

March 26, 1929.

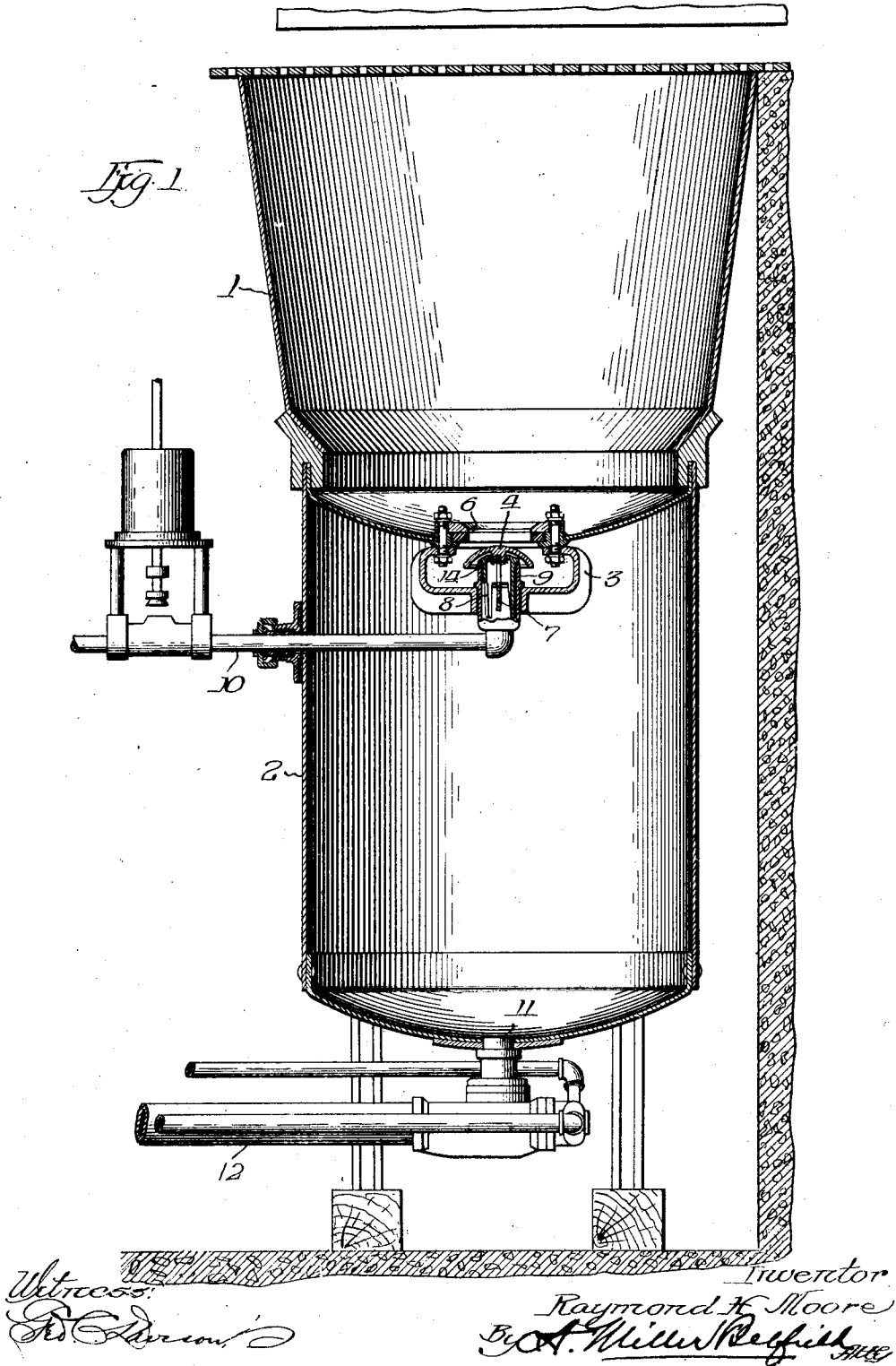
R. H. MOORE

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SAND BLAST TANK AND FILLING VALVE

