

No. 759,876.

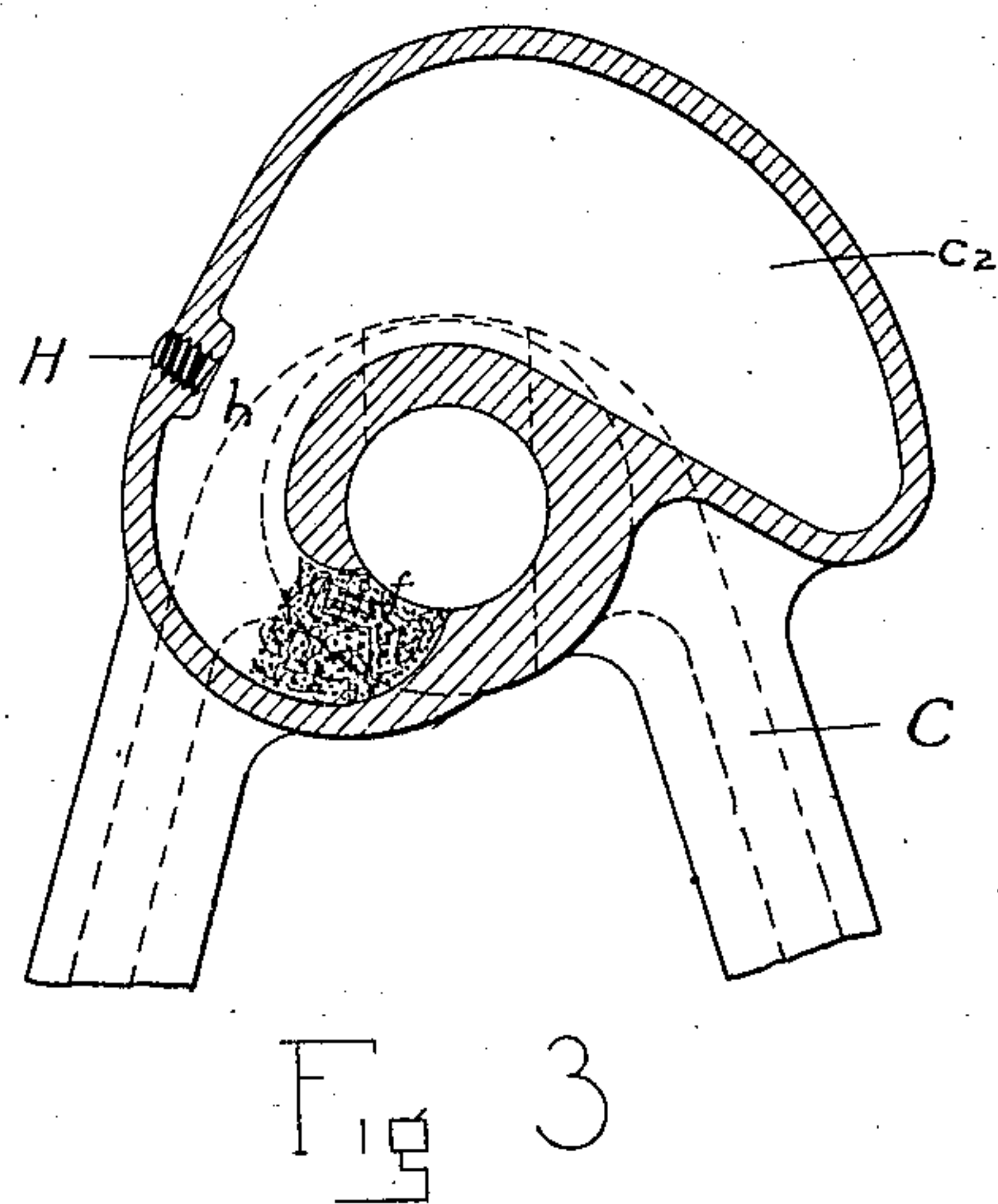
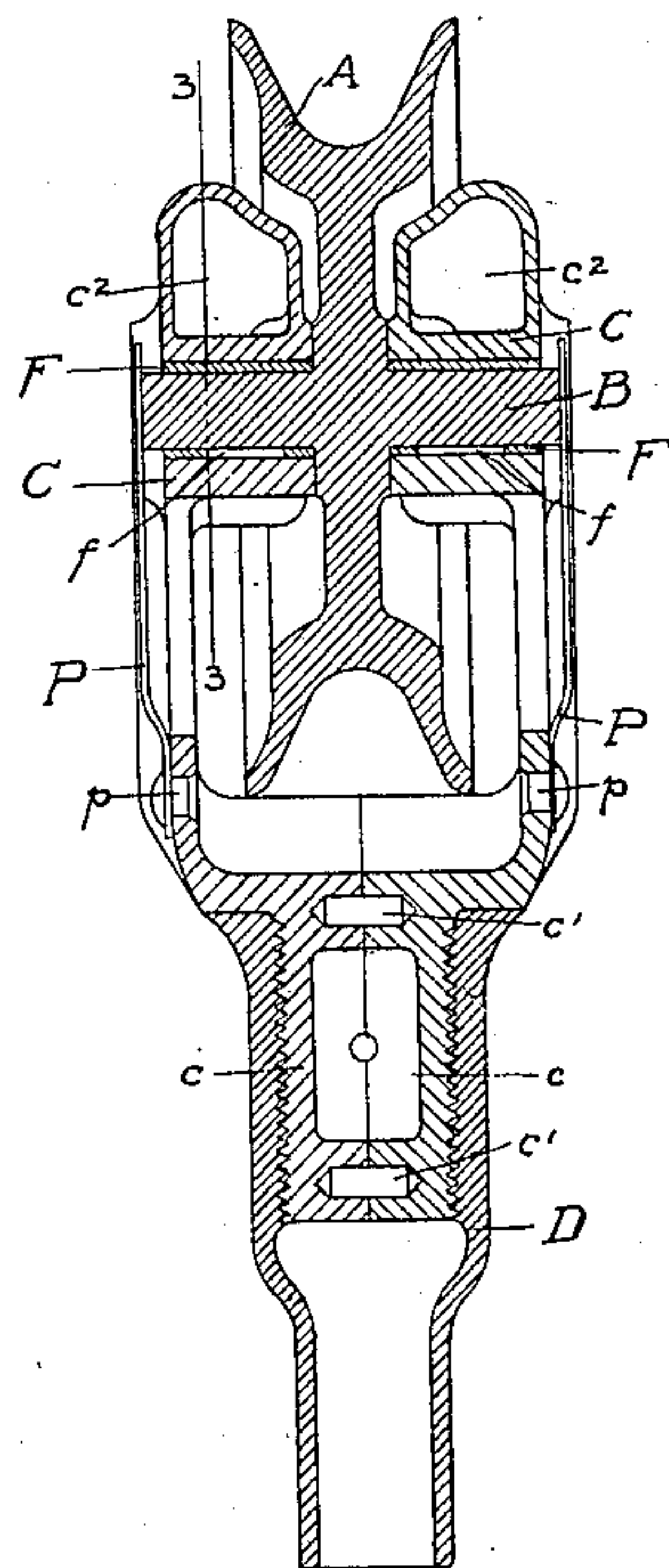
