

No. 762,510.

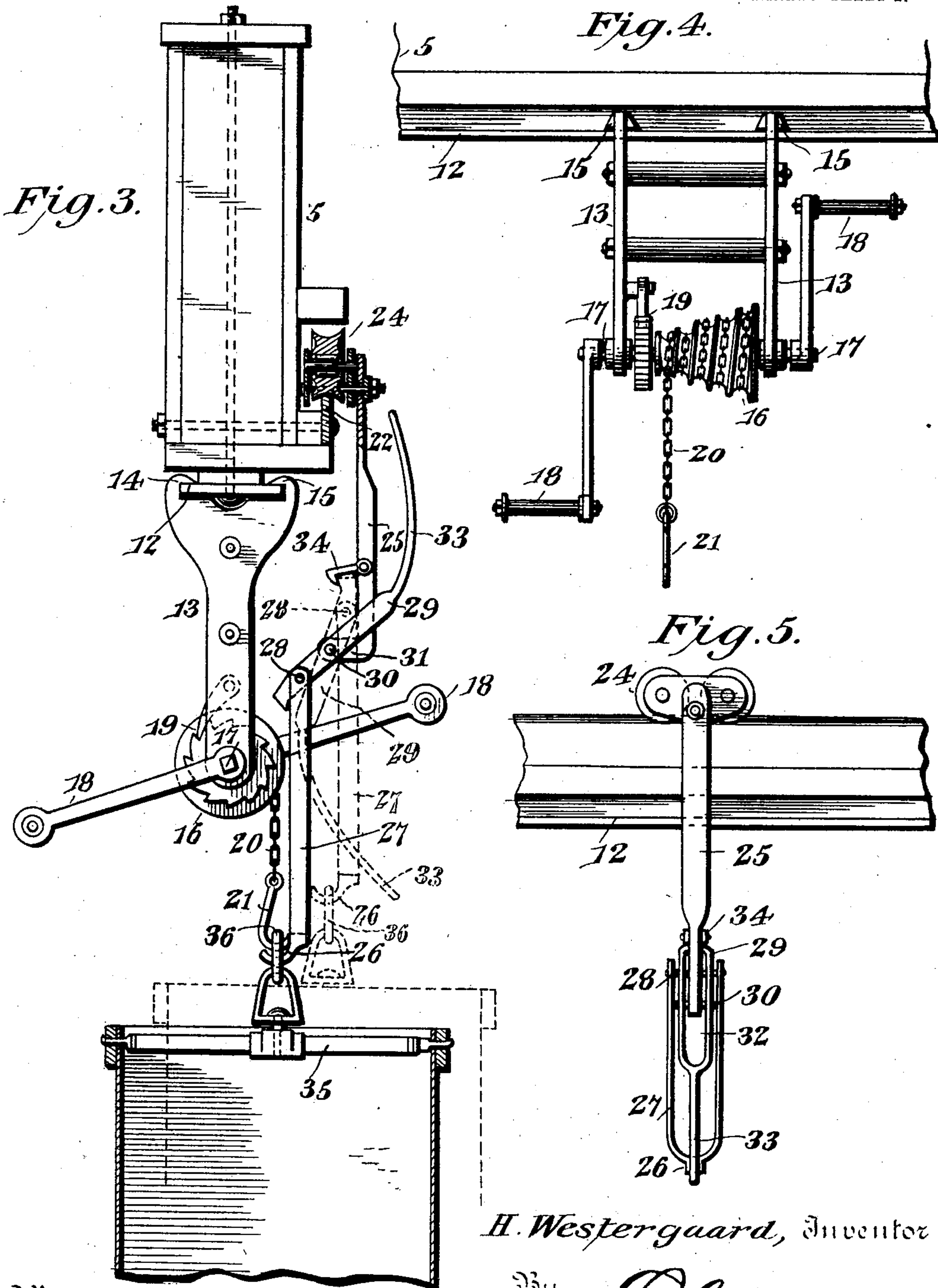
PATENTED JUNE 14, 1904.

H. WESTERGAARD.
ICE CONVEYING APPARATUS.

APPLIOATION FILED JAN. 12, 1904.

NO MODEL.

2 SHEETS—SHEET 2.



Witnesses

Jas. E. McAtfran
 Louis L. Julihn

H. Westergaard, Inventor

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E. G. Figgers

Attorney

UNITED STATES PATENT OFFICE.

