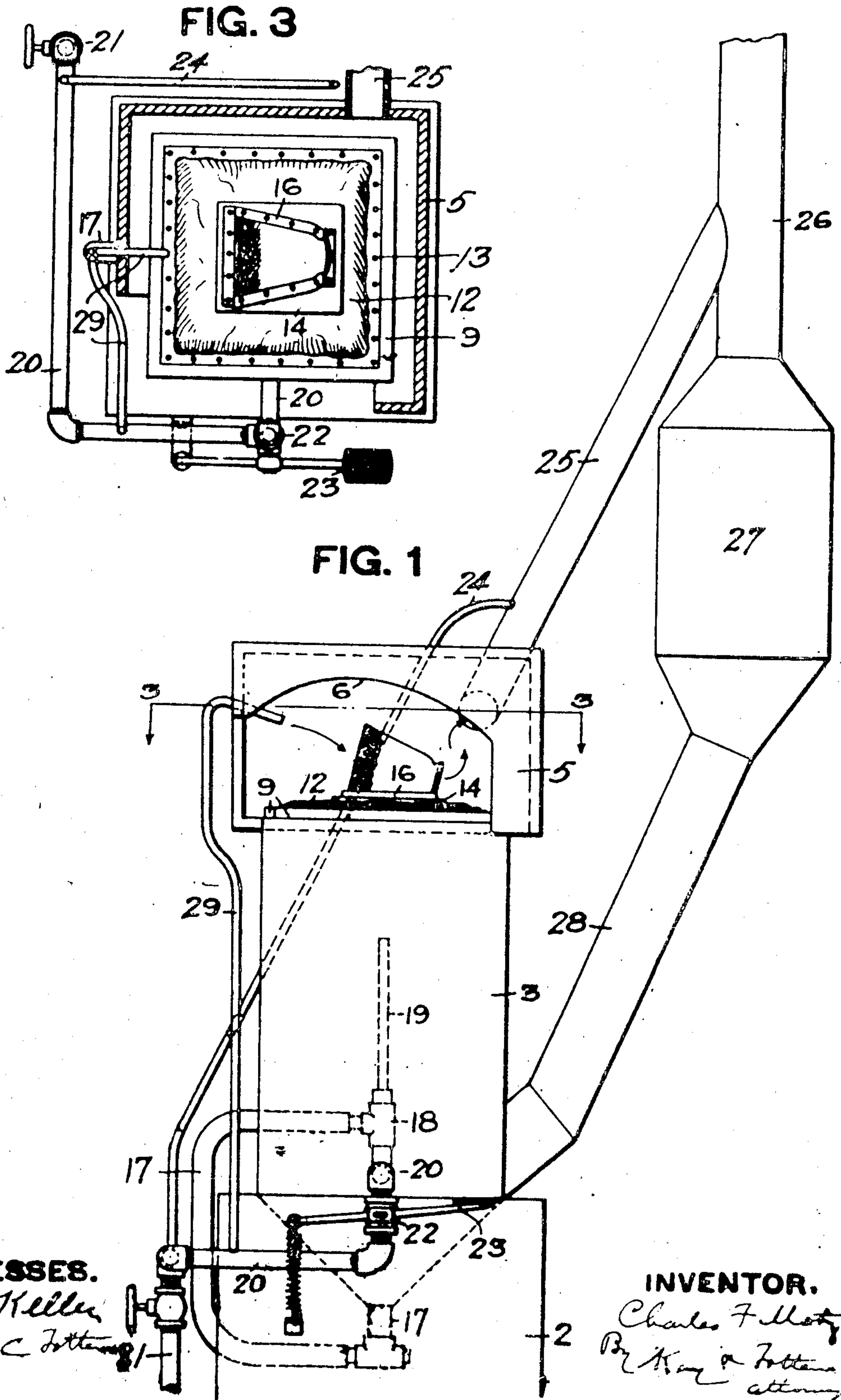


955,468.

