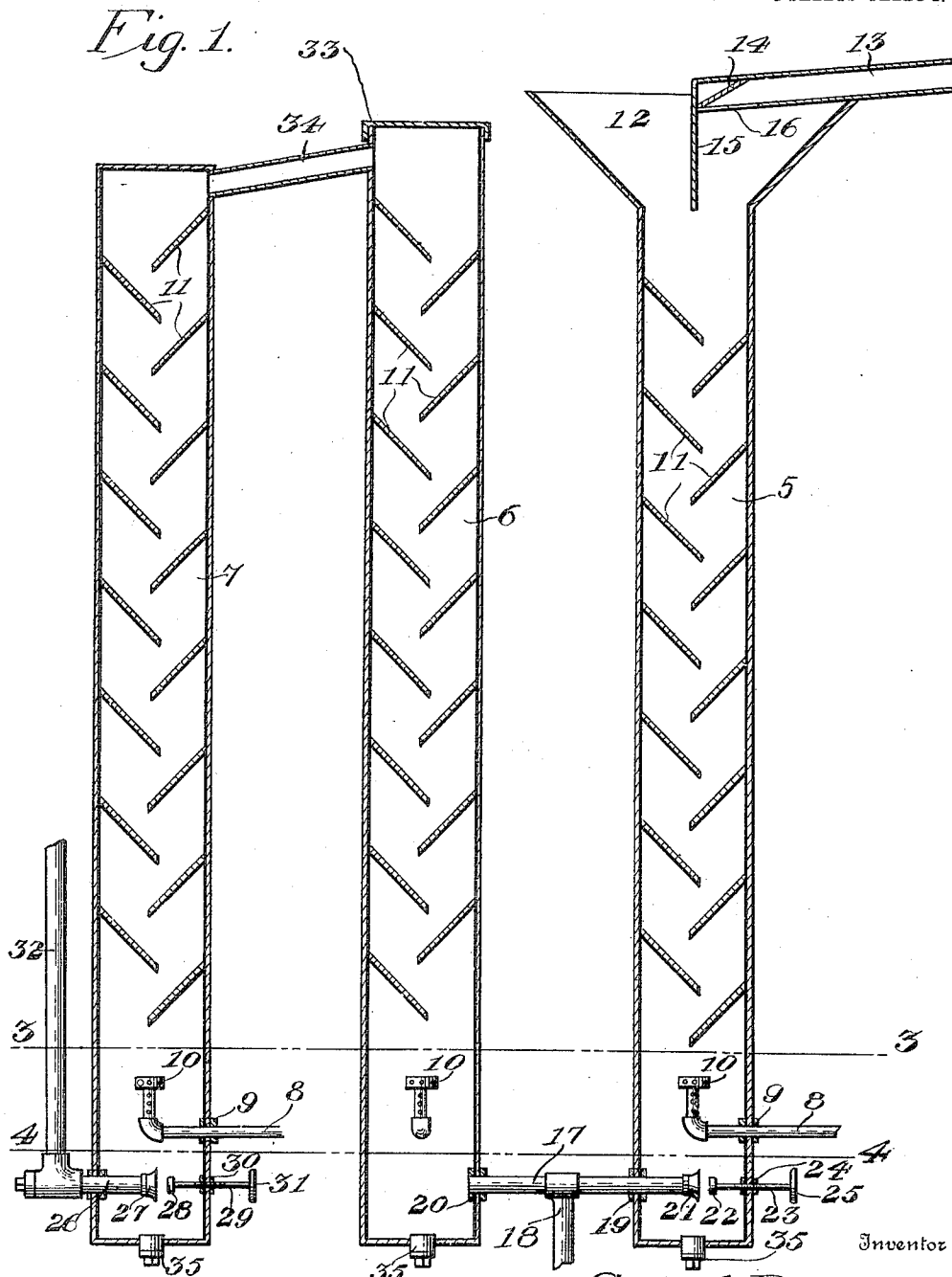


C. A. DAHLSTROM.
SAND WASHER.
APPLICATION FILED SEPT. 10, 1908.

971,528.

Patented Oct. 4, 1910.

2 SHEETS-SHEET 1.



Witnesses
Albert L. Key
Gertrude C. Thornett.

