W. H. Place,

Blast Generator,

No. 34,331. Patented Feb. 4, 1862.

Fig. 3.

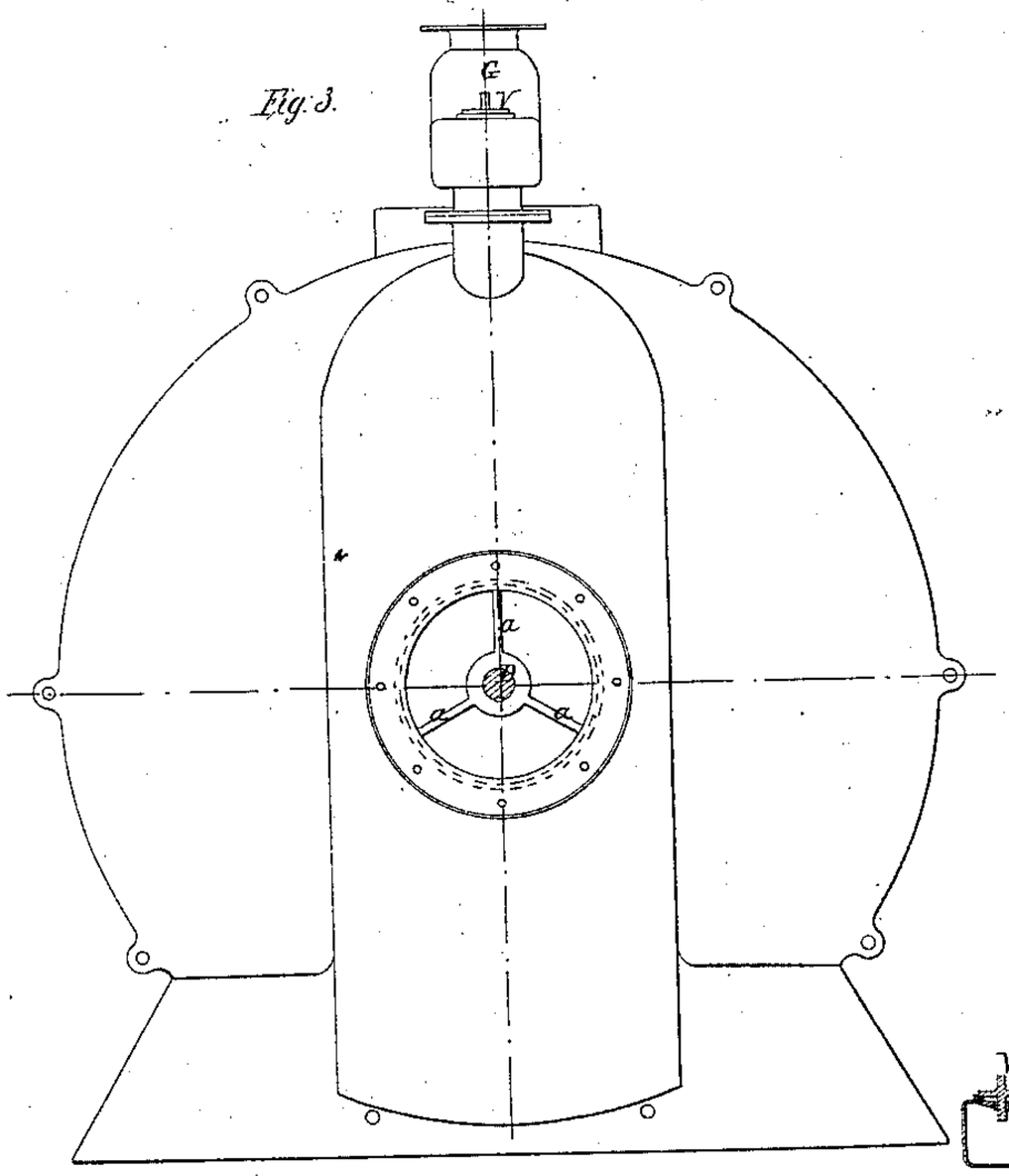


Fig. 1.

