

O. W. ROBINS.

ICE EDGER.

APPLICATION FILED JULY 28, 1908.

935,690.

Patented Oct. 5, 1909.

3 SHEETS—SHEET 1.

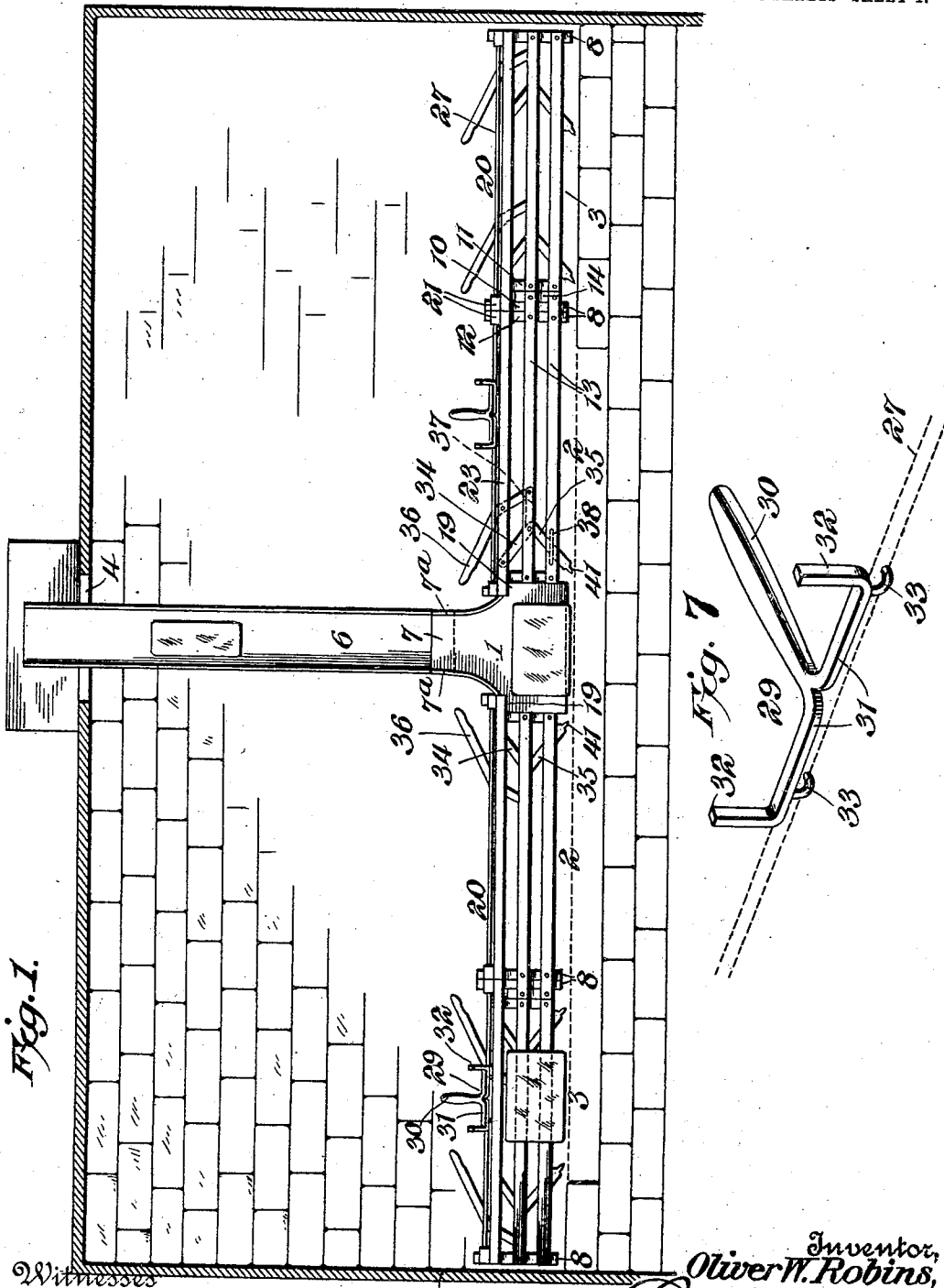


Fig. 1.

