

April 7, 1925.

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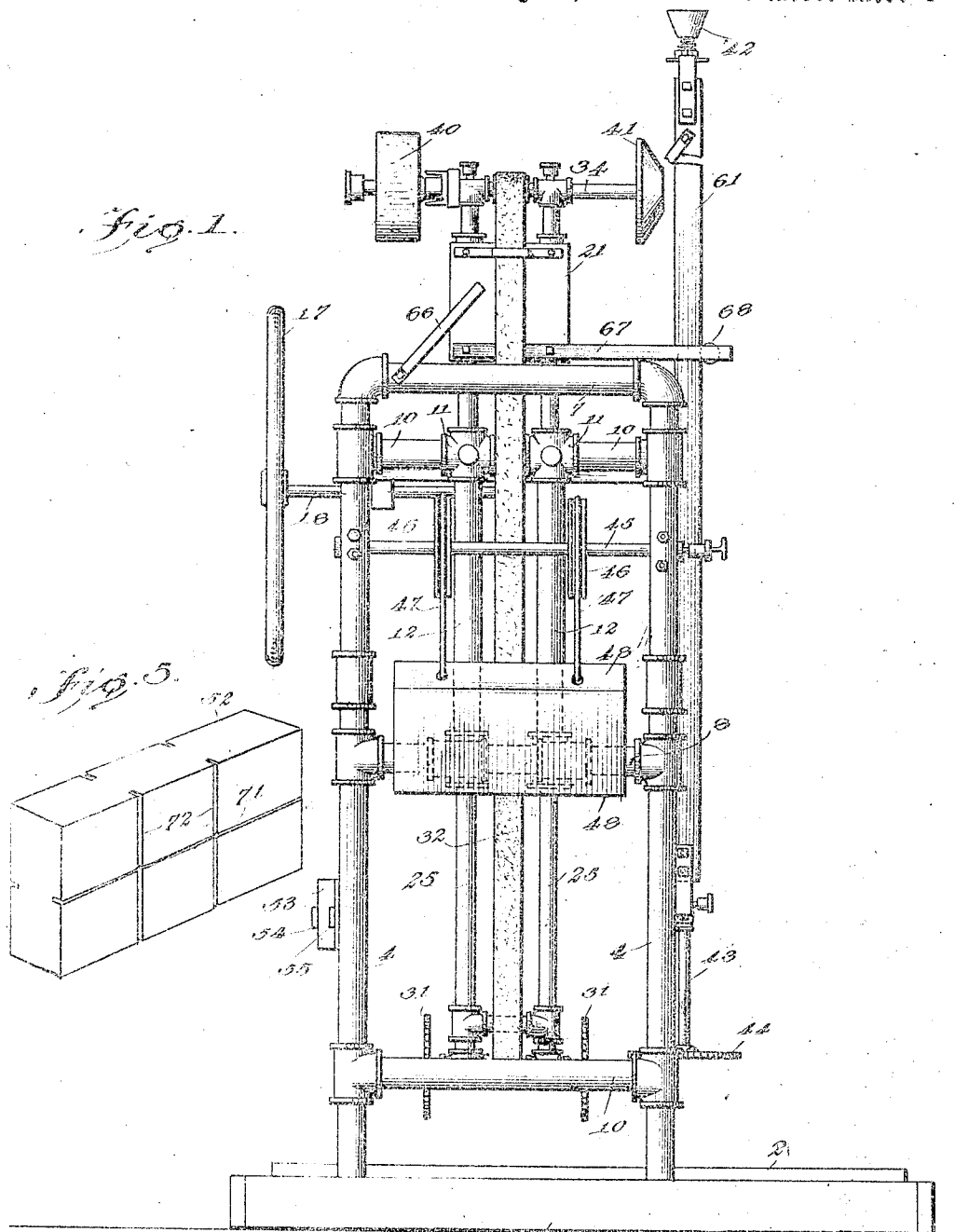
J. S. YAGER ET AL

ICE SCORING MACHINE

Filed Aug. 13, 1924

4 Sheets-Sheet 1

Fig. 1.