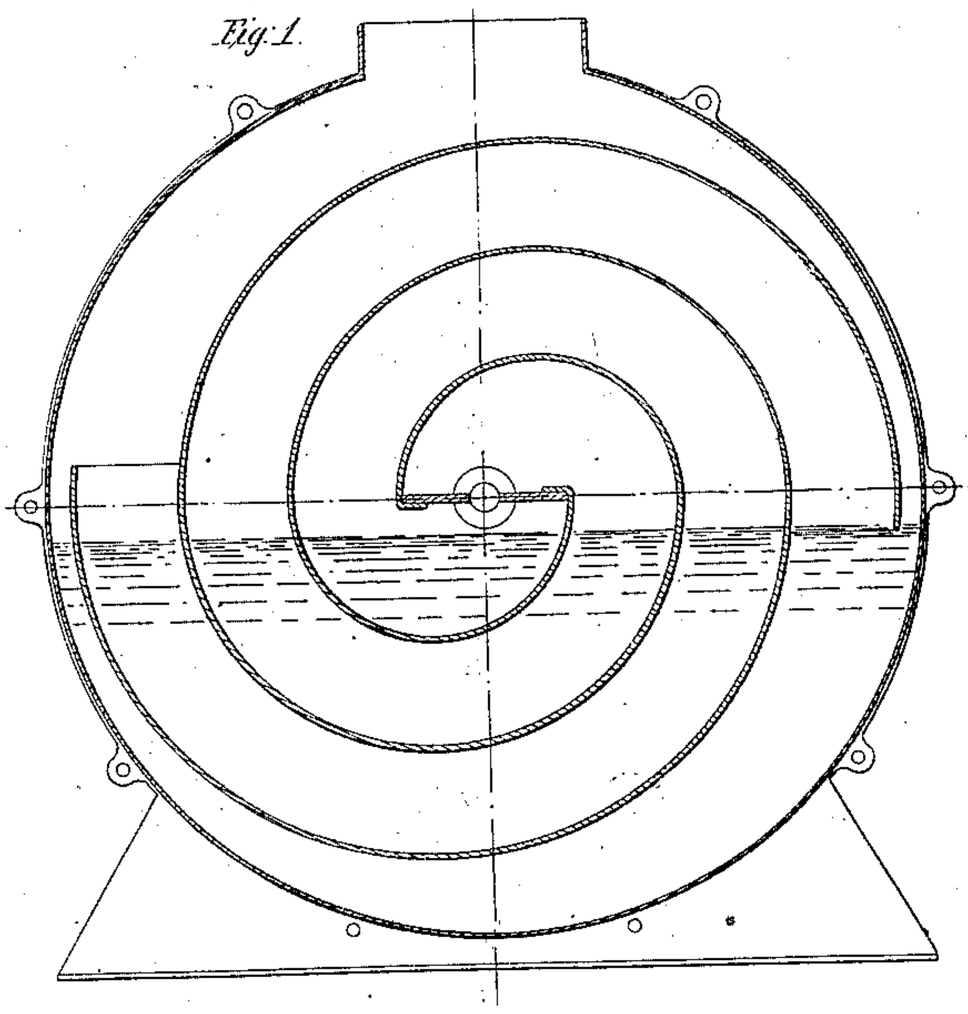
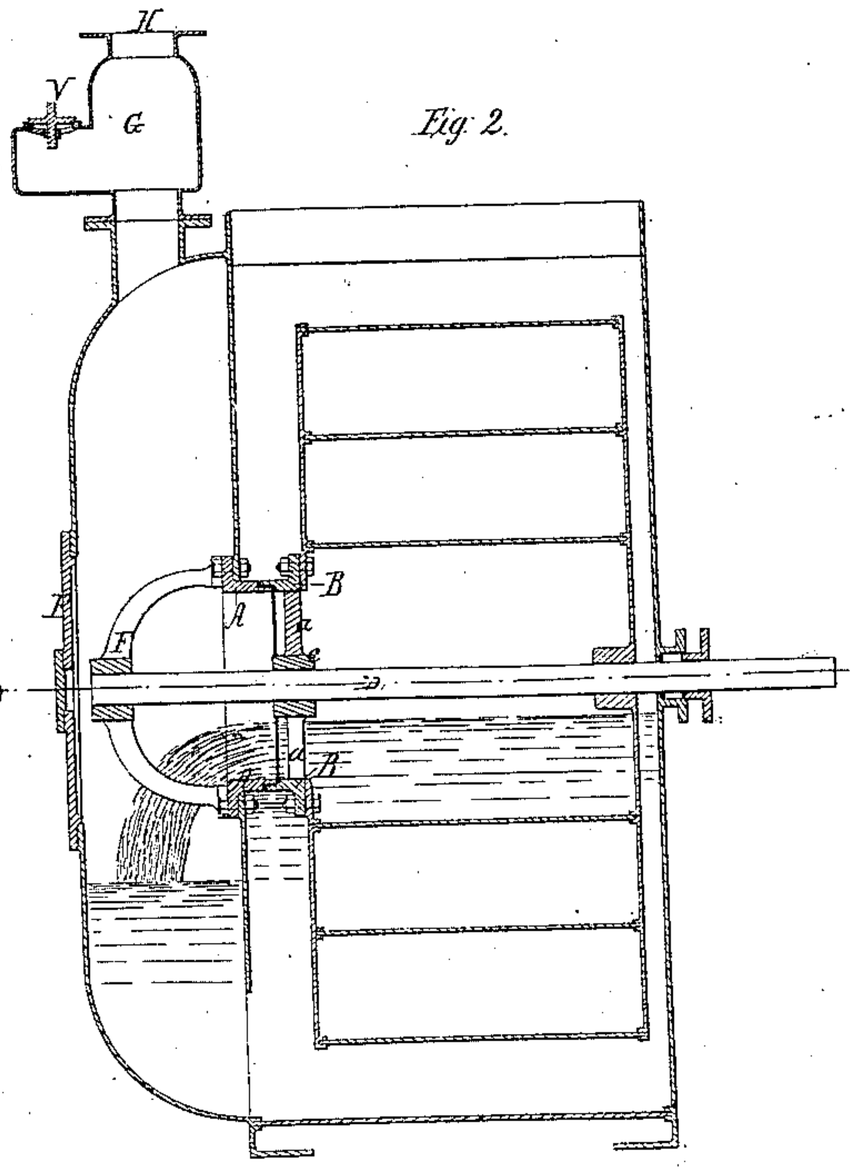