HELGE WESTERGAARD, OF AUSTIN, TEXAS, ASSIGNOR OF ONE-HALF TO
NOYES D. SMITH, OF AUSTIN, TEXAS.

ICE-CONVEYING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 762,510, dated June 14, 1904.

Application filed January 12, 1904. Serial No. 188,700. (No model.)

To all whom it may concern:

Be it known that I, HELGE WESTERGAARD, a citizen of the United States, residing at Austin, in the county of Travis and State of Texas, have invented a new and useful Ice-Conveying Apparatus, of which the following is a specification.

My present invention relates to an improved ice-conveying apparatus designed with special reference to the equipment of ice-making plants.

The object of the invention is to produce a simple, durable, and efficient apparatus for conveying ice-cans from the freezing-tank to the dump and for returning the empty cans to the tank with the least possible expenditure of energy and without the necessity for the employment of the complicated cranes and trucks usually considered necessary in ice plants.

A further object is to afford means for allowing one can to drip while the can previously raised from the freezing-tank is being carried to the dump or to any other desired point and to provide for the conveyance of ice from several freezing-tanks to the same dump or other unloading-point.

A still further object of the invention is to improve the grappling mechanism of the truck in order to facilitate the transfer of the can from the hoisting mechanism to the truck for conveyance to the dump.

To the accomplishment of the recited objects and others subordinate thereto, as will hereinafter more fully appear, the preferred embodiment of the invention comprehends the construction and arrangement of parts to be herein described, illustrated in the accompanying drawings, and succinctly defined in the appended claims.

In said drawings, Figure 1 is a plan view of a portion of the apparatus with parts broken away. Fig. 2 is a vertical section illustrating the mounting of the boom on the stringers and the mounting of the winch and truck on the boom. Fig. 3 is an end elevation, partly in section, of the boom, winch, and truck and

showing an ice-can in the act of being transferred from the hoisting mechanism to the truck, the positions of the can and the transferring or grappling mechanism at the completion of the transfer being indicated in dotted lines. Fig. 4 is a side elevation of the winch and a portion of the boom, and Fig. 5 is an elevation of the truck.

Like numerals of reference are employed to designate corresponding parts throughout the several views.

At a suitable height above the opposite side walls of one or more freezing-tanks (not illustrated) are located stringers 1 and 2, supported in any suitable manner—as, for instance, by brackets 3, extending from vertical posts 4. These stringers are designed for the support of a traveling boom 5, provided at its opposite ends with travelers 6 and 7, arranged to travel upon tracks 8 and 9, extending inwardly from the stringers 1 and 2 at the lower edges thereof, as shown in Fig. 2. By preference one of the travelers, as 7, is grooved, as shown, and the rail 9 is flanged for engagement therewith. Both rails and travelers may be constructed in this manner, if desired; but for all practical purposes it is only necessary to flange one rail and traveler. To prevent possible rocking of the boom 5, the latter is provided at its opposite ends with guide-bars 10, located above the stringers 1 and 2 and held rigid by suitable braces 11.

Along the under side of the boom 5 is secured a winch-rail 12, extending from end to end of the boom and designed for the support of a winch-frame 13, the side plates of which are formed with oppositely-disposed hooks 14 and 15, which take over the opposite side edges of the winch-rail 12 and slidably support the winch-frame, which may be quickly shifted to position, the winch 16 carried at the lower end of the frame, over any desired ice-can in the freezing-tank. The shaft 17 of the winch 16 is disposed parallel with the boom 5 and is provided with operating-cranks 18 and with a pawl-and-ratchet dogging or checking device 19, preventing reverse rotation of

the winch as the elevating-chain 20 is wound thereon by the manipulation of the cranks 18. The chain 20 is provided at its end with a hook 21, as usual.