Fig. 7.

Witnesses

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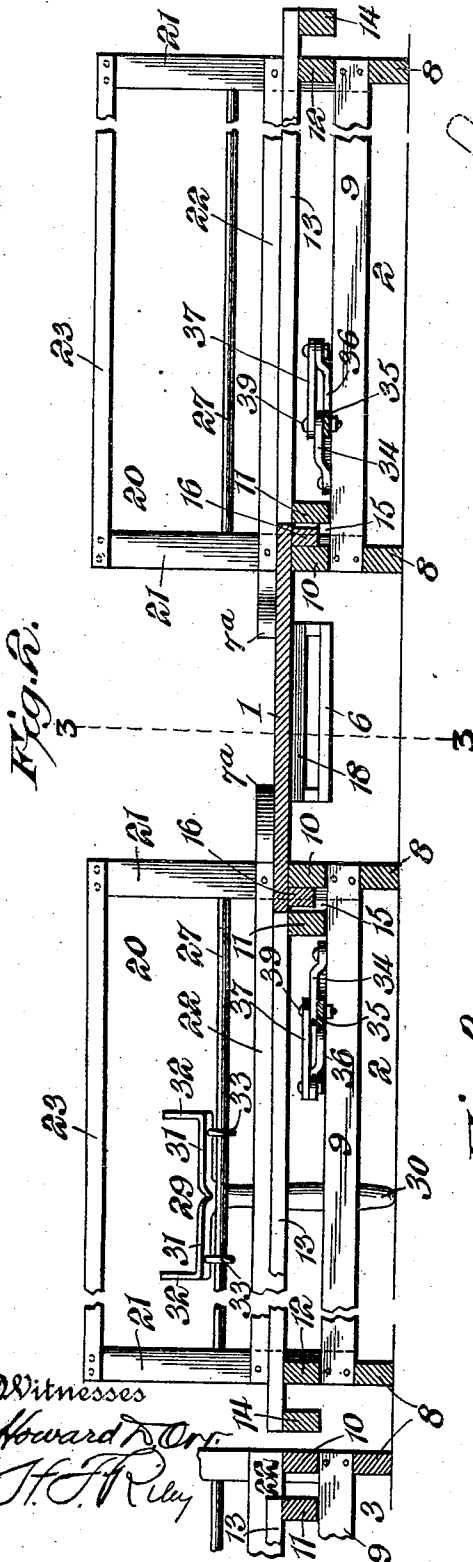


Fig. 1.

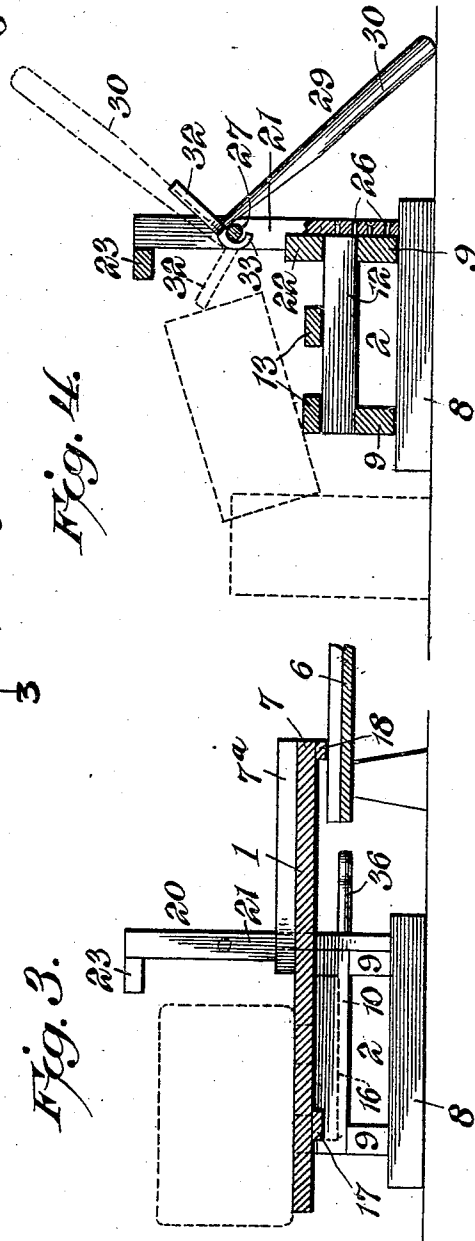


Fig. 3.

