

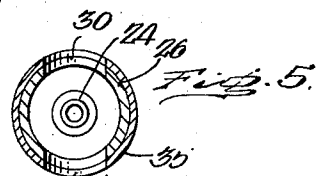
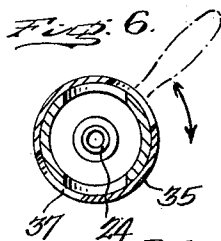
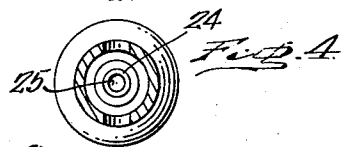
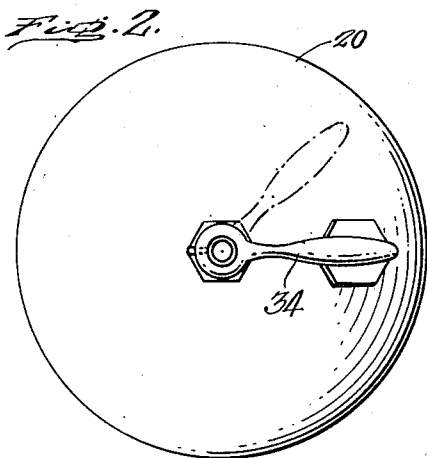
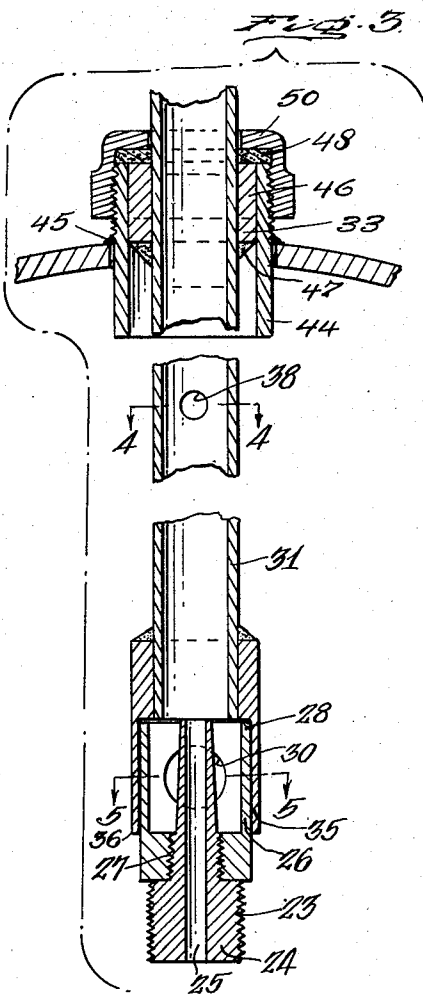
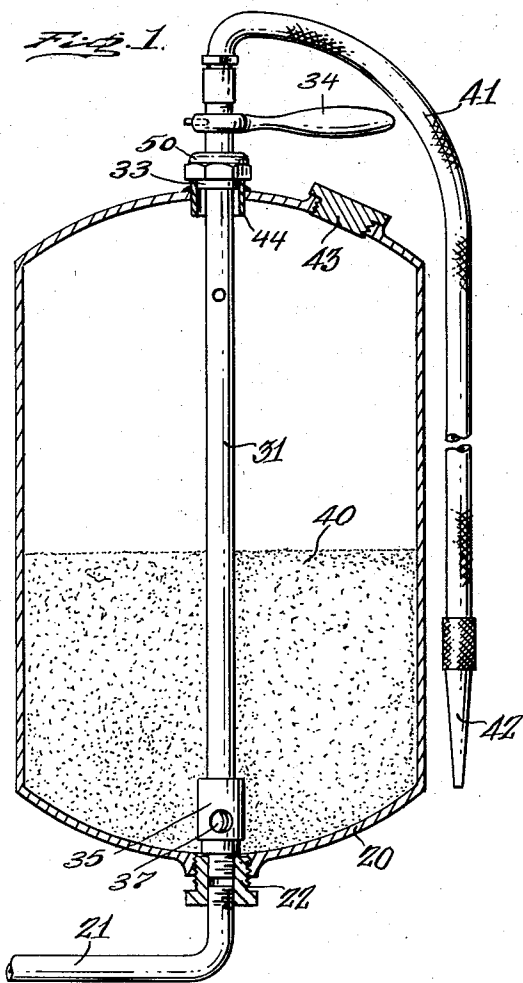
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SAND BLAST

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UNITED STATES PATENT OFFICE

2,553,625

SAND BLAST

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2 Claims. (Cl. 51-12)

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The present invention relates to sand blasting machines particularly of the portable type.

A purpose of the invention is to increase the life of valve assemblies on said blasting machines.

A further purpose is to facilitate alignment of the discharge tube with its cooperating valve element.

A further purpose is to avoid the possibility of operating a sand blasting machine with the valve in position where it cannot close.

Further purposes appear in the specification and in the claims.

In the drawings I have chosen to illustrate one only of the numerous embodiments in which my invention may appear, choosing the form shown from the standpoints of convenience in illustration, satisfactory operation and clear demonstration of the principles involved.

Figure 1 is a partially diagrammatic central vertical section of a sand blasting machine embodying my invention.

Figure 2 is a top plan view of Figure 1.