5 In addition to the winch-rail 12 the boom 5 is equipped with a truck-rail 22, extending along one side face of the boom at a point above the lower edge thereof. This truck-rail 22 instead of terminating at the ends of
10 the boom is provided at one end with a curved extension or switch 23, the end of which aligns with and is designed to slide freely upon the flange of the stringer-rail 9. The truck-rail 22 is designed to support a wheeled truck 24,
15 from one side of which is suspended a hanger 25, equipped with grappling mechanism designed to effect the transfer of an ice-can from the hoisting mechanism to the truck for conveyance to the ice-dump or any other desired
20 point. The grappling mechanism includes a grappling-hook 26, having a comparatively long shank 27, bifurcated at its upper end (see Fig. 5) and pivotally connected, as indicated at 28, to one end of a lever 29, fulcrumed, as
25 indicated at 30, upon the angular lower extremity 31 of the hanger 25. That portion of the lever 29 which is connected to the hanger and grappling-hook shank is in the form of a loop 32, receiving the lower end of the hanger
30 25, as shown. One end of the loop 32—to wit, that end thereof from which the handle 33 of the lever extends—is designed to abut against one edge of the hanger 25, as shown in Fig. 3, to limit the movement of the lever,
35 while the opposite end of the loop is designed to be engaged by a pivoted catch 34, carried by the hanger 25 when the handle of the lever is drawn down to the dotted position in Fig. 3 for the purpose of raising the grappling-
40 hook 26 to effect the transfer of the ice-can from the hoisting mechanism to the truck.

When it is desired to convey the cans from one of the freezing-tanks, the boom is shifted
45 along the stringers until it arrives above the tank. The winch is then shifted along the boom to a position above one of the ice-cans, usually the one at the left-hand end of the tank. A can-jack 35 is then attached to the can, as shown in Fig. 3, and the hook 21 of
50 the winch chain or cable is drawn down and passed through the ring 36 of the jack, care being taken to have the hook 21 open toward the front—that is to say, toward that side of the boom at which the truck is supported.
55 The winch is then operated to hoist the ice-can from the freezing-tank, and when it has reached the proper height the truck 24 is shifted along the truck-rail until the grappling-hook arrives in position to engage the
60 ring 36 of the can-jack, it being understood that the cranks of the winch are brought to rest in a vertical position in order to prevent interference with the mechanism suspended

from the truck when the latter is shifted to its engaging position. The grappling-hook 65 is now passed into the ring 36 from the side opposite the hook 21, and the lever 29 is then swung to the dotted position in Fig. 3 for the purpose of lifting the can, and thereby detaching the ring 36 from the hook 21 of the
70 hoisting mechanism. The elevation of the short end of the lever 29 will cause it to snap under the catch 34, and the grappling-hook will thus be prevented from moving downward, since this movement must necessarily
75 be accompanied by the movement of the lever 29, which is locked against movement by the catch 34. The described manipulation of the parts will have effected the transfer of the can from the hoisting mechanism to the truck, 80
85 and the latter may now be shifted along the truck-rail and around the deflected end or switch 23 thereof to the stringer-rail 9, whence the can may be conveyed to any desired portion of a track or rail system, including the
90 stringer-rail, as an element thereof. The usual destination of the ice-can is the ice-dump, (shown conventionally in Fig. 1 at 37,) and while this dump is shown below one of the stringer-rails it may be remarked that its
95 usual location is at a point remote from the freezing-tanks and under a rail to which the truck is transferred from the stringer-rail through the medium of intermediate rails and switches. The point of delivery, however, is
100 entirely immaterial, since the present invention is concerned particularly with the construction and arrangement of the boom, provided with the switch 23, adjustable there-
105 with and equipped in a novel manner with hoisting and conveying mechanism of novel and advantageous construction.

It is thought that from the foregoing the construction, operation, and many advantages of my ice-conveying apparatus will be
110 clearly comprehended; but while the present embodiment of the invention appears at this time to be preferable I desire to reserve the right to effect such changes, modifications, and variations of the illustrated structure as
115 may fall fairly within the scope of the protection prayed.

What I claim is—

1. In an apparatus of the class described, the combination with stringer-rails, and a boom
115 mounted to travel thereon, of a truck-rail movable with the boom and having a laterally-deflected end overlapping one of the stringer-rails and constituting a switch.

2. In an apparatus of the class described, the combination with stringer-rails, of a wheeled
120 boom mounted to travel thereon, and a truck-rail rigid with the boom and having one end curved and disposed over one of the stringer-rails to constitute a traveling switch.

3. In an apparatus of the class described, the

combination with stringer-rails, and a boom mounted to travel thereon, of hoisting mechanism adjustable along the boom, a truck-rail movable with the boom and having a curved end overlapping a stringer-rail to constitute a traveling switch, and a conveying-truck mounted to travel on the stringer and truck rails and having pendent means for suspending the object to be conveyed.

