Jan. 16, 1945. W. P. MOTT 2,367,647

CONTROL VALVE FOR SAND BLASTING

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Fig. 2

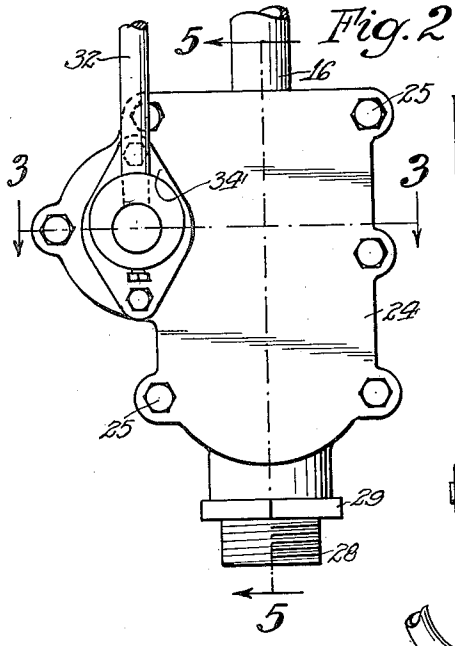
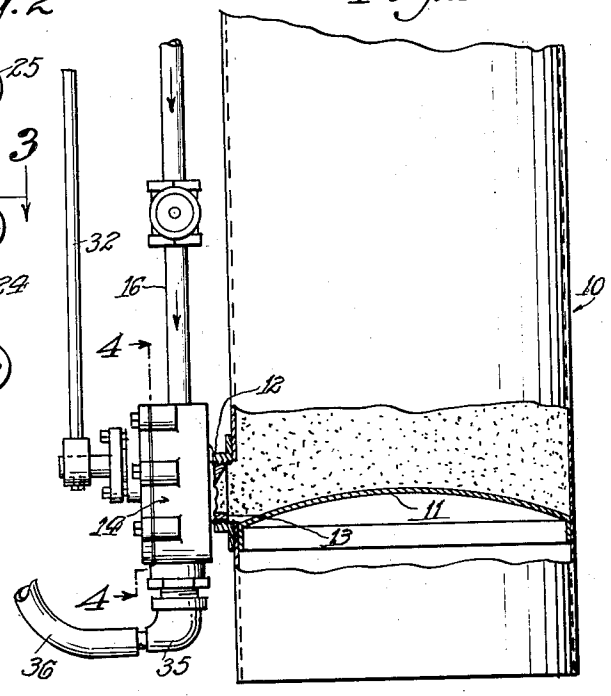


