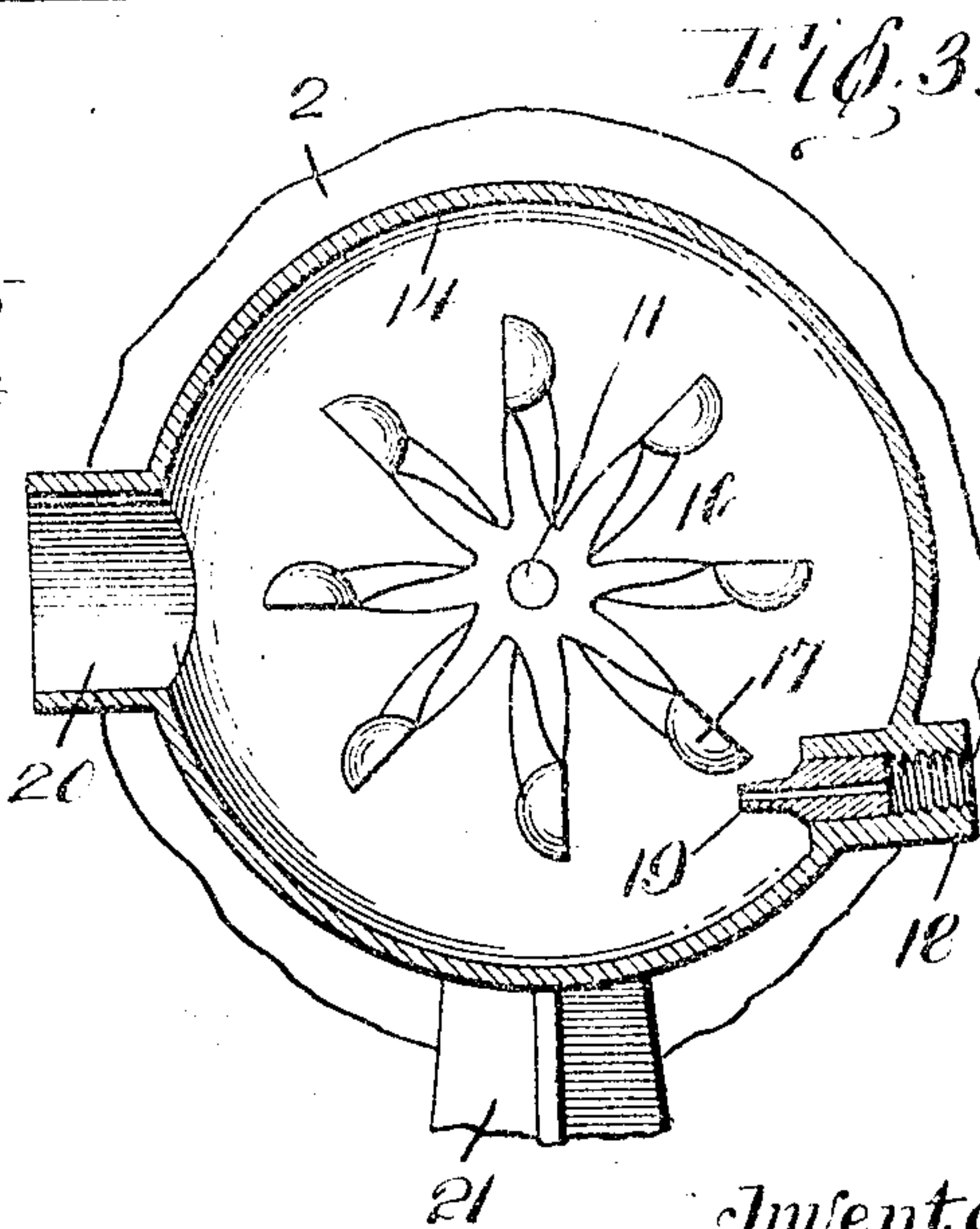
