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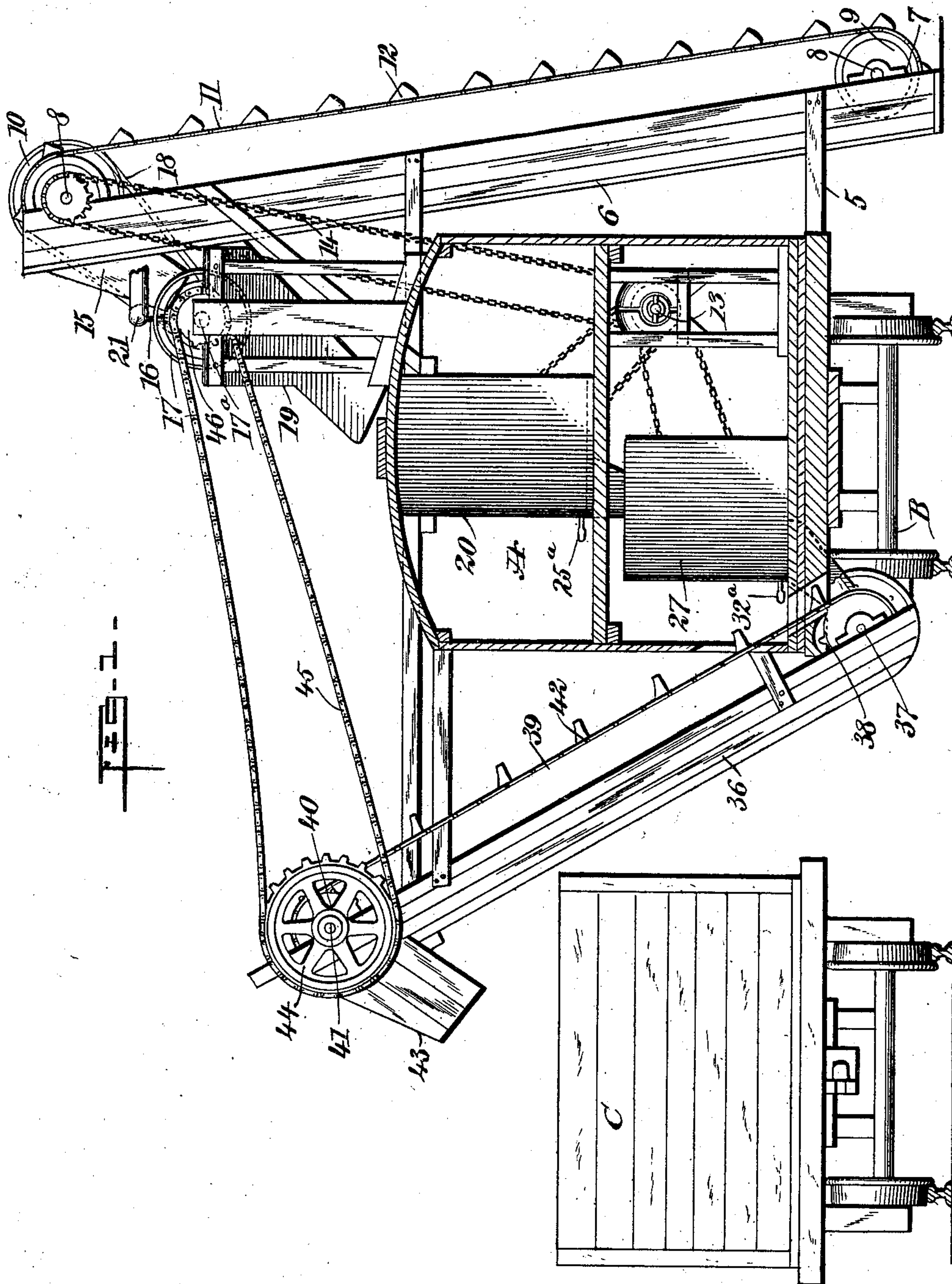
PATENTED JUNE 14, 1904.