Fig. 4.

Witnesses

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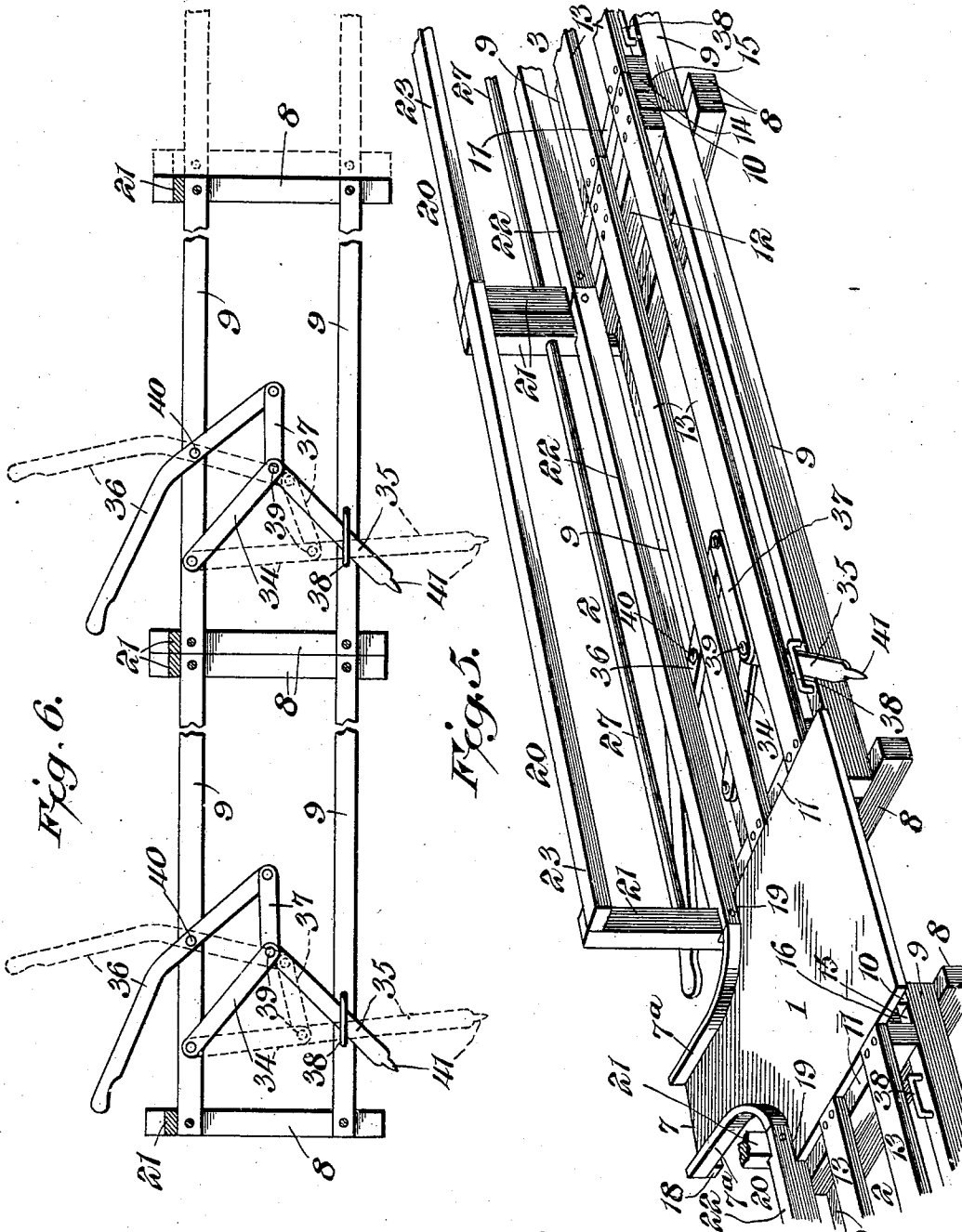
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UNITED STATES PATENT OFFICE.

