

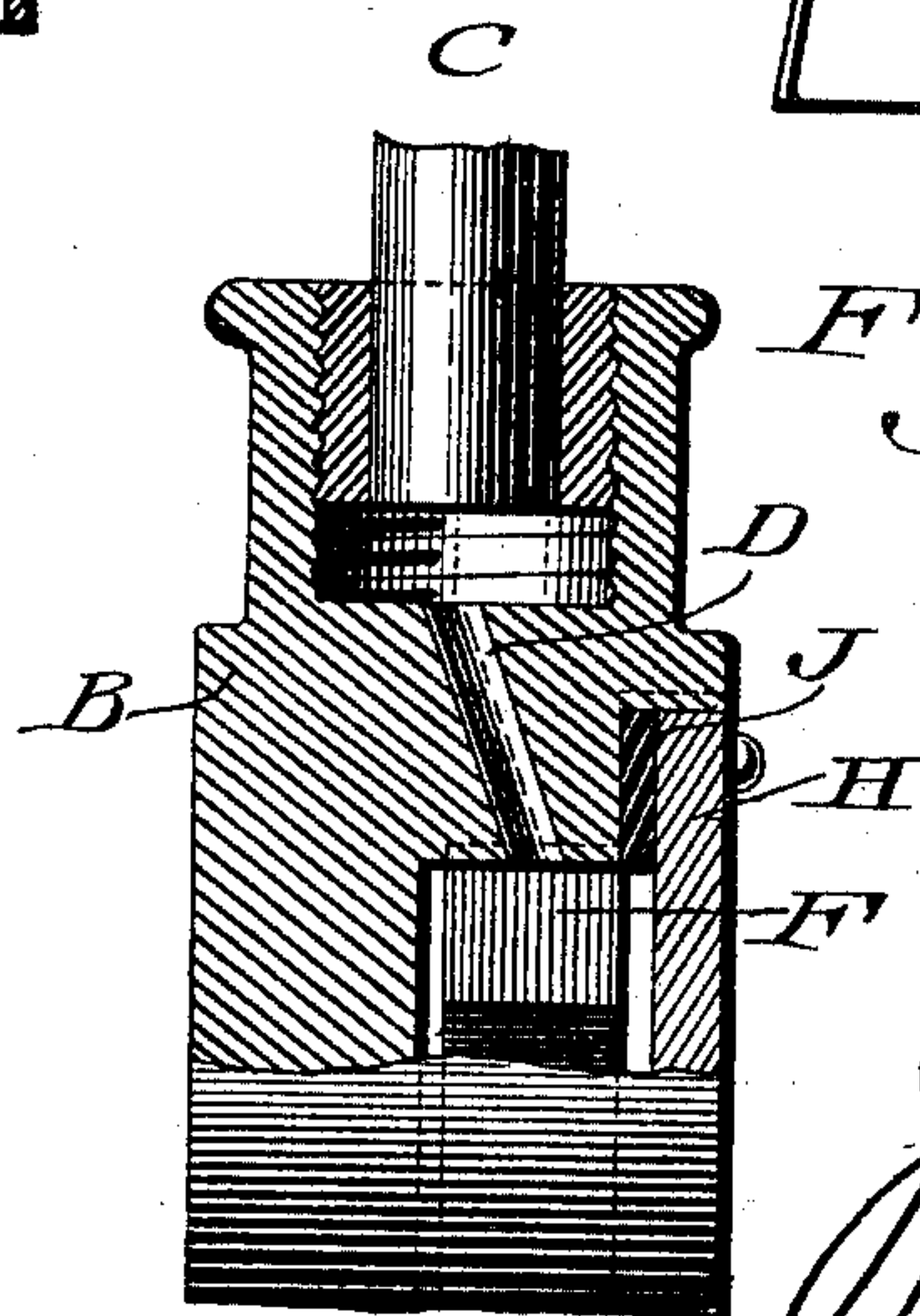
