T. VOLSKY.

SAND CONVEYER.

APPLICATION FILED OCT. 9, 1917.

1,259,176.

Patented Mar. 12, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

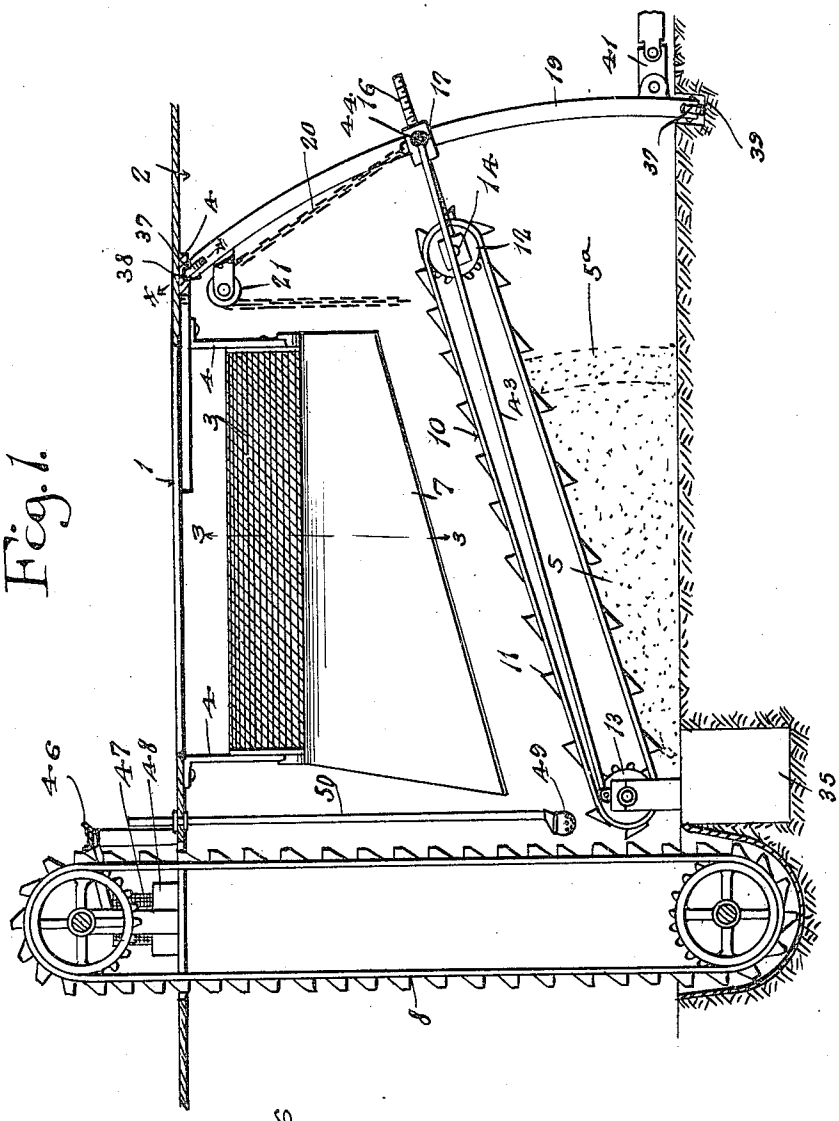
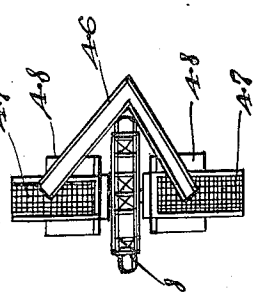


Fig. 6.



Witnesses

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2 SHEETS—SHEET 2.

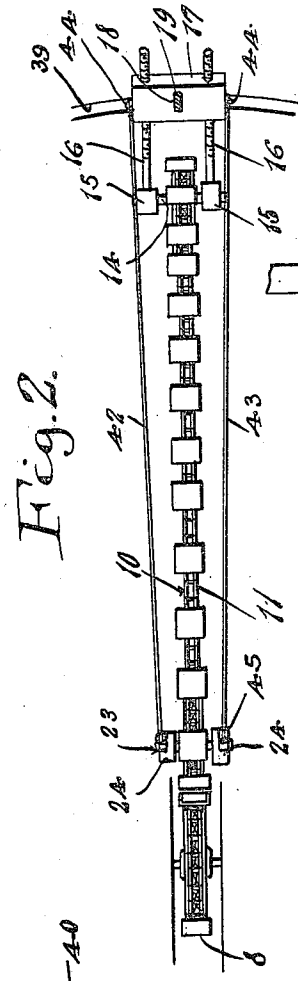


Fig. 2.

