(No Model.)

F. H. PERRY.

SELF OILING JOURNAL BEARING.

No. 561,028. Patented May 26, 1896.

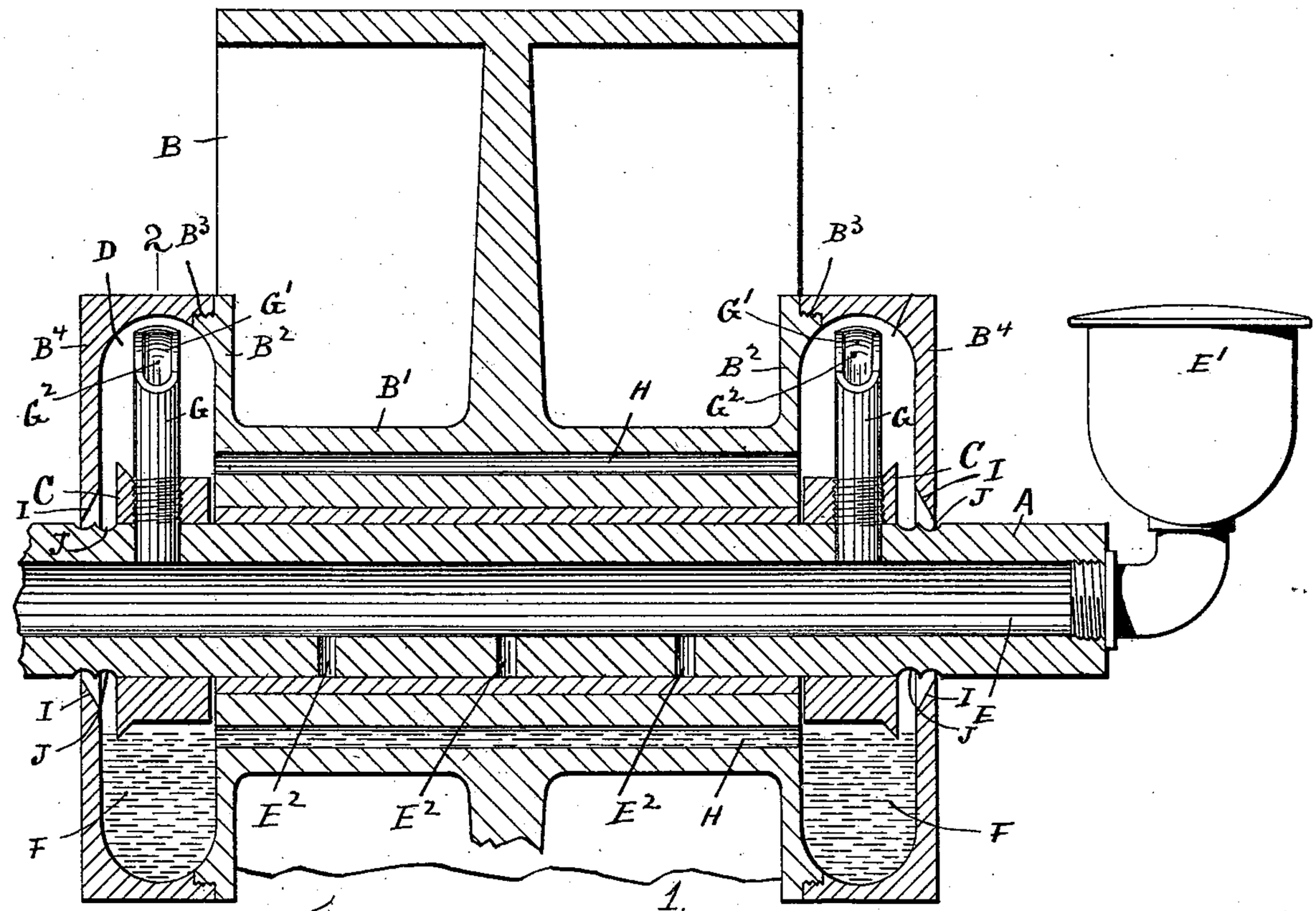

Fig. 1.