W. S. VANZANT.
SAND CLEANING APPARATUS.

APPLICATION FILED AUG. 26, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES:

Paul Hunter
R. B. Canagh

INVENTOR

William S. Vanzant

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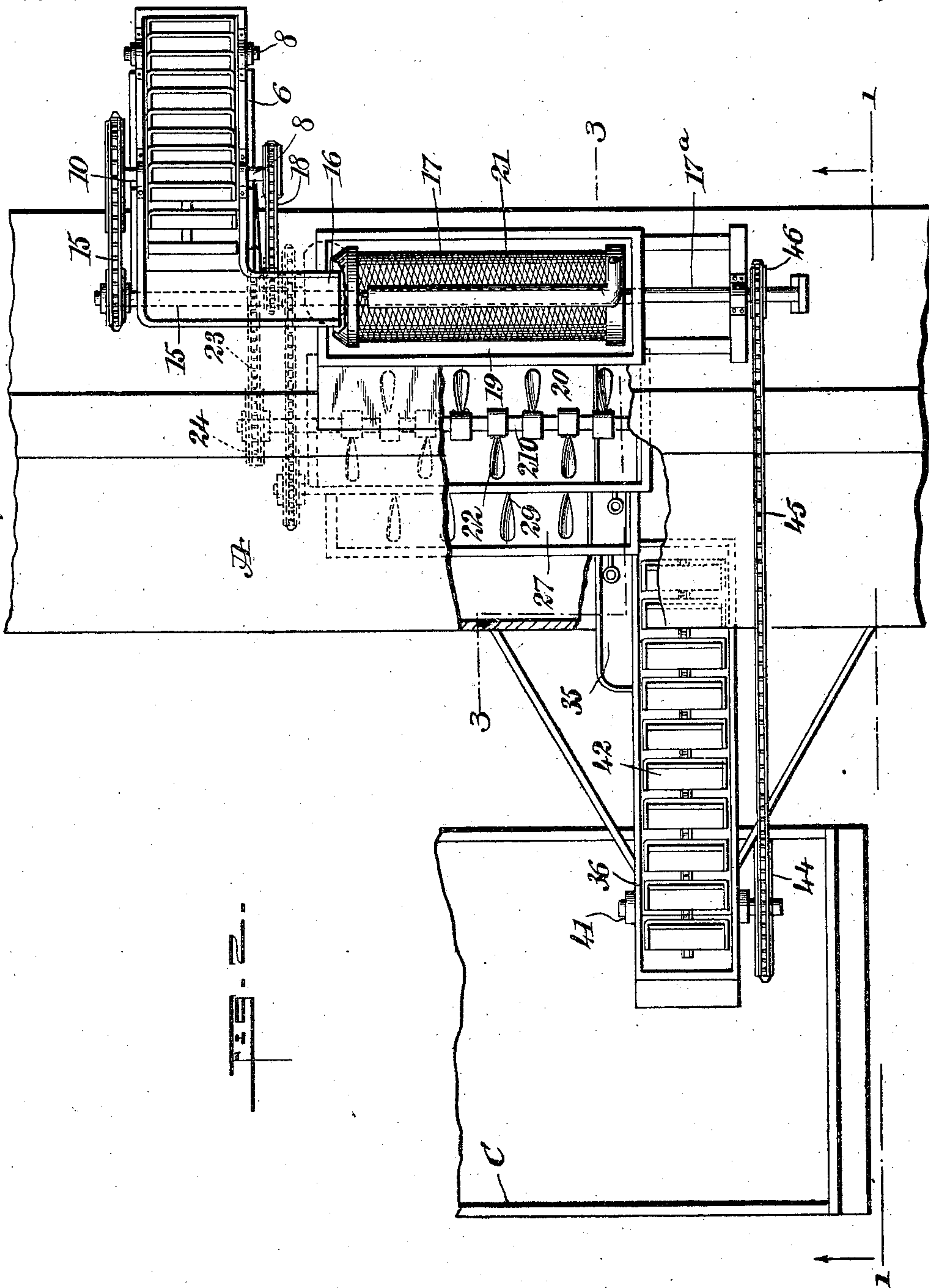
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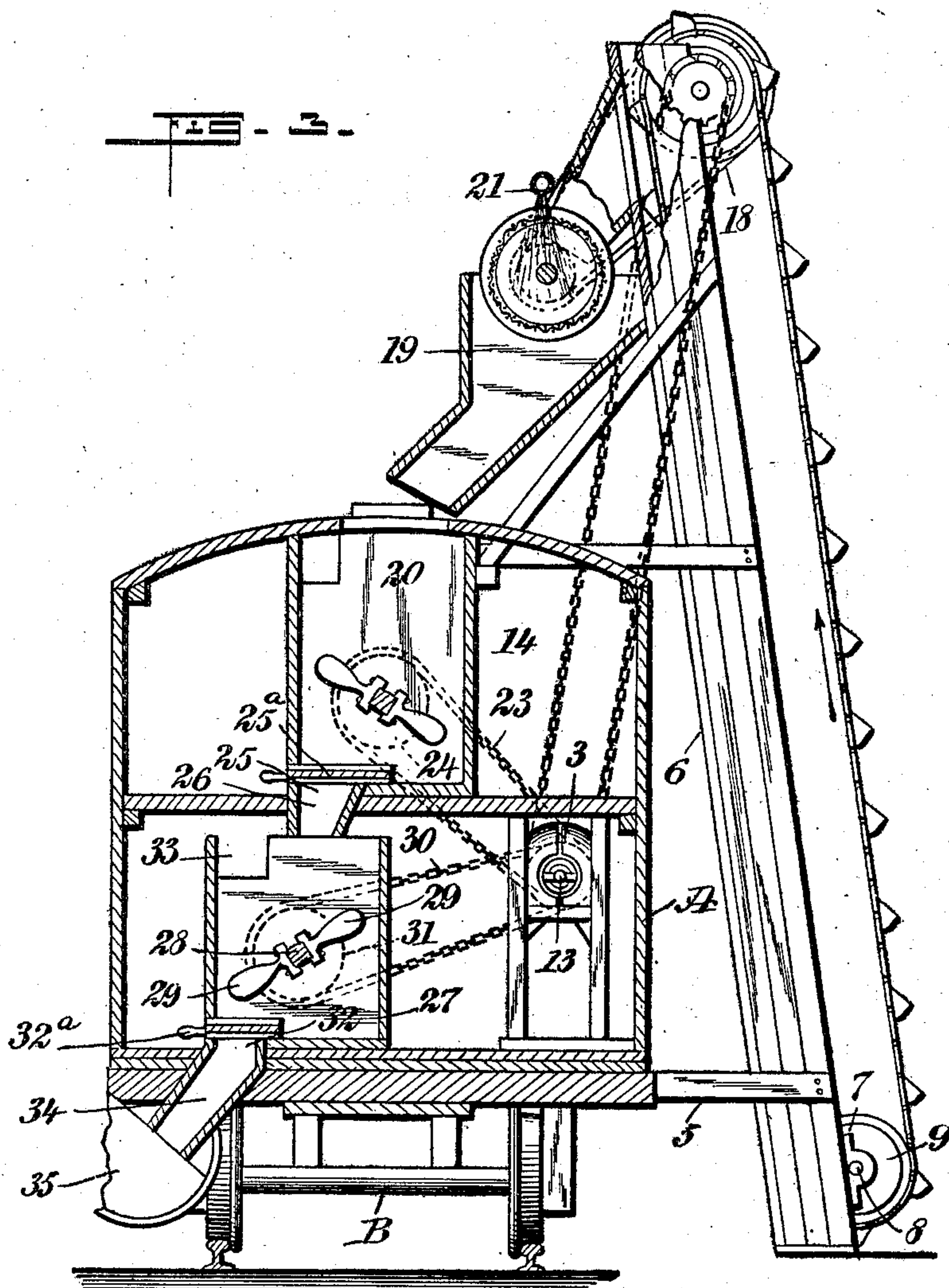
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UNITED STATES PATENT OFFICE.