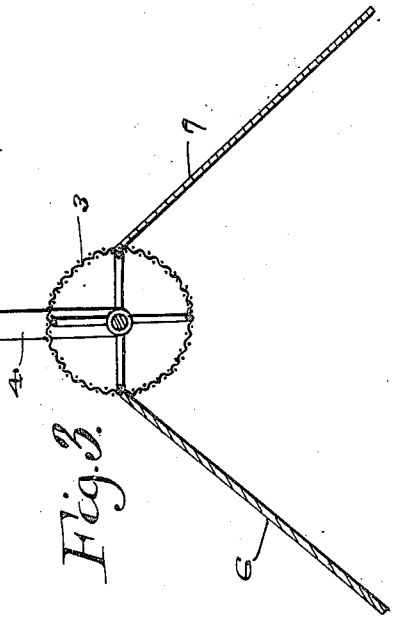


Fig. 3.

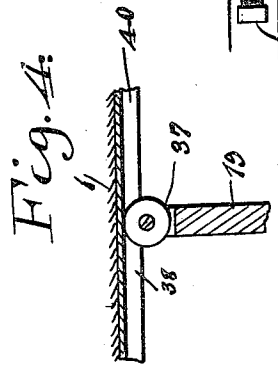


Fig. 4.

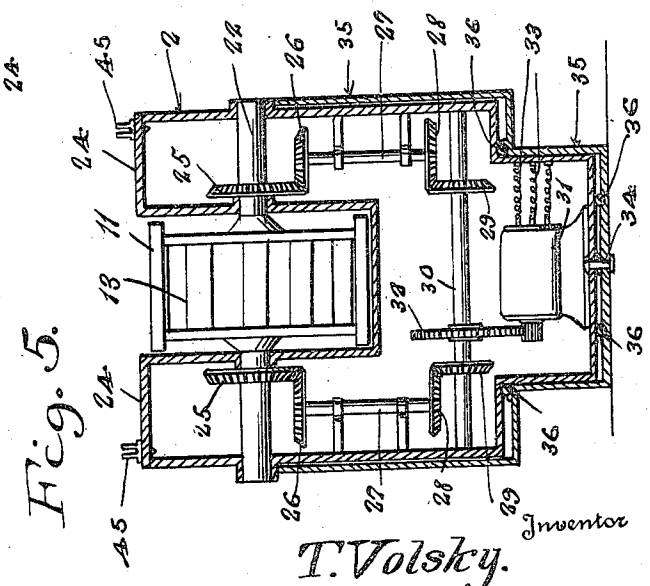


Fig. 5.

Witnesses

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# UNITED STATES PATENT OFFICE.

THEODORE VOLSKY, OF PITTSFIELD, MASSACHUSETTS.

## SAND-CONVEYER.

1,259,176. Specification of Letters Patent. Patented Mar. 12, 1918.

Substitute for application Serial No. 186,731, filed August 17, 1917. This application filed October 9, 1917. Serial No. 195,594.

*To all whom it may concern:*

Be it known that I, THEODORE VOLSKY, a subject of the King of Great Britain, residing at Pittsfield, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Sand-Conveyers; 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.

This invention relates to a conveyer which is particularly designed for handling molder's sand, and conveying it from the pile or heap in the sand cellar to the elevator which elevates the sand to the molding floor of a foundry.

In ordinary construction of foundries, the sand is dumped when the cast molds are broken up into the sand pit or sand cellar where it is moistened and has a small quantity of new sand mixed therewith for increasing the sharpness of the sand, and the sand is then shoveled by hand to the elevator structure for elevation to the molding floor where the molding make the mold. Owing to the inconveniences of working in a sand pit, among which inconveniences are the dumping of the sand into the pit while the man is working therein, the closeness of the pit, etc., it is difficult to get sufficient laborers to handle the sand and the primary object of this invention is to provide a mechanical structure which will mix new sand with the old sand and convey the mixed sand to the elevator, mechanically, eliminating the necessity of a man working in the sand pit or sand cellar.