WITNESSES

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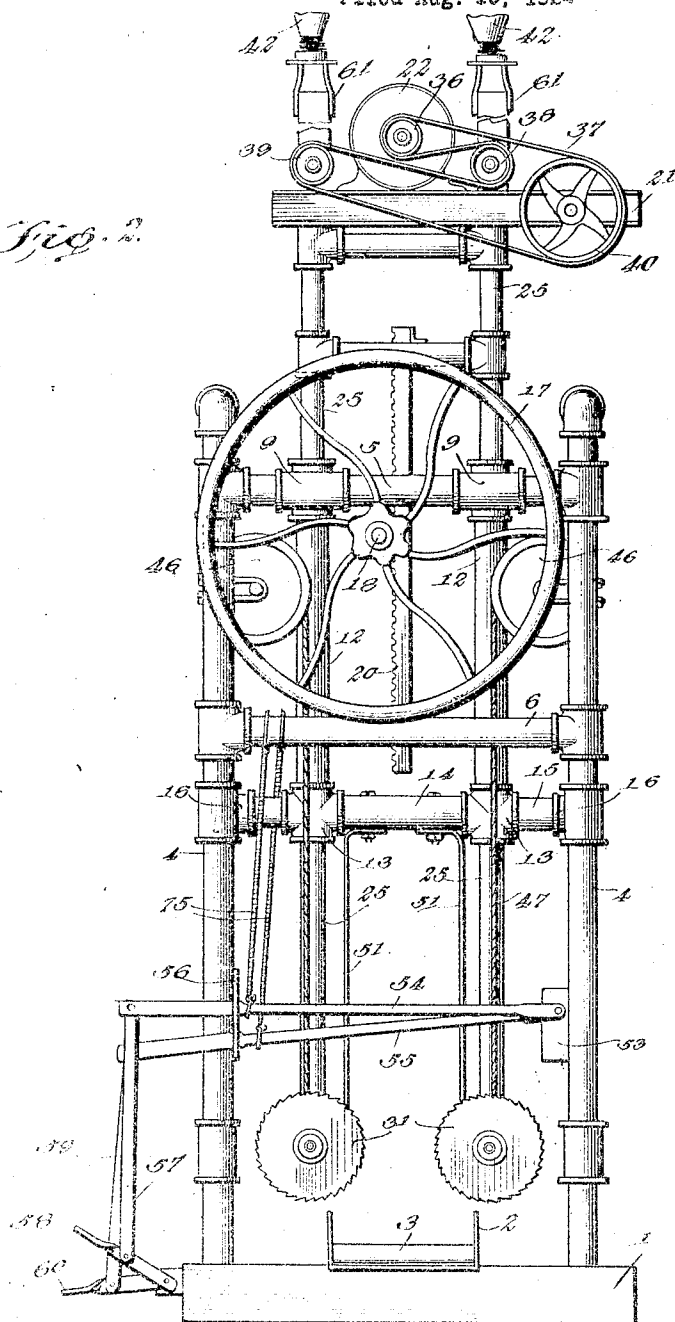
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Fig. 2.



WITNESSES

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April 7, 1925.

1,533,056

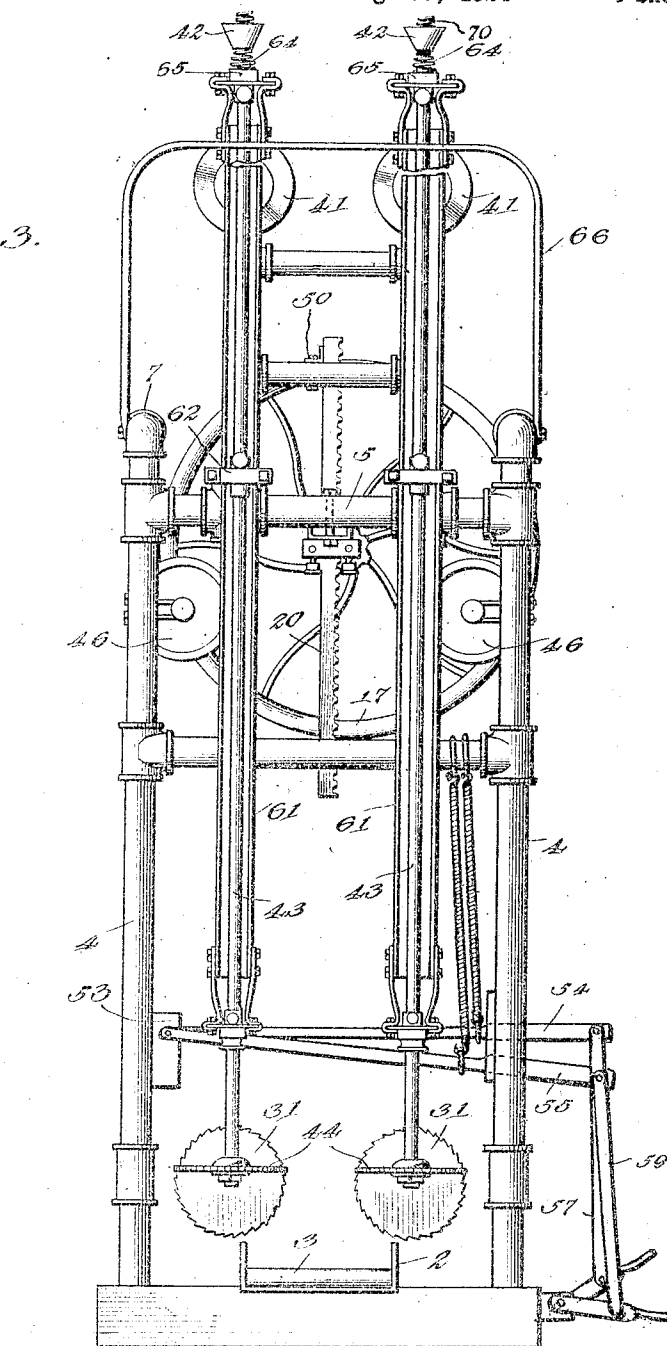
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Fig. 3.