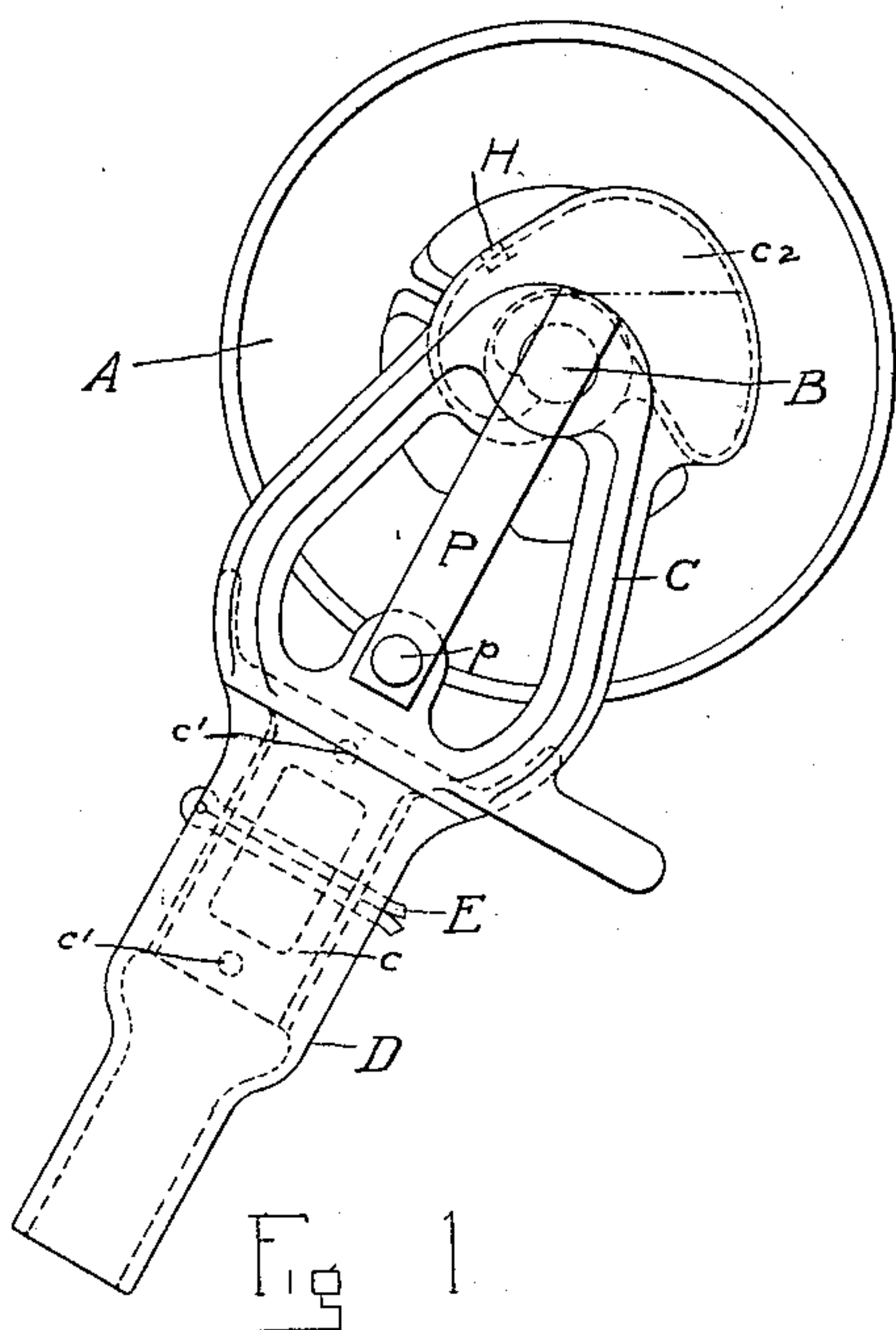
PATENTED MAY 17, 1904.

