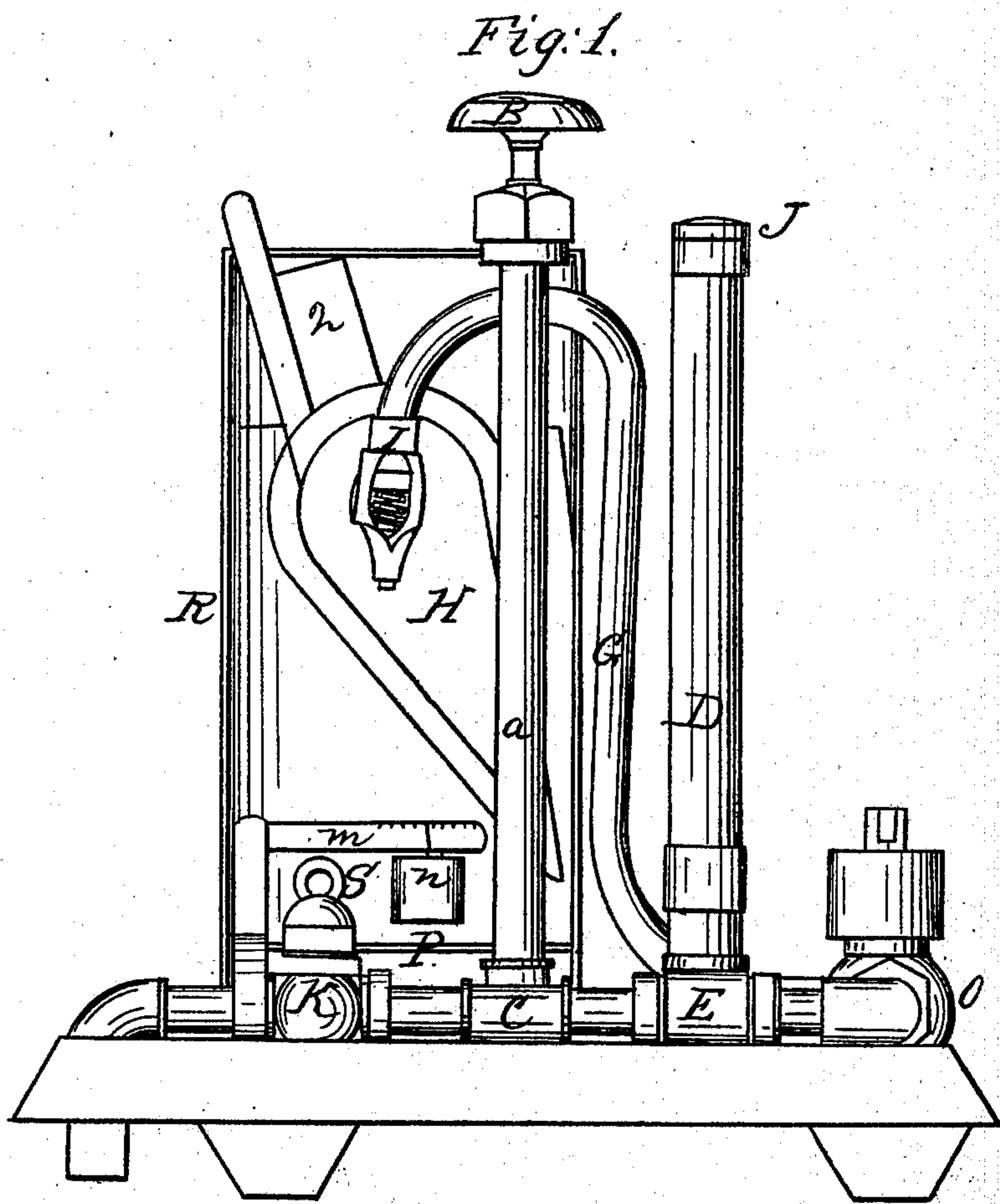


J. W. SUMMERS.  
STEAM GENERATOR.

No. 62.162.

Patented Feb. 19, 1867



Witnesses.

St. Schuman  
Roll-Hill

*Inventor.*

J. W. Sammes  
per  
V. H. Alexander  
Atty

# United States Patent Office.

J. W. SUMMERS, OF SANDY HILL, NEW YORK.

*Letters Patent No. 62,152, dated February 19, 1867.*

## IMPROVEMENT IN STEAM GENERATORS.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, J. W. SUMMERS, of the town of Sandy Hill, State of New York, have invented certain new and useful Improvements in Steam Generators; and I declare the following is a full, true, and exact description of the same, reference being had to the accompanying drawings, which form a part of these specifications, and the letters of reference marked thereon.

Figure 1 represents a front view of my generator and accompanying apparatus.

Letter A represents the pump-barrel, which is connected at bottom with the main distributing pipe C. The pump-barrel A is furnished with plunger B for acting upon the water within the pump A. D designates the air-chamber, which is connected with the delivery valve E, and is provided at top with a movable cap, F. Letter G represents a second distributing pipe, which is joined to the main distributing pipe C, from which it passes up into the generator H. At the upper end of the distributing pipe G is placed the valve I, which is acted upon by the spring J. The letter K represents a foot-valve, immediately over which is placed the water-valve L, the valve L being held down by the lever M and weight N. At the point O is another waste-valve, constructed and operated in the same manner with the globular valve L, and in connection with the foot-valve K. H represents a vertical section of the generator, which is of conical form, the apex pointing downwards. Q represents the tube for carrying the steam into the cylinder. At the point K the furnace is made to incline inwards at a slight angle, so as to reflect or radiate the heat directly on the surface of the generator H. It will be remarked that the pressure can be obtained in the air-chamber D to any desired degree by means of the two valves L and O, and the levers and weights attached to them, and that when the steam in the generator H exceeds the pressure in the air-chamber D, no water will enter the generator, but will be forced out through the waste-valves L and O, so that no more steam can be generated until the pressure in the generator falls below that in the air-chamber D. It will be further observed that the generator H is so formed that it presents its strongest part to the direct action of the fire, and will be, consequently, less injured by the heat. In order that the water injected into the generator H may be instantaneously converted into steam it will be seen that the valve I is pressed upwards by spring J, and has to force its way by minute streams or spray into the generator.

In operating my machine, the necessary quantity of water being introduced into the generator H by the pump A, and steam raised to set the pump in operation, the water will then be forced through the distributing valves into the generator H, and the pressure of the steam will increase until it is equal to the weights which hold down the waste-valves, while the water not needed to keep the steam at a given pressure will pass out from the waste-valves.

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

1. The generator H, when constructed as and for the purpose herein described.
2. The air-chamber D, for the purpose of governing and controlling the pressure of steam in the generator, as and for the purpose set forth.
3. The valve I, for the purpose of dispersing the water, in the manner and for the purpose specified.
4. The combination of the valves L, K, and O, the air-chamber D, and generator H, the whole constructed, arranged, and operating as and for the purpose herein set forth.

In testimony that I acknowledge the foregoing as my own act, I hereby affix my signature in the presence of two witnesses.

J. W. SUMMERS.

Witnesses:

D. E. PARKS,

C. H. CRONWHITE.