OLIVER W. ROBINS, OF CEDAR RAPIDS, IOWA.

ICE-EDGER.

935,690.

Specification of Letters Patent.

Patented Oct. 5, 1909.

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To all whom it may concern:

Be it known that I, OLIVER W. ROBINS, a citizen of the United States, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and useful Ice-Edger, of which the following is a specification.

The invention relates to an ice edger.

Heretofore it has been the practice in packing ice in ice houses to run the ice into an ice house and then turn the ice off upon the ground, or upon a layer of ice to enable the cakes of ice to be moved by hand to the different portions of the ice house and to be also turned by hand to arrange them edgewise in tiers.

The object of the present invention is to provide a simple and comparatively inexpensive apparatus, adjustable to adapt it for ice houses of different sizes, and capable of enabling the cakes of ice to be kept on runways until they arrive at the points along the tier where they are to be edged and packed, whereby the ice may be stored with greater facility, rapidity and with a less number of hands than heretofore.

A further object of the invention is to provide an apparatus of this character, capable of enabling cakes of ice to be quickly arranged in edgewise tiers and adapted to be readily adjusted after a course of ice has been completed to provide sufficient space for the next succeeding row.

Another object of the invention is to provide a simple device for laterally discharging the ice and for simultaneously changing the position of the cakes from flat to edgewise.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a plan view of an ice edging apparatus, constructed in accordance with this invention. Fig. 2 is a sectional view, taken longitudinally of a plurality of ice run sections and the central

platform. Fig. 3 is a vertical sectional view, taken substantially on the line 3—3 of Fig. 2. Fig. 4 is a vertical sectional view, taken transversely of one of the sections of the ice run and illustrating the manner of discharging and reversing a cake of ice. Fig. 5 is a perspective view of a portion of the ice run. Fig. 6 is a horizontal sectional view, illustrating the construction of the actuating devices for moving the ice run from a complete course to provide a space for the next succeeding row of ice. Fig. 7 is a detail perspective view of the edging lever.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

The apparatus comprises in its construction a central or intermediate platform 1, and opposite alined ice runs supporting the platform 1 and composed of sections 2 and 3. In Fig. 1 of the drawings the platform 1 is centrally arranged and the opposite ice runs are each made up of two sections 2 and 3, but it will be apparent that the ice runs may be composed of any number of sections necessary to extend the apparatus the entire width of the ice house, and the platform 1 may be arranged either at the center or at any other point to locate it opposite the entrance 4 through which the ice is introduced into the ice house 5. The ice is delivered upon the platform 1 from an ice run 6, or other suitably arranged run, and the said platform is provided at the rear end with an extension 7, adapted to be connected with the feed run 6. The extension is provided at opposite sides with vertical flanges 7^a, having laterally curved diverging inner portions terminating at the back of the opposite ice runs. Each section is provided at its ends with transverse runners 8, which are connected by longitudinal bars 9, forming a supporting frame of rectangular form. Each section is provided at its inner end, or the end nearer the platform with a pair of transverse bars 10 and 11, spaced apart to form a transverse recess. The section is equipped at the other end with a single transverse bar 12. The transverse bars 11 and 12 support longitudinal rails or bars 13, spaced apart to receive the cakes of ice, and the bars or rails 13 of the intermediate sections of the ice run are extended beyond the outer end bars 12 to support a transverse bar or mem-

ber 14, spaced from the transverse bar or member 12 and adapted to fit in the recess or space 15 between the bars 10 and 11, whereby the sections are detachably interlocked. The inner ends of the sections contiguous to the platform 1 are interlocked with the latter by means of bars 16, secured to the lower face of the platform, which is also equipped with cleats 17 and 18. The sides of the platform overlap the adjacent ends of the sections, as clearly illustrated in Fig. 5 of the drawings, and the side portions of the platform are provided with shoulders 19, which fit against a rear guard 20, constructed in sections and carried by the sections of the ice runs. The longitudinal rails or bars 13 terminate at the transverse bar at the outer end of the outermost section, as illustrated in Fig. 1 of the drawings. Each run is thus equipped with an outer section and one or more intermediate sections and may be varied in length by varying the number of sections.