Fig. 1



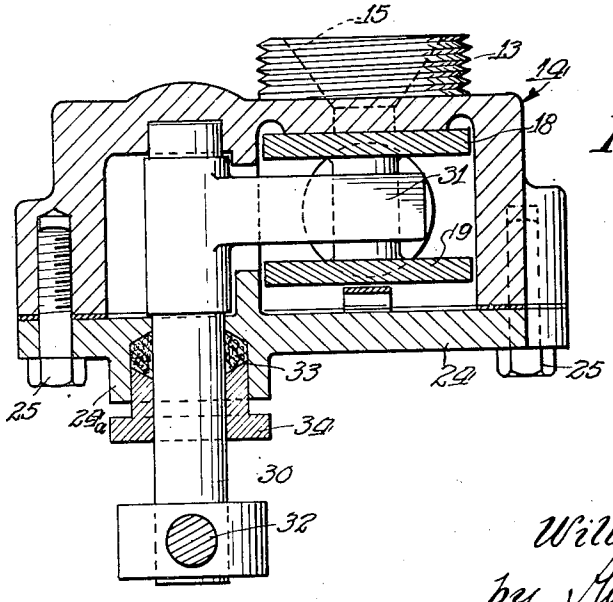


Fig. 3

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Fig. 4

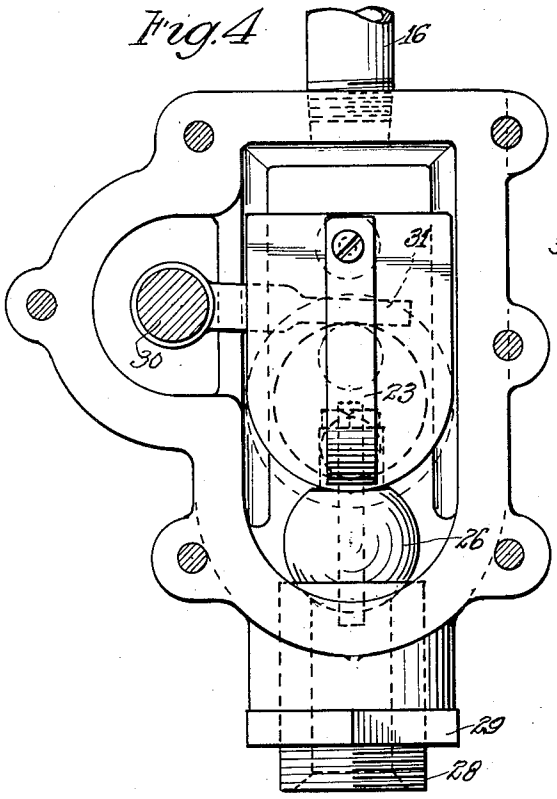


Fig. 5

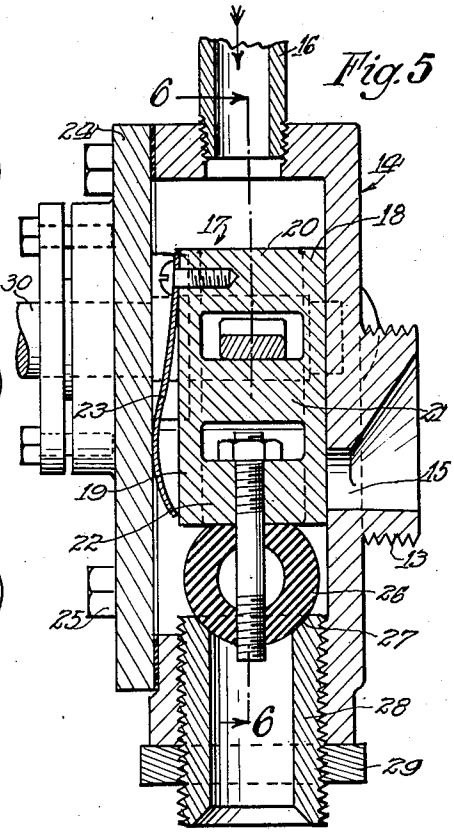


Fig. 6

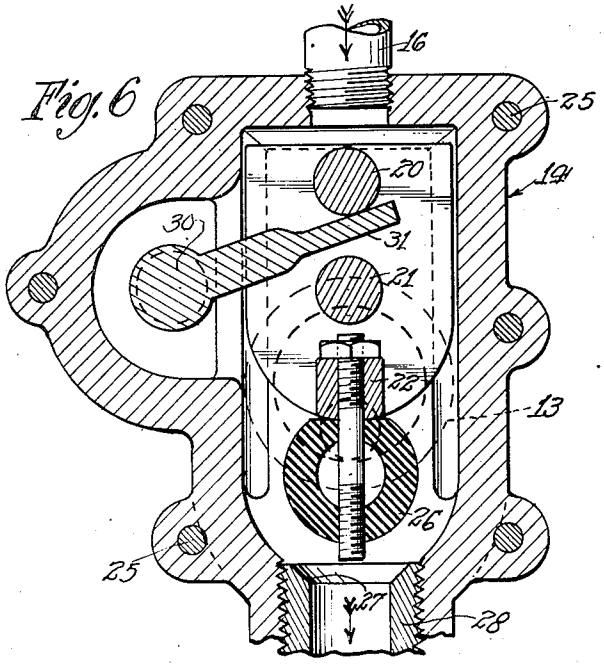
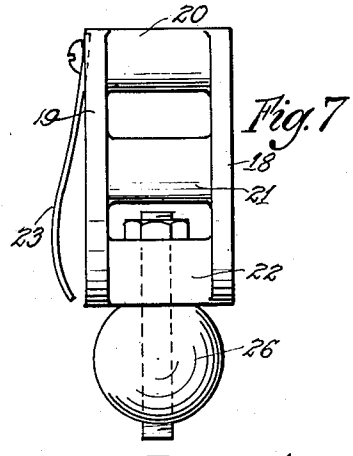


Fig. 7



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CONTROL VALVE FOR SANDBLASTING

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Application October 12, 1942, Serial No. 461,692

3 Claims. (Cl. 51—12)

The invention relates to sand blasting devices and particularly to control valves for sand blasting devices.

In order to prepare metal sheets or plates for painting it is necessary to subject the same to sand blasting in order to remove scales or foreign substances therefrom.

It is an object of the invention to provide a control valve for sand blasting which is of simple construction and yet effectively controls the sand blasting operation.

A still further object embraces the provision of a single valve which may be actuated to control both the flow of the sand and of the compressed air.

Another object constitutes the provision of a control valve which may be manipulated by a single lever to control the flow of the sand and of the compressed air.

Another object constitutes the provision of a control valve in a sand blasting device capable of controlling the flow of sand and air so that upon opening or closing of the valve a lag exists between the admission of air and sand until the valve is entirely opened or closed.

It is also an object of the invention to provide certain details of construction and arrangement of parts tending to enhance the efficiency and utility of a device of the character specified.

With these and other important objects in view which will become apparent from a perusal of the invention, the latter comprises the means described in the following specification, particularly pointed out in the claims forming a part thereof, and illustrated in the accompanying drawings, in which:

Fig. 1 is a side elevation of my invention with parts shown in section.

Fig. 2 is a front elevation of the valve member.

Fig. 3 is an enlarged section taken at line 3—3 of Fig. 2.

