

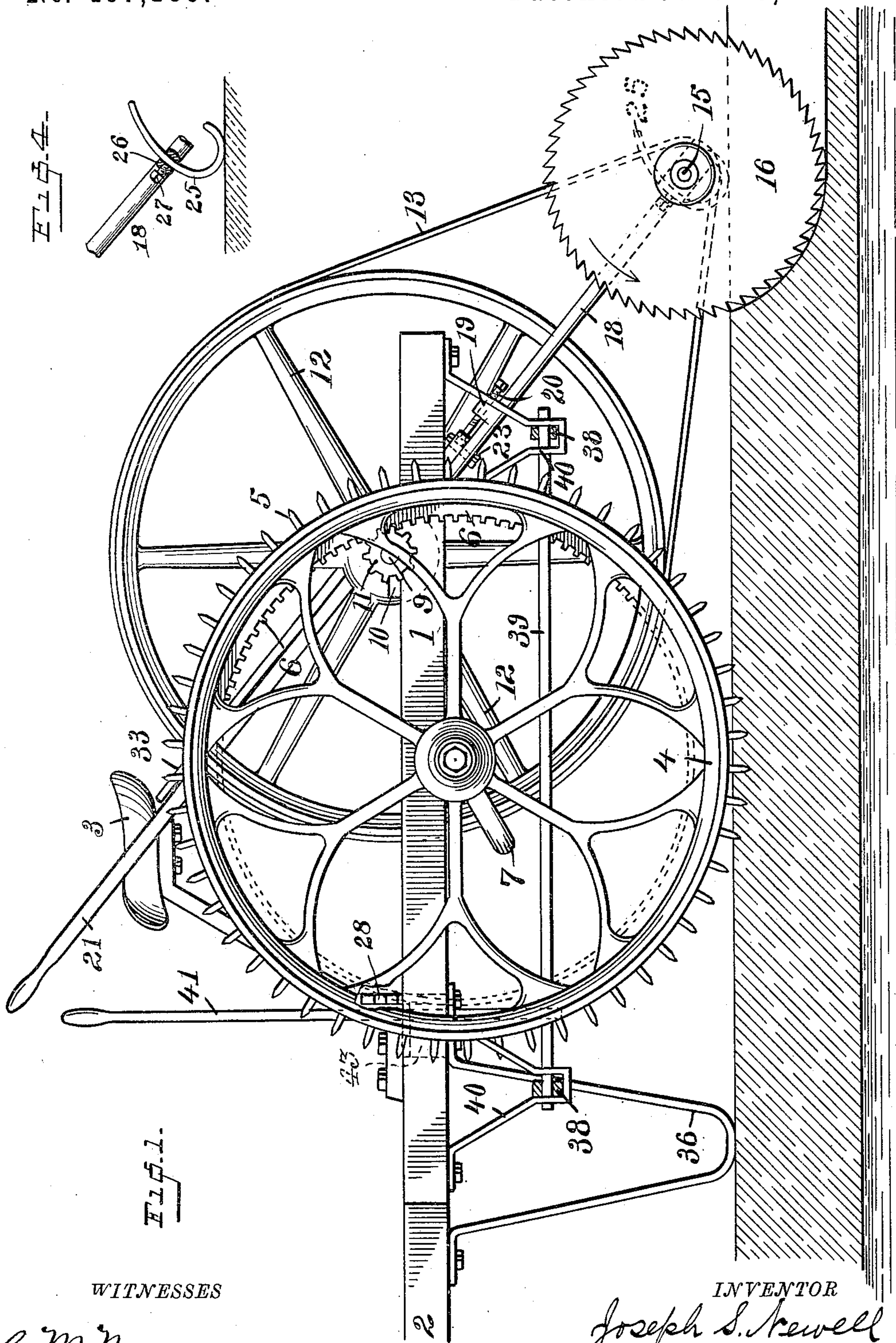
(No Model.)

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J. S. NEWELL.
MACHINE FOR CUTTING ICE.

No. 467,189.

Patented Jan. 19, 1892.



WITNESSES

INVENTOR

C. M. Newman,
Arley F. Munson.

Joseph S. Kewell
By *A. M. Wooster*
Atty.

