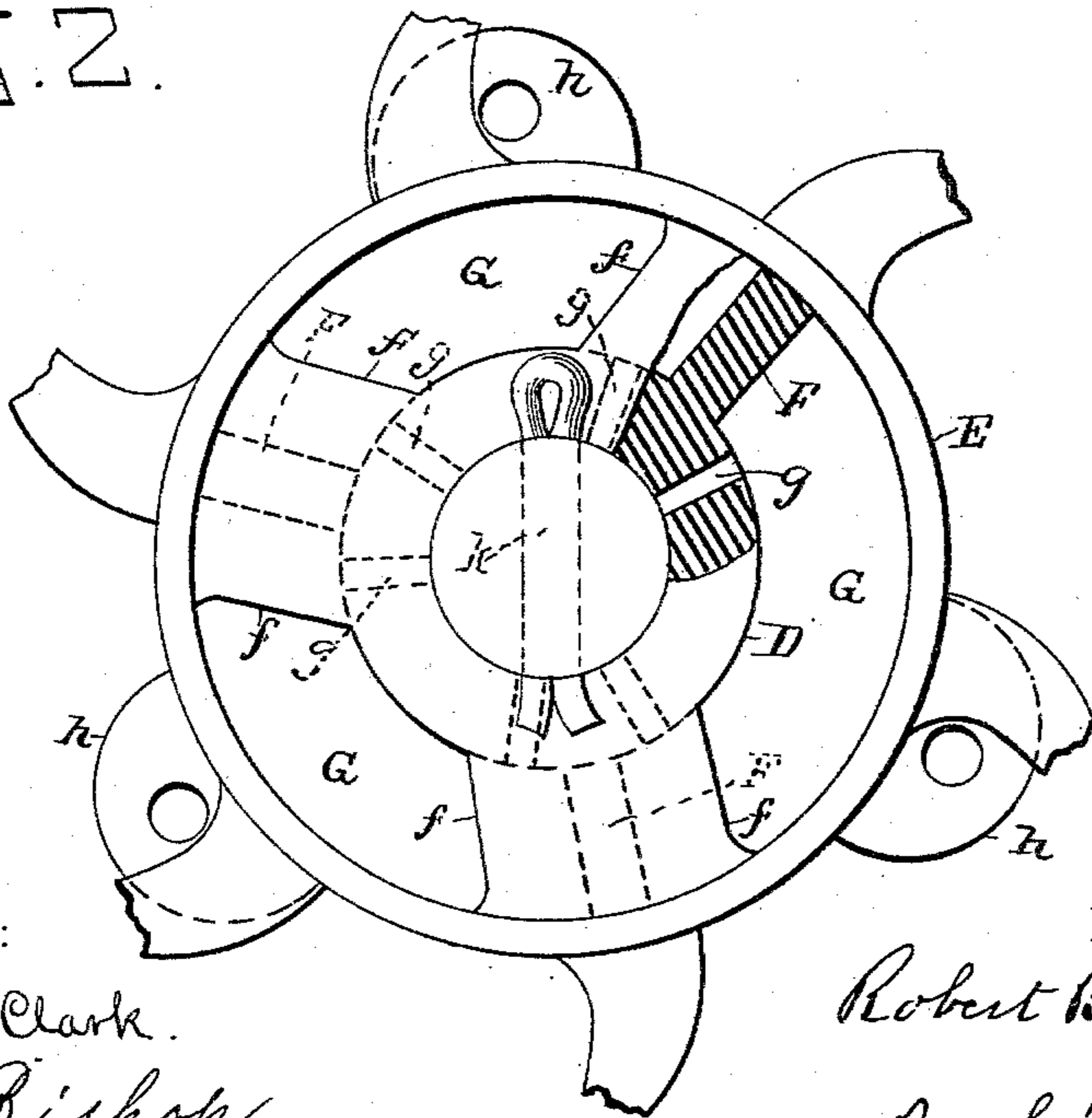


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 331,809, dated December 8, 1885.

Application filed October 14, 1885. Serial No. 179,908. (No model.)

