

UNITED STATES PATENT OFFICE.

HENRY ENGLISH, OF WILMINGTON, DELAWARE, ASSIGNOR OF ONE-HALF
HIS RIGHT TO JACOB F. MYNICH, OF SAME PLACE.

IMPROVEMENT IN APPARATUS FOR VENTING AND DRAINING WATER-PIPES.

Specification forming part of Letters Patent No. **130,850**, dated August 27, 1872; antedated August 23, 1872.

To all whom it may concern:

Be it known that I, HENRY ENGLISH, of Wilmington, in the county of New Castle and State of Delaware, have invented a new and useful Apparatus for Draining Water-Pipes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification and to the letters marked thereon.

Figure 1 represents a plan of a water-pipe with my improvement attached. Fig. 2 is a longitudinal bisection.

My invention consists of an air-valve with elongated stems, operating within a small metallic cylinder, which is attached to the water-pipe above the waste, and working automatically for the purpose of admitting air to the pipe, as the water is drawn off through the waste, without opening the upper cocks.

To enable others to make use of my invention I will describe the same.

A in Fig. 2 represents the lower section of the barrel or cylinder, which is provided with a screw, *b*, at the end which enters the pipe. B is the upper or outer section secured to the lower by screw *c* in order to remove the valve D, should it ever become clogged. E is the valve-chamber, the upper or outer part being made larger than the lower, in order to allow a greater quantity of air to press upon and open the valve when the pressure of water is shut off from the pipe. F represents a small aperture in the outer section B, for the purpose of admitting air into the valve-chamber. The outer end of the valve-stem projects from the cylinder, in order to indicate the working of the valve and to keep it steady. The lower valve-stem is made square on the sides, so that the air may readily pass through the chamber in section A, and thence into the pipe. The outer portion of the valve D is provided with a leather or other suitable cushion, to prevent the water from entering the outer air-chamber.

By this arrangement when the water is let

into the pipe, the pressure is so great that it will instantly close the valve and pass upward in the ordinary manner, the same as if there was no valve attached to the pipe, but as soon as the pressure of water is cut off by the waste-cock, the atmospheric pressure, entering the aperture F, forces back the valve D, overbalancing the slight weight of water against the valve, and the air being lighter than water ascends through the volume of water in the pipe, and continually supplies the place of the water until all above the waste-cock is entirely drained out. When again it is required to let the water flow to the upper portion of the pipe, to bath-rooms and upper stories, the water pressure, being greater than the atmospheric, instantly closes the valve.

It is a well known fact that by merely shutting off the water at the waste-cock the water will not run out unless the upper cocks are opened, but the greater portion remains in the pipe, congeals, bursts the pipe, and causes much damage to the building through the inadvertency of allowing the upper cocks to remain closed; but by the use of my device, which can be readily attached without the aid of a plumber, and which is entirely automatic and not in any way liable to get out of order, this difficulty is effectually obviated, and the upper cocks remain closed and ready for use when required.

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

The combination of the automatically-operating air-valve herein described with a water-pipe, for the purpose set forth.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

HENRY ENGLISH.

Witnesses:

JNO. HENRY PUHL,
W. W. PRITCHETT.

H. H. FETTA.

Improvement in Wheels for Vehicles

No. 130,851.

Patented Aug. 27, 1872.

Fig. 1.