WITNESSES

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1,533,056

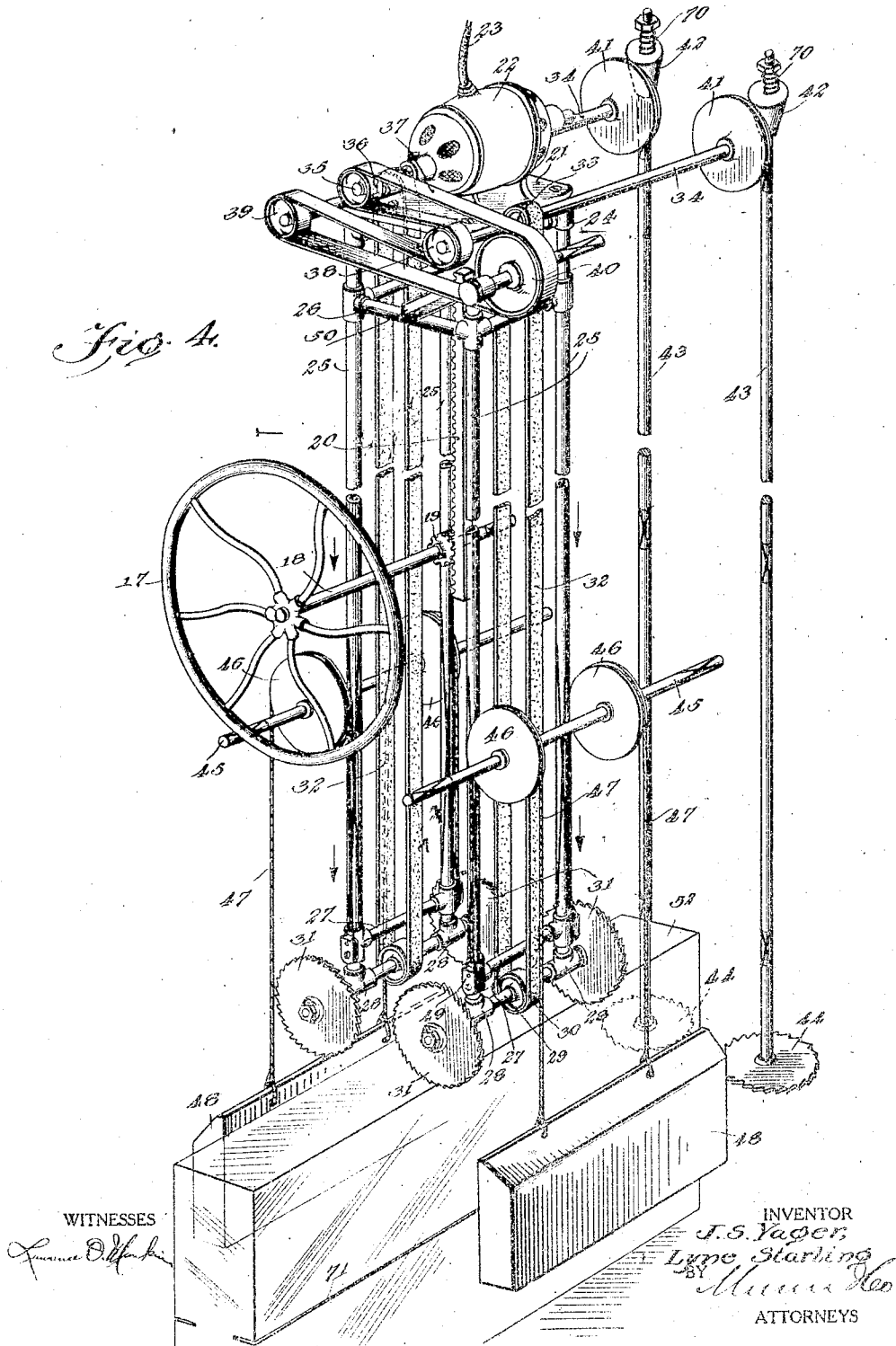
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Fig. 4.