Fig. 4 is an enlarged section taken at line 4—4 of Fig. 1.

Fig. 5 is an enlarged section taken at line 5—5 of Fig. 2.

Fig. 6 is a section taken at line 6—6 of Fig. 5 with valve member in open position.

Fig. 7 is an end view of the valve member.

The invention has been illustrated in connection with sand blasting but may be utilized wherever two media are employed and their cooperation is to be controlled.

Referring to Fig. 1, 10 illustrates a tank which has a bottom 11 and a screw-threaded flange 12 adapted to receive the nipple 13 Fig. 5 of the valve housing 14.

The tank 10 is filled with sand. The nipple or hub 13 is provided with a port 15 which is in communication with the interior of the tank 10 and through which sand may pass.

The top wall of the valve housing 14 is provided with a screw-threaded inlet opening to receive an air pipe 16. Slidable in the housing 14 is a valve member generally designated by 17 which is formed by front and rear end walls 18, 19, and are connected by upper, intermediate and lower cross members 20, 21, 22.

Secured to the outer face of the front wall of the valve member is a spring 23 which bears against a cover plate 24 for the housing 14 and secured thereto by screws 25. To the cross member 22 is secured a ball 26 of rubber which, in the valve closing positon, engages a seat 27 of a nipple 28 forming a bottom outlet and screw-threaded into the valve housing 14 and held in position by a lock nut 29.

The cover plate 24 is apertured to receive a shaft 30 which has secured thereto an arm 31 extending between the cross members 20 and 21 of the valve member. The shaft is oscillated by an exterior handle lever 32. Any suitable packing means 33 may be employed where the shaft extends through the cover plate 24 where a stuffing box 24a is provided therefor and such packing is held in position by a gland 34. Connected to the nipple 28 is a fitting 35 to which is connected a hose 36, for directing the sand blast.

When the valve is closed as illustrated in Figs. 4 and 5, the rubber ball 26 is seated tight against the seat 27 and also covers the aperture 15.

When the handle 32 is rotated in counterclockwise rotation, referring to Figs. 2 and 4, the finger 31 lifts the valve 18 and first unseats the ball 26 and thereafter opens the port 15.

From the foregoing it is evident that when the valve is opened the ball 26 leaves the seat before the port 15 is uncovered so that the air passes before sand is admitted. Conversely upon closing of the valve, the admission of sand is shut off before the supply of air ceases.

The control of the sand blast thus is effected by a single valve manipulated by the handle lever 32.

While the drawings show one embodiment of the invention numerous changes and alterations may be made without departing from the spirit of the invention.

I, therefore, wish to include all changes, modi-

fications, and variations constituting departures within the scope of the invention as defined in the appended claims.

I claim:

1. For use in a sand blasting device, a sand filled tank provided with a port for horizontal discharge of sand, and a control means comprising a housing mounted laterally adjacent said tank and communicating therewith through said port and provided with a vertical passage designed to be connected with an air supply and including a top inlet and a bottom outlet, a valve in said housing comprising spaced front and rear walls and a pair of spaced cross members connecting the walls, the rear wall being arranged to control the port of said tank, a shaft journaled in the housing and having an arm extending between said cross members for actuating the valve, and means carried by the valve for controlling the bottom outlet, whereby upon opening of said valve the air passing through said housing causes discharge of sand from said tank under injector action and discharge from the housing under air propulsion.

2. For use in a sand blasting device, a sand filled tank provided with a port for horizontal discharge of sand, and a control means comprising a housing mounted laterally adjacent said tank and communicating therewith through said port and provided with a vertical passage designed to be connected with an air supply and including a top inlet and a bottom outlet, a valve in said housing comprising spaced front and rear walls and a pair of spaced cross members connecting the walls, the rear wall being arranged to control the port of said tank, a shaft journaled in the housing and having an arm extending between said cross members for actuating the valve, a spring carried by the valve and interposed between the front wall of the same and the housing, and means carried by the valve for controlling the bottom outlet, whereby upon opening of said valve the air passing through said housing causes discharge of sand from said tank under injector action and discharge from the housing under air propulsion.

3. For use in a sand blasting device, a sand filled tank provided with a port for horizontal discharge of sand, and a control means comprising a housing mounted laterally adjacent said tank and communicating therewith through said port and provided with a vertical passage designed to be connected with an air supply and including a top inlet and a bottom outlet, a valve in said housing comprising spaced front and rear walls and a pair of spaced cross members connecting the walls, the rear wall being arranged to control the port of said tank, a shaft journaled in the housing and having an arm extending between said cross members for actuating the valve, a spring carried by the valve and interposed between the front wall of the same and the housing, a lower cross member also connecting the front and rear walls of the valve, and a valve member secured to the cross member for controlling the bottom outlet of the housing, whereby upon opening of said valve the air passing through said housing causes discharge of sand from said tank under injector action and discharge from the housing under air propulsion.

WILLIAM P. MOTT.