The further object of this invention is to provide a mechanical shoveler, in which the conveyer structure is pivotally mounted for vertical pivotal movement, so that it will work upon sand piles of different sizes, and also one which is mounted to swing laterally for feeding an entire pile of sand to the sand elevator.

This invention is an improvement over similar device disclosed in the abandoned application filed August 17, 1917, Serial No. 186,731.

With the foregoing and other objects in view this invention consists in certain novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawing and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters designate like and corresponding parts throughout the several views, and in which:

Figure 1 is a side elevation of the improved sand handling device.

Fig. 2 is a top plan view of the sand handling device or conveyer.

Fig. 3 is a section on the line 3—3 of Fig. 1.

Fig. 4 is a section on the line 4—4 of Fig. 1.

Fig. 5 is a section through the bearing and delivering mechanism on the conveyer, and

Fig. 6 is a plan view of the upper delivery end of the elevator.

Referring more particularly to the drawings, 1 designates the floor of the molding room, beneath which the sand pit indicated by the numeral 2 is formed. When the molders brake up the molds, they dump the sand through the opening in the floor 1 into the pit 2. The sand passing through the opening in the floor 1 engages a cylindrical screen 3 which is suspended by suitable hangers 4, directly beneath the openings in the floor and the fine sand falls through this screen upon the pile 5 which is formed upon the floor of the sand pit 2. A pair of shedding boards 6 and 7 extend outwardly and downwardly from the sides of the cylindrical screen 3 and they guide any foreign material, such as lumps of metal, slag, or the like outwardly upon each side of the pile 5 of sand.

After the sand has been dumped into the sand pit 2, the desired quantity of new sand as indicated by $5^a$ is placed at the end of the pile farthest from the sand elevator 8 and the new sand is mixed with the old sand by the action of the sand conveyer structure generically indicated by the numeral 10.

The sand conveyer structure 10 comprises an endless conveyer 11 which travels about sprockets 12 and 13. The guiding sprocket 12 is mounted upon a guiding shaft 14 which shaft is rotatably carried by suitable bearing blocks 15. The bearing blocks 15 are formed as heads upon threaded bolts

16. The bolts 16 extend adjustably through a block 17 as clearly shown in Fig. 2 of the drawing. The block 17 is provided with a centrally disposed opening 18 through which an arcuate guide 19 slidably extends. The block 17 is slidably mounted upon the arcuate guide 19, so that the elevation of the conveyer 11 may be varied in accordance with the height of the sand piles 5. A suitable chain 20 is connected to the block 17 and passes over a pulley 21 and any suitable means may be employed in connection with the chain 20 for varying the elevation of the conveyer 11.

The lower sprocket 13 which is positioned in close proximity to the elevator 8 is mounted upon the shaft 22. The ends of the shaft 22 are journaled in the sides of a casing 23 which is substantially Y-shaped in vertical sections as clearly shown in Fig. 5 of the drawings, providing a pair of upstanding arms 24 one of which is positioned upon each side of the sprocket 13 and conveyer 11.

The shaft 22 has beveled gears 25 mounted thereon which mesh with beveled gears 26. The gears 26 are carried by the vertical shafts 27 and they have beveled gears 28 mounted upon their lower ends. The beveled gears 28 mesh with beveled gears 29 which are mounted upon a horizontally extending shaft 30. All of the beveled gears previously mentioned, the shaft 27 and the shaft 30 are all inclosed within the casing 23 and a motor 31 is inclosed within the depending leg portions of the casing. The motor 31 is connected by means of gears 32 to the shaft 30 for rotating the shaft 30 by the operation of the motor, and consequently rotating the shaft 22 by the operation of the motor for propelling the conveyer structure 11.

The current feeding wires 33 of the motor are resiliently coiled, as clearly shown in Fig. 5 of the drawings, so as to prevent tangling thereof when the casing 23 is rotated, during the movement of the conveyer structure 10 in a horizontal movement about the pin 34 as an axis. The pin 34 connects the lower end of the casing 23 to a casing 35 which is embedded in the ground, which forms the floor of the sand pit 2. Suitable ball bearings 36 are provided at bearing portions of the casing 35 and 23 for relieving friction and to allow the casing 23 to rotate freely within the casing 35 so as to permit a free and unimpeded movement of the conveyer structure 10 in a horizontal plane.

