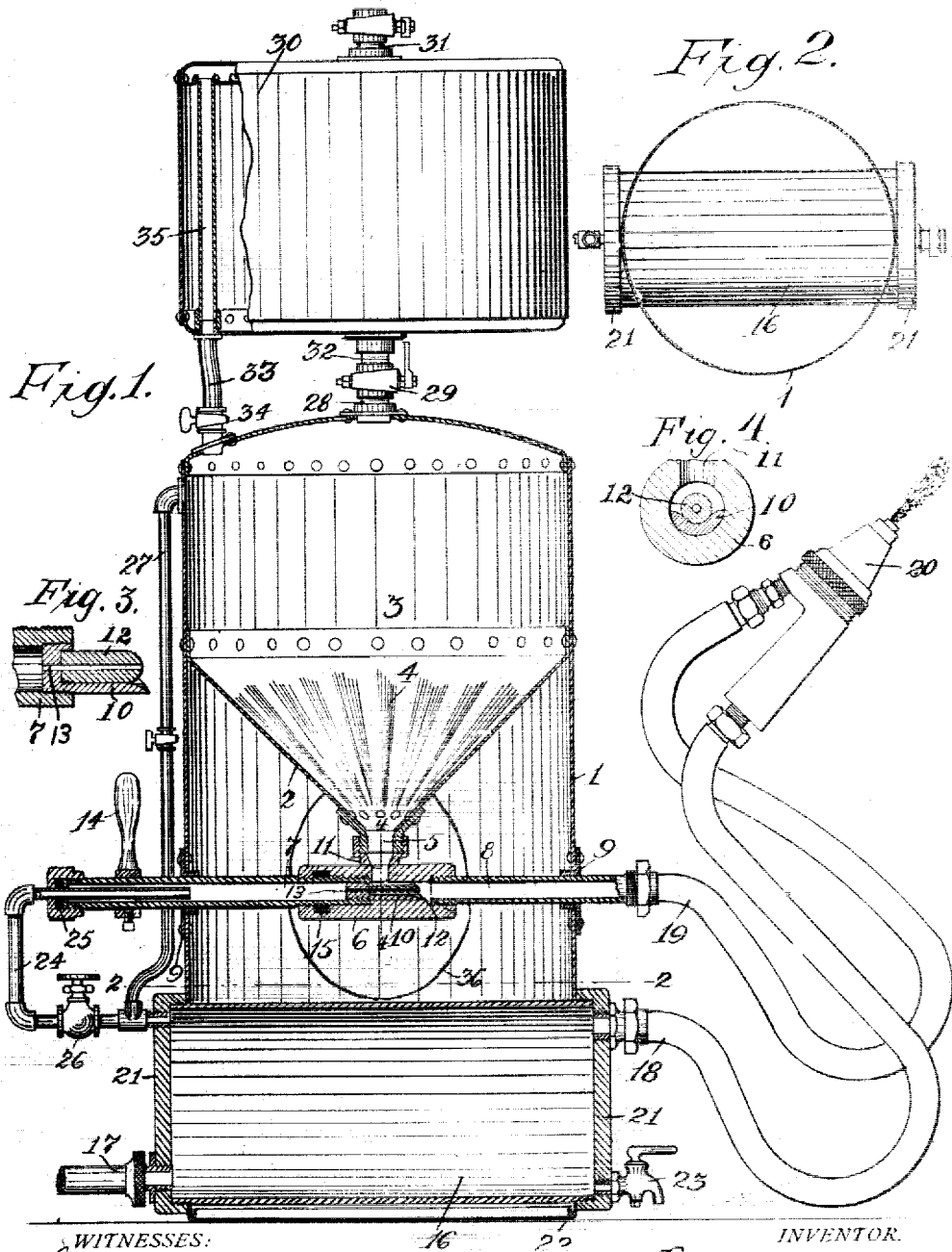


No. 864,471.

PATENTED AUG. 27, 1907.

W. H. KELLY.
SAND BLAST APPARATUS.
APPLICATION FILED FEB. 19, 1906.



WITNESSES:
Ernest Hines-James
W.S. Boyd,

INVENTOR.
William H. Kelly
BY *Spear & Seely*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM H. KELLY, OF SAN FRANCISCO, CALIFORNIA. ASSIGNOR TO INTERNATIONAL SAND
BLAST COMPANY, OF SAN FRANCISCO, CALIFORNIA, A CORPORATION OF CALIFORNIA.