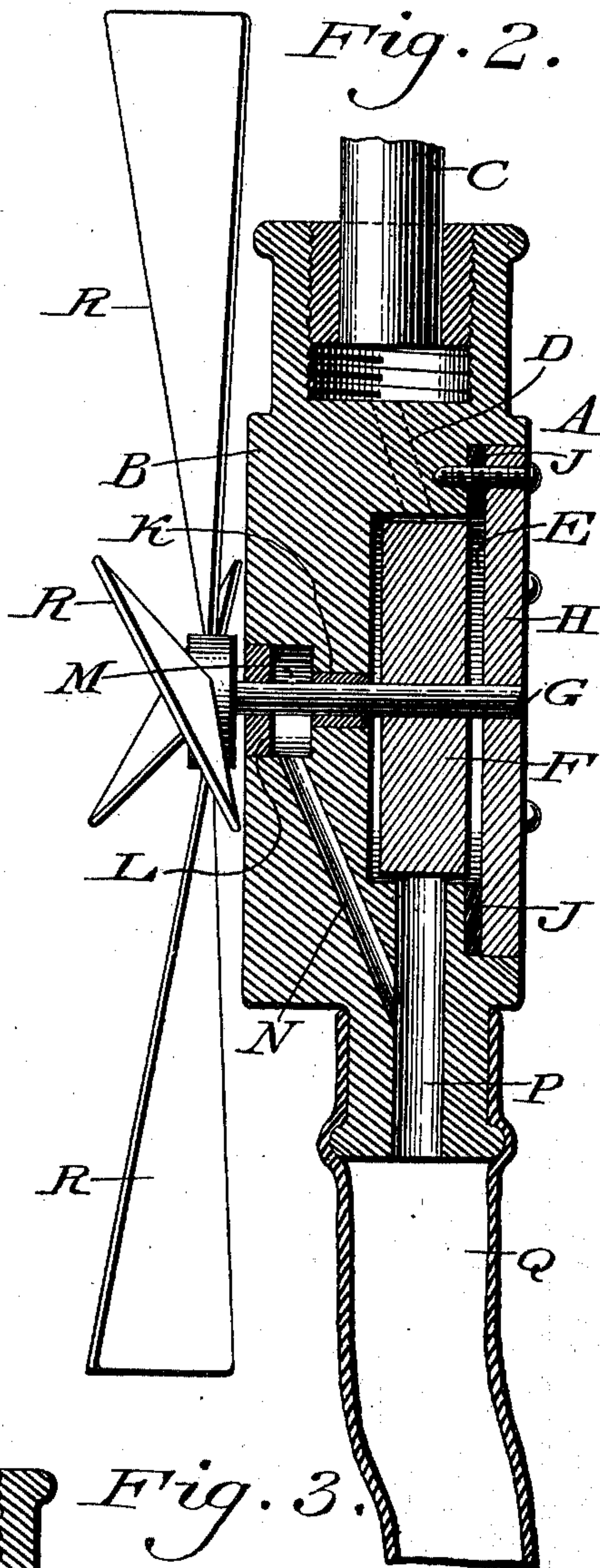
