No. 866,804. PATENTED SEPT. 24, 1907.

S. OLSON.

PNEUMATIC CONVEYER.

APPLICATION FILED JUNE 27, 1907.

Fig. 1.

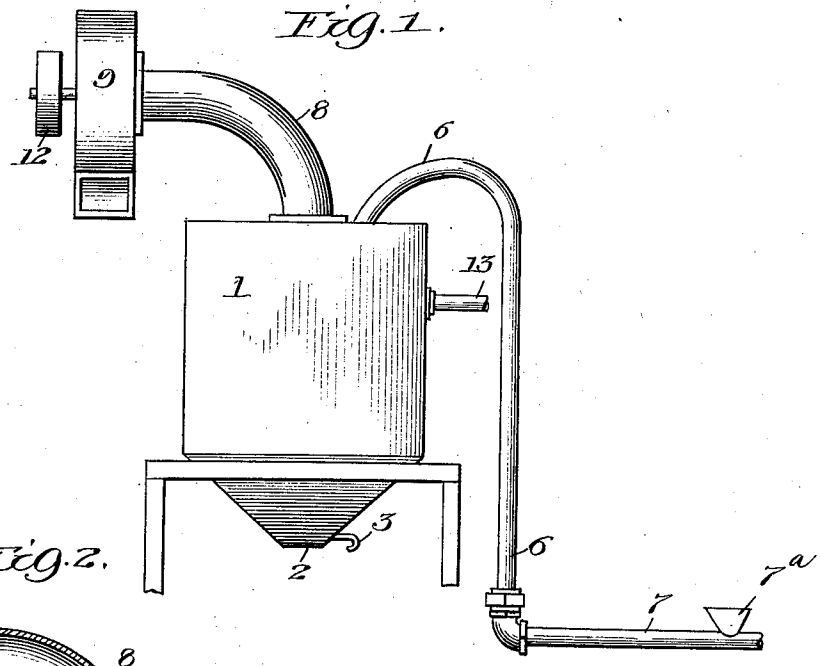


Fig. 2.

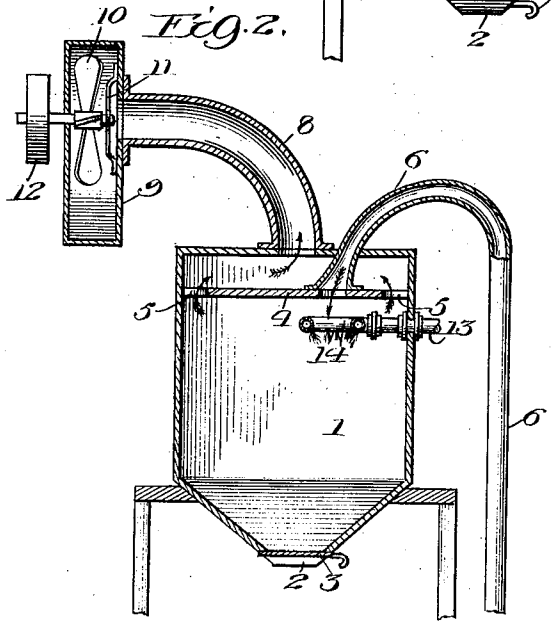
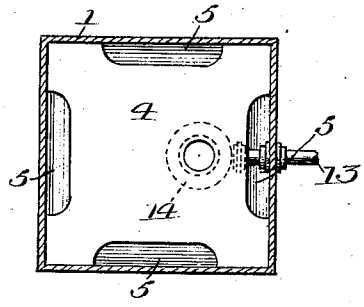


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

SAMUEL OLSON, OF CHICAGO, ILLINOIS.

PNEUMATIC CONVEYER.

No. 866,804. Specification of Letters Patent. Patented Sept. 24, 1907.

Application filed June 27, 1907. Serial No. 381,126.

To all whom it may concern:

Be it known that I, SAMUEL OLSON, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pneumatic Conveyers, of which the following is a full, clear, and exact description.

This invention relates to improvements in pneumatic elevators such as may be used, for instance, in the removal of ashes, refuse, etc., and operates somewhat on the principle of that shown and described in Letters Patent of the United States, No. 795,412, granted to me July 25, 1905, for pneumatic grain elevator.

The object of the invention is to provide an elevator of this character whereby the ashes or other material may be removed from the bin or other place where they have been dumped and stored and elevated into a suitable tank or receptacle from which they can be easily deposited into a wagon or cart for removal, the ashes being thoroughly sprayed and the dust and odor being freed therefrom while being drawn into said receptacle.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereafter described and claimed.

In the drawings:—Figure 1 is a side elevation of the invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a horizontal sectional view through the receptacle or tank taken on the plane of the upper surface of the partition and having the feed pipe removed from the discharge opening in said partition.