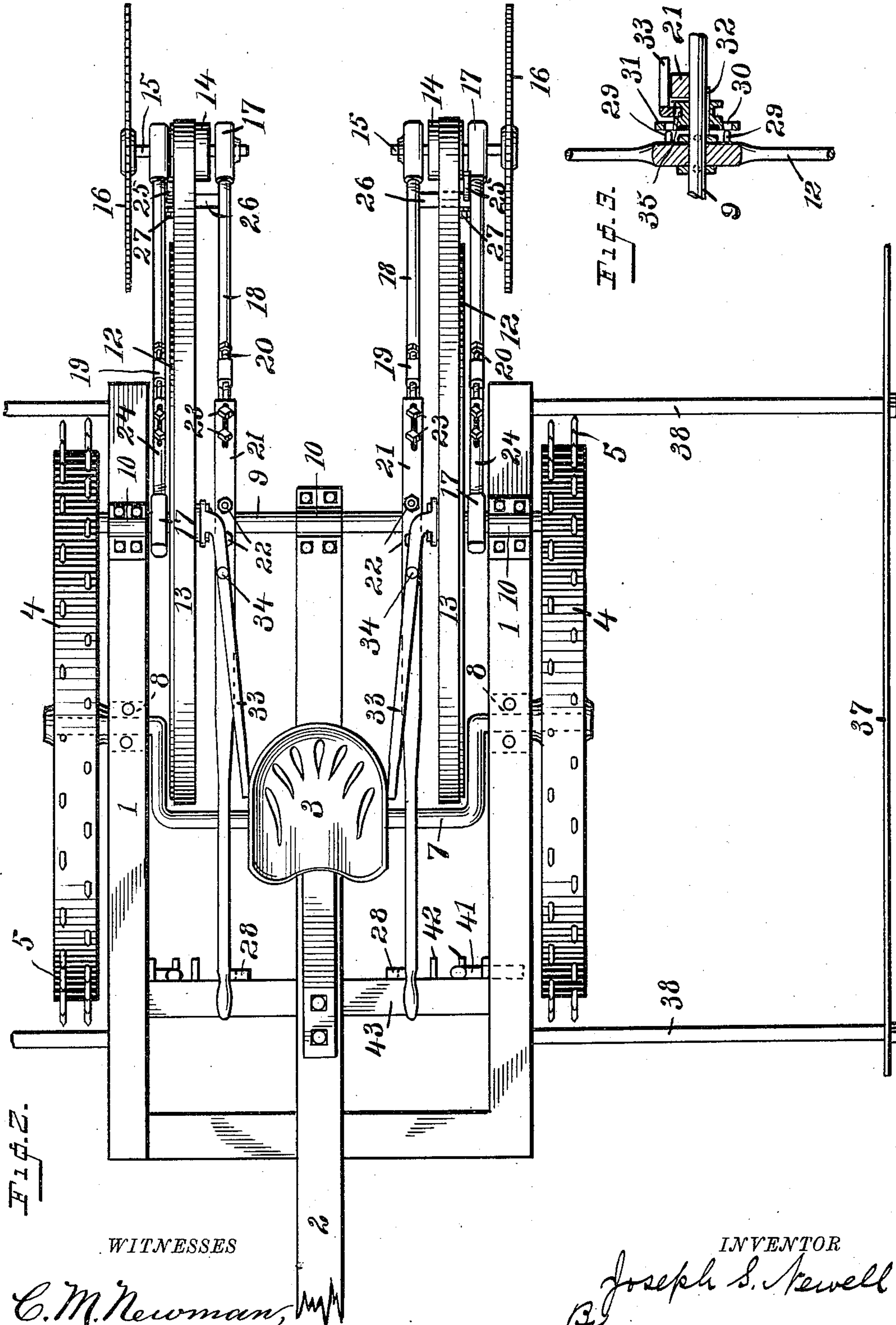
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UNITED STATES PATENT OFFICE.

JOSEPH S. NEWELL, OF THOMASTON, CONNECTICUT.

MACHINE FOR CUTTING ICE.

SPECIFICATION forming part of Letters Patent No. 467,189, dated January 19, 1892.