Filed Sept. 19, 1923

2 Sheets-Sheet 1



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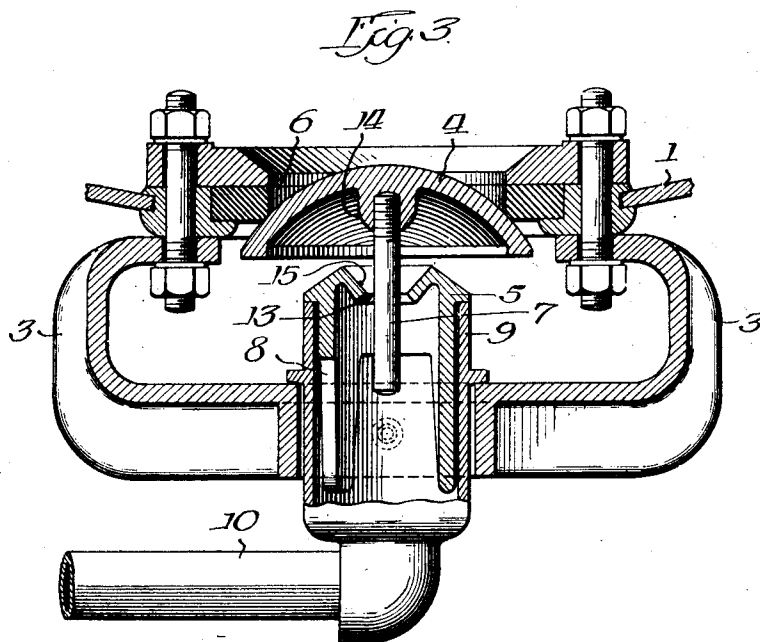
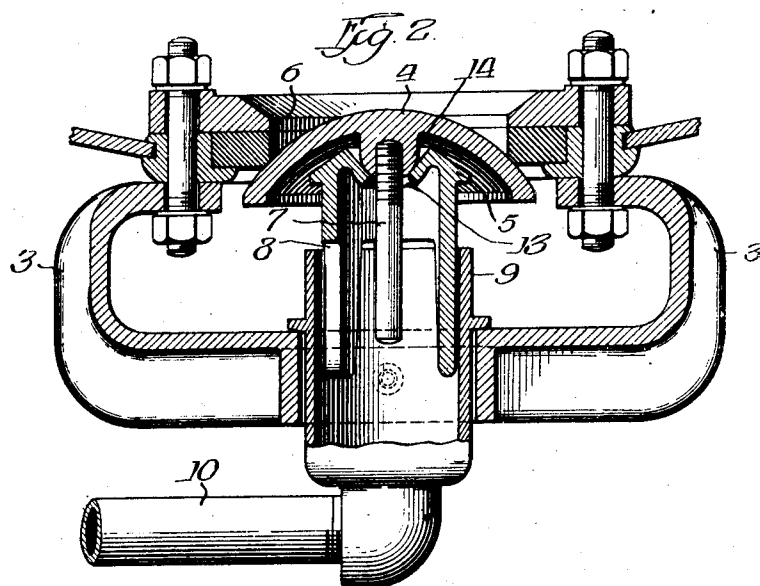
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SAND BLAST TANK AND FILLING VALVE

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2 Sheets-Sheet 2



Witness:
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Patented Mar. 26, 1929.

1,706,737

UNITED STATES PATENT OFFICE.

RAYMOND H. MOORE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE AMERICAN FOUNDRY EQUIPMENT COMPANY, OF NEW YORK, N. Y., A CORPORATION OF OHIO.

SAND-BLAST TANK AND FILLING VALVE.

Application filed September 19, 1923. Serial No. 663,656.

My invention relates to sand blast tanks for sand blasting apparatus and to valves for filling said tanks.

One of the objects of the invention is to provide a simple, practical and durable construction of filling valve for sand blast tanks.