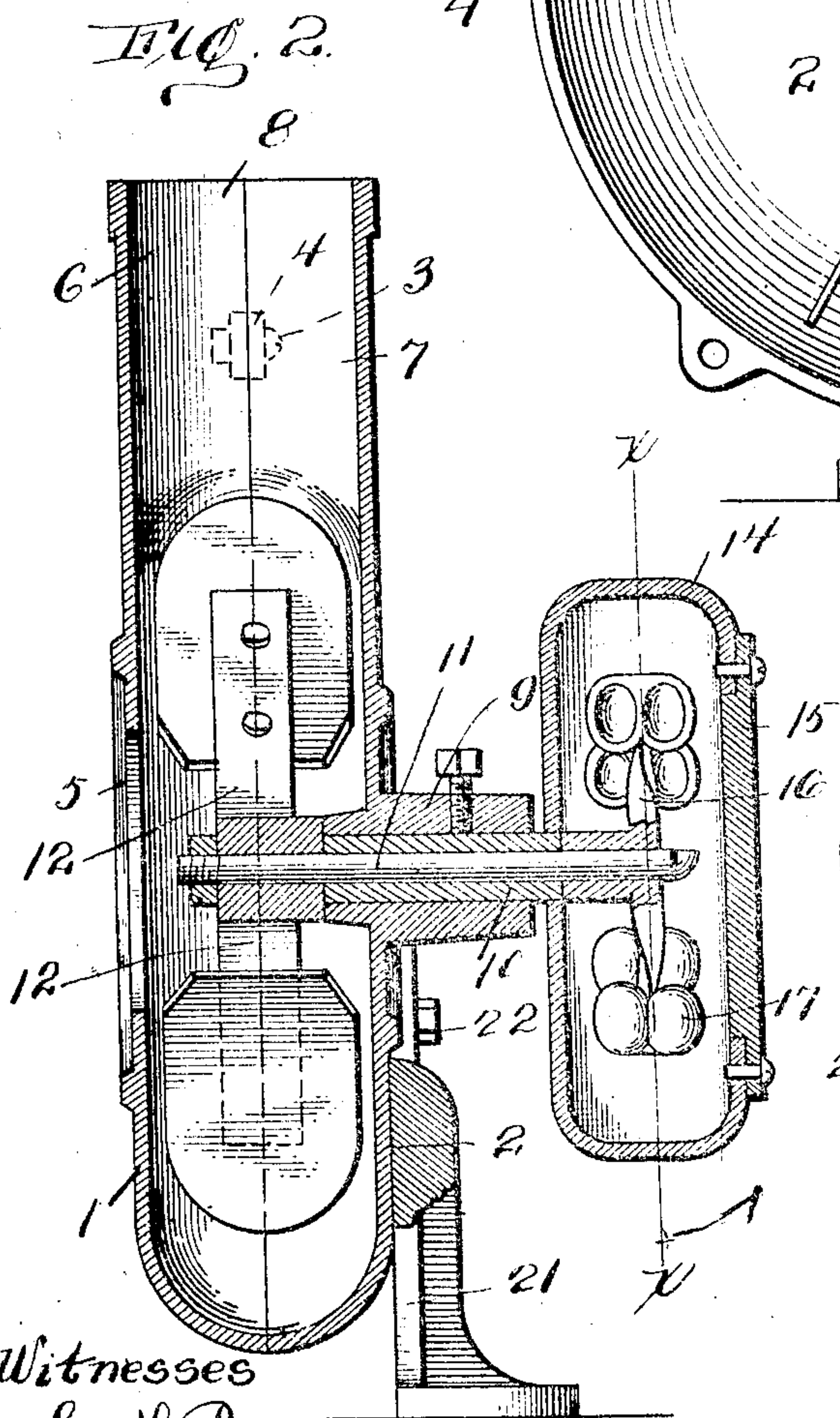