WILLIAM S. VANZANT, OF ELDREDGE, NEW JERSEY.

SAND-CLEANING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 762,775, dated June 14, 1904.

Application filed August 26, 1903. Serial No. 170,809. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. VANZANT, a citizen of the United States, and a resident of Eldredge, in the county of Cape May and State of New Jersey, have invented new and useful Improvements in Sand-Cleaning Apparatus, of which the following is a full, clear, and exact description.

This invention relates to certain novel and useful improvements in an apparatus for cleaning and washing sand.

In carrying out the present invention I have in contemplation the provision of an apparatus which will produce filter-sand of the proper grade, such sand being thoroughly tested and washed in its passage through the apparatus, and I have particularly in view so constructing my sand-cleaning apparatus that sand may be taken from the sand-bank and passed to a car or bin without delay.

In all sand-cleaning apparatus with which I am acquainted it is customary to haul the sand to the cleaner and after it has been passed through the apparatus to cart it off to the cars or bins, this requiring a great deal of time and labor; but, as above stated, I overcome this objection by providing a simple, compact, and positively-operating sand-cleaning apparatus whereby after being cleansed the sand is delivered directly to a car or bin.

To the accomplishment of the above-recited ends and others of a similar nature my invention consists in the construction, combination, and arrangement of parts, as is described in this specification, delineated in the accompanying drawings, and set forth in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a transverse vertical sectional view of a sand-cleaning apparatus embodying my improvements, and Fig. 2 is a top plan view of the same, part of the framing being broken away. Fig. 3 is a transverse sectional view taken on the line 3 3 of Fig. 2.

Referring now to the accompanying drawings in detail, A designates a railway box-car

or similar structure mounted upon trucks or wheels B, designed to run upon tracks, as shown, the box-car forming what for the purpose of convenience may be termed the "frame" of the device. Extending out from the car are struts or beams 5 5, rigidly supporting a vertically-inclined trough 6, said trough being provided at its upper and lower ends with bearings 7, designed to support the transversely-extending shafts 8 8. The lowermost of these shafts 8 carries a sprocket-wheel 9, while the upper shaft 8 carries a similar sprocket-wheel 10, an endless chain 11 encircling and connecting said sprocket-wheels, said chain having spaced apart at suitable distances thereon the conveyer-buckets 12. When it is desired to supply sand to the apparatus, it is taken from the bank or other place and loaded into these buckets, and the buckets are caused to travel upward with the chain when power is applied to revolve the upper shaft 8, said power being taken from a motor 13, mounted at a suitable point in the body of the car A, an endless belt (shown at 14) connecting the drive-shaft of the motor with the top shaft 8. When the sand and the buckets have reached the top of the sprocket-wheel 10 and the buckets have started on their downward path of travel, they will be inverted and the contents thereof be dropped down or fed into a downwardly-inclined chute 15, the mouth 16 of which conducts the sand to one end of a revolving screen 17. This screen 17 is caused to turn or rotate through the medium of a short endless drive-chain, (shown at 18,) said chain being driven by the rotation of the shaft 8 of the upper sprocket-wheel 10, and as the screen turns or revolves the sand fed therein will be sifted—that is to say, large coarse particles and pebbles will be retained in the screen, the fine sand being permitted to fall through the meshes thereof into a hopper-chute 19, leading to the agitator-receptacle 20, formed in the top of the car. In order to assist in this cleaning or sifting of the sand and to thoroughly wash and drain the same, a water-pipe 21, provided with small perforations through which water may be sprinkled or passed to the sand in the screen, is placed directly over

the screen, as is clearly shown in the drawings, and as such screen is revolved the water is sprinkled upon the sand therein.