Patented Apr. 19, 1910.

3 SHEETS-SHEET 1.



WITNESSES.

J. R. Keller
Robert C. Fottner

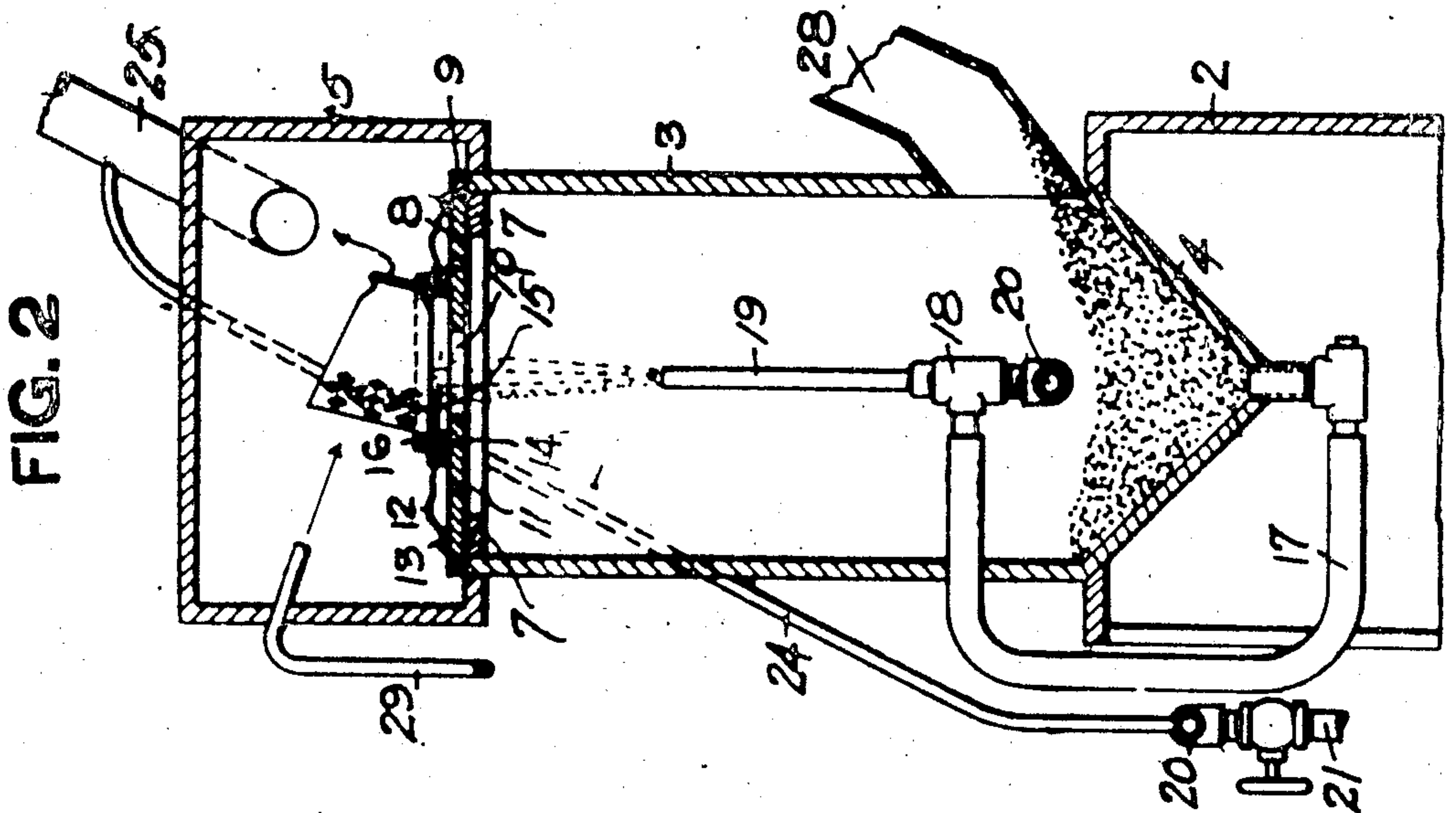