To all whom it may concern:

Be it known that I, ROBERT B. MOTHERWELL, a citizen of the United States, residing at Logan, in the county of Hocking and State of Ohio, have invented certain new and useful Improvements in Lubricators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-
10 pertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

15 My invention relates to improvements in lubricators of that class adapted to be applied to loose pulleys, idlers, and to such pulleys or hubs as revolve about a fixed shaft or axle, and it is particularly designed to be applied to
20 wheels which are made of cast metal.

Heretofore hubs have been made of cast metal having an annular oil-chamber surrounding the inner bearing portion, said chamber being subdivided by radial partitions, which
25 brace and strengthen the walls forming the main chamber. Communication is afforded between the bore of the hub and each subdivision of the main chamber by ducts formed in the inner bearing portion at a point midway
30 between the radial partitions. In practice it has been found that pulleys or wheels having such hubs will not work efficiently on a shaft or axle set at an incline, or even horizontally, without a copious supply of oil in the chamber,
35 for the following reasons: First, the inner wall or bearing portion of each subdivision of the annular or main oil-reservoir is formed on the arc of a circle, and the mouth of the duct, being located midway the extremities of the arc
40 on the convex side, occupies the highest possible position relatively to the subdivision. Thus the axle or shaft, if it occupied a horizontal position, would fail to be lubricated even with a given quantity of oil in the chamber.
45 Second, the radial partitions being of uniform thickness throughout their length and the main reservoir being open at one end, if the shaft or axle should be inclined to cause the mouth of the oil-reservoir to become lower
50 than the base, the oil would pass from the various compartments before they would reach

their highest point. Thus, again, the shaft or axle would fail to be lubricated, although the reservoir contains a quantity of lubricant.

The object of my invention is to obviate these
55 difficulties and use the lubricant nearly or entirely up, thus accomplishing with a reduced chamber and supply of oil what heretofore was impracticable.

It consists in forming the ducts through the
60 inner wall or bearing of the hub near the radial partitions so they will occupy relatively the lowest possible position; also, in providing the radial partitions at their free ends with lateral flanges extending on either side and at right
65 angles thereto, inclosing a small space, which will catch and carry a sufficient quantity of the lubricant to the top of the shaft or axle, no matter how great the incline of the latter.

In the drawings, Figure 1 represents a por-
70 tion of a shaft or axle provided with a pulley or wheel having its hub constructed according to my invention, the hub being shown in section and the rim of the pulley being broken away. Fig. 2 is an end view of the same,
75 partly in section.

In the drawings my improvement is shown as applied to the end of a shaft or axle, A, having a shoulder, *a*, formed near its end.

The hub of the pulley consists of two parts, 80 the hub proper, B, and the cap C. Hub B is centrally bored to fit on the shaft, and has an inner and outer wall, D E, forming an annular chamber between them. These walls are united, strengthened, and braced by radial par-
85 titions F, which subdivide the chamber into compartments G. Ducts *g*, formed through the inner wall near the partitions and on either side thereof, communicate with the bore of the hub. The ducts in each compartment 90 are in the same plane and alternate with the ducts of the adjacent compartments, so that in a revolution of the hub every part of the shaft in contact therewith will be lubricated. Flanges *f* extend on either side of and at right
95 angles to the radial partitions, and are preferably formed as a head or finish to their free ends. Cap C is dome-shaped, and is slightly larger in diameter than the outer wall of the hub, and is grooved to form a seat for the edge
100 of said wall. This cap is secured to the hub by bolts H, passing through coincident lugs *h*,

cast with the parts. The apex of the dome of the cap is removed to form an opening for the admission of a lubricant to the interior or reservoir of the hub. This opening is automatically closed by a spring-actuated check-valve, J. The hub is held in place between the shoulder *a* and pin *k*, collars K being interposed between the pin and the adjacent end of the hub to take the wear.

10 From the foregoing the operation of the device is apparent.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

15 A self-lubricating pulley or wheel provided

with a hub having an annular reservoir surrounding its bore, radial partitions dividing the reservoir into several compartments, flanges formed at right angles to and extending on either side of the free ends of the partition, and the inner wall of the compartments having ducts formed therethrough close to and on either side of the partitions, substantially as shown, and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT BURANS MOTHERWELL.

Witnesses:

E. B. COMLY,

S. H. BRIGHT.