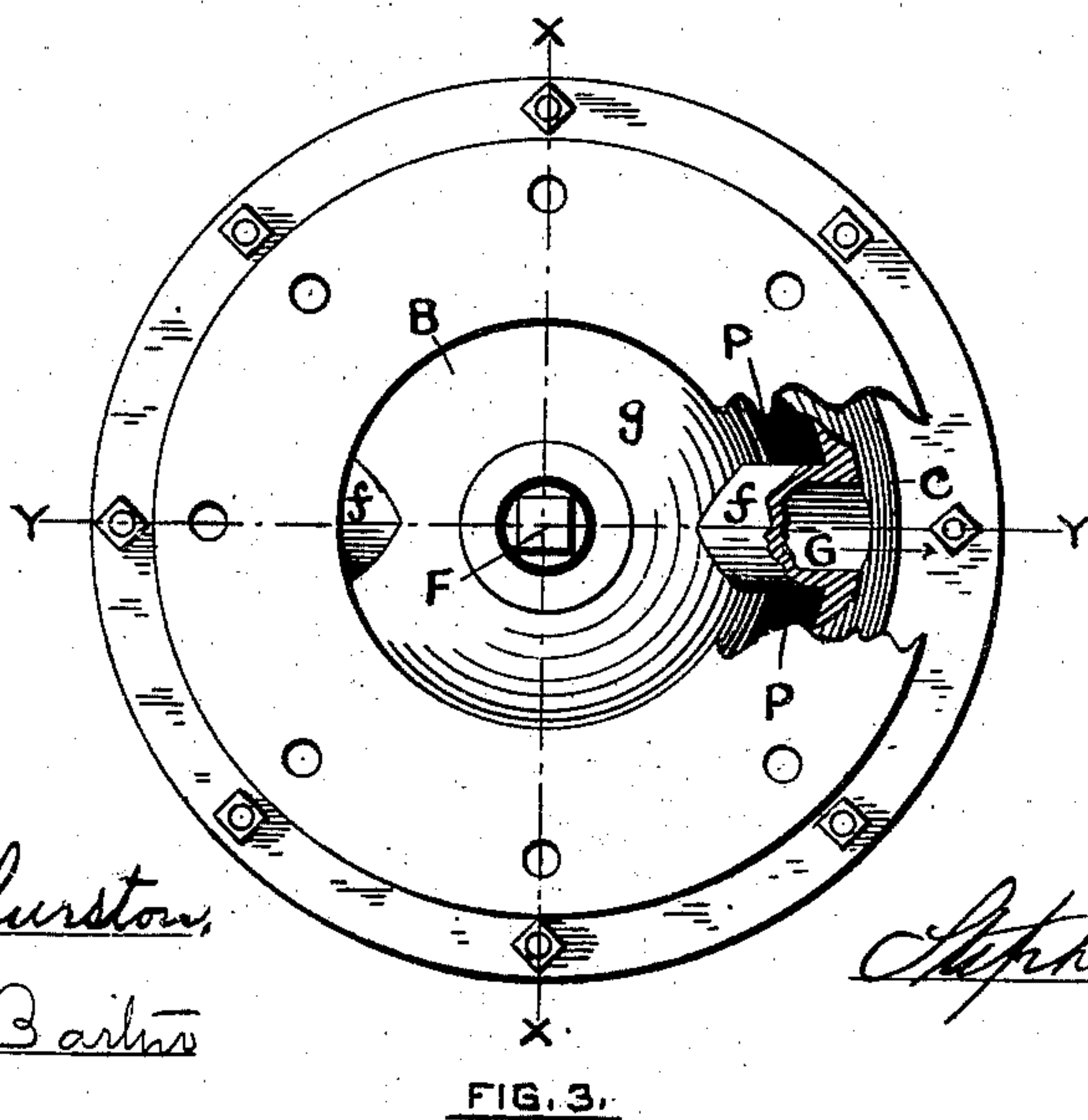