Figure 3 is a fragmentary axial section of the nozzle and discharge pipe, broken away and to enlarged scale.

Figure 4 is a section of Figure 3 on the line 4-4.

Figure 5 is a section of Figure 3 on the line 5-5 showing the valve in open position.

Figure 6 is a view similar to Figure 5 showing the valve in process of closing.

Describing in illustration but not in limitation and referring to the drawings:

In prior art sand blasting machines, air or other fluid is injected at the bottom of a tank containing the sand or other grit, and the grit is drawn by the air jet into the blast and discharging through a pipe.

Cooperating slotted elements have been used for valving the flow of grit into the stream. This has led to difficulty due to the very rapid wear of the slots and the tendency of the slotted elements to become improperly fitted or mismatched, in which case they are incapable of manipulation to close off the stream. This not only results in the waste of a tank of grit, but may be dangerous as the operator loses control of the stream, and is unable to shut it off.

The present invention is designed to increase the service life of the valve elements of a sand blasting machine, and to improve the reliability and reduce the danger of operation.

In accordance with the invention, I provide a tank 20 supplied with air under suitable pressure at the bottom by a pipe 21 entering the

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tank in any suitable manner as through a threaded nipple 22. The nipple at its opposite end interiorly threads with the outside thread 23 on an upwardly directed vertical nozzle 24 suitably of steel. The nozzle has a desirably straight interior bore 25.

A skirt 26 suitably of steel surrounds the nozzle in spaced relation and is desirably mounted thereon by inter-threading at 27 on a thread smaller than the thread 23. The skirt terminates at 28 at the top in an unbroken annular edge substantially at the same height as the top of the nozzle.

Diametrically opposite ports 30 extend through the skirt and act as inlet ports for the grit and valve ports for a sleeve valve.

Coaxial with the nozzle and extending upwardly from a position immediately in line with the top of the nozzle is an outlet tube or pipe 31 which is suitably carried through the top of the tank at 32 and extends above the outside of the tank at 33. The outlet pipe 31 is capable of free turning with respect to the tank by operating a handle 34 above the tank.

A downwardly extending sleeve 35 on the lower end of the outlet pipe has a lower edge 36 which is annular and unbroken and has suitably diametrically opposite valve ports 37 which are conveniently of the same size as the ports in the skirt so that when in open relation free passage will be allowed through the skirt ports.

At a suitable position near the top of the inside of the tank, one or preferably diametrically opposite ports 38 from the discharge pipe communicate pressure to the top of the tank above the sand or other grit 40 as well known.

The blast from the discharge pipe is carried by a hose or the like 41 to an applicator nozzle 42.

Introduction of grit into the tank is permitted through a removable plug 43 suitably at the top of the tank.

The seal at the top of the tank which permits the discharge pipe to turn is best seen in Figures 1 and 3. A nipple 44 is secured in the tank as by welding at 45. A collar 46 is secured on the discharge pipe as by welding at 47 is guided by the nipple and turnable in the nipple. At the top of the collar, a seal is made by a gasket 48 engaging the top of the collar and compressed by a packing nut 50 threaded on the nipple and surrounding the discharge pipe.

In operation the device of the invention is readily portable and can be set up at any location where a sand blast is required, as for example for cleaning metal or wood, refinishing automo-

biles, engraving monuments, removing concrete from concrete equipment and the like. Discharge pipe 31 is inserted in proper position with the sleeve 35 fully down over the skirt and the handle turned so that the valve is closed. The discharge pipe can be inserted through the top after removing the packing nut. The tank is filled partially full of sand or other grit and the plug 43 is closed.

An air compressor or other source of fluid pressure is connected to the air inlet pipe 21. The device is now ready for use, and it is merely necessary to turn the handle 34 so as to open grit inlet ports in order to permit the blast to operate. As soon as the service conditions require turning off the blast, this can be accomplished by turning the handle 34 until the ports in the skirt are out of alignment with the ports in the sleeve.

It will be understood that the components of the valve wear out quickly, and will require replacement at frequent intervals. This can be accomplished readily by removing the bushing 22 and the discharge pipe as required.

In view of my invention and disclosure variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art to obtain all or part of the benefits of my invention without copying the structure shown, and I, therefore, claim all such insofar as they fall within the reasonable spirit and scope of my claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a sand blast, a tank, an inlet nozzle upwardly directed at a lower portion on the interior of the tank, a skirt surrounding the inlet nozzle extending upwardly unbroken at the upper edge and having a lateral inlet opening, a discharge tube extending upwardly above and in line with the nozzle and extending through the top of the tank, a handle on the discharge tube and a sleeve on the lower end of the discharge tube extending downwardly from the same over the outside of the skirt, unbroken on its lower end and having a valve opening which in one position cooperates with the valve opening on the skirt.

2. In a sand blast machine, a tank, a nozzle upwardly directed and extending into the interior of the tank at a lower portion thereof, a skirt extending upwardly around the nozzle to a position approximately opposite the top of the nozzle, having an unbroken annular upper edge and having lateral ports, a discharge tube extending upwardly to a position outside the tank in line with the nozzle and at its lower end adjoining the top of the nozzle, a sleeve extending downwardly from the discharge tube around the outside of the skirt, unbroken at its lower edge and having ports which in one position cooperate with the ports on the skirt and a handle on the discharge tube above the tank.

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No references cited.