Carl A. Dahlstrom

By *Charles Chandler*

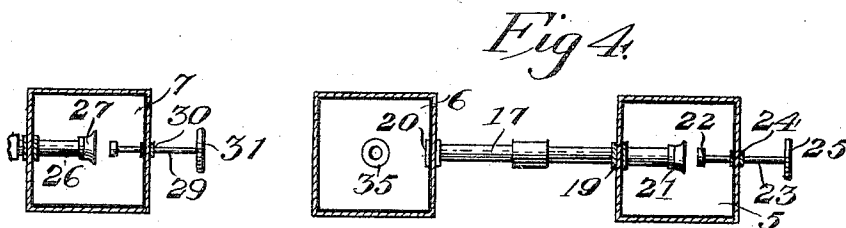
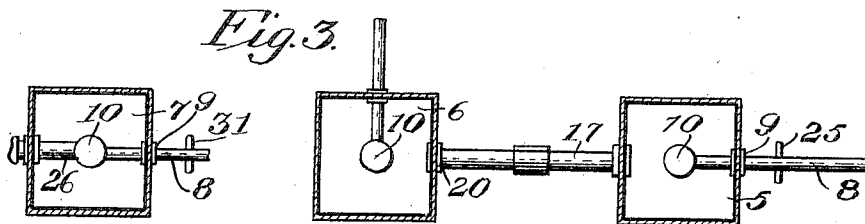
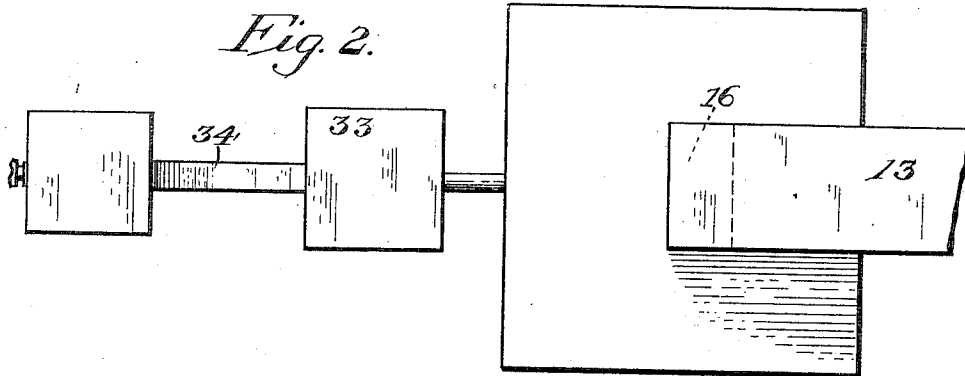
Attorney

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2 SHEETS—SHEET 2.



Witnesses

Albert L. Key
Gertrude C. Shorbett

Inventor

Carl A. Dahlstrom.

By

Handwritten signature of the attorney

Attorney

UNITED STATES PATENT OFFICE.

CARL A. DAHLSTROM, OF MOUNTPLEASANT, TENNESSEE.

SAND-WASHER.

971,528.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed September 10, 1908. Serial No. 452,397.

To all whom it may concern:

Be it known that I, CARL A. DAHLSTROM, a citizen of the United States, residing at Mountpleasant, in the county of Maury, State of Tennessee, have invented certain new and useful Improvements in Sand-Washers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention has reference to sand washers, and it resides, generally, in the provision of an exceedingly simple, inexpensive, and effective apparatus of that type including a plurality of vertical settling tanks arranged in series, the outermost tanks being each provided with an improved valve operating in connection with an outlet pipe, for regulating at will the passage of the sand to the succeeding tank and to the final discharge pipe.

To this end, the invention resides in providing each of the outermost or end tanks of the series with a horizontal outlet pipe having a flared inner end adapted to receive the head of an endwise movable valve whose stem is arranged in alinement with the outlet pipe, and projects through an opening formed in the wall of the tank, to permit the manipulation of the valve.

The invention further resides in the provision in connection with each tank, of two series of oblique equi-distant plates arranged upon opposite sides thereof, each plate being directed toward the middle of the next in order below, as a result of which arrangement the current of sand and water follows a zig-zag course.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which corresponding parts are designated by the same reference numerals throughout the several views.

Of the said drawings, Figure 1 is a longitudinal section through the complete invention. Fig. 2 is a top plan view thereof. Figs. 3 and 4 are transverse sections taken respectively on the lines 3—3 and 4—4 of Fig. 1.

