

S. RUE, Jr.
Injectors for Steam Generators.

No. 138,198.

Patented April 22, 1873.

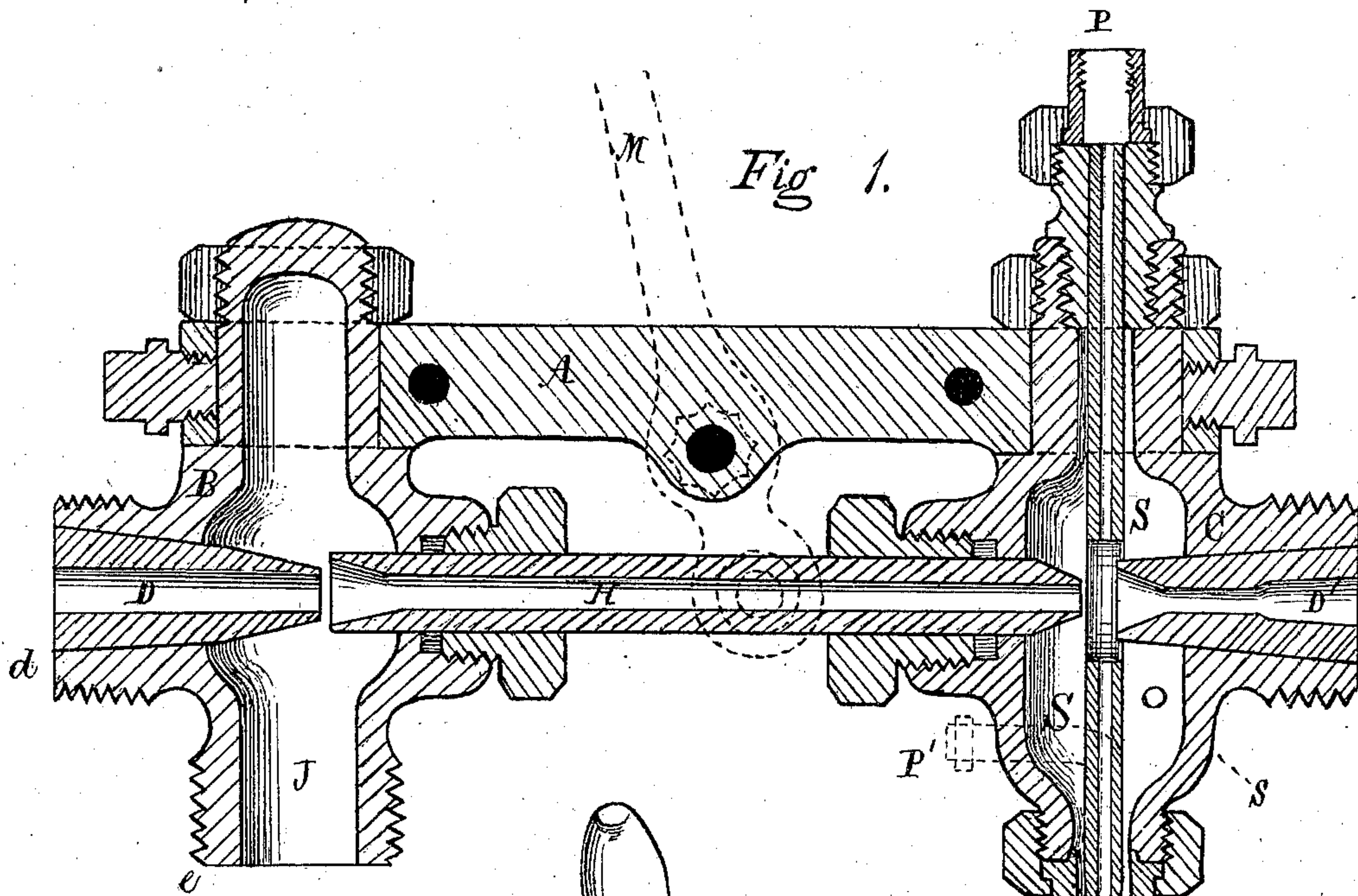


Fig. 3.