F. W. GARRETT & J. D. FORRER.

TROLLEY WHEEL AND HARP.

APPLICATION FILED DEC. 26, 1901.

NO MODEL.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK W. GARRETT AND JOSEPH D. FORRER, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNORS, BY MESNE ASSIGNMENTS, TO WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, OF PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

TROLLEY WHEEL AND HARP.

SPECIFICATION forming part of Letters Patent No. 759,876, dated May 17, 1904.

Application filed December 26, 1901. Serial No. 87,311. (No model.)

To all whom it may concern:

Be it known that we, FRANK W. GARRETT and JOSEPH D. FORRER, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Trolley Wheels and Harps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

Our invention has relation to certain new and useful improvements in trolley wheels and harps, and is designed to provide a trolley wheel and harp which will have an efficient self-lubrication of the wheel-bearings and which is mechanically capable of meeting the requirements of the present-day high-speed and high-potential service.

With these objects in view our invention consists in the provision in the harp-frame of lubricant-reservoirs of novel character so arranged that oil will be automatically delivered therefrom to the wheel-journals each time the trolley-wheel is elevated above its normal running position either by losing its contact with the conductor or by manual operation, together with oil-pockets arranged to receive the oil delivered from the reservoirs at such times and feed the same to the journals as required.

Our invention also consists in the novel construction and arrangement of parts, all as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a wheel and harp embodying our invention and shown in the oblique position which it occupies, approximately, in service; Fig. 2, a central vertical section of the wheel and harps, and Fig. 3 a detail sectional view of one of the oil-reservoirs.

In the figures the letter A designates the grooved trolley-wheel, which is preferably formed in one integral piece with its shaft or journals B in the manner shown in Fig. 2.

C C are the two members of the divided

harp-frame consisting of separate pieces formed each with a semicylindrical externally-threaded shank portion *c*. These shank portions fit together to receive the internally-threaded socket-piece D on the upper end of the pole, the threads being caused to properly register by means of the dowel-pins *c'*. To prevent any tendency of the harp to unscrew and become loose in the pocket-piece, a cotter E is employed.

The construction described is mechanically a strong one and at the same time is such as to readily permit the harp to be unscrewed and taken apart for the purpose of removing and replacing a defective or worn wheel.