SAND-BLAST APPARATUS.

No. 864,471.

Specification of Letters Patent.

Patented Aug. 27, 1907.

Application filed February 19, 1906. Serial No. 301,846.

To all whom it may concern:

Be it known that I, WILLIAM H. KELLY, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have
5 invented certain new and useful Improvements in Sand-Blast Apparatus, of which the following is a specification.

My invention relates to sand blast apparatus and more particularly to the tank or receptacle for containing the abrading material and which also forms a reservoir for the compressed air. In constructing such a device it is preferably made in two compartments by means of a partition with the upper compartment adapted to hold the abrading material, as sand, and the
10 lower one is provided with means for holding compressed air. The partition is preferably inclined or funnel shaped and may be corrugated toward the outlet and the discharge mechanism is connected with the lower portion thereof. The discharge pipe extends
15 through the wall of the tank at one point and the means for controlling the admission of sand and air thereto extends through the wall at another point. A means is provided for replenishing the sand without having to stop the ejector, as by means of an extra tank or compartment which permits of one compartment being
20 filled while the other is being emptied.

An embodiment of my invention is shown in the accompanying drawings in which:

Figure 1 is a vertical sectional view of the main portion and a broken elevation of the supplemental portion. Fig. 2 is a horizontal sectional view through the tank on line 2—2 of Fig. 1. Fig. 3 is a sectional detail view of the nozzle and valve. Fig. 4 is a section on line 4—4 of Fig. 1.

Referring more particularly to the drawings, 1 indicates a tank or vessel in which is arranged a hopper shaped partition 2 which forms a sand receptacle 3 in the upper portion thereof. The partition is preferably corrugated as shown at 4 and terminates at its lower end in a screw threaded nipple 5.

6 indicates a T which is removably secured to the nipple and has an air supply pipe 7 removably connected with one end thereof and a discharge pipe 8 at the other. Each of these passes through the side of the
45 tank 1, at which points suitable bearings 9 are preferably located for securing greater rigidity. The pipe 7 is provided at its inner end with a rotary scoop-like valve 10 for closing the passage 11 from the hopper 2. A slender pipe or nipple 12 registers with an air passage
50 13 through the valve and projects forward from the same in position to discharge a current of air into the end of pipe 8, preferably substantially axially thereof.

The outer end of the pipe 7 is provided with a handle 14 for rotating it and the valve, and the inner end passes
55 through a packing 15 which is formed by making a

groove in the interior of the T and filling it with suitable material, as packing, to engage with the screw threads of the pipe and prevent the passage of air and fine sand therethrough.

A reservoir 16 is provided for compressed air which enters at 17 from any suitable source, not shown, and is discharged through a flexible pipe or hose 18 which, with a similar pipe or hose 19 from the pipe 8, is connected with a nozzle 20 for discharging a jet of air and sand against the object being acted upon. The reservoir is preferably formed from a cylinder of suitable diameter and long enough to project through the sides of the tank and be supported thereby. Heads 21 are secured upon the ends of the cylinder outside of the tank, as by screw threads, for closing the same, and also for holding the cylinder against longitudinal movement. The bottom of the tank extends below the cylinder a short distance to prevent damage thereto when placed upon the ground and the edge of the bottom is preferably flanged or turned up as shown at 22 to add sufficient rigidity thereto to prevent the edge from being bent or damaged by usage. A cock or faucet 23 is secured in one end of the cylinder for permitting any water to escape that may be deposited therein from the compressed air.

The air from the reservoir for forcing the sand into and through the pipe 8 and through the hose 19 is admitted to the pipe 7 through a pipe 24 which is connected with the reservoir at one end and projects through a suitable packing or stuffing box 25 at the other. A valve 26 is located at any suitable point within the pipe 24 for controlling the passage of air therethrough into the pipe 7. Air from the cylinder is also preferably admitted to the top of the sand chamber through a valved pipe 27 for equalizing the pressure upon the sand and assisting in forcing it out of the hopper into the pipe 8.

