(No Model.) 2 Sheets—Sheet 1.

J. N. BRIGGS.

HEATER FOR ICE ELEVATORS.

No. 399,012. Patented Mar. 5, 1889.

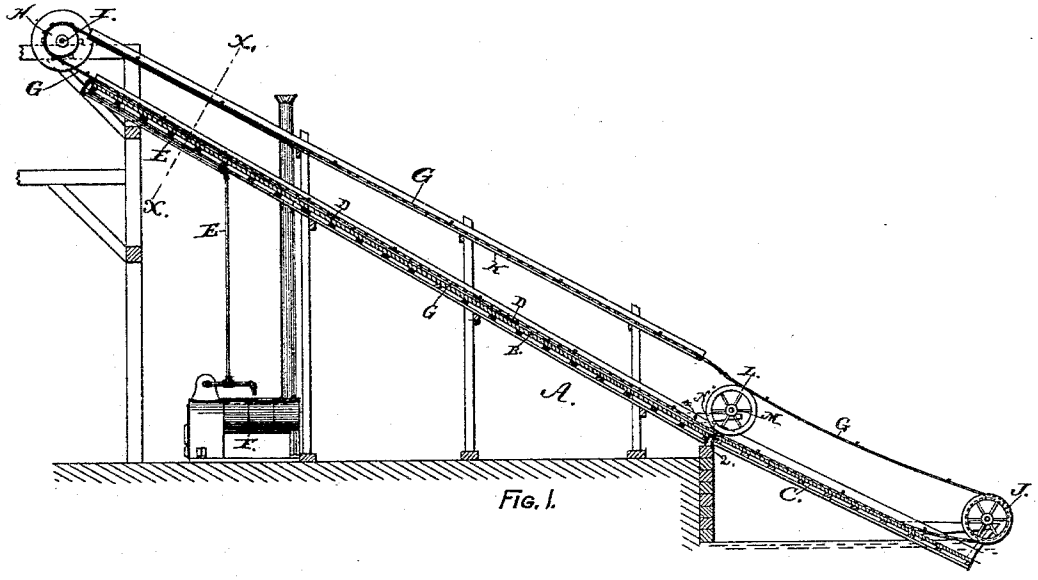


FIG. 1.

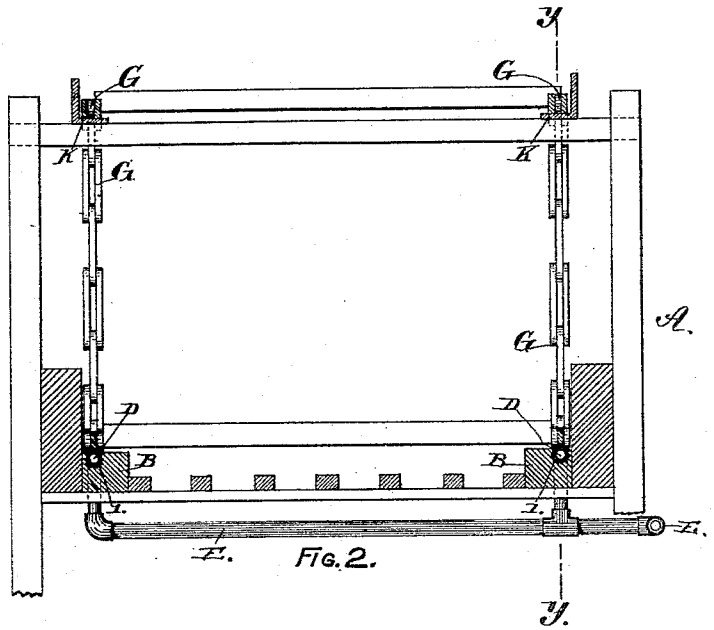


FIG. 2.

Witnesses:
Walter Morton Brown
S. B. Brewer

Inventor:
JOHN N. BRIGGS,
by William N. Goss,
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N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

J. N. BRIGGS.

HEATER FOR ICE ELEVATORS.

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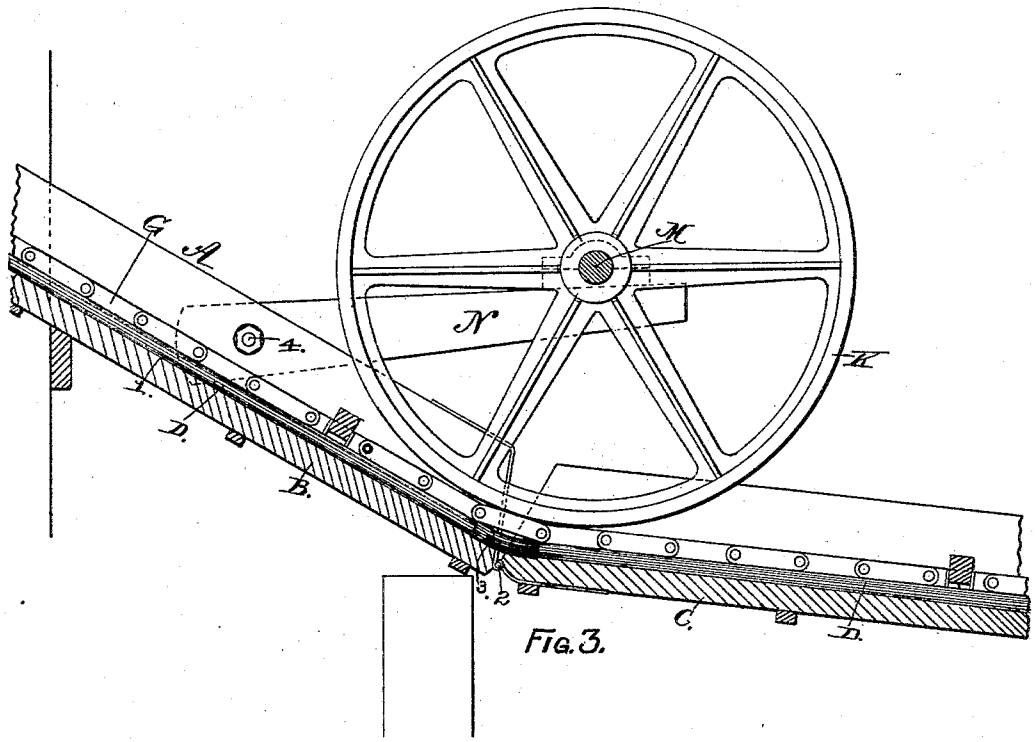


