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SAND BLAST STOPPER VALVE

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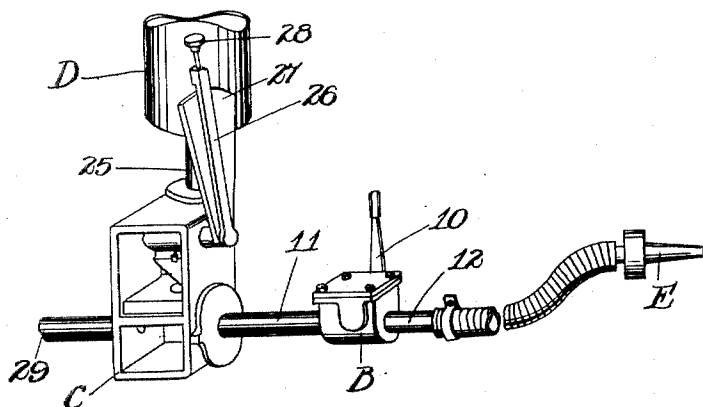


Fig. 1

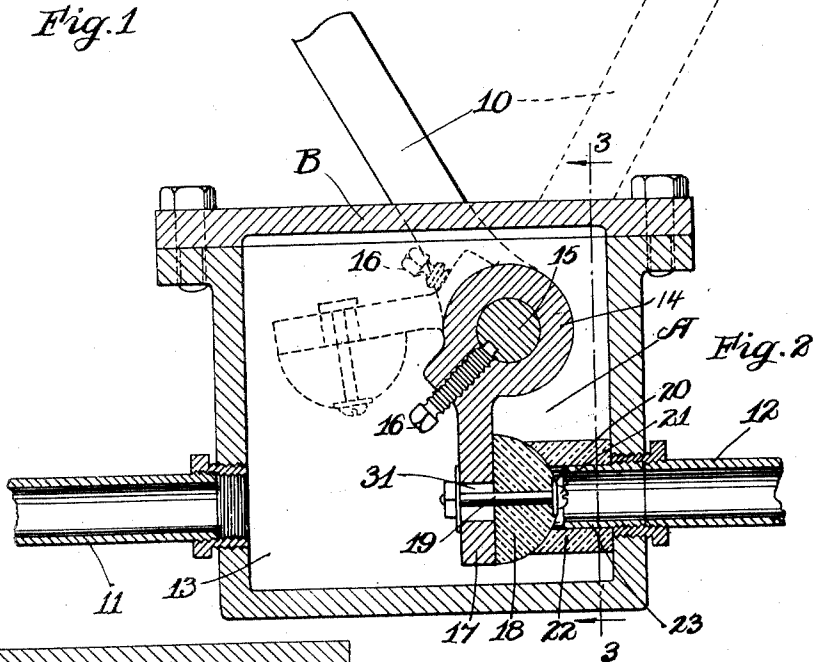


Fig. 2

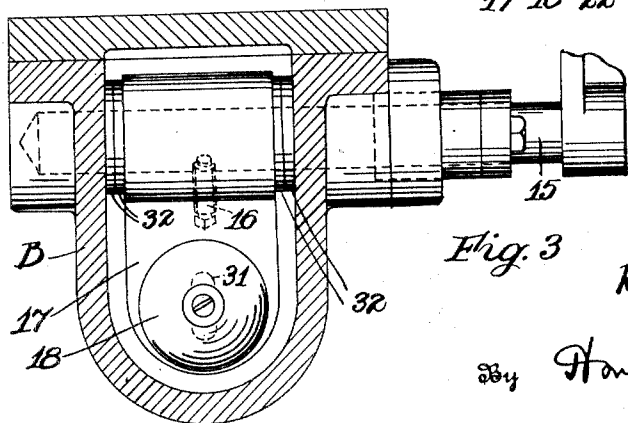


Fig. 3

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SAND BLAST STOPPER VALVE

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My invention relates to a sand blast stopper valve, the primary feature of which is to provide a valve which will close off the sand blast line and which is so constructed as to provide a valve means which will not be cut by the sand blast in operation. It is important to consider that in a sand blast an ordinary valve is not operable to shut off the same for the reason that if it is made of metal or almost any substance, except that which is herein disclosed, the blast of the sand will cut the same and the valve soon becomes inoperative.

A primary feature of my invention is in the provision of a valve made with a pure gum rubber moveable valve and a valve seat made of pure gum rubber extending about a short nipple which supports the same leading to the blast nozzle, and a casing for inclosing my valve and seat so that the valve may be operated to shut off the sand blast without disturbing the mixer valve which feeds the sand from the supply tank into the mixer so that the sand and air are mixed in the proper relation to provide the sand blast desired. When the valve of the mixer is once set it is very undesirable that it be tampered with while blasting, otherwise the blasting operation may be materially changed to give undesirable results thereto. I therefore provide in my sand blast stopper valve a means of stopping the flow of a sand blast quickly in a simple manner and without altering the adjustment of the sand and air mixtures in the mixer box.

These features, together with other objects and details of my sand blast stopper valve will be more fully and clearly hereinafter set forth.

In the drawings:

Figure 1 illustrates a perspective view of my sand blast stopper valve to diagrammatically illustrate the use of the same.

Figure 2 illustrates a cross section of my sand blast stopper valve and casing.

Figure 3 is a section on the line 3—3 of Figure 2.

In the drawings I have illustrated my sand blast stopper valve A which is adapted to be inclosed within the casing B and which is

operated by the handle 10 in a manner to shut off the flow of sand and air coming from the sand and air mixer box C, shown in Figure 1 with its cover removed.