The sand is introduced into the tank through a pipe 28 in the top which is provided with means for closing it, as an ordinary plug valve 29. When it is desired to fill the sand chamber without stopping the sanding operation a supplemental tank is provided which, in the construction shown in the drawings, consists of a receptacle 30, which has a valved inlet 31 and is connected with the tank 1, by suitable means, as a pipe 32, which is connected with the valve 29. A flexible air pipe 33 extends from a valved nipple 34 in the top of the tank 1 to the bottom of tank 30 where it joins a pipe 35 that extends to the top of the tank and delivers air thereto to equalize the pressure in the two tanks and permit the sand to fall into the lower tank.

In using the apparatus as above described, sand and air are introduced into the respective chambers or compartments in the usual manner and the valves 12 110

and 26 are turned to permit the air to force the sand through the pipe 19 into the nozzle where it is taken up by the current of air from pipe 18 and discharged against the desired object.

- 5 When the supplemental tank is used the valves in the connections between it and the main tank are closed and it is then filled with sand, after which it is closed and the valves in the connections are opened which will permit sand to enter the sand
10 chamber of the main tank. The flexible connection 33 is made long enough to permit of a partial rotation of the upper tank to tighten up the screw threads when the supplemental tank is being secured in position.

- 15 A hand hole 36 is preferably formed in one side of the tank opposite the lower end of the hopper through which access may be had to the T and its connections for assisting in assembling them or for any other purpose.

- 20 What I claim is:—

1. In a sand blast apparatus, a sand receptacle provided with an outlet, a discharge pipe communicating with said outlet, a movable air inlet pipe for delivering air to the discharge pipe and a valve carried by the inner end of the
25 air inlet pipe and controlling the discharge of sand from the said receptacle.
2. In a sand blast apparatus, a sand receptacle provided with an outlet, a discharge pipe communicating with said outlet, a movable air inlet pipe for delivering air to the discharge pipe and a perforated valve carried in the inner
30 end of the air inlet pipe and controlling the discharge of sand from the sand receptacle.
3. In a sand blast apparatus, a sand receptacle provided with an outlet, a discharge pipe communicating with said
35 outlet, a rotary air supply pipe a longitudinally perforated valve at the inner end of the air supply pipe for controlling said outlet, a nipple in the valve communicating with the longitudinal perforation thereof for admitting air to the

discharge pipe, and means for admitting air to the supply pipe.

4. In a sand blast apparatus, a sand receptacle provided with an outlet, a discharge pipe communicating therewith, a rotatable air inlet pipe provided with a longitudinally perforated scoop-like valve at its inner end for controlling said outlet, a handle on the outer end of the rotatable pipe for rotating it, and means for admitting air to said rotatable pipe.

5. In a sand blast apparatus, a tank provided with a sand receptacle, a T at the outlet thereof, a supply pipe and a discharge pipe secured to the T and extending through the sides of the tank, a longitudinally perforated valve at the inner end of the supply pipe for controlling said outlet, and a valved pipe extending into the outer end of the supply pipe.

6. In a sand blast apparatus, a tank, a sand receptacle at the upper end and a compressed air reservoir in the lower end, a discharge pipe communicating with the outlet of the sand receptacle, a rotary air supply pipe, for delivering air to the discharge pipe a valve at the inner end of the supply pipe for controlling said outlet, and a pipe from the reservoir to the outer end of the supply pipe.

7. In a sand blast apparatus, a main tank provided with means for ejecting abrading material by means of compressed air, a supplemental tank detachably secured to the main tank, and means for delivering the contents of the supplemental tank to the main tank without stopping the ejecting process.

8. In a sand blast apparatus, a tank provided with two communicating compartments, one of which is adapted to contain abrading material and the other compressed air, means for discharging said material, and a supplemental tank provided with means for communicating with one of said compartments, one of said means being rigid and the other flexible and communicating with the upper portion of the supplemental tank.

In testimony whereof I affix my signature, in presence of two witnesses, this 13th day of February, 1906.

WILLIAM H. KELLY.

Witnesses:

M. R. SEELY,
F. M. BARTEL.

40

45

50

55

60

65

70

75