FIG. 3.

Witnesses:
Walter M. Brown.
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JOHN N. BRIGGS,
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UNITED STATES PATENT OFFICE.

JOHN N. BRIGGS, OF COEYMANS, NEW YORK.

HEATER FOR ICE-ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 399,012, dated March 5, 1889.

Application filed October 19, 1888. Serial No. 288,538. (No model.)

To all whom it may concern:

Be it known that I, JOHN N. BRIGGS, of Coeymans, in the county of Albany and State of New York, have invented new and useful Improvements in Heaters for Ice-Elevators, of which the following is a specification.

Heretofore the operation of elevating cakes of ice into ice-houses has been attended with very great trouble and difficulty, which has occurred by reason of the endless chains and guideways of the elevator becoming coated and clogged with ice, which would form thereon and produce an obstruction to the free operation of the elevating machinery that necessitated removal before the operation of elevating could be continued. This removal was only effected by considerable loss of time and its attendant expense.

The object of my invention is to remedy this defect; and I attain this object by the means illustrated in the accompanying drawings, which are herein referred to and form part of this specification, and in which—

Figure 1 is a vertical longitudinal section, partly in elevation, of an ice-elevator provided with my improvement. Fig. 2 is an enlarged transverse section at the line X X of the elevator with the driving-shaft and sprocket-wheels removed therefrom; and Fig. 3 is an enlarged longitudinal section at the line Y Y of one of the guideways, showing the joint of the apron to said guideway.

As shown in the drawings, A designates an ice-elevator similar to those ordinarily used for the purpose of elevating cakes of ice into an ice-house, the essential difference between the one shown and those of prior construction being that the lower guideways, B, are provided with a longitudinal channel, 1, formed in each for the purpose of containing steam-pipes. To the lower end of said guideways an apron, C, is hinged, as at 2, in the usual manner, for the purpose of allowing it to swing upwardly and downwardly, according to the rise and fall of the tide in the water where the elevator is erected. Said apron has in its guideways channels which conform to those in the guideways B and which are for the same purpose as the channels in the latter.

D are longitudinal steam-pipes arranged in the channels of the guideways of the elevator and its apron in such manner that the upper side of said pipes will be about flush with the upper face of the horizontal flanges of the guideways—*i. e.*, the seat on which the lower portion of the endless chain has its bearing. Said steam-pipes are connected to a steam-supply pipe, E, which may be connected directly to a steam-boiler, F, as shown in the drawings; or, when preferred, they may be connected to the exhaust-pipe of a steam-engine by which the elevator machinery is driven. When the steam-pipes D are extended outwardly to reach onto the apron C, they are each provided with a flexible joint, 3, which is arranged in correspondence with the hinge-joints 2 of the guideways B, and which are preferably made of a section of rubber hose or other material having sufficient strength to stand the pressure to which it is subjected and sufficient flexibility to yield with the bending movement of said hinge-joint. The lower ends of the steam-pipes D are preferably left open, for the purpose of obtaining a constant circulation of steam therethrough and allowing a free escape for the water of condensation therefrom.

G are endless chains, of which there are two to each elevator, and which pass over sprocket-wheels H on a driving-shaft, I, by which a continuous motion is imparted to said endless chains. Extending outwardly said endless chains pass around the apron-wheels J at the outer end of the apron C. The lower stretch of said chains will move on the guideways B directly over the steam-pipes D, and the upper or downwardly-moving stretch of said endless chains will move on the upper guideways, K, thence over the top of the knuckle-wheels L and to the apron-wheels J. The knuckle-wheels L are secured to a cross-shaft, M, which is journaled in the outer end of the arms N, the latter being pivoted to the guideways B, as at 4, so that the weight of the knuckle-wheels L and shaft M will rest on the lower stretch of said endless chains.

By means of the steam-pipes D, which are fixed directly under the path of the endless chains G, ice is prevented from forming on the guideways B and on the endless chains G, but especially on the lower stretch of the latter, which, as it is drawn upwardly out of the water, is covered with water and usually coated with

ice, and by which the water is scattered over the guideways B to produce a formation of ice at the angle of said guideways to such a degree that the operations of the elevator will be materially delayed and oftentimes entirely prevented. This defect has proved a source of great annoyance and expense.

It should be understood that the elevator and its operating machinery form no part of my invention, they being of an old and well-known construction. Therefore I do not make any claim to them; but

I claim as my invention—

In an ice-elevator, the combination of the endless chains of the elevator, guideways for said endless chains provided with longitudinal channels in proximity to the path of said endless chains, and steam-pipes arranged in said channels, whereby ice is prevented from forming on said chains and guideways, as and for the purpose herein specified.

JOHN N. BRIGGS.

Witnesses:
WM. H. LOW,
S. B. BREWER.