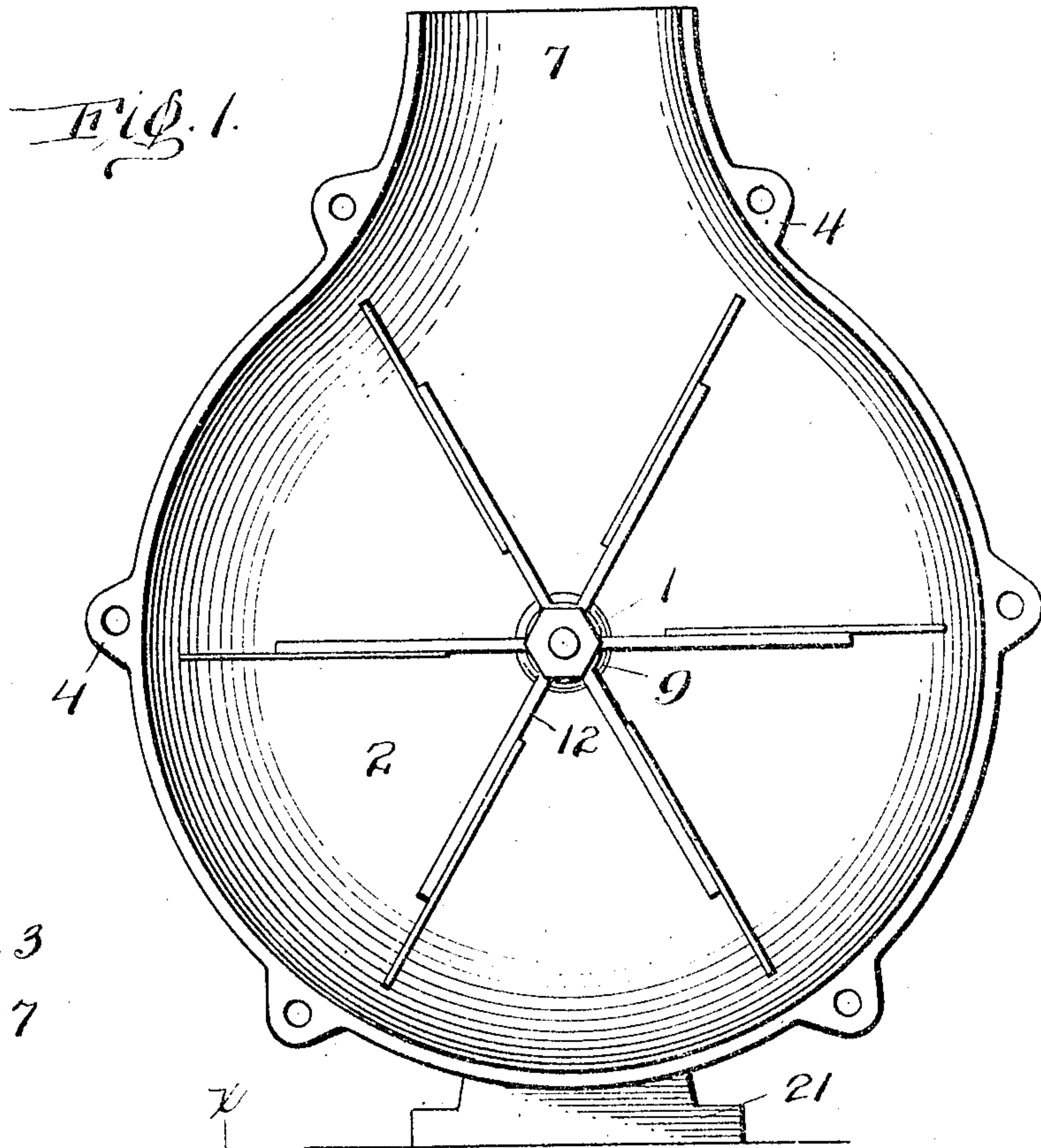