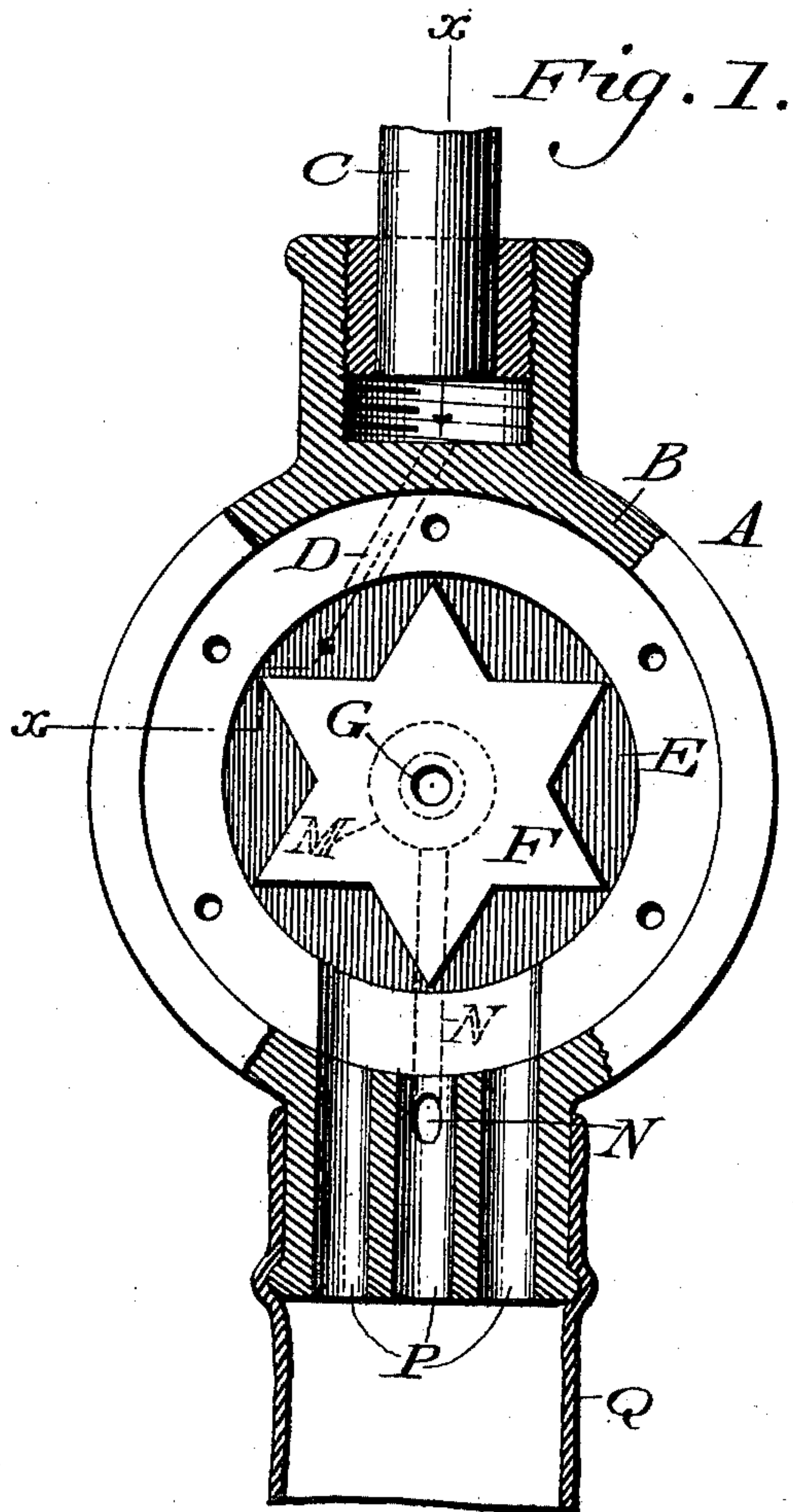
No. 670,759.