The rear guard consists of vertical posts 21, a bottom connecting bar 22 and a top guard rail 23, extending inward over the ice run and adapted to extend over the adjacent edge of a cake of ice for engaging the top of the same, whereby the cake of ice is prevented from accidentally tilting laterally and thereby leaving the ice run. The posts 21 are provided with lower reduced portions to which the bottom bar 22 is secured and which are provided with a plurality of perforations 26 for the reception of fastening devices for adjustably securing the guard to the section of the ice run. The guard is adapted to be raised and lowered to attach the upper projecting guard rail higher or lower to suit the thickness of the ice being stored.

Each section of the alined ice runs is equipped with a horizontal supporting rod 27, located between the upper guard rail and the bottom bar 22 and supported by the post 21. The rod 27 is adapted to form a bearing or fulcrum for an ice edging lever 29, consisting of a straight bar or shank 30 and laterally extending approximately L-shaped arms 31, having outer ice-engaging portions 32, arranged in a plane intersecting the plane of the straight bar or shank 30 and extending upward from the inner portions of the L-shaped arms, when the straight shank or bar 30 is arranged in a horizontal position. The L-shaped arms are equipped with depending curved bearing hooks 33, partially embracing the supporting rod and adapted to permit the edging lever to slide freely along the rod and to be readily removed therefrom.

Each of the alined ice runs is equipped with an edging lever, and the ice is handled by three men at each side of the platform or center of the apparatus. One of these men is

stationed at the platform for turning the cakes of ice and guiding the same to the ice run. The ice is then moved along the ice run by the second man to the point where it is to be edged and packed, and this operation is performed by the third workman, who swings the handle portion of the edging lever upward from a horizontal position to an inclined position to carry the ice-engaging portions 32 of the L-shaped arms into engagement with the cake of ice, which is moved laterally over the front of the section of the ice run until it overbalances and stands on edge, as clearly illustrated in dotted lines in Fig. 4 of the drawings. The cake of ice is thus discharged and simultaneously changed from a flat to an edgewise position. The edging lever is adapted to be readily transferred from one section of the ice run to another, and after the entire row or course of ice is completed, the apparatus is moved backward away from such completed row by means of actuating mechanism, consisting of toggle levers 34 and 35, an angle lever 36 and a connecting link 37. The lever or member 34 of the toggle lever is pivoted to the frame at the back thereof, and the other member or lever 35, which is pivoted at its inner end to the member 34, slides through a guide 38, mounted on the front longitudinal connecting bar and consisting of a loop, or other suitable means. One end of the link 37 is connected to the toggle levers by the pin or rivet 39, which connects the two members of the toggle levers together, and the other end of the link is pivoted to the inner or front end of the operating lever 36. The operating lever is fulcrumed at an intermediate point on the rear longitudinal connecting bar of the section by means of a suitable pivot 40, and its outer or rear arm, which is arranged at a slight angle to the inner or front arm, is shaped into a handle, and it is adapted to be oscillated to actuate the toggle levers to move the same from the angular position illustrated in full lines in Fig. 6 of the drawings to the straight position shown in dotted lines. This movement of the toggle levers carries them into engagement with the row or course of ice last packed, and operates to move the apparatus backward away from the same a sufficient distance to provide the necessary space for the next succeeding row. The engaging end of the member 35 of the toggle levers is provided with a spur 41, which is embedded in the ice when the actuating mechanism is operated for moving the oppositely extending ice runs backward. The feeding ice run, which delivers the ice to the platform, is moved backward or otherwise shortened as the apparatus is, through its successive movements, carried toward the entrance of the ice house.