Each of the harp arms or members is provided with a bearing-seat for a bushing F and is formed with an upward extension *C'*, which is made hollow to form an oil-reservoir, which partially surrounds the said bearing-seat and bushing. These oil-reservoirs, as will be noted, are of peculiar form, the body or reservoir portions proper thereof being below the axial line of the harp and pole in the position which they occupy in service and contracting on the other side of said line to narrow passages *h*, which curve around behind the journals to the under side of the same, where they communicate with openings *f*, formed in the bushing F. The lower portions of these curved passages constitute oil-pockets, and it will be noted that the bottom of the passage which connects them with the reservoir proper is in part eccentric with respect to the wheel-journals and is above the normal level of the lubricant in said reservoirs when the harp is in its normal running position, said level being indicated by the dotted line in Fig. 1. When, however, the harp is elevated above such normal position, either by reason of its leaving the overhead conductor or by manual manipulation, as is the case at the end of the line in reversing the direction of travel, the bottoms of the oil-reservoirs are raised with respect to the wheel-journals, thereby raising the level of the oil therein, so that a portion of the oil

will flow over and into and fill or partially fill the pockets *n*, from which it is gradually delivered to the bearings through the slots or openings *f*. If desired, the said pockets may
 5 be filled or partially filled with felt, waste, or other absorbent material, as shown in Fig. 3. H indicates a removable plug which closes the filling-opening of the reservoir. By means
 10 of this peculiar arrangement of the oil-reservoirs and oil-pockets the bearings are kept properly lubricated at all times with but little waste of oil and without other attention than the occasional filling of the reservoirs. The
 15 extensions *C*², which contain these reservoirs, are made of such shape, as indicated in the drawings, as to lie within the dished faces of the trolley-wheel, so that they do not present obstructions beyond the outer lateral planes of the harp-arms, and their upper edges are
 20 preferably rounded in order to prevent them from catching span-wires or other overhead wires.

P designates contact-strips secured to the harp at *p* and bearing at their free ends upon
 25 the wheel-journals.

We do not wish to be limited to the exact construction and arrangement of parts which we have herein shown and described, as changes may be made in the details thereof
 30 without departing from the spirit and scope of our invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

35 1. A trolley-harp having bearings therein for the wheel shaft or journals, and having also oil-reservoirs adjacent to the said journals, said reservoirs being below and behind said journals and having bottom walls eccentric there-
 40 to, whereby the level of the oil in the reservoirs is raised with respect to the journals when the harp and wheel are elevated above their normal running position, and passages leading from the reservoirs to the journals.

45 2. A trolley-harp having bearings thereon for the wheel-shaft journals, and formed with contained oil-reservoirs behind said shaft or journals and with passages leading from said reservoirs over the said journals and to the
 50 same at the opposite side from the reservoirs, the bottom wall of the reservoirs being eccentric with respect to the journals.

3. A trolley-harp having bearings therein for the wheel shaft or journals, and also oil-reservoirs, said reservoirs consisting each of
 55 a body portion located below the normal position of the axial line of the pole and harp when in service, and contracted portions or passages leading over the journals and terminating each in a pocket which communicates
 60 with the lower portions of the journal at the opposite side thereof from the said body portion.

4. A trolley-harp having its arms provided with wheel-bearings and with upward exten-
 65 sions containing oil-reservoirs which partially surround said bearings, and whose bottom walls are eccentric with respect to the same, whereby they discharge oil thereto upon an
 70 upward movement of the wheel and harp.

5. A trolley-harp having its arms provided with wheel-bearings and with oil-pockets communicating with the lower portions of said
 75 bearings, and oil-reservoirs at the opposite side of said bearings and connected with the pockets by passages which in the normal position of the harp in service have bottom walls
 80 above the level of the lubricant in said reservoir.

6. A trolley-harp provided with wheel-bear-
 80 ings and having oil-pockets communicating with said bearings, and oil-reservoirs communicating with said pockets by passages having bottom walls extending over the bearings, and which, in the normal position of the harp
 85 in service, are above the level of the lubricant in said reservoir.

7. A trolley-harp having wheel-bearings, oil-pockets communicating with said bearings, and lubricant-reservoirs in eccentric relation
 90 to said bearings and connected with said pockets by passages which are above the normal level of the lubricant in said reservoirs in the normal position of the harp in service, but at
 95 or below said level when the harp is above such normal position.

In testimony whereof we have affixed our signatures in presence of two witnesses.

FRANK W. GARRETT.
 JOSEPH D. FORRER.

Witnesses:

CORA G. COX,
 H. W. SMITH.