UNITED STATES PATENT OFFICE.

JOSEPH STEPHENSON YAGER AND LYNE STARLING, OF GREENVILLE, MISSISSIPPI.

ICE-SCORING MACHINE.

Application filed August 13, 1924. Serial No. 731,324.

To all whom it may concern:

Be it known that we, JOSEPH STEPHENSON YAGER and LYNE STARLING, citizens of the United States, and residents of Greenville, in the county of Washington and State of Mississippi, have invented certain new and useful Improvements in Ice-Scoring Machines, of which the following is a specification.

This invention relates to ice scoring machines and has for its object the provision of a device which is adapted to provide a horizontal cut and vertical cuts upon opposite faces of a block of ice whereby the ice may be readily chopped in the usual manner for producing blocks of ice of uniform dimensions.

A further object of the invention is the provision of an ice scoring machine having a movable carrier and carrying saws for causing vertical scores on a block of ice and in which the carriage automatically and through its own weight is caused to descend for causing the saws to score the ice.

A further object of the invention is the provision of a device having a movable carriage carrying vertical scoring implements and stationary horizontal scoring implements adapted to cause horizontal scores in advance of the vertical scores and which are caused to be operated when the carriage is at its most elevated position.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawing forming a part of the specification; nevertheless it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications which shall define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

Figure 1 is a side elevation of the ice scoring machine.

Figure 2 is an end elevation of the same.

Figure 3 is an end elevation of the ice scoring machine where the ice enters the same.

Figure 4 is a view in perspective of the scoring device with the supporting framework eliminated.

Figure 5 shows a block of ice which has been scored by the machine.

Referring more particularly to the draw-

ings, 1 represents a base member which is provided with a track 2 adapted to receive the ice with rollers 3 for aiding in moving the block of ice readily through the scoring machine. Mounted upon the base member 1 are four columns 4 formed of hollow piping made of sections and joined together by the usual couplings. These columns or standards are connected intermediate their ends by means of cross bars 5, 6, 7 and 8. The parallel cross bars 5 are provided with T-joints 9 which are adapted to support cross bars 10. The cross bars 10 are connected to couplings 11 into which are screwed the vertical guides 12. The lower ends of the vertical guides are screwed into couplings 13 which are supported by transverse bars 14 and 15. The bars 14 connect the couplings 13 while the outer ends of the bars 15 are screwed into couplings 16 carried by the cross bars 8. The transverse bars, as are the standards 4, are made from standard piping.

A hand wheel 17 drives a shaft 18 which is mounted in bearings upon the frame carried by the standard 4. The shaft 18 carries a gear 19 which meshes with a rack 20 rigidly connected to the frame of a movable carriage which carries the cutters that produce the vertical slots.

The movable carriage comprises a table 21 upon which is mounted a motor 22 having electrical connections through the wires 23 with the house current. Depending from the table 21 and mounted in sockets 24 secured to the bottom of the table are four legs 25 of standard pipe construction and braced near their upper ends by means of transverse rods 26. The lower ends of these pipes are braced by means of rods 27. Carried by the lower ends of the legs are bearings 28. In each pair of bearings is mounted a shaft 29 carrying a drive pulley 30. Upon the outer ends of the shafts are provided cutters 31 for producing pairs of vertical cuts in a block of ice. These shafts are driven by pulleys 33 rigid with the horizontal shafts 34.