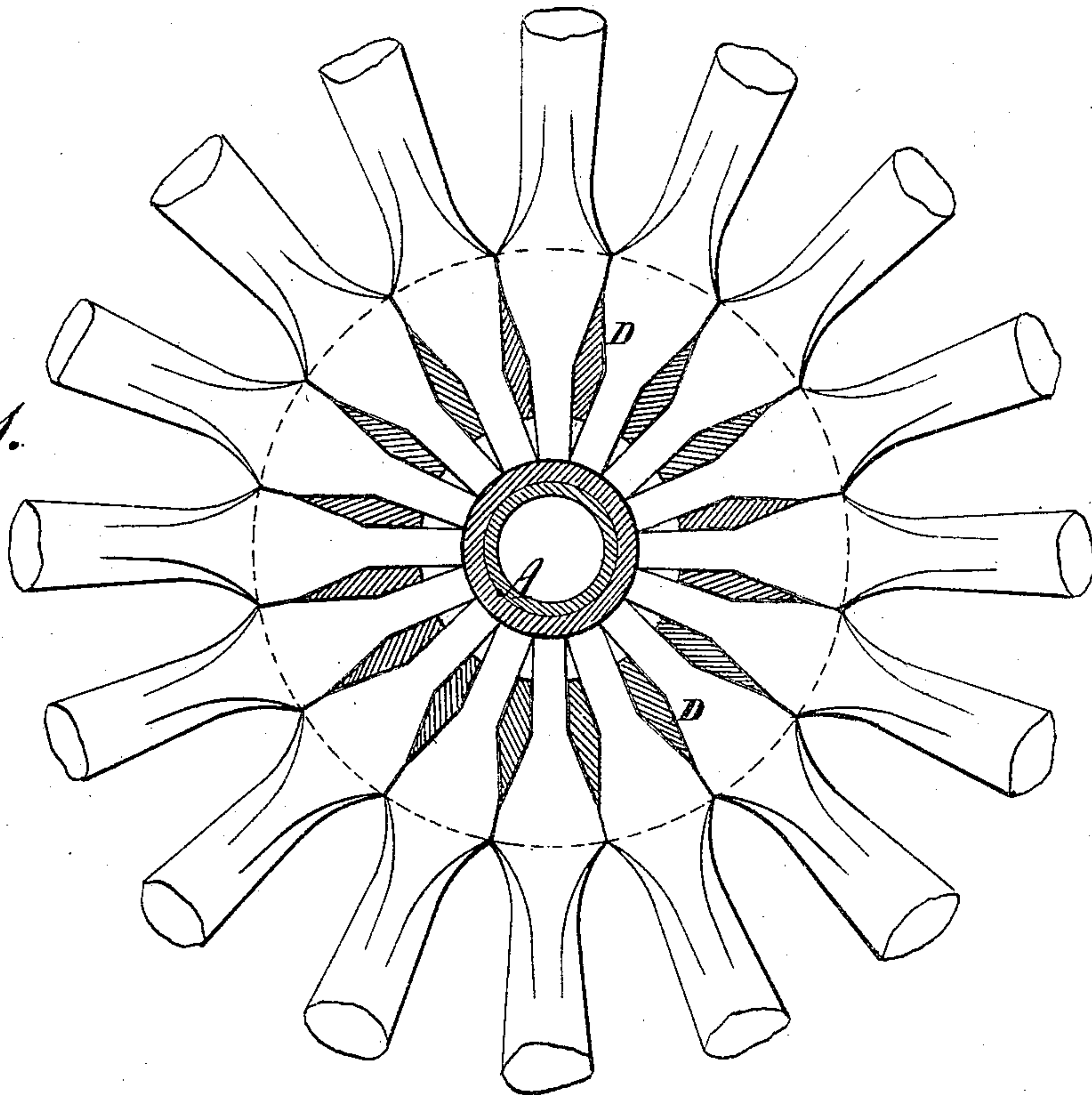
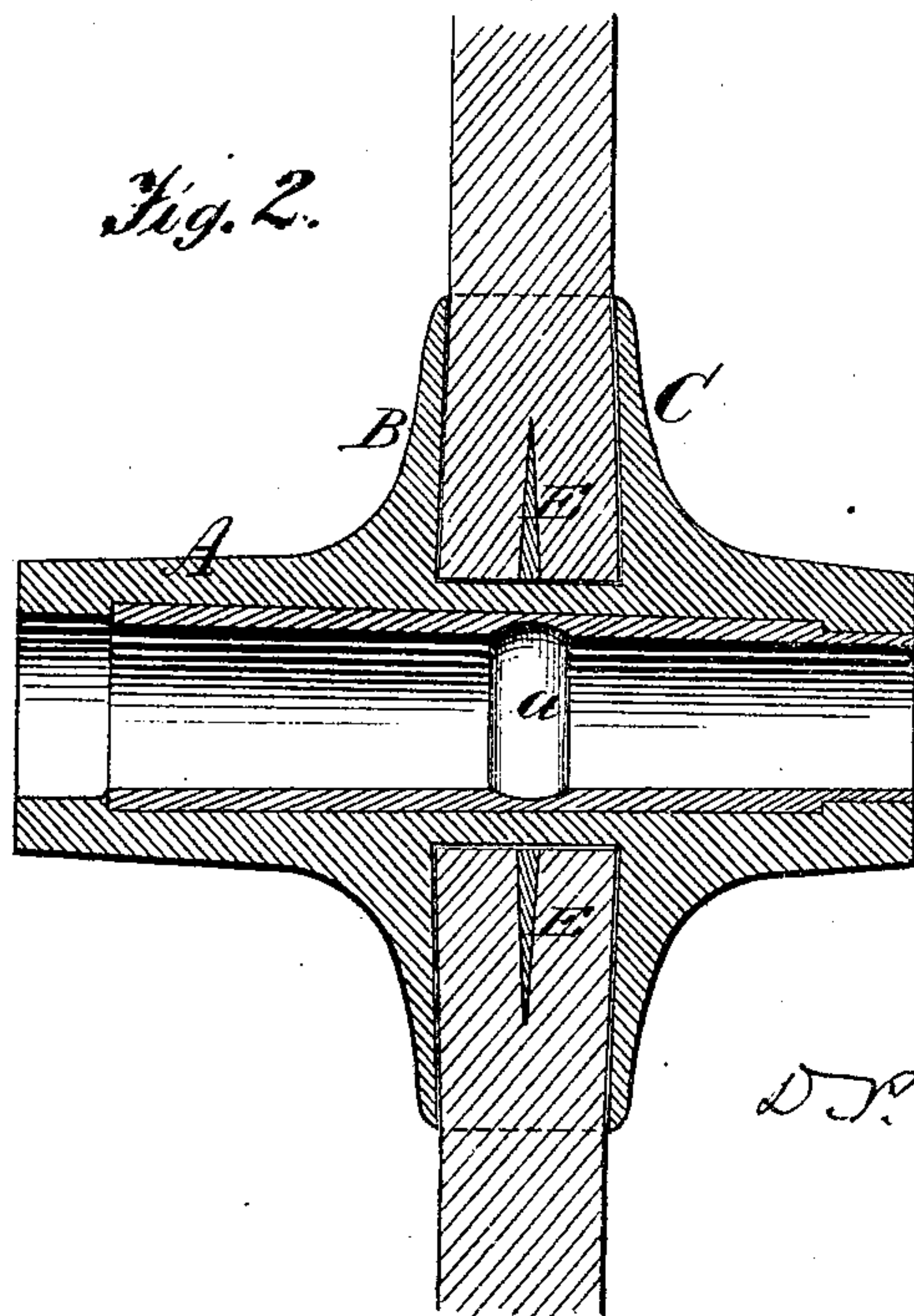


Fig. 2.



Witnesses.
A. Ruppert.
B. L. J. Cils

H. H. Fetta
Inventor.
D. P. Holloway & Co
Atty.