Another object of the invention is to provide a construction of such valve as will avoid the puffing or blowing of the sand in the hopper, as is now commonly done when the filling valve is opened by a reduction of air pressure in the tank.

Another object of the invention is to secure quick and effective operation in such a valve.

In the accompanying drawings, Fig. 1 is a vertical section of a sand hopper and filling tank and filling valve embodying the invention;

Fig. 2 is a vertical section of the valve in a closed condition; and

Fig. 3 is a similar section with the valve partially closed and partially opened.

Referring to the drawings, 1 is a sand hopper to receive sand to be used for sand blasting purposes. Below hopper 1 is a sand blast tank 2 to receive sand from hopper 1 to deliver it to blasting nozzle. Between hopper 1 and tank 2 is valve mechanism 3 for controlling flow of sand from hopper 1 to tank 2.

The valve mechanism 3 comprises a duplex or two part valve, having an upper mushroom part 4 and a lower cylinder part 5. Part 4 controls opening 6 in bottom of hopper 1, opening or closing the same when in lower or upper position, respectively. Part 4 has a stem 7 adapted to slide in aperture 13 in part 5, to permit relative movement of parts 4 and 5. Part 5 has side openings 8 through which compressed air may pass into tank 2. Part 5 is vertically adjustable in a tubular member 9, being shown elevated in Fig. 2, and lowered in Fig. 3.

Compressed air pipe 10 leads from member 9 to outside of tank, where it is understood to be provided with a controlling valve, either hand controlled or automatic.

Tank 2 has an outlet 11 connected with sand blast nozzle pipe 12. An aperture 13 is provided in part 5 to permit the air to release from the tank through the compressed air pipe 10. A spherical seat member is provided on valve part 4 adapted to seat in

socket 15 and thereby maintain said valve parts in alinement.

In operation, when the sand blast is not operating, the valve will be open, as shown in Fig. 1, both parts 4 and 5 being down to permit sand to flow from hopper 1 into tank 2. When sand blast is turned on, however, both parts 4 and 5 will be elevated by air pressure, part 5 pushing part 4 up, thereby closing bottom opening of hopper and preventing escape of sand to filling tank, as shown in Fig. 2. Part 5 will then drop, due to the fact that there is substantially no flow of air into the tank through cylinder 9. Part 4 will remain up, however, and will close outlet of hopper 1 until air is released from the tank, thereby so reducing the pressure within the tank that there will be no puff of sand into hopper 1 when part 4 drops. Part 4 is made separate from part 5 in order to be as light as possible, so that it will remain in raised position until the pressure in tank 2 has become a minimum.

It will be understood that changes and modifications may be made without departing from the spirit of the invention.

What I claim is:

1. The combination with a hopper and tank of a light valve slidable on and operable by a slidable member to close the valve opening, said member being returned to its normal position as soon as the said opening is closed, and an opening in said member for venting the tank.

2. The combination with a hopper and a tank, of a two part valve at the opening between the same, one of the parts of said valve being adapted to open and close the hopper opening and the other part being adapted to actuate the first mentioned part to cause it to close said opening when the air flow is turned on and being adapted to separate from the first mentioned member when the pressure in the tank has become substantially uniform, and having means for venting the tank when the supply pressure is released.

3. A valve device comprising two parts, one of which is adapted for movement relatively to the valve casing and the other of which is carried by the first mentioned part and adapted for movement relatively to the same, the second mentioned part having the valve closing structure and the first mentioned part having a venting aperture.

4. A valve device comprising two parts, the second mentioned part being cylindric and
one of which is adapted for movement rela- provided with a crosswise portion forming a 10
tively to the valve casing and the other of baffle and having an aperture for the valve
which is carried by the first mentioned part stem and also having venting apertures.
5 and adapted for movement relatively to the In witness whereof, I hereunto subscribe
same, the second mentioned part having the my name this 10th day of September, A. D.,
valve closing structure and the first men- 1923. 15
tioned part having a venting aperture, the
first mentioned part having a valve stem and

RAYMOND H. MOORE.