The motor 22 through a shaft 35 drives a pulley 36 around which a belt 37 is entrained. This belt is carried around the pulleys 38 and 39, each one of which being rigid with a shaft 34. The belt is further entrained about a pulley or fly wheel mounted in bearings carried by the vertically movable carriage.

Upon the outer ends of shafts 34 are cone-pulleys 41 adapted to mesh with cone pulleys rigid with shafts 43. The lower end of each shaft 43 is provided with a horizontal cutter 44 for producing horizontal scores in a block of ice.

A shaft 45 mounted in bearings carried by the post 4 is provided with a pair of spaced grooved wheels 46 adapted to support cables 47 which are connected at their lower ends to a weight 48. The other ends of the cables are connected as shown at 49 to the lower ends of the legs 25 of the movable carriage. It will be noted that a shaft 45, a pair of grooved wheels 46 and movable weight 48 are located upon opposite sides of the scoring machine.

The rack 20 is secured by means of an angle bar 50 to the cross bars 26 connected to the legs 25 of the movable carriage. A pair of spaced guides 51 are secured to the transverse bars 14 and adapted to receive and guide a block of ice 52 through the scoring machine when said block of ice is riding upon rollers of the track 2.

It will be seen from Figure 2 that the legs 25 of the movable carriage are inserted within the vertical hollow guides 12 providing a bearing for the legs 25 of the movable carriage for guiding the movable carriage vertically when the same is operated.

A block 53 is secured to one of the posts 4 adjacent the discharge end of the scoring machine upon which are pivotally mounted in spaced relation a pair of rods or stops 54 and 55. The outer free ends of the rods are movable in slots formed in a plate 56, which is secured to an opposite standard 4 of the rigid frame. Rod 54 is connected by means of a link 57 to an operating pedal 58 while rod 55 is connected by means of a link 59 to an operating pedal 60. These rods are adapted, when moved in the position shown by the position of the bar 55 in Figure 2, to maintain the block of ice against movement during the vertical scoring.

Referring more particularly to Figure 3 it will be seen that the vertical shafts 43 are mounted in U-shaped casings 61 which are supported on the stationary frame by means of clamps 62. A coil spring 64 is located on each of the shafts 43 between a pulley 42 and a block 65 carried by the upper end of each of the casings 61. Brackets 66 connected with the transverse rods 7 of the stationary frame are connected with the upper ends of the casings 61 for aiding in supporting the same rigidly with respect to the stationary frame.

Bars 67 have their inner ends secured to the table 21 and have their outer ends provided with rollers 68 adapted to engage the shaft housings 61 when the carriage is moved for scoring purposes.

The operation of our device is as follows:

The table 21 is movable vertically when the hand wheel 17 is rotated causing the gear 19 to move the rack 20 upwardly and since the rack is rigid with the movement of the table, the table is likewise carried upwardly. When the table has been moved to its most elevated position the cone pulleys 41 will be moved into engagement with the cone pulleys 42. The springs 70 mounted upon the upper end of the shaft 43 permit the pulleys 42 a slight upward movement and the springs cushion the shocks of the engagement of the pulleys 41 with the pulleys 42. The motor 22 may be in operation or the current may be turned on to operate the motor and since the pulleys 42 are rotated through connection with the motor the pulleys 41 are likewise rotated, revolving shaft 43 and the cutters 44. As the block of ice 52 is moved through the scoring machine the cutters 44 produce a horizontal cut 71.

The block of ice 52 is maintained within a predetermined position within the scoring machine by either of the stops 54 or 55, it being only necessary to depress either of the foot pedals 58 or 60 to lower either of said rods for restricting movement of the block of ice. The block of ice is held by stop 55 to produce the scoring shown in Figure 5. In order to vary such scoring the block thus scored is released by stop 55 and removed to stop 54 and retained thereby after the cutters have been operated. When the cutters are operatively lowered other scorings will be produced on said blocks spaced from the previous scoring. It must be borne in mind that the stops 54 and 55 are so spaced in actual practice that they will produce cuts or scorings so spaced that they will represent a definite number of pounds which are less than the number of pounds designated by the scorings on the blocks of ice when said ice has been held by stop 55. As soon as the block of ice is positioned within the scoring machine the hand wheel 17 is released and the movable carriage through its own weight and against the resistance of the weight 48, will descend slowly and since the motor drives the cutters 31 through the belts 32, the cutters 31 will produce the vertical scores 72.