Referring more particularly to the drawings, there is shown a series of three vertical settling tanks 5, 6, and 7, each of which is rectangular in cross section and is provided toward its lower end or bottom with an L-shaped water-supply pipe 8, whose hori-

zontal arm enters thereinto through the bore of a plug 9 set into one of the tank walls, while its vertical arm which is disposed interiorly of the tank terminates in a rose or nozzle 10. Within the interior of each tank are arranged two series of oblique plates 11 secured to the opposite walls thereof and arranged at regular distances apart from each other, each plate projecting downwardly toward the center of the plate next in order below, the plates of each series being disposed in parallel planes.

The tank 5 is provided at its upper end with a flared hopper 12 into which a continuous stream of sand and water is introduced through an inclined feed trough 13, the front end of which is secured to a deflector 14 carried in turn by a board 15 disposed transversely of the hopper, the bottom wall of the trough being cut away adjacent the deflector to provide a discharge opening 16. The tank 5 is connected toward its lower end with the tank 6 by a horizontal pipe 17 provided intermediate its end with a depending blow-off pipe 18. The opposite ends of the feed pipe 17 extend through the axial openings formed in the plugs 19 and 20 set into the walls of the above-mentioned tanks, as shown in Fig. 1, the end of said pipe which is disposed within the interior of the tank 5 having its walls flared outward, as indicated by the numeral 21, to provide a seat for the head 22 of an endwise-movable valve whose threaded stem 23 extends through the bore of a plug 24 set into the wall of said tank directly opposite the plug 19. The free end of said stem is provided with a handle 25. In like manner, the tank 7 is provided with an outer pipe 26 similar to the pipe 17 and having its inner end flared, so as to form a seat 27 for the head 28 of a valve similar to the first-mentioned valve, the stem 29 of the second valve extending through the bore of a plug 30 and terminating in a handle 31. The outer end of the pipe 26 is connected by a T-joint with a vertical pipe 32 from which the washed sand is discharged to any suitable receptacle (not shown). The top of the tank 6 is closed by a cap 33 adjacent which is located a feed pipe 34 which communicates with the top of the tank 7. The bottom of each tank is provided with a removable plug 35 which is fitted in a threaded opening formed therein from which it may be readily removed, to permit the contents of the tank to be dis-

charged in the event of either of the pipes 17 or 26 becoming clogged by the sand.

In operation, a continuous current of sand and water is fed into the tank 5 from the trough 13, the sand being subjected to a thorough agitation and cleaning by its passage from plate to plate, pursuing a zig-zag course from one plate of one series to the opposite plate of the other series, until the bottom of the trough is reached, whereupon it passes through the pipe 17, to the tank 6 and thence to the top of said tank, from which latter it passes through the pipe 34 into the tank 7, being finally discharged therefrom in a completely cleaned state through the pipes 26 and 32. During the passage of the stream of sand through the tanks, the agitation and consequent cleaning of the sand is furthered by the provision of the water-supply pipes 8, each of which introduces an upwardly-flowing current of water through the corresponding tank. The stream of sand passing from one tank to another can be controlled at will by the valves, thus permitting the tanks to be filled more or less rapidly, as circumstances may demand.

What is claimed is:

1. A washing apparatus comprising a plurality of vertical tanks having their interiors successively connected at their bottoms and tops, one of the terminal tanks of the series being provided with a flared open upper end to receive material and the other

terminal tank of the series being provided with a discharge outlet, a series of downwardly inclined and inwardly projecting plates extending from opposite sides of each tank, means for introducing an upward flow of water at the bottom of each tank and means for controlling the communication between adjacent tanks through the connections disposed at the bottom thereof.

2. A washing apparatus comprising a plurality of vertical tanks having their interiors successively connected at their bottoms and tops, the connection disposed at the bottoms of adjacent tanks comprising a pipe having one end projecting into one of the tanks and flared outwardly, a valve mounted in said tank and adapted for longitudinal movement into and out of the flared end of said pipe to control the communication therethrough, one of the terminal tanks being provided with a flared open upper end to receive material and the other terminal tank being provided with a discharge outlet, a series of downwardly inclined and inwardly projecting plates extending from opposite sides of each tank and means for introducing an upwardly flowing current of water at the bottom of each tank.

In testimony whereof, I affix my signature, in presence of two witnesses.

CARL A. DAHLSTROM.

Witnesses:

W. J. WILLIAMSON,
R. H. WRIGHT.