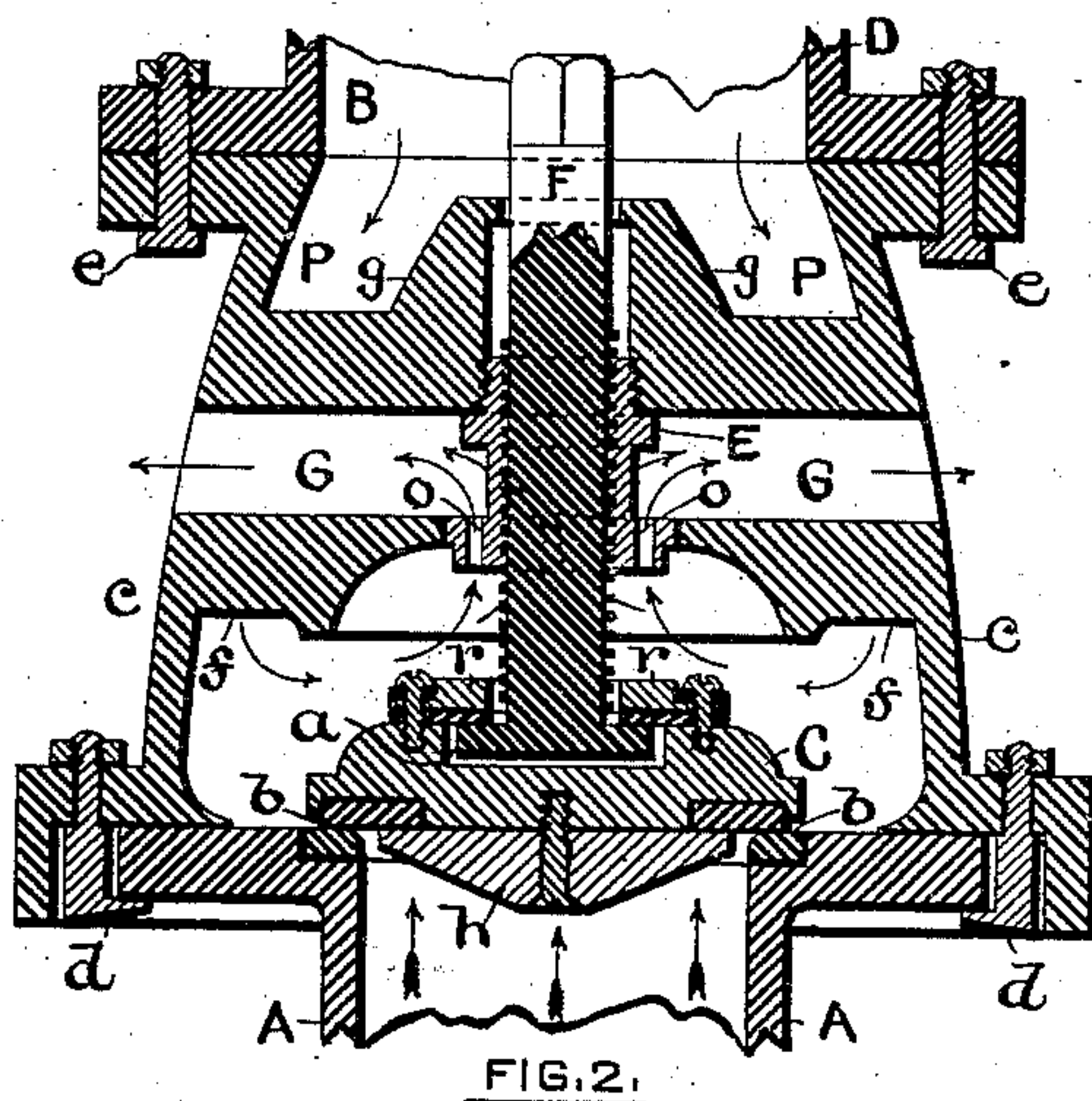