In the embodiment of the invention I provide a tank or receptacle 1, which may be of any suitable size or capacity, the lower end of which is preferably inclined inwardly toward the center to a centrally disposed discharge opening 2, in which is arranged a sliding valve or gate 3. Near the upper end of the tank is arranged a horizontal transversely disposed partition or baffle 4, in which along two or more of its edges are formed draft-openings 5. Passing through the upper end of the tank 1 and through the partition 4 is the end of a suction-pipe 6, to the lower end of which is connected a suitable length of pipe 7, that projects laterally therefrom and is adapted to extend to the pile of ashes and through which and the pipe 6 said ashes are adapted to be drawn. If desired this pipe 7 may have an opening cut in its upper segment near the outer end thereof and a hopper or funnel 7^a of any suitable construction may be secured thereto in which the ashes are adapted to be shoveled. Above the tank 1 and communicating with the same at a point above the partition 4 is an air-suction pipe 8, said pipe being adapted to communicate with the tank through the top, as shown, or through the sides of the same above said partition. A fan-casing 9 is mounted on the outer free end of suction-pipe 8, the fan 10 being mounted on a suitable shaft having its inner bearings in a spider-frame 11 spanning the end of said suction-pipe. The opposite end of this shaft preferably extends outside of said casing where it is provided with a drive-pulley 12 that is adapted to be driven by any suitable driving mechanism. Entering the side of the receptacle 1 is a water-supply pipe 13 the inner end of which terminates preferably at a point below the exit opening of the suction-pipe 6 where it is provided with a circular sprayer 14 of any suitable type. When the fan 10 is operated, a strong draft or suction will be created through the pipe 8, thus exhausting the air from the tank 1 and the suction pipes 6 and 7, which will draw the ashes and refuse up through said suction-pipes and cause the same to be deposited in the tank. As this material falls from the end of pipe 6 the dust and odor therefrom will be quickly separated therefrom and drawn off through the openings 5 in the baffle and from thence may be driven into a suitable dust-collector (not shown).

A pneumatic elevator constructed as herein shown and described will be simple, strong and durable in construction, efficient in use, and well adapted to the purpose for which it is designed.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim as new is:—

1. In a pneumatic elevator, the combination of a suitable tank or receptacle, a horizontally disposed partition arranged therein near its upper end and having an inlet and outlet openings therein, a suction-pipe passing through the top of said tank and connected to said partition in alinement with said inlet opening, a sprayer discharging into said receptacle below the partition, an air-exhaust pipe connected to the top of the tank and communicating with said tank above said partition, an exhaust-fan mounted in a chamber to the opposite end of said exhaust-pipe, an extension suction pipe secured to the lower end of said air-suction pipe, and a discharge-valve arranged in the lower end of said receptacle.

2. In a pneumatic elevator, the combination of a suitable tank or receptacle, a horizontally disposed partition arranged therein near its upper end and having an inlet and outlet openings therein, a suction-pipe passing through the top of said tank and connected to said partition in alinement with said inlet opening, a sprayer discharging into said receptacle below the partition and in alinement with said inlet opening, an air-exhaust pipe connected to the top of the tank and communicating with said tank above said partition, an exhaust-fan mounted in a chamber to the opposite end of said exhaust-pipe, an extension suction-pipe secured to the lower end of said air-suction pipe, and a discharge-valve arranged in the lower end of said receptacle.

3. In a pneumatic elevator, the combination of a suitable tank or receptacle, having a hopper-shaped bottom

a horizontally disposed partition arranged therein near its upper end and having an inlet and outlet opening therein, a suction-pipe passing through the top of said tank and connected to said partition in alinement with said inlet opening, a sprayer discharging into said receptacle below the partition, an air-exhaust pipe connected to the top of the tank and communicating with said tank above said partition, an exhaust-fan mounted in a chamber to the opposite end of said exhaust-pipe, an extension suction-pipe secured to the lower end of said air-suction pipe, and a discharge valve arranged in the apex of the hopper-shaped bottom of said receptacle.

4. In a pneumatic elevator, the combination of a suitable tank or receptacle having a hopper shaped bottom, a horizontally disposed partition arranged therein near its upper end and having an inlet and outlet openings therein, a suction-pipe passing through the top of said tank and connected to said partition in alinement with said inlet opening, a sprayer discharging into said receptacle below the partition and in alinement with said inlet opening, an air exhaust pipe connected to the top of the tank and communicating with said tank above said partition, an exhaust fan mounted in a chamber to the opposite end of said exhaust-pipe, an extension suction-pipe secured to the lower end of said air-suction pipe, and a discharge-valve arranged in the apex of the hopper-shaped bottom of said receptacle.

In testimony whereof I have hereunto set my hand and seal this 18th day of June, A. D., 1907.

SAMUEL OLSON. [L. S.]

Witnesses:
FRANK D. THOMASON,
E. K. LUNDY.