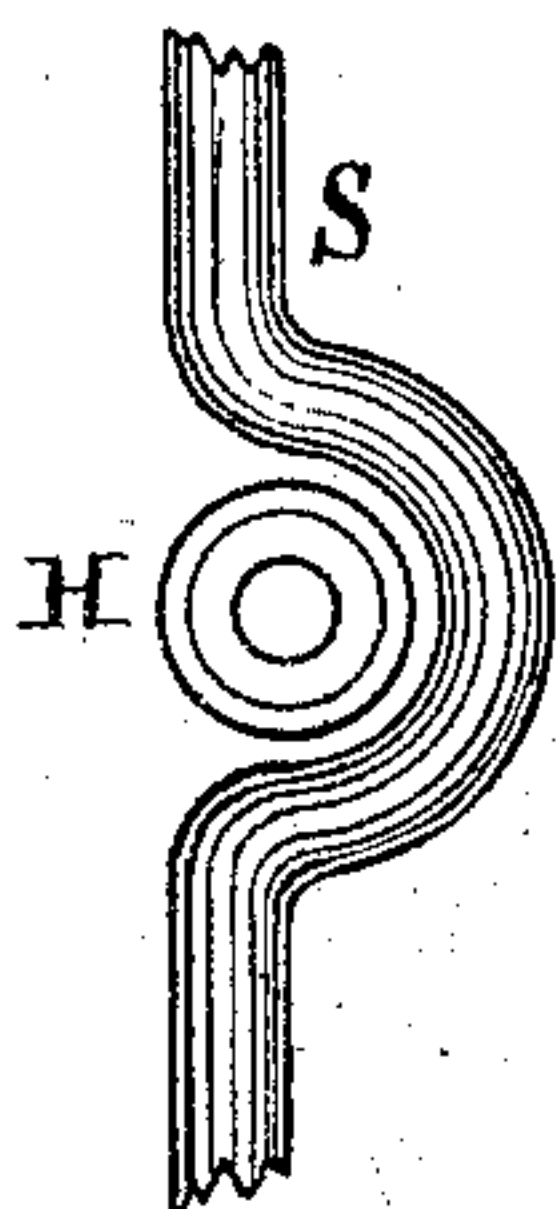
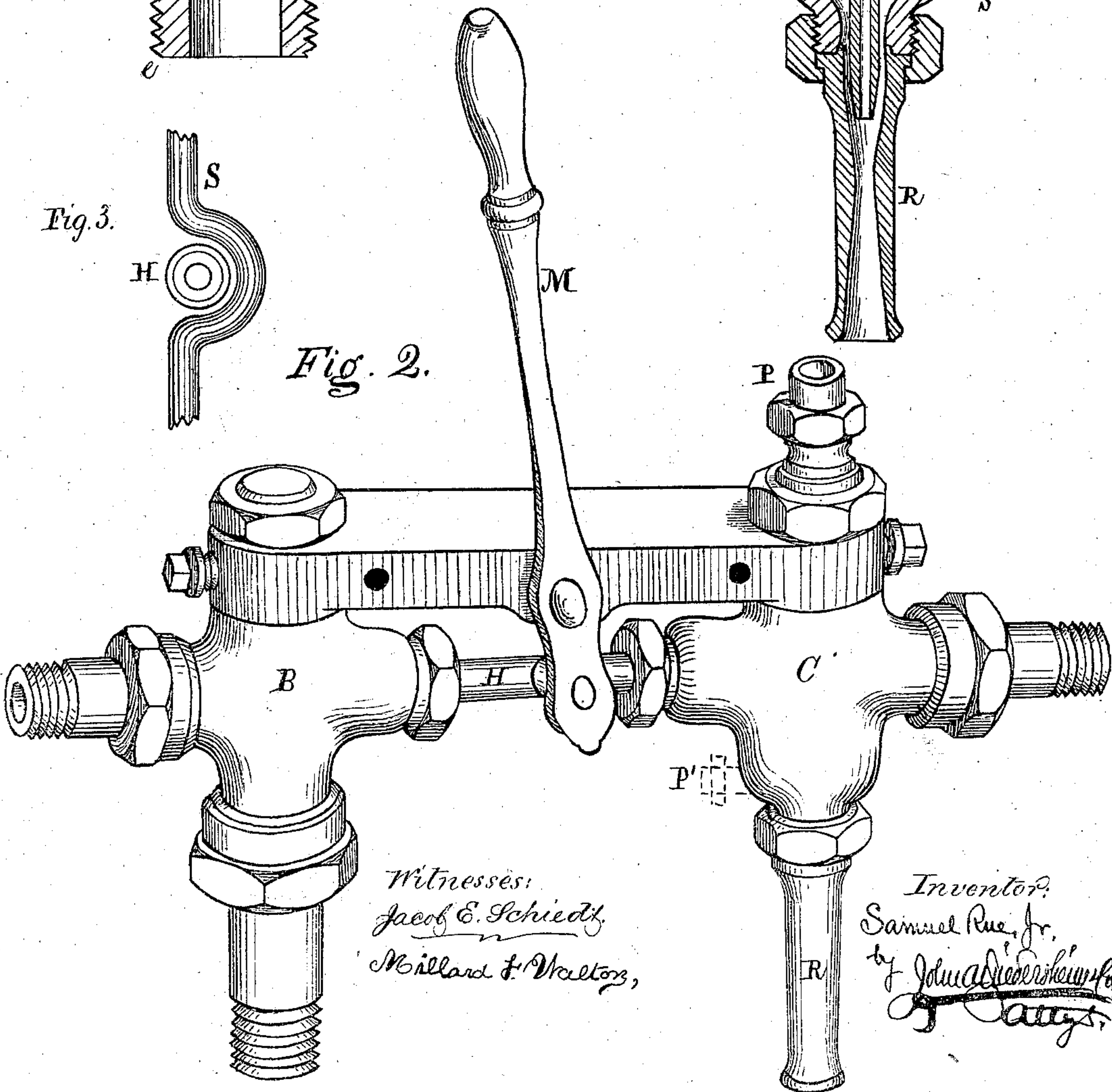