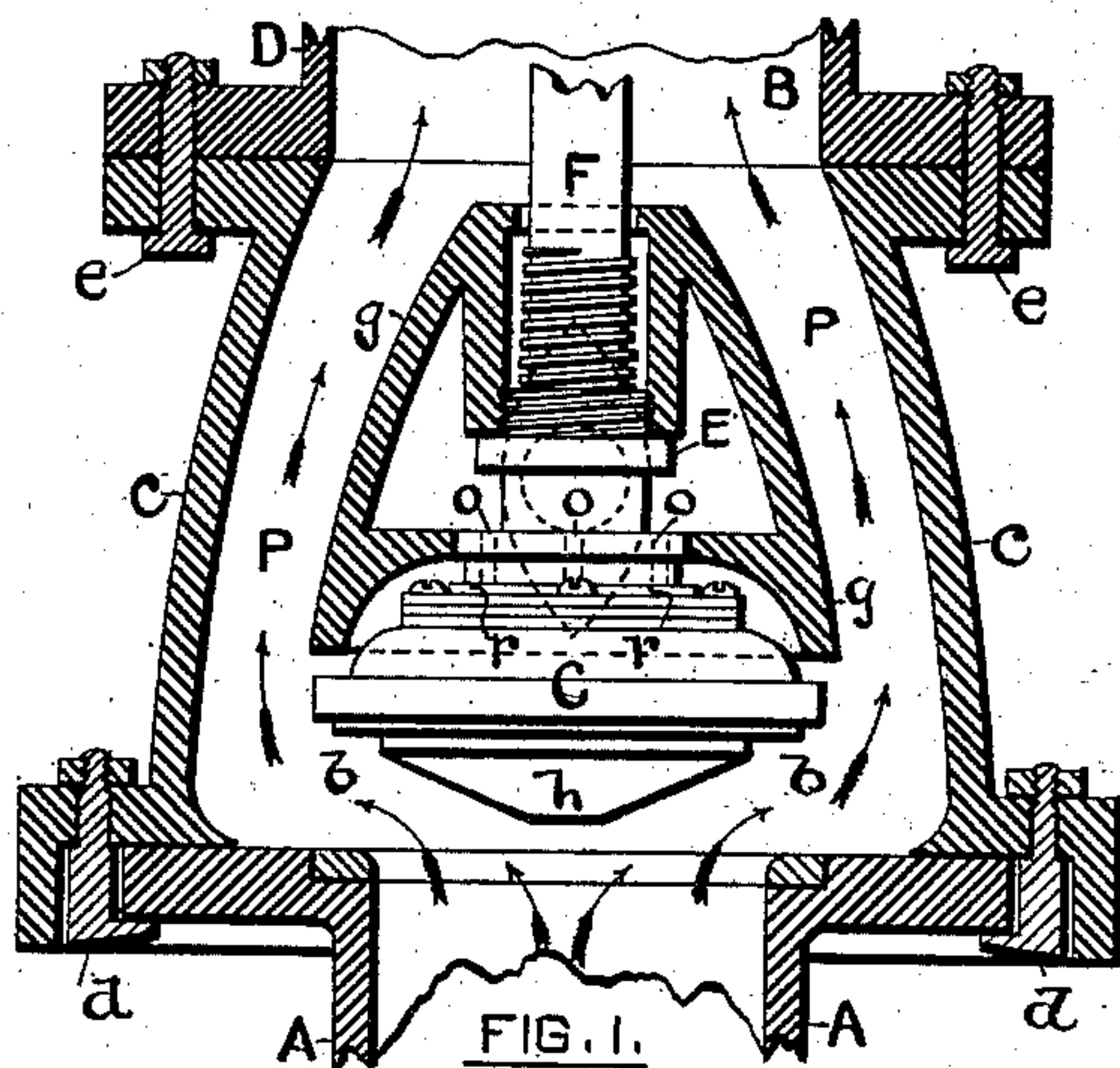