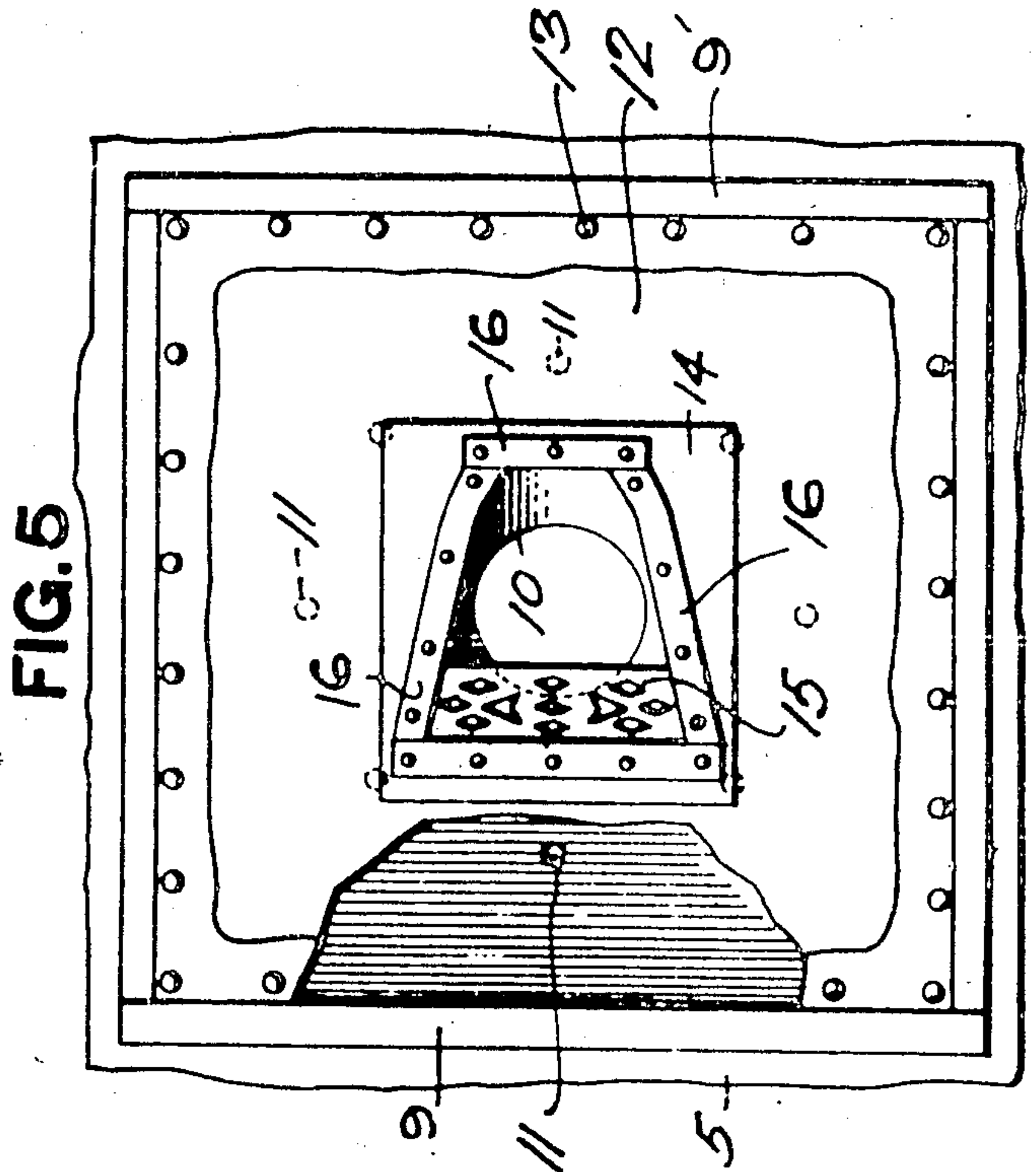
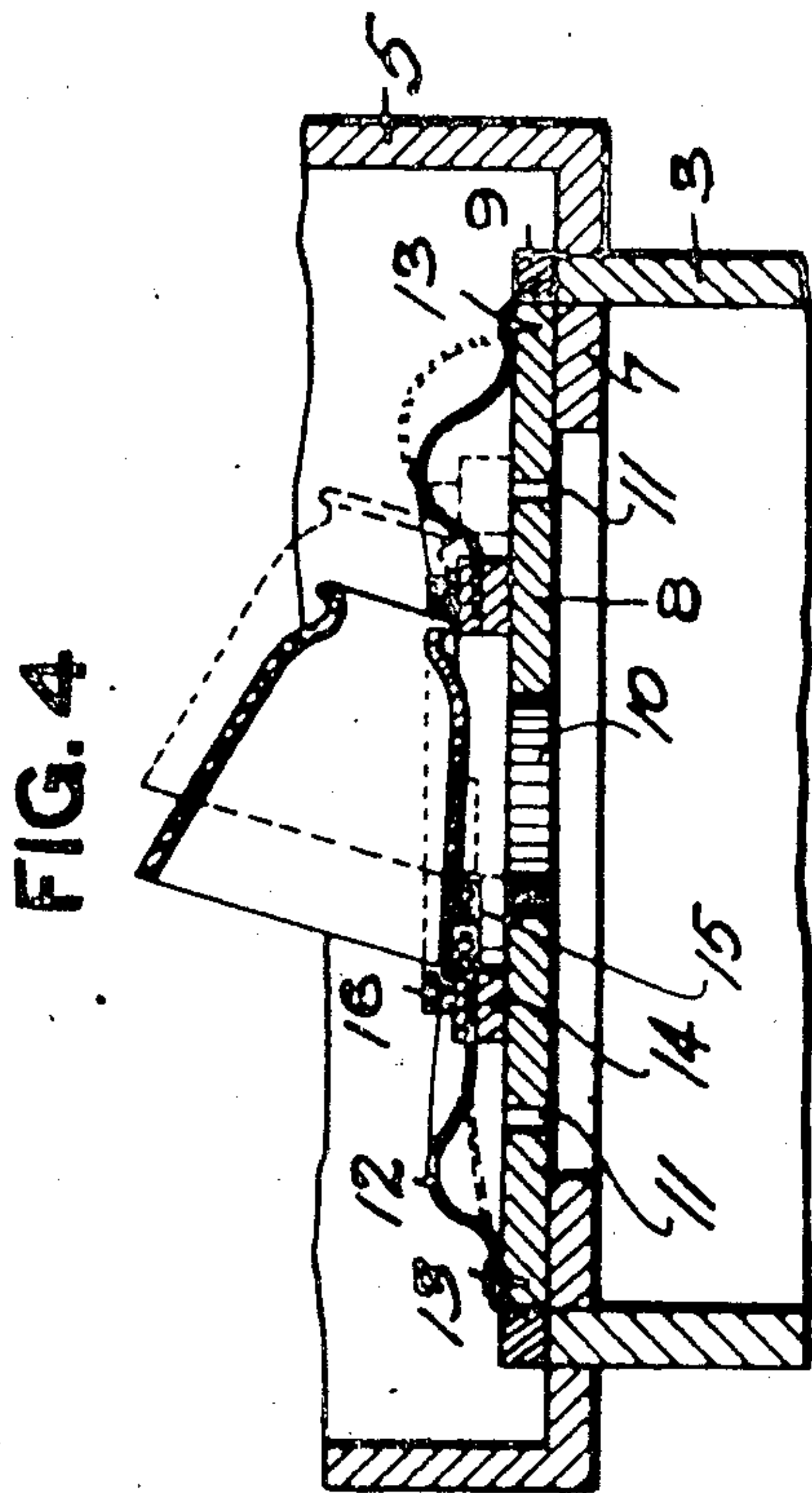
INVENTOR.