Fig. 2.



Witnesses:
Jacob E. Schiedt,
Willard F. Walton,

Inventor:
Samuel Rue, Jr.,
by John A. Schiedt,

UNITED STATES PATENT OFFICE.

SAMUEL RUE, JR., OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN INJECTORS FOR STEAM-GENERATORS.

Specification forming part of Letters Patent No. **138,198**, dated April 22, 1873; application filed February 28, 1873.

To all whom it may concern:

Be it known that I, SAMUEL RUE, Jr., of the city and county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Injectors for Steam-Generators; and I do hereby declare the following to be a clear and exact description of the nature thereof sufficient to enable others skilled in the art to which my invention appertains to fully understand, make, and use the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a central longitudinal section of the device embodying my invention. Fig. 2 is a perspective view. Fig. 3 is a view of detached parts.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in a steam-pipe arranged centrally within the overflow in connection with the tube which communicates with the two heads and the pipe leading to the generator, whereby a jet of steam is introduced directly into the center of the mouth of the overflow or a supplementary tube attached thereto, as far remote as possible from the point where the steam and water at first come in contact for the ordinary purposes of the injector, so as to form a more perfect vacuum, and also serve to create a draft or suction through the injector for effectively lifting the water and starting it running through the injector, and drawing out any hot air or water with which it may be filled, the device constituting a double injector or a combined ejector and injector.

Although the improvement is designed for any form of injector, I have illustrated it as applied to an injector, the subject-matter of Letters Patent heretofore granted to me.

D represents the steam-pipe or plug; J, the pipe communicating with the water-supply; H, the adjustable tube extending from the head or casting B to head or casting C; and D', the pipe leading to the generator. O represents the overflow in the head C, and through the overflow is passed a small tube, S, which extends from the point P at the top of the head C, and is curved around the ends of the tube H and pipe D', or enters at the side of the lower

portion of said casting, as shown by the dotted lines, and in either case projects centrally through the mouth of the overflow into a supplementary tube, R, which is attached to the bottom of the casting, and constituting a continuation of the overflow. The entrance-point of the pipe S is so located that the steam-pipe can be readily attached thereto, whether the injector is placed against the right or left hand side of the generator, it being required to adapt the injector so that it can be placed at any suitable position on the generator. The bore of this tube R may be tapering up or down, or tapering in both directions, or with a double taper. A steam-pipe leading from the generator is attached to the pipe S, either at P or P', and when steam is admitted through this pipe it is thrown in the form of a jet into a tube, R, and, passing through said tube, draws with it the air in the overflow, and any air or water in the tube H. By the vacuum thus caused the water is drawn up in the pipe J and caused to flow through the tube H and out through the overflow and pipe R. When this has begun, the steam then being turned on through the steam-pipe D, the water is forced into the generator through pipe D', and the injector, being in operation, will afterward draw up the water without the assistance of the jet from the pipe S, in which case the steam to the latter pipe is then turned off.

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

1. The steam-pipe S, extending through the head C from the top thereof around the ends of the tube H and pipe D' into the tube R, substantially as and for the purpose set forth.

2. The combination, with the adjustable tube H and pipe D', of the steam-pipe S, arranged in the overflow and projecting into the tube R, substantially as and for the purpose set forth.

The above signed by me this 5th day of February, 1873.

SAMUEL RUE, JR.

Witnesses:

STERLING BONSALE,
ELLWOOD BONSALE.