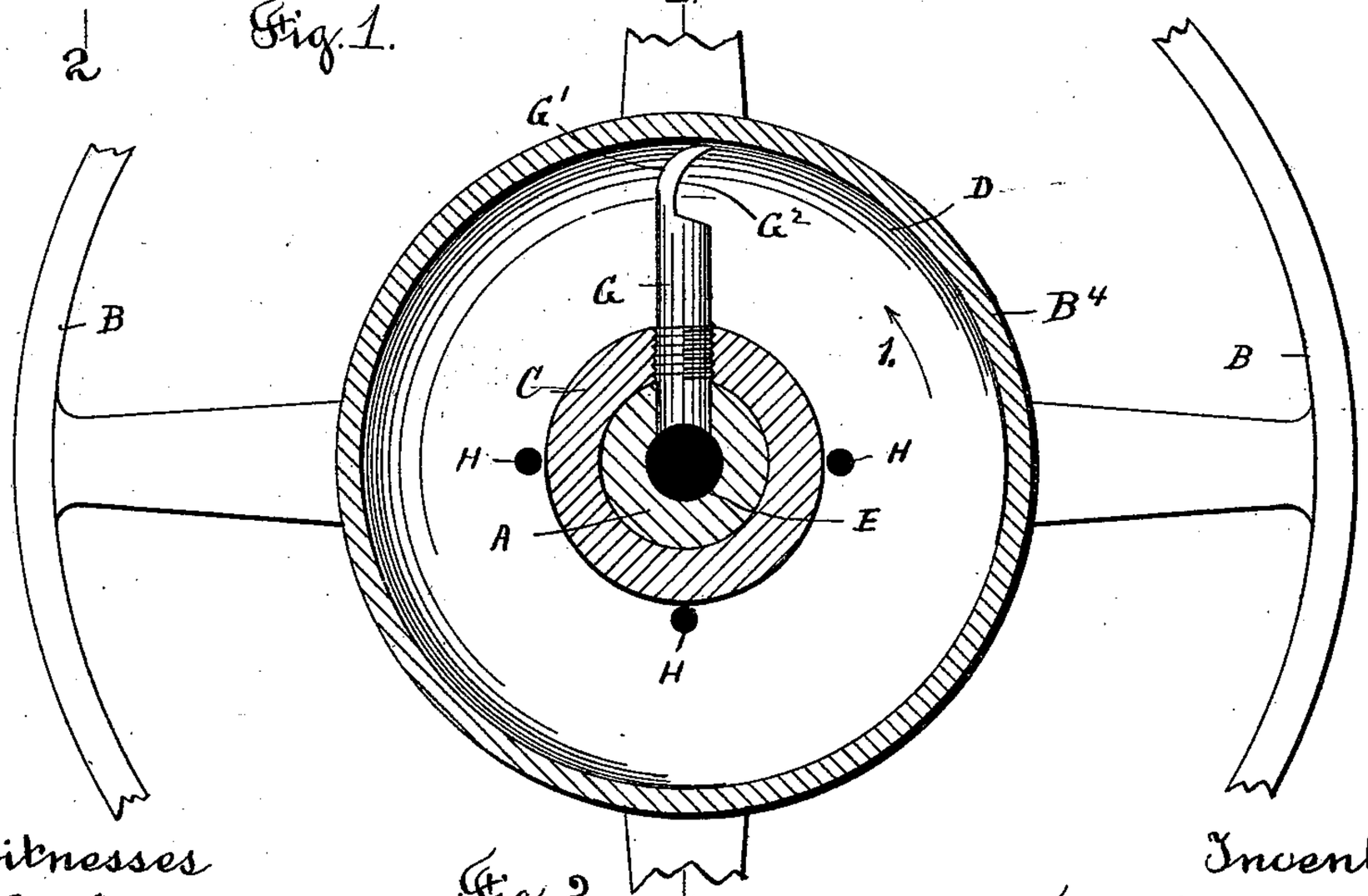

Fig. 2.

Witnesses
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By his Attorney.
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UNITED STATES PATENT OFFICE.

FRED H. PERRY, OF MONTPELIER, VERMONT, ASSIGNOR TO GEORGE B. PECK, OF SAME PLACE.

SELF-OILING JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 561,028, dated May 26, 1896.

Application filed December 30, 1893. Serial No. 495,187. (No model.)

To all whom it may concern:

Be it known that I, FRED H. PERRY, a citizen of the United States, and a resident of Montpelier, in the county of Washington and State of Vermont, have invented a new and useful Improvement in Self-Oiling Journal-Bearings, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a central sectional view on line 1 1, Fig. 2. Fig. 2 is a sectional view on line 2 2, Fig. 1.

Similar letters refer to similar parts in both figures.