Although the ice edging apparatus is

shown arranged transversely of an ice house in the accompanying drawings, yet it will be readily understood that the oppositely disposed alined ice runs may be arranged either longitudinally or transversely of an ice house, according to the position of the door or opening at which the ice is delivered to the ice house, and after one layer of ice of the area of the ice house has been laid, the apparatus is moved forward and the next layer is placed edgewise on the layer previously completed. In this manner cakes of ice may be handled and packed in an ice house with greater rapidity and accuracy than has heretofore been possible. The rows or courses of ice laid by the edger will be perfectly straight and the number of workmen necessary for packing the ice within an ice house is materially reduced by the use of the ice edging apparatus.

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

1. An ice edging apparatus including a platform adapted to receive cakes of ice from a feeding ice run, a movable ice run extending from the platform, and means for discharging the ice laterally from the movable ice run at different points along the same and for simultaneously changing the position of the cakes of ice from flat to edgewise.

2. An ice edging apparatus including a platform arranged to receive the cakes of ice to be edged, and a plurality of ice run sections connected with the platform and forming an adjustable ice run to adapt the ice edging apparatus for use in ice houses of various sizes, means for discharging the cakes of ice at one side of the ice run and for tilting the cakes from flat to edgewise, and means for moving the ice edging apparatus backward after a row of ice has been packed to provide a space for the next succeeding row.

3. An ice edging apparatus including a platform arranged to suit the cakes of ice to be edged, ice runs extending in opposite directions from the platform, means carried by the ice runs for tilting the cakes of ice laterally to discharge them from the said ice runs and to change them simultaneously from flat to edgewise.

4. An ice edging apparatus including a platform adapted to receive the cakes of ice to be edged, and oppositely disposed ice runs extending from the platform, means for tilting the cakes of ice to discharge them from the ice runs and to change them from flat to edgewise, and means carried by the ice runs for moving the ice edging apparatus backward after a row of ice has been packed to provide a space for the next succeeding row.

5. An ice edging apparatus including a

platform, an alined ice run extending from the platform in opposite directions and supporting the platform, and means carried by the ice runs for moving the same and the platform backward after a row of ice has been packed to provide a space for the next succeeding row.

6. An ice edging apparatus including ice runs extending in opposite directions and composed of a plurality of sections detachably interlocked with each other, and a platform connecting the proximate ends of the ice runs and detachably interlocked with the same.

7. An ice edging apparatus including ice runs extending in opposite directions and provided with supporting runners arranged transversely of the ice runs, a platform connecting the proximate ends of the ice runs and carried by the same, and means for successively moving the ice runs backward as the rows of ice are packed.

8. An ice edging apparatus including a platform, and an ice run composed of a plurality of sections having their adjacent ends detachably interlocked, one of the interlocked ends being provided with spaced transversely disposed bars and the other end having a transverse bar fitting between the spaced transverse bars of the first mentioned end.

9. An ice edging apparatus including a platform, ice runs extending in opposite directions from and supporting the platform and provided adjacent to the same with spaced bars arranged in pairs and forming intervening recesses, and cooperating bars secured to the lower face of the platform and fitted in the said recesses, whereby the platform is detachably interlocked with the ice runs.

10. An ice edging apparatus including an ice run composed of detachably interlocked sections comprising supporting frames provided with transverse runners, transverse bars mounted on the frame at the ends thereof, the bars at one end of the frame being arranged in spaced relation, longitudinal bars secured to the inner end of the spaced bars and projecting from the other end of the frame, and a transverse bar secured to the projecting portions of the longitudinal rails and arranged to fit in the space between the spaced bars of the adjacent section.

11. An ice edging apparatus including a platform arranged to receive the cakes of ice to be edged, and ice runs extending in opposite directions from the platform and provided at the back with guards having projecting guard rails arranged to engage the cakes of ice at the top thereof to prevent the same from accidentally tilting off the ice runs.

12. An ice edging apparatus including a

platform arranged to receive the cakes of ice to be edged, and opposite ice runs extending from the platform and provided at the back with guards having projecting guard rails arranged to engage the cakes of ice at the top thereof to prevent the same from accidentally tilting off the ice runs, said guards being adjustable vertically to arrange them to suit the thickness of the cakes of ice to be edged.