The arcuate guide 19 which guides the vertical movement of the conveyer structure 10 has rollers 37 rotatably carried by its upper and lower ends and these rollers travel in guideways 38 and 39. The guide way 38 is formed in a suitable plate 40 which is attached to the under surface of the floor 1 and the guide way 39 is formed in the floor of the sand pit 2. The guides 38 and 39 are arcuate, and have the center of the pin 34 as an axis.

Any suitable means may be connected to the arcuate guide 19 and to a flexible shaft structure as indicated in 41 for moving the guide 19 and consequently the conveyer structure 10 in a horizontal plane for carrying the sand from all portions of the pile 5.

A pair of rods 42 and 43 are connected to the ends of the block 17 as shown at 44 and to upstanding ears 45 which are formed upon the arms 24 of the casing 23. The rods 42 and 43 assist in supporting the conveyer structure during its lateral movement and also relieve the conveyer structure of the strain of turning the casing 23 during the horizontal pivotal movement of the conveyer structure.

The sand is carried by the lower run of the conveyer 11 to the elevator 8 which elevator carries the sand upwardly through the floor 1 and deposits it in a substantially V-shaped guiding trough 46. The trough 46 guides the sand to the sieve 47 through which the sand passes upon the molders' tables 48.

The sand is moistened prior to its delivery to the elevator 8 through the medium of a substantially spherical nozzle 49 which is carried by the lower end of a pipe 50. The nozzle 49 is positioned so that it will spray water upon the sand immediately after the sand leaves the conveyer 11 and passes to the elevator 8.

It will be seen by reference to Fig. 1 of the drawings, that if the new sand is positioned at end of the pile remote from the elevator, this sand will, by the action of the conveyer, be fairly mixed with the old sand from the pile 5, prior to the delivery of the sand to the elevator 8.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and method of operation of the improved sand conveyer will be readily apparent to those skilled in the art to which this invention appertains, and while in the foregoing description, the principle of the operation of this invention has been described together with various features of construction, it is to be understood that certain minor features of construction, combination and arrangement of parts may be altered to suit practical conditions provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:—

1. A sand conveyer including a pivoted support, an operating shaft journaled in said support, a movably mounted guide bar, means at the ends of said guide bar for

guiding the movement of the guide bar, a conveyer guiding shaft, means adjustably carried by said guide bar and connecting the guide bar and guide shaft, and an endless conveyer passing about said shafts.

2. In a device as set forth, a conveyer for scraping sand from a pile having one end pivotally mounted for permitting the conveyer to move in a horizontal and a vertical arc, an arcuate upstanding guide bar, a pair of feed screws connected to the free end of said conveyer, a block adjustably mounted upon said feed screws and provided with an opening for slidably receiving said upstanding arcuate guides for guiding the vertical movement of said conveyer, rollers carried by the ends of arcuate guide bars, and guide ways for guiding the movement of said conveyer in a horizontal arc.

3. In a device as set forth, a conveyer for scraping sand from a pile having one end pivotally mounted for permitting the conveyer to move in a horizontal and a vertical arc, an arcuate upstanding guide bar, means connected to the free end of said conveyer and slidably connected to said arcuate guide bar for connecting the conveyer to the guide bar, rollers carried by the upper and lower ends of said arcuate guide bar, and guideways for receiving said rollers to guide the movement of said conveyer in a horizontal arc.

4. A sand conveyer including a pivoted support, an operating shaft journaled in said support, a guiding shaft, an endless conveyer traveling over said shafts, a movable guide bar, means adjustably carried by said guide bar and connected to said guide shaft, said means mounted for vertical movement upon said guide bar to guide the vertical pivotal movement of said conveyer, and means at the ends of said guide bar to guide the movement of the bar and the horizontal pivotal movement of said conveyer.

5. A sand conveyer including a pivoted support, an operating shaft journaled in said support, a guiding shaft, an endless conveyer traveling over said shafts, a movable guide bar, means adjustably carried by said guide bar and connected to said guide shaft, said means mounted for vertical movement upon said guide bar to guide the vertical pivotal movement of said conveyer, said means being adjustable to regulate the tension of said conveyer, rollers at the ends of said guide bar, guideways receiving said rollers to guide the movement of the bar and the horizontal pivotal movement of said conveyer.

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

THEODORE VOLSKY.

Witnesses:
P. J. MOORE,
MRS. FANETTE OSTERHOUT.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."**