No. 876,152.

PATENTED JAN. 7, 1908.

F. C., S. H. & R. A. DOUDS.
COMBINED TURBINE WATER MOTOR AND FAN BLOWER.
APPLICATION FILED OCT. 6, 1906.



Witnesses

Sam'l Payne.
O. H. Butler.

Inventors
Frank C. Douds.
Smith H. Douds.
Ralph A. Douds.
by
H. C. Douds. Attorneys.

UNITED STATES PATENT OFFICE.

FRANK C. DOUDS, SMITH H. DOUDS, AND RALPH A. DOUDS, OF NEW CASTLE, PENNSYLVANIA.

COMBINED TURBINE WATER-MOTOR AND FAN-BLOWER.

No. 876,152.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed October 6, 1906. Serial No. 337,789.

To all whom it may concern:

Be it known that we, FRANK C. DOUDS, SMITH H. DOUDS, and RALPH A. DOUDS, citizens of the United States of America, residing at New Castle, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in a Combined Turbine Water-Motor and Fan-Blower, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a combined turbine water motor and fan blower, and the invention has for its object to combine these devices to form a useful and inexpensively operated fan blower.

Another object of this invention is to provide a simple, durable and efficient fan blower, free from injury by ordinary use.

With these and other objects in view, which will more readily appear as the invention is better understood, the same consists in the novel construction, combination and arrangement of parts to be hereinafter more fully described and then specifically pointed out in the appended claims.

Referring to the drawing forming part of this specification, like numerals of reference designate corresponding parts throughout the several views, in which:

Figure 1 is a front elevation of one-half of the fan blower, Fig. 2 is a vertical sectional view of the combined motor and fan, and Fig. 3 is a cross sectional view taken on line x—x of Fig. 2.

To put my invention into practice, I construct the blower of two semi-circular casings 1 and 2 secured together by nuts and bolts 3, which pass through the radially disposed flanges 4, carried by the edges of said casings. The casing 1 is formed with a central opening 5, and with a neck portion 6, which with the neck portion 7 of the casing 2 forms an opening 8 in the top of the blower, one opening serving as an air inlet while the other serves as an air outlet.

The casing 2 opposite the opening 5 is formed with a bearing 9 in which is mounted a sleeve or bushing 10. In the bushing 10 is journaled a shaft 11 having a bladed wheel or fan 12 mounted upon its end within the blower casing. It will be observed that the bushing 10 protrudes beyond the bearing 9, and upon this protruding end, I mount a semi-circular turbine casing 14 having a detachable front plate 15. In the casing 14,

upon the end of the shaft 11 is mounted a turbine wheel 16 consisting of a plurality of buckets or cups 17, arranged in pairs. The casing 14 is formed with a tangentially disposed water inlet port 18, containing a nozzle or nipple 19 adapted to discharge a stream of water against the turbine wheel 16 with considerable propelling force. The opposite side of the casing 14 is provided with a water outlet port 20.

To support the combined blower and turbine, I use a bracket 21, which is secured to the blower casing, as at 22.

The operation of my improved blower is obvious from the above description taken in connection with the drawing, still I desire to call attention to the fact that by driving the equally balanced shaft 11 from one end thereof, I am enabled to operate the blower with considerable rapidity. The shaft 11 has the least possible bearing surface, thereby reducing the friction of the same to a minimum.

I do not care to confine myself to the size, proportions or minor details of construction, as such changes are permissible by the appended claim and may be resorted to without departing from the spirit and scope of the invention.

What I claim and desire to secure by Letters Patent, is:—

In a water motor fan, the combination of a fan casing formed of two sections secured together and provided with an outlet, one of said sections having an air inlet arranged approximately centrally thereof and the other of said sections provided at a point in alignment with the center of the air inlet with a laterally-extending bearing, said bearing projecting inwardly and outwardly with respect to the section with which it is formed, a bushing mounted within said bearing and having its inner end flush with the inner end of the bearing and its outer end projecting past the outer end of the bearing, means extending through the bearing for securing the bushing in position, a supporting standard for said fan casing connected with one of the sections of the casing, a shaft mounted for rotation in said bushing and extending beyond both ends thereof, a fan mounted on the inner end of said shaft within the fan casing and having its hub abutting against the inner end of the bearing and the inner end of the bushing, a turbine casing mounted on the outer end of said bushing and sur-

rounding the outer end of the shaft, said turbine casing having one side formed of a removable plate whereby access can be had to the said turbine casing, a turbine mounted
5 on said shaft within the turbine casing and having its hub abutting against the outer end of the bushing, said turbine casing provided with an interiorly screw-threaded annular portion constituting a water inlet port
10 arranged tangentially with respect to the turbine, a nipple secured to said screw-threaded

portion and extending within the turbine casing, and a water outlet for said turbine casing.

In testimony whereof we affix our signatures in the presence of two witnesses.

FRANK C. DOUDS.

SMITH H. DOUDS.

RALPH A. DOUDS.

Witnesses:

C. A. MCCREARY,

NELLIE C. ROGERS