The casing B which incloses the sand blast stopper valve A is connected by the pipe 11 to the mixer box C. A suitable outlet pipe 12 extends from the opposite side of the casing B to the pipe 11 and this pipe leads to the sand blast nozzle which is illustrated in the drawings by E.

As the sand comes from the mixer box C it passes through the pipe 11 into the chamber 13 of the casing B. The pipe 12 is positioned virtually in line with the pipe 11 so that when the valve A is open the sand coming from the pipe 11 will pass virtually straight through the casing B into the pipe 12 and on to the blasting nozzle E.

The valve A provides a shut-off so that the sand blast may be shut off quickly without changing or disturbing the setting of the valves within the mixing box C.

The valve A includes a rocker arm valve supporting member 14 which is carried by the transverse shaft 15 and which is held thereto by the set screw 16. This valve supporting member 14 is provided with a depending lip 17 to which the pure gum rubber semi-spherical valve 18 is secured by means of the bolt 19. A suitable washer 20 is provided beneath the head 21 of the bolt 19 so that the valve 18 may be rigidly attached to the depending lip 17. The slot 31 in the lever 17 permits adjusting of the rubber ball virtually in line with the tubular valve seat 22 so as to form an air tight seal without leakage. The washers 32 permit horizontal adjustment of the lever 17. The handle 10 is connected to the shaft 15 in any suitable manner so as to operate the valve 18 to open and close the same.

I provide a tubular valve seat 22 which is formed of pure gum rubber and which is adapted to be supported upon the nipple 23 extending inward from the pipe 12 in the casing B. This tubular valve seat 22 is adapted to provide a cushion seat against which the valve 18 engages when it is in closed position.

tion to completely shut off the sand blast from the pipe 11.

The sand blast includes the passing of sand and air through the pipes 11 and 12 and under considerable pressure which may be as much as a hundred pounds more or less, and a blast of this nature is powerful enough to cut the ordinary material, so that an ordinary metal valve and seat would not operate in a manner to provide a stopper valve to shut off a sand blast. My rubber valve and seat accomplish the desired results and will stand up under the severe cutting nature of the sand blast for a longer period of time than anything else insofar as I know, and therefore, by means of the simple valve structure together with the casing which is of a substantial nature for supporting the same, I provide a means of shutting off a sand blast without disturbing the mixture in the mixture box which mixes the sand and air.

The mixture box C is connected to a sand supply tank D by means of the pipe 25 and the valve, which is not shown, in the mixture box C is operated by the lever 26. This lever 26 is set to the quadrant 27 by means of the set screw 28 to set the sand feed valve from the pipe 25 in the mixture box C so that it will feed the desired amount of sand into the chamber of the mixture box. The air supply is injected from an air compressor or supply of compressed air through the intake pipe 29 into the mixer box C. After the valve lever 26 has been set in the desired position so that a sand blast may be obtained from the mixture box C of the desired consistency or nature, it is very undesirable that it be changed until the work of sand blasting has been completed for a particular job, otherwise the nature of the blast may be changed so materially as to ruin the work being done by the sand blast or cause considerable delays in operation. I have therefore provided my sand blast stopper valve having a virtually pure gum rubber valve and valve seat 18 and 22, respectively, together with a casing for inclosing the stopper valve A so that by the operating handle 10 the same may be readily operated to shut off the sand blast at any time without disturbing the mixture of the compressed air and sand.

In accordance with the patent statutes I have described the principles of operation of my sand blast stopper valve and I have endeavored to illustrate the best embodiment thereof, however, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the purpose and intent of my invention.

I claim:

1. A sand blast stopper valve including, a casing, sand blast inlet and outlet passages,

a semi-spherical gum rubber valve member, means for adjustably supporting said valve member, lever means for operating said valve member, and a gum rubber tubular valve seat operable with said valve to shut off a sand blast through said casing.

2. A stopper valve including, a casing adapted to be interposed in a sand blast pipe extending from a mixer box, a valve within said casing formed of pure gum rubber, a tubular nipple of similar material against which said valve may seat, and means for operating the valve to shut off a sand blast through said casing.

3. A stopper valve for a sand blast including, a casing, inlet and outlet passageways in said casing extending in line to permit a sand blast to pass through said casing, a tubular pure gum rubber valve seat positioned on the outlet passageway within said casing, a rocker arm pivotally supported within said casing, a gum rubber semi-spherical valve supported by said rocker arm in a manner to close against said valve seat to shut off the sand blast through said casing, and a lever for operating said rocker arm.

4. A sand blast stopper valve including, a casing, a shaft extending transversely in said casing, a lever for operating said shaft, a rocker arm adjustably supported by said shaft having a depending lip, inlet and outlet sand blast pipes extending in line from said casing, a tubular rubber valve seat on the outlet passageway in said casing, and a semi-spherical rubber valve supported on said depending lip to close against said tubular valve seat to shut off a sand blast without changing the mixture of sand and air.

5. A shut-off valve for a sand blast including, a valve casing adapted to be interposed in the sand blast pipe leading to the blast nozzle, the shut-off valve in said casing including a rubber valve rotatably supported within said casing, and a tubular rubber valve seat against which said valve is adapted to close.

6. A sand blast stopper valve including, a casing adapted to receive inlet and outlet pipes in opposite sides thereof and in line to permit a sand blast to be extended through said casing, a horizontal shaft in said casing, a cover for the top of said casing, a lever for operating said shaft, a rocker arm carried by said shaft and adjustably positioned there-to within said casing, a semi-spherical rubber valve member carried on said rocker arm, and a tubular rubber valve seat about the outlet opening in said casing against which said valve is adapted to close.

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