Charles F. Motz
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955,468.

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2 SHEETS—SHEET 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

CHARLES F. MOTZ, OF MOON TOWNSHIP, BEAVER COUNTY, PENNSYLVANIA, ASSIGNOR,
BY MESNE ASSIGNMENTS, TO EMPIRE GLOBE COMPANY, OF NEW YORK, N. Y., A
CORPORATION OF NEW JERSEY.

SAND-BLAST MACHINE.

855,468.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed November 10, 1908. Serial No. 527,213.

To all whom it may concern:

Be it known that I, CHARLES F. MOTZ, a resident of Moon township, in the county of Beaver and State of Pennsylvania, have invented a new and useful Improvement in Sand-Blast Machines; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to sand-blast machines.

The object of my invention is to provide a machine in which patterns or designs may be quickly and accurately produced upon articles of glassware by means of sand-blasting, the device being simple in construction and capable of being operated without the employment of skilled labor.

To these ends my invention comprises, generally stated, a suitable receptacle for containing the sand, an air-pipe, a sand-pipe communicating with said receptacle and with the air-pipe, whereby the sand is directed with required force against the article to be treated, and means for supporting the article in connection with the pattern so that the article and pattern may be moved in position with reference to the sand-blast to direct the blast uniformly and with accuracy upon the entire surface to be frosted.

Referring to the accompanying drawings, Figure 1 is a front elevation of my improved machine; Fig. 2 is a vertical section; Fig. 3 is a cross section on the line (3-3) Fig. 1; Fig. 4 is an enlarged section of the diaphragm and the pattern plate; Fig. 5 is a plan view of same partly broken away.

In the drawings, the numeral 2 designates a suitable stand or support for the sand receptacle 3 having a conical bottom 4. Secured to the upper end of the receptacle 3 is the hood 5, which has the opening 6. A flange 7 is secured to the inner wall of the receptacle 3 and forms a support for the cover 8. The cover 9 is provided with the opening 10 and the similar openings 11 arranged at intervals around said cover.

A diaphragm 12 of canvas or other suitable material is secured by the nails or other fastening devices 13 to the cover 8 at its outer edge and the inner edge of said diaphragm is secured to the movable support or frame 14 which rests upon the cover 8. The pattern 15 is also secured to the sup-

port 14. This pattern-plate, in the particular instance illustrated, consists of the metal plate with a suitable design therein by openings cut in the plate and as I have illustrated my invention in connection with the sand-blasting of a shade having a bell-shape with flat sides, the support 14 and the pattern-plate 15 have been designed for the sand-blasting of such a shade. Accordingly, the lower portion of the shade is supported upon the pattern-plate 15 and the upper end of the shade rests upon the support 14. Strips of rubber 16, or other suitable material, are secured to the frame 14, said strips being arranged to conform to the shape of the shade so that the shade, when adjusted in position on the frame, will fit down snugly within the rubber-strips.

Connected to the conical bottom 4 of receptacle 3 is the sand-pipe 17, which extends up and passes through the walls of the receptacle 3 and is connected by the coupling 18 to the nozzle-pipe 19 of the air-pipe 20. The air-pipe 20 is connected up to the suitable supply-pipe 21 leading from an air compressor or fan. A valve 22 controls the supply of air to the nozzle-pipe 19 and said valve is operated by the spring actuated treadle 23.