Patented Mar. 26, 1901.

J. F. BEHNY.
HYDRAULIC FAN.

(Application filed Sept. 12, 1900.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN F. BEHNY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO JOHN DEVINE, OF SAME PLACE.

HYDRAULIC FAN.

SPECIFICATION forming part of Letter's Patent No. 670,759, dated March 26, 1901.

Application filed September 12, 1900. Serial No. 29,770. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. BEHNY, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Hydraulic Fans, of which the following is a specification.

My invention consists of an improved construction of a hydraulic or water fan wherein a drip-chamber is provided in the outer portion of the casing containing the fan-motor, which catches any water which might otherwise leak from said casing, said drip-chamber having a port leading downwardly therefrom to the exhaust-passage from said casing in such a manner that said exhaust acts to create a suction through said port, so that said drip-chamber is at all times drained and kept comparatively free from moisture.

It further consists of novel details of construction, all as will be hereinafter fully set forth, and particularly pointed out in the claims.

Figure 1 represents a front elevation of a water-fan embodying my invention, showing also the rotary piston by which power is imparted to the fan and the relative location of the inlet and exhaust ports therefor. Fig. 2 represents a vertical sectional view of Fig. 1. Fig. 3 represents a section on line *xx*, Fig. 1.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a rotary water-fan, the same consisting of a casing B, which is provided with the inlet-pipe C, from which leads the port D to the piston-chamber E, in which is located the piston F, which is preferably star or similarly shaped, as will be understood from Fig. 1, said piston being mounted on the shaft G.

H designates a plate for closing the piston-chamber E, said plate resting on the gasket J, and said shaft G having one extremity thereof, if desired, mounted in said plate as a bearing, the other extremity of said shaft passing through the bushing or box K, whereby a bearing for the intermediate portion thereof is formed and also revolving in the plug L, which forms the outer closure for the drip-chamber M, from which leads the port N to one of the exhaust-passages P, which

latter may be three in number, as will be evident from Fig. 1, said exhaust-passages discharging into the main outlet Q, which conducts the exhaust to any desired point.

It will be noted that the chamber E discharges first into the plurality of passages P, which are of greater area in cross-section than the port N, so that as the main exhaust flows through said passages a positive suction is created through the port N, whereby the drip-chamber M is kept drained at all times.

R designates a fan mounted on the shaft G so as to revolve therewith.

The operation is as follows: The impact of the water or other motive fluid upon the blades of the rotary piston F, as will be understood from Fig. 1, will cause said piston, shaft G, and the fan R to rotate, the exhaust taking place through the passages P and Q. In order to insure the most effective working of the motor and fan, I have provided the aforesaid drip-chamber M, which is preferably located in substantially the position seen in Fig. 2, said drip-chamber effectively preventing any leakage through the plug L, since all the water which would otherwise pass therethrough is conveyed through the passage N to the main exhaust Q, it being apparent that the suction created in the port N will effect the steady and continuous withdrawal of the contents of the drip-chamber so long as the motor is in operation. The drip-chamber M effectually prevents leakage through that portion of the casing contiguous to the fan R, which seems to always occur at this point, due to the action or suction of the fan upon the air; but in my invention such leakage is effectually prevented.

I have found in practice that it is of advantage to make the main exhaust-flue of flexible material, as by this means the water can be conducted to a suitable outlet, avoiding any noise, and in practice I make the same of such length as to reach to a suitable place of exhaust.

It will be apparent that various changes may be made by those skilled in this art which will come within the scope of my invention, and I do not therefore desire to be limited in every instance to the exact construction I have herein shown and described.

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

1. In a water-fan, a casing, a piston-chamber therein, a shaft passing through said chamber, a piston on said shaft, a contracted outlet-passage leading from said chamber to the main exhaust, a drip-chamber located at one side of said casing and of greater diameter than said shaft, and a port leading downwardly from said drip-chamber to said outlet-passage, whereby a suction is continually created in said port and drip-chamber and the moisture is withdrawn from the latter during the operation of the fan.

2. In a water-fan, a casing, a piston-chamber therein, a shaft passing through said

chamber, a star-shaped piston on said shaft, a plurality of contracted outlet-passages leading from said chamber to the main exhaust, a drip-chamber located at one side of said casing and of greater diameter than said shaft, and a port leading downwardly from said drip-chamber to one of said outlet-passages, said port being of lesser diameter than said drip-chamber or outlet-passage, whereby a suction is continuously created in said port and drip-chamber during the operation of the fan.

JOHN F. BEHNY.

Witnesses:

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