S. A. JENKS.
Hydrant.

No. 223,808.

Patented Jan. 27, 1880.



WITNESSES.

Wilmart H. Thurston,
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STEPHEN A. JENKS, OF LINCOLN, RHODE ISLAND.

HYDRANT.

SPECIFICATION forming part of Letters Patent No. 223,808, dated January 27, 1880.

Application filed December 1, 1879.

To all whom it may concern:

Be it known that I, STEPHEN A. JENKS, of Lincoln, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Water-Hydrants; and I do hereby declare that the following specification, taken in connection with the drawings making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is a vertical section upon the line *xx* of Fig. 3, showing the valve opened. Fig. 2 is a vertical section on the line *yy* of Fig. 3, showing the valve closed. Fig. 3 is a top view with a portion of the top plate cut away to show the interior and the waste-discharge.

The purpose of my invention is principally to provide a free and practically unobstructed passage for the water-flow from the main when the valve is opened, so that the water-pressure at the outflow from the hydrant shall be as near as possible the same as the pressure in the main; and my improvement consists in connecting the inflow-opening into and the outflow-discharge from the hydrant by a substantially annular passage-way formed between the outer shell of the hydrant and an inner shell, which incases the nut, and screw-gear, which works the valve.

Certain other improvements relating to the combination of the wasteway with this annular passage when the valve is closed, and the means for cutting off the connection between the two when the valve is opened, also belong to my invention, as will be hereinafter particularly described.

Referring to the drawings, A, Figs. 1 and 2, represents the branch leading directly to the main as well as the inflow to the hydrant, and B the discharge-orifice from the hydrant. C is the shut-off valve, which is swivel-jointed to its operative spindle, as shown at *a*, Fig. 2, and this valve is to be suitably seated at *b*, and the joint between the valve and its seat properly ground or packed, so as to be water-tight when closed, in any well-understood or proper way.

The cast-iron shell of the hydrant is represented by *c*, and is preferably of the usual flattened dome shape.

The whole structure is to be properly secured, in the customary way, to the flange

of the branch of the main, as shown at *d*, and from the top of the hydrant a vertical pipe, D, should be attached, as shown at *e*, extending to the surface of the ground.

To secure a free passage for the water through the hydrant a dome-shaped shell, *g*, is arranged centrally in the interior of the hydrant, as shown at Fig. 1. It is secured to the outer shell by a cross-tie, *ff*, Fig. 2, and may be made in one casting with the outer shell. The exterior surface of this inner shell, *g*, corresponds generally in form with the inner surface of the outer shell, *c*, the purpose being to provide an annular converging passage-way, P, for the water, which, with the exception of the cross-tie *ff*, containing the waste-pipe hereinafter mentioned, is unobstructed. The top and bottom sides of the cross-tie may be rounded and brought to a sharp edge, as shown in dotted lines at Fig. 1, and thereby present no abrupt surface to break up the current of water.

The fixed nut or screw-threaded collar E, in which the screw-spindle F of the valve C turns for opening or closing the valve, is secured centrally in the vertical axis of the inner shell, as clearly shown at Figs. 1 and 2. The valve-spindle has the usual squared head for the application of a key, and when the valve is fully open the parts are in the position shown at Fig. 1.

It is obvious from the drawings and the description that the water flowing from the main will have free passage to the outlet of the hydrant in a path of easy curves unobstructed by abrupt interfering surfaces.

I prefer, also, to form in a frusto-conical or rounded shape the under side of the valve, as seen at *h*, to give easy initial direction to the inflowing stream toward the annular passage-way P, leading to the outlet B.

The waste-discharge pipe is shown at G in all the figures. Several small orifices, *o*, Figs. 1 and 2, make connection with the interior of the hydrant, the office of which is to permit the water remaining in the vertical pipe D and in the body of the hydrant immediately on the closing of the shut-off valve C to escape into the waste-pipe, as indicated by arrows in Fig. 2. Means must be provided to close these orifices *o* when the valve C is opened; otherwise con-

siderable water from the main will pass off into the waste. Hence the back side of the valve is arranged as a cover for these openings, which are accordingly located in a circle 5 around the screw collar or nut E and within the diameter of the valve, and a packing of rubber, *r*, or other suitable means should be employed to make the joint so formed by the back of the valve water-tight.

10 Practical experience has proved that hydrants constructed as herein described do not materially diminish the water-pressure at the discharge-outlet from the pressure in the main.

What I claim as my invention, and desire to 15 secure by Letters Patent as an improvement in water-hydrants, is—

1. The combination, substantially as hereinbefore set forth, of the inflow-branch from the main and the outflow-discharge from the 20 hydrant with an annular passage formed between the inner surface of the case or shell of the hydrant and the exterior surface of a cen-

trally-arranged shell to which the valve and its working-gear is attached, as specified.

2. The combination, substantially as hereinbefore set forth, of the waste-pipe, the orifices 25 connecting the same with the interior of the hydrant, and the annular water-passage described for permitting the escape of water from the hydrant when the water-flow from the 30 main is shut off.

3. The combination and arrangement, substantially as hereinbefore set forth, of the annular water-passage described, the orifices connecting the waste-pipe with the interior of the 35 hydrant, and the back of the shut-off valve, whereby communication is cut off between the interior of the hydrant and the waste-pipe when the water-valve is opened.

STEPHEN A. JENKS.

Witnesses:

WILMARTH H. THURSTON,
MILTON H. BARTON.