13. An ice edging apparatus including an ice run provided with a horizontal supporting rod, and an ice edging lever fulcrumed on the supporting rod and having an ice engaging portion arranged to tilt the cakes of ice laterally of the ice run to discharge them therefrom and also to simultaneously change them from flat to edgewise.

14. An ice edging apparatus including an ice run, and an edging lever provided with spaced ice-engaging portions arranged to tilt the cakes of ice to discharge the same from the ice run and to change them from flat to edgewise.

15. An ice edging apparatus including an ice run having a longitudinal supporting rod, and an edging lever detachably mounted on the supporting rod and slidable longitudinally thereof to arrange it at different points along the ice run, said levers being composed of a handle portion, and an angularly related ice-engaging portion adapted when the lever is oscillated to tilt the cakes of ice laterally to discharge the same from the ice run and change the position of the ice from flat to edgewise.

16. An ice edging apparatus including an ice run provided with a supporting rod, and an ice edging lever provided with opposite ice-engaging arms and having curved bearing hooks detachably and slidably engaging the supporting rod, said arms being arranged to tilt the ice laterally from the ice run.

17. An ice edging apparatus including an ice run having a supporting rod, and an edging lever composed of a bar forming a handle, and substantially L-shaped arms extending in opposite directions from the handle and provided with means for fulcruming the lever on the supporting rod.

18. An ice edging apparatus including an ice run having a supporting rod, and an edging lever composed of a bar forming a handle, substantially L-shaped arms extending in opposite directions from the handle and having terminal portions extending upward and arranged vertically when the said bar is in a horizontal position, and curved bearing hooks depending from the L-shaped arms and slidably fulcruming the lever on the supporting rod.

19. An ice edging apparatus including an ice run, and actuating mechanism for moving the ice run backward from a row of ice

after the same has been packed, said mechanism including toggle levers having one of its members pivoted to the ice run and its other member slidable thereon and adapted to project therefrom, and operating mechanism connected with the toggle levers for moving the slidable member inward and outward.

20. An ice edging apparatus including an ice run, and actuating mechanism for moving the ice run backward from a row of ice after the same has been packed, said mechanism including transversely disposed toggle levers, one of the members of the toggle levers being pivoted at the back of the run way and the other member being slidable at the front thereof to project therefrom, and an actuating lever connected with the adjacent ends of the members of the toggle levers for operating the same.

21. An ice edging apparatus including an ice run, and actuating mechanism for moving the ice run backward from a row of ice after the same has been packed, said mechanism including a pair of transversely disposed toggle levers composed of front and rear members pivoted together at their adjacent ends, the rear member being fulcrumed on the ice run, a guide receiving the front member, an operating lever, and a link connecting the operating lever with the proximate ends of the members of the toggle levers.

22. An ice edging apparatus including a platform, and ice runs extending in opposite directions from and supporting the platform, and actuating mechanism arranged at intervals and composed of transversely disposed toggle levers, and operating levers connected with the toggle levers for oscillating the same to project and retract one of the members.

23. An ice edging apparatus including a platform, alined ice runs extending in opposite directions from and detachably connected with and supporting the platform, said ice runs being composed of sections provided with rear guards and having supporting rods, ice edging levers detachably fulcrumed on and slidable along the supporting rods, and means including spaced toggle levers, and operating levers connected therewith for moving the ice runs and the platform backward from a row of ice after the same has been edged to provide a space for the next succeeding row.

24. An ice edging apparatus including alined ice runs extending in opposite directions and spaced apart at their proximate ends, a platform connecting the proximate ends of the ice runs and bridging the space between the same and extending to the front edges of the said runs, and means for supporting the runs to permit the same to be moved backward as the ice is edged.

25. An ice edging apparatus including
spaced sections provided with rear guards,
and a platform supported by the sections
and provided with an extension having side
5 flanges, the inner portions of the flanges be-
ing curved laterally and terminating at the
rear guards.

In testimony, that I claim the foregoing
as my own, I have hereto affixed my signa-
ture in the presence of two witnesses.

OLIVER W. ROBINS.

Witnesses:

VICTORIA HORNIBROOK,
T. K. HAHN.