Fig. 2.



Witnesses;

E. F. Wheeler and Chas Roberts.

Inventor;

William H. Place

UNITED STATES PATENT OFFICE.

WILLIAM H. PLACE, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND GEORGE HAYWARD, OF SAME PLACE.

IMPROVED BLAST-GENERATOR.

Specification forming part of Letters Patent No. **34,331**, dated February 4, 1862.

To all whom it may concern:

Be it known that I, WILLIAM H. PLACE, of the city, county, and State of New York, have invented new and useful improvements on the machine known as Partz's Hydraulic Blast-Generator, patented June, 1857; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and the letters of reference marked thereon.

The nature of my improvement consists in applying to the above-named machine a new arrangement to produce an air-tight joint between the revolving cylinder and the adjoining side of the surrounding case, saving thereby a great amount of friction which was caused formerly by the stuffing-box surrounding the shaft and was injurious to the perfect and economical working of said machine. I have also added an air-chamber, with safety-valve attached, to give exit to the blast generated in case the usual orifice is suddenly closed while the machine is still in operation.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

Figure 1 in the drawings is a section at right angles to the shaft D, showing the form and construction of the revolving cylinder, which is made of wrought plate-iron curved into the spiral shape, as per drawings, the ends being closed by circular plates of cast-iron, the whole being firmly secured to shaft D. Fig. 2 is a vertical section on a line with the axis of the shaft, showing the revolving cylinder and shaft in its surrounding-case, which is partly filled with water or any other fluid; also, showing rings A and B in their relative positions, and finally the air-vessel and safety-valve. Fig. 3 is an external view of the inclosing-case with cover E removed from its side to show the form and construction of the rings A and B.

In Fig. 2, A A is a ring with a flange or projection cast on, by which it is bolted or otherwise secured to the side of the casing of the machine. It has also cast on three or more arms, uniting in a central hub forming a bearing for shaft D, as shown at F, all of a form similar to drawings. B B is a ring in all respects similar to the one described. It has a flange or projection cast on by which it is bolted or otherwise secured to the cast-iron circular plate forming the end of the revolving cylinder. It has also cast on three or more arms *a a a*, Figs. 2 and 3, uniting in a central hub C, which is securely keyed to shaft D, with which it revolves. The edges of the rings just described which come in contact with each other are formed to overlap each other and turned and fitted, forming thereby a joint to prevent the blast generated by the revolving cylinder and passing through these rings into the reservoir at the side from escaping in any way but through its proper orifice. The rings A A, being connected with the case, remain stationary, while rings B B, being connected to the revolving cylinder and both keyed to shaft D, are forced to revolve with it. Water and air or blast passing through the rings into the reservoir, the water adhering to the internal surfaces of the rings assists in producing an air-tight joint at the surfaces of contact of the two rings.

In Figs. 2 and 3, G is an air vessel or reservoir, with safety-valve V for the purpose of letting escape the blast generated when the usual exit thereof—the opening H or a pipe leading therefrom—is suddenly closed while the machine is still in operation, preventing thereby any injury which might arise from the accumulation of blast in the reservoir.

The operation of the rings A A and B B and the manner in which the air-tight joint is formed at their surfaces of contact are now evident. Ring A A remains stationary while B B revolves, carrying with it water on its inner circumference, which prevents the blast from escaping through the space between the two rings.

I claim as an improvement on A. F. W. Partz's hydraulic blast-generator, patented June 2, 1857, and desire to secure by Letters Patent—

1. The arrangement of rings A A B B with the shaft D and bearing F.

2. The combination of valve V or its equivalent with the valve-chamber G, as and for the purpose described.

New York, May 27, 1861.

WILLIAM H. PLACE.

In presence of—

JOHN ANDERSON, Jr.,

E. S. MCPHERSON.