

No. 682,346.

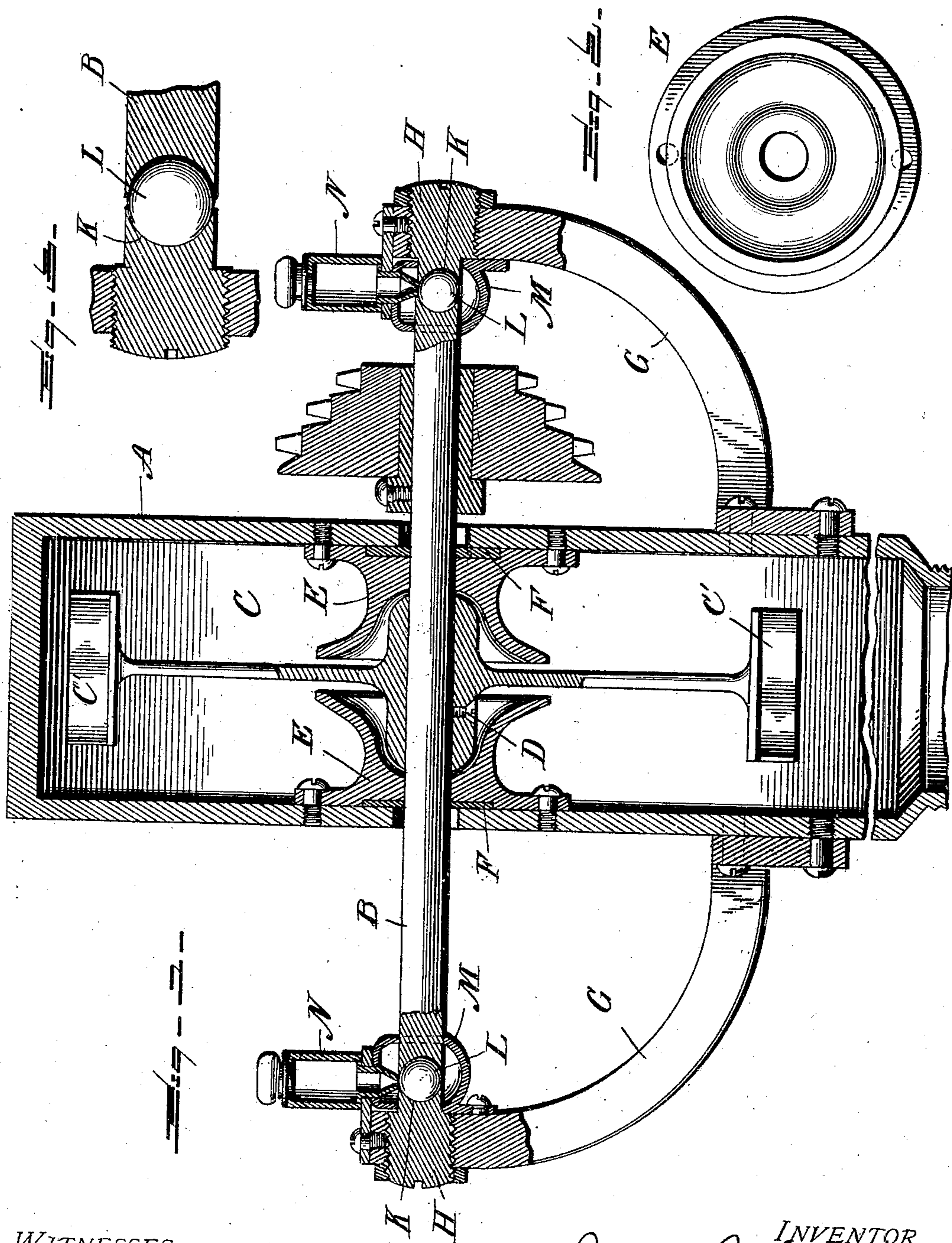
Patented Sept. 10, 1901.

D. P. SIMS.

LEAKAGE GUARD FOR WATER MOTORS.