A denotes a stud or shaft, upon which the belt-pulley B rotates between collars C C, attached to the shaft A. The hub B′ of the pulley B is provided at its ends with flanges B^2 B^2, having screw-threads B^3 B^3, to receive the annular shells B^4, which form with the flanges B^2 an annular trough D, rotating with the pulley B around the shaft A. The shaft A is provided with an interior chamber E, which receives its supply from an oil cup or reservoir E′. Holes E^2 lead from the chamber E to the outer surface of the shaft A, allowing the lubricating material to pass from the interior chamber E to the bearing-surface of the shaft. The holes E^2 are preferably placed upon the lower side of the shaft A, in order that the oil may flow by gravity from the interior chamber E to the outer surface of the shaft A, upon which it is distributed by the rotation of the pulley. Any excess of lubricating material fed through the holes E^2 to the outer surface of the shaft will flow out at the ends of the hub B′ and be caught by the annular troughs D D and held, when the pulley is at rest, in the lower portion of the troughs, as represented at F F in Fig. 1; but when the pulley B is rotated the lubricating material held in the troughs will be thrown by centrifugal force into the outer portions of the troughs and carried around by the rotation of the pulley. Tubes G G are inserted in the collars C C and shaft A, communicating with the interior chamber E and having their outer ends provided with curved or spoon-shaped blades G′ G′, which extend into the path of the body of oil carried around by the rotation of the troughs, and are open upon that side toward which the lubricating material is carried by the rotary movement of the pulley, so that the lubricating material, striking against the concave sides G^2 G^2 of the spoon-shaped blades G′, will be turned downward into the tubes G and returned to the interior chamber E. The hub B′ is provided with holes H, extending lengthwise the hub and forming means of communication between the two troughs D D. Four or more holes H extend through the hub B′, so that whenever the pulley comes to a state of rest at least one of the holes H will connect the troughs D D beneath the lower side of the shaft A and allow the quantity of lubricating material F F held in the troughs D D to become equalized. The edge of the central opening in the shell B^4 is chamfered upon the inner side at I to aid in the centrifugal movement of the lubricating material upon the inner wall of the trough, and the shaft A is also provided with one or more grooves J J to check the flow of oil lengthwise the shaft and between the surface of the shaft and the edge of the shell B^4.

The operation of the device is as follows: A quantity of lubricating material is placed in the oil cup or reservoir E′, from which it flows into the interior chamber E and is gradually fed through the holes E^2 to the outer or bearing surface of the shaft, upon which it is distributed by the rotation of the pulley. Any excess of lubricating material so fed to the bearing-surface of the shaft will eventually find its way out at the ends of the hub B′ and be caught by the troughs D D. When the pulley B is in motion, the oil fed in the troughs D D will be thrown by centrifugal force into the outer portion of the troughs, forming an annular body of oil, which will be carried around with the troughs, the movement of the oil as rotated by the pulley being in the direction of the arrow 1, Fig. 2, causing it to be carried against the open and concave side of the spoon-shaped blade G′, which extends within the path of the rotating body of oil, thereby intercepting its motion and deflecting it downward through the tube G, causing it to be returned to the interior chamber E, from which it is again fed through the holes E^2 to the bearing-surface of the shaft A.

A single tube G will usually be sufficient in each of the troughs D to return the lubricating material to the chamber E, and this tube I preferably place upon the upper side of the shaft, so that the lubricating material will flow by its own gravity through the tube G. The size of the hole through the tube G and also the size of the spoon-shaped blade G′ can be varied to adapt the device to heavy or light lubricating-oils.

I have represented in the drawings and have thus far described my invention as applied to a stationary shaft and a pulley rotating thereon; but it will be obvious that a slight change in the arrangement of the several parts will adapt the same to a shaft capable of rotating within a fixed or stationary box. For example, if the shaft A were a rotating shaft and the hub B′ of the pulley were considered a stationary journal-bearing for the shaft then it is obvious that it would be only necessary to attach the shells B^4 to the shaft A and detach the flanges B^2 from the hub B′, so that the troughs D would rotate with the shaft A around the ends of the fixed bearing, in which case the bearing would extend within the trough and carry the tubes G.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination with a fixed shaft, and a pulley running loosely on said shaft, said shaft having an interior chamber E, holes E^2 leading from said chamber to the outer surface of the shaft, and annular grooves J at the ends of said pulley, of shells attached to said pulley and inclosing an annular trough D and having chamfered edges I entering the annular grooves on said shaft, collars attached to said shaft within said shells, pipes G projecting from said collars into said annular trough and having spoon-shaped open ends, and an oil-reservoir communicating with said chamber E, said pulley having a series of passages H parallel with said shaft, substantially as described.

Dated this 26th day of December, 1893.

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Witnesses:
HARLAN W. KEMP,
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