It will be seen from Figure 5 that the block of ice normally is so scored that six smaller blocks of 50 pounds each will be provided for. Other scores may be produced by a different arrangement of the position of the block of ice in the scoring machine. As soon as the carriage begins to descend the pulleys 41 will be moved out of engagement with the pulleys 42 and the horizontal scoring cutters 44 will remain inactive.

What we claim is:

1. In an ice scoring machine, a vertically movable carriage, a motor carried by the carriage, cutters mounted on the carriage

causing vertical scores and operatively connected with the motor, cutters for causing horizontal scores, and means on the carriage and driven by the motor adapted to be operatively connected with the horizontal cutters when the carriage has been moved to a predetermined vertical position whereby the horizontal cutters are actuated.

2. In an ice scoring machine, a vertically movable carriage, a motor carried by the carriage, cutters mounted on the carriage causing vertical scores and operatively connected with the motor, cutters for causing horizontal scores, pulleys on the carriage and driven by the motor and means connected with the horizontal cutters and adapted to be engaged by the pulleys when said carriage has been moved to a predetermined vertical position for causing rotation of said horizontal cutters.

3. In an ice scoring machine, a vertically movable carriage, a motor carried by the carriage, cutters mounted on the carriage causing vertical scores and operatively connected with the motor, cutters for causing horizontal scores, means on the carriage and driven by the motor adapted to be operatively connected with the horizontal cutters when the carriage has been moved to a predetermined vertical position whereby the horizontal cutters are actuated, and manual means for causing elevation of the carriage.

4. In an ice scoring machine, a vertically movable carriage, a motor carried by the carriage, cutters mounted on the carriage, causing vertical scores and operatively connected with the motor, cutters for causing horizontal scores, means on the carriage and driven by the motor adapted to be operatively connected with the horizontal cutters when the carriage has been moved to a predetermined vertical position whereby the horizontal cutters are actuated, manual means for causing elevation of the carriage, and a weight connected with the carriage for limiting the speed of the downward travel of said carriage.

5. In an ice scoring machine, a vertically movable carriage, a motor carried by the carriage, cutters mounted on the carriage causing vertical scores and operatively connected with the motor, cutters for causing horizontal scores, means on the carriage and driven by the motor adapted to be operatively connected with the horizontal cutters when the carriage has been moved to a predetermined vertical position whereby the horizontal cutters are actuated, and means for predeterminedly positioning a block of

ice to be scored relative to the vertical cutters.

6. In an ice scoring machine, a vertically movable carriage, a motor carried by the carriage, cutters mounted on the carriage causing vertical scores and operatively connected with the motor, cutters for causing horizontal scores, pulleys on the carriage and driven by the motor, and means connected with the horizontal cutters and adapted to be engaged by the pulleys when said carriage has been moved to a predetermined vertical position for causing rotation of said horizontal cutters, and means for retaining a block of ice in predetermined positions relative to the cutters for varying the vertical scoring of a block of ice whereby different sizes of pieces of ice may be cut from said block.

7. In an ice scoring machine, a vertically movable carriage, a motor carried by the carriage, cone pulleys driven by the motor, a fixed frame in which the carriage is movable, vertical shafts carried by the fixed frame, cone pulleys mounted at the upper ends of the shafts, means for elevating the carriage whereby the pulleys driven by the motor will engage the cone pulleys on the vertical shafts, horizontal cutters carried by the vertical shafts for producing horizontal scores on a block of ice, cutters adapted to produce vertical scores carried by the movable carriage, and means operatively connecting the vertical scoring cutters with the motor.

8. In an ice scoring machine, a fixed frame, a carriage mounted for vertical movement in the frame, a shaft carried by the frame carrying a gear, a rack secured to the movable carriage and in mesh with said gear whereby when the gear is rotated the carriage will be elevated through the rack, guides carried by the frame, legs projecting from the movable carriage and slidable in the guides, cutters carried by the lower ends of the legs, a motor on the carriage operatively connected with said cutters, vertical shafts carried by the frame, operating means for the shafts located at the upper end of said shafts, and means driven by the motor and adapted to engage the operating means for the shafts when the carriage is in its most elevated position for causing rotation of said shafts, and cutters carried by the vertical shafts for producing horizontal scores.

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