4. In an apparatus of the character described, the combination with stringer-rails, and a traveling boom, of hoisting mechanism adjustable along the boom, a truck-rail rigid with the boom and having a curved end overlapping a stringer-rail, and means carried by the truck for transferring an object to the truck from the hoisting mechanism.

5. In an apparatus of the character described, the combination with stringer-rails, and a traveling boom having a winch-rail, and a separate truck-rail, of a traveling winch supported by the winch-rail, a truck mounted to travel on the truck-rail, means carried by the truck for suspending an object hoisted by the winch, and a switch for transferring the truck from the truck-rail to a stringer-rail.

6. In an apparatus of the character described, the combination with stringer-rails, and a traveling boom, of a winch-rail and a truck-rail both carried by the boom, a truck movable on the truck-rail, a winch movable on the winch-rail, said rails being disposed in different planes to prevent the winch and truck from interfering with each other during their movement along the boom and means for transferring an object hoisted by the winch, to permit its transportation by the truck.

7. In an apparatus of the class described, the combination with stringer-rails, and a traveling boom, of a winch-rail extending along the under side of the boom, a truck-rail fixed to one side of the boom and having a curved end overlapping a stringer-rail, a winch movably suspended from the winch-rail, a truck mounted to travel on the truck-rail, and means suspended from the truck for engaging an object hoisted by the winch.

8. In an apparatus of the class described, the combination with stringer-rails, and a traveling boom, of a winch-rail having the form of a plate secured to the under side of the boom, a winch-frame having oppositely-disposed supporting-hooks engaged over the opposite side edges of the winch-rail, a winch mounted in the winch-frame, a truck-rail extending along one side of the boom, and a truck mounted on the truck-rail and having means for engaging and suspending an object hoisted by the winch.

9. In an apparatus of the class described, the combination with hoisting mechanism, of a truck provided with a hanger, a grappling-

hook disposed to engage a hoisted object, and means carried by the hanger for operating said hook to remove the object from the hoisting mechanism.

10. In an apparatus of the character described, the combination with hoisting mechanism, of a truck provided with a hanger, a lever fulcrumed on the hanger, a hook suspended from one end of the lever and adapted to be elevated thereby to remove an object from the hoisting mechanism, and means carried by the hanger for retaining the hook in its elevated position.

11. In an apparatus of the character described, the combination with hoisting mechanism, of a truck provided with a hanger, a lever fulcrumed on the hanger, a hook suspended from one end of the lever and adapted to be elevated thereby to remove an object from the hoisting mechanism, and a pivoted catch mounted on the hanger and disposed to automatically engage and retain the lever when the hook reaches its elevated position.

12. In an apparatus of the character described, the combination with a truck provided with a hanger having an angular end, of a lever fulcrumed on the end of the hanger and formed with a loop the opposite ends of which are adapted to engage opposite edges of the hanger to limit the movement of the lever in opposite directions, a hook suspended from one end of the lever, and a catch pivoted on the hanger above its lower end to engage the extremity of the lever to which the hook is connected and to thereby retain the hook in its elevated position.

13. In an apparatus of the character described, the combination with stringer-rails and a boom mounted to travel thereon, of a hoisting mechanism, a truck-rail rigid with the boom and having a curved end overlapping a stringer-rail, a truck movable on the truck-rail, and means carried by the truck for transferring an object from the hoisting mechanism.

14. In an apparatus of the character described, the combination with rails and a traveling boom, of hoisting mechanism adjustable along the boom, a truck mounted to travel on the boom, and means carried by the truck for transferring an object to the truck from the hoisting mechanism.

15. In an apparatus of the character described, the combination with stringer-rails and a traveling boom, of a winch-rail and a truck-rail both carried by the boom, said truck-rail being provided with a traveling switch, a winch mounted on the winch-rail, a truck mounted to travel on the truck-rail, and means suspended from the truck for engaging an object hoisted by the winch.

16. In an apparatus of the character described, the combination with stringer-rails

and a traveling boom, of a winch-rail and a
separate truck-rail both carried by the boom,
said truck-rail being provided with a switch,
a winch mounted on the winch-rail, a truck
5 mounted on the truck-rail, and means carried
by the truck for transferring and sustaining
an object hoisted by the winch.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses.

HELGE WESTERGAARD.

Witnesses:

F. W. MOORE,
W. F. DECHERD.