(Application filed Mar. 2, 1901.)

(No Model.)



WITNESSES:

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DAVID P. SIMS, OF LINCOLN, NEBRASKA.

LEAKAGE-GUARD FOR WATER-MOTORS.

SPECIFICATION forming part of Letters Patent No. 682,346, dated September 10, 1901.

Application filed March 2, 1901. Serial No. 49,609. (No model.)

To all whom it may concern:

Be it known that I, DAVID P. SIMS, a citizen of the United States, residing at Lincoln, in the county of Lancaster, State of Nebraska, have invented certain new and useful Improvements in Leakage-Guards for Water-Motors; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in leakage-guards for water-motors; and it consists in the provision of bowl-shaped guards which are fastened to the opposite sides of the motor-casing with their bowl portions extending over the hub of the motor-wheel.

My invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form part of this application, and in which—

Figure 1 is a vertical central sectional view through a motor, showing the water guard cups or plates held to the casing of the motor, through which casing the shaft rotates; and Fig. 2 is an enlarged detail view, in side elevation, of one of said guard plates or cups. Fig. 3 is an enlarged sectional view through the bearing.

Reference now being had to the details of the drawings by letter, A designates the casing of the motor, which is centrally apertured to receive the shaft B, on which the motor-wheel C is mounted. The hub portion of this wheel, which is cylindrical in outline with rounding ends, is secured to the shaft by means of the screw D or other suitable means, and mounted about said shaft and secured to the inner walls of the casing opposite each other are the guard-cups E, which are bowl-shaped and held by their flanged bottoms to the opposite vertical side walls of the motor-casing with their hollow bowl portions projecting over the rounded ends of said hubs, the free ends of said guard-cups being adjacent to the spokes of the motor-wheel on opposite sides thereof, the circumferences of the cups being concaved, whereby

the water falling upon the same will run down and away from the hub and bearings. The outer face of each cup is recessed to receive a suitable packing-ring F. At the outer ends of the wheel are the buckets C', the ends of which extend beyond the inner adjacent ends of the guard-cups E, whereby as the motor-wheel rotates the cups will serve to catch the water and prevent its passing out through the apertures in the casing, through which the shaft turns.

Mounted on either side of the casing are bracket-arms G, in the upper ends of which are mounted the screw-threaded adjustable plugs H, which have their inner ends hollowed out, as at K, and hardened, forming a bearing for one of the hardened antifriction-balls L. Secured to said bracket G is a cup or casing M, which surrounds the ends of one plug H and the shaft B, with antifriction-ball interposed between same. Mounted upon the upper end of each bracket G is a self-lubricating box N, having an outlet-passage passing through said cup or casing M and held adjacent to the ball beneath, whereby a lubricant may be constantly fed to the bearings.

From the foregoing it will be observed that any wear between the antifriction-ball and the hardened sockets held adjacent thereto may be taken up by screwing in the plugs H, which are mounted opposite each other at the upper ends of said bracket-arms. By the provision of the cups mounted within the casing the water which is thrown by centrifugal force about the interior of the casing is prevented from passing out through the shaft-opening and in contact with the bearings at the ends of the shaft.

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

1. In combination with the casing of a water-motor, a shaft passing through apertures therein, a cylindrical round-ended hub on said shaft, double-flanged guard-cups fastened by their outer flanges to the walls of the casing, the bottoms of the interiors of said cups conforming to the ends of said hub, their exteriors being concave and their inner ends being adjacent to the spokes of the motor-wheel, as set forth.

2. In combination with the casing of a water-motor, a shaft passing through apertures therein, a cylindrical round-ended hub on said shaft, double-flanged guard-cups fastened by their outer flanges to the walls of the casing, washers countersunk in the outer faces of said guard-cups, the bottoms of the interiors of the cups conforming to the ends of said hub, their exteriors being concave

and their inner ends being adjacent to the spokes of the motor-wheel, as set forth.

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

DAVID P. SIMS.

Witnesses:

H. F. HELMS,

A. D. KITCHEN.