The agitator-receptacle 20, heretofore mentioned as receiving the sand from the hopper-chute 19, is built within the body of the car A, approximately centrally thereof, and is in the nature of a long box or trough having extending therethrough a revolving shaft 210, carrying a number of beater-blades or flukes 22, arranged or twisted at an angle to the axis of revolution of the shaft to give a churning or twisting movement to the sand. The shaft 210 is driven by means of an endless chain 23, encircling a drive sprocket-wheel 24, carried by said shaft, said chain being coupled with and receiving power from the motor 13, heretofore described. The blades or flukes carried by the shaft 210 in addition to agitating the sand act as a conveyer to carry the sand to an opening 25 in the bottom of the trough or receptacle 20, said sand passing through a short chute 26 into a second agitating trough or receptacle 27, similar in construction to that above described. The opening 25 is provided with a slide-gate 25^a for controlling the passage of the sand therethrough, and the upper receptacle may also have an opening formed at the top at one end thereof to allow the dirty water and fine sand to pass off, and said outlet may also be controlled by a gate 32^a. Extending longitudinally of the lower receptacle 27 is a square shaft 28, a counterpart of the shaft 210 and carrying blades 29, similar to the blades 22. An endless chain 30, driven from the motor 13, is adapted to encircle a sprocket-wheel 31 to revolve the agitating-blades and convey the sand to an opening 32 in the bottom of the lowermost trough, said opening 32 being preferably controlled by a slide-gate 32^a, while the trough has also an opening 33 at the upper end thereof, through which the fine sand and water are designed to be carried to any suitable point. After the sand has been thoroughly agitated, washed, and cleaned in the lower agitating-box it passes through a feed-chute 34 to a hopper 35, secured to the body of the car, and at the lower end of the opposite side of the car to that at which the conveyer for feeding the sand to the apparatus is located is arranged a relatively long vertically-inclined trough 36, connected with said hopper. Upon a shaft 37, journaled transversely of the hopper, is mounted a sprocket-wheel 38, designed to be encircled by an endless chain 39, said chain also passing over a sprocket-wheel 40, carried by a shaft 41, mounted at the upper end of the conveyer-trough 36. The chain 39 is provided with a number of conveying buckets or pans 42, spaced apart suitable distances thereon, said pans being designed to take up the wet sand which is in the hopper and carry the same to the top of the conveyer-trough, the water being drained from

the sand as the latter is being carried up the trough, and when the top of said trough is reached the sand is deposited by the buckets upon a downwardly-inclined chute 43, leading into any suitable bin or receptacle, such as the car C, so that the thoroughly washed and cleansed sand may be carried to any suitable point without the trouble of reloading or transferring the same. In order to drive the upper shaft 41, carrying the sprocket-wheel 40, I have secured to said shaft a relatively large sprocket-wheel 44, driven by an endless chain 45, which chain is in turn connected with a drive sprocket-wheel 46, carried by the shaft 17^a of the screen 17, and as said shaft is driven by the chain 18 motion will be imparted to the chain 45 to drive the shaft 41, this in turn causing the endless chain 39 and its conveyer-pans to travel over the sprocket-wheels 38 and 40, thereby carrying the sand to the top of the conveyer-trough, from which it is deposited by the short downwardly-inclined chute 43 into the car or receptacle C.

It is to be noted in particular that it is unnecessary to handle or transfer the sand after the time it has been placed upon the feeding-conveyers until the time it is deposited in its cleansed condition within the car or receiving-bin.

While I have shown and herein described one particular embodiment of my invention, it is of course to be understood that I do not confine myself to all the precise details of construction shown herein, as there may be modifications and variations in some respects without departing from the spirit of the invention or sacrificing any of the advantages thereof.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A car divided horizontally into compartments, a longitudinally-disposed washing-tank in each compartment, each provided with a longitudinal shaft carrying agitator-blades, a framework upon the top of the car, carrying a rotating screen, a chute leading from the screen to the tank, a valved passage from the upper tank to the lower and from the lower tank to an elevator-hopper, and laterally-projecting conveyers delivering to the screen and from the elevator-hopper.

2. A vehicle having a body horizontally divided into compartments, a longitudinally-disposed washing-tank in each compartment, each of said tanks being provided with a longitudinal shaft, agitator-blades on said shaft, a framework upon the top of the vehicle, a rotary screen mounted on said framework, means for supplying water to the screen, a chute leading from the screen to the tank, a valved passage from the upper part of the tank to the lower, an elevator-hopper, a valved passage from the lower part of the tank to the hopper, a conveyer for delivering to the screen, and a conveyer for delivering from said hopper.

3. The combination of a body horizontally divided into compartments, a longitudinally-disposed washing-tank in each compartment, each of said tanks being provided with a longitudinal shaft carrying a plurality of separate angular agitating-blades, a framework upon the top of the body, a screen carried by said framework, a chute leading from the screen to the tank, a valved passage leading from the upper part of the tank to the lower, an elevator for delivering material to the

from the tank, a valved passage from the tank to the last-named elevator, and means for simultaneously actuating both the blades and the first-mentioned conveyer.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM S. VANZANT.

Witnesses:

J. HENRY EDMUNDS,
THOS. S. STEVENS.