A pipe 24 leading from the air-pipe is connected to the exhaust-pipe 25 leading from the hood 5 to carry off the dust, said exhaust pipe 25 being connected to the pipe 26. The pipe 26 is connected to the enlargement 27 which is connected by the pipe 28 to the receptacle 3. The pipe 29 is connected to the air-pipe 20 and the upper end of said pipe 29 passes through an opening in the hood 5, and is bent to direct the air on the article to be operated on.

When my improved sand-blast machine is in use the shade or other article to be frosted, is inserted within the space bound by the rubber strips 16 on the movable support 14 with the lower portion of said shade resting in contact with the pattern-plate 15. The operator with his foot upon the treadle 23 and holding the shade down in position upon the support 14 operates the treadle 23 to open the valve 22 and admit air to the nozzle-pipe 19. The admission of air to the nozzle pipe 19 acts to suck or draw the sand up through the sand pipe 17 and this sand

is expelled with high velocity from the nozzle-pipe and is directed up through the opening 10 in the cover 8. The operator with his hand upon the shade is able to move the support 14 over the cover 8, the flexible diaphragm 12 permitting of movements in all directions, so that the face of the shade exposed to the sand-blast is moved around in position to have the sand-blast directed against all portions of said face, so that all parts of shade are brought directly in the path of the sand-blast. The pattern plate protects certain parts of the shade from the sand-blast, and consequently the design or pattern produced upon the article is brought out by sharp and clearly defined lines. Any dust arising from the operation within the hood 5 is drawn off by the suction-pipe 25 so that this dust is not inhaled by the operator, and the action of the pipe 29 blows this dust away from the article, and it is quickly drawn up by the pipe 25. The enlargement or chamber 27 acts to collect the sand which passes up through the pipes 26 and 28 and said sand falls back into the lower end of the receptacle so that waste is prevented. When one side of the shade has been properly treated, the operator with his foot upon the treadle 23 closes the valve 22 to shut off the air, and then changes the position of the shade so as to bring another face in position to be acted on by the sand-blast, when the operation just described is repeated. In this manner I provide a machine in which the sand-blast is directed through a comparatively small opening in the cover and the article being operated on is freely movable in all directions so as to subject it to the action of the blast equally at all points to obtain a uniform frosting of the shade and at the same time a design can be applied to the shade with great accuracy and rapidity, the whole operation requiring but a few seconds. No skill is required on the part of the operator as it is only a question of the handling of the shade in bringing it into proper position on the pattern frame, and the moving of the movable support so as to

expose all portions of the shade to the action of the blast.

What I claim is:

1. In a sand-blast machine, combination of a suitable receptacle, an air-pipe, a sand-pipe connected thereto, a cover for said receptacle having an opening in line with the blast, and a movable support on said cover to receive the article to be operated on.

2. In a sand-blast machine, combination of a suitable receptacle, an air-pipe, a sand-pipe connected thereto, a cover for said receptacle having an opening therein in line with the blast, a movable support on said cover to receive the article to be operated upon, and a flexible diaphragm connecting said cover and said support.

3. In a sand-blast machine, combination of a suitable receptacle, an air-pipe, a sand-pipe connected thereto, a cover for said receptacle having an opening therein in line with the blast, a movable support on said cover to receive the article to be operated on, and a pattern carried by said movable support.

4. In a sand-blast machine, combination of a suitable receptacle, an air-pipe, a sand-pipe connected thereto, a cover for said receptacle having an opening therein, a movable support on said cover to receive the article to be operated on, a flexible diaphragm connecting said support with said cover, and cushioning strips on said support within which the article rests.

5. In a sand-blast machine, combination with suitable receptacle, an air-pipe, a sand-pipe connected thereto, a cover for said receptacle having an opening therein in line with the sand-blast, a movable support on said cover to receive the article to be operated on, a hood over said cover and an exhaust pipe connected up to said hood.

In testimony whereof, I the said CHARLES F. MOTZ have hereunto set my hand.

CHARLES F. MOTZ

Witnesses:

GEO. F. WEHR,
ERNEST FOGEL.