Application filed March 9, 1891. Serial No. 384,196. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH S. NEWELL, a citizen of the United States, residing at Thomaston, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Machines for Cutting Ice; 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.

My invention has for its object to produce a machine for cutting ice by means of saws, the special object in view being to greatly increase the amount of work performed in a given length of time and to produce cakes of any required dimensions which shall be uniform in size and cut smoothly and without chipping or cracking the ice.

With these ends in view I have devised the machine of which the following description, in connection with the accompanying drawings, is a specification, numerals being used to designate the several parts.

Figure 1 is a side elevation of either a single or double machine; Fig. 2, a plan view of a double machine; Fig. 3, a detail view illustrating one of the clutches which connect the large belt-pulleys to the shaft; and Fig. 4 is a detail view illustrating one of the shoes.

1 denotes the frame of the machine, which may be of any suitable construction and of either metal or wood; 2, the neap or pole; 3, the seat, and 4 the driving-wheels, which are provided with radial pins or projections 5, which engage the ice, and on their internal perimeters with gears 6. The driving-wheels are mounted on an axle 7, which is made U-shaped and is provided with an angular portion which is rigidly secured to the frame, as at 8. (See dotted lines, Fig. 2.)

9 denotes the driving-shaft, which is journaled in suitable boxes 10. At one end of this shaft in a single machine and at both ends in a double machine are pinions 11, which engage internal gear 6. I have illustrated a double machine, as it is obvious that the construction of a single machine is precisely the same, with the exception that duplicate parts are omitted. I will therefore confine the description to a double machine.

12 denotes large belt-pulleys mounted

loosely on shaft 9. From these pulleys belts 13 extend over smaller pulleys 14 on shafts 15, which carry the saws 16. Shafts 15 are journaled in blocks 17, which are themselves connected to heavy rods or bars 18. These rods are provided with lugs 19. 20 denotes screws threaded to engage these lugs, the inner ends of which bear in sockets in the ends of levers 21. These levers are provided on their under sides with straps or boxes, by which they are secured to the shaft. The bolts only (see 22, Fig. 2) by which these straps or boxes are secured in place appear in the drawings. 23 denotes bolts which pass through rods 18 and levers 21, said levers being slotted, so as to permit rods 18, and consequently shafts 15, which carry the saws and the small belt-pulleys, to be adjusted in or out, as may be required, to adjust the belt when screws 20 are rotated.

The construction just described is specifically that for adjusting the inner ends of shafts 15. The outer ends of said shafts are adjusted in precisely the same manner, except that bolts 20 and 23, instead of engaging levers 21, engage side pieces 24, which are themselves connected to blocks 17, through which the shaft passes. The connection of rods or bars 18 and side pieces 24 to the blocks may be made in any suitable manner. In practice these parts may be made of tubing and threaded at their ends to engage internal threaded recesses in the blocks. Should it be required at any time to raise the saws above the surface of the ice, it is simply necessary for the operator to press levers 21 downward. As soon as the machine is in position for use again the operator releases these levers, which permits the saws to drop down upon the ice.

The extreme depth of the cut of the saws is determined by shoes 25, which pass through cross-pieces 26 between the rods or bars 18 on each side of the machine, said shoes being locked at any required adjustment by set-screws 27. When it is desired to hold the saws out of engagement with the ice, levers 21 are pressed down and engaged with the teeth of racks 28, which are rigidly secured to the frame. As already stated, the large belt-pulleys 12 turn freely upon the shaft. On the inner sides of these pulleys are pins 29, which are adapted to engage holes 30 in

disks 31, these disks constituting the other members of the clutches and being held against rotation independently of the shaft by splines 32 or in any suitable manner, but
5 being free to be moved longitudinally thereon by means of hand-levers 33, which are pivoted to levers 21, as at 34, and are bifurcated at their lower ends to engage grooves 35 in the disks.

10 Should it be required at any time to stop the rotation of the saws instantly, the operator simply has to move both of the hand-levers outward quickly, thereby disconnecting the parts of the clutch.

15 At the forward end of the machine is a shoe 36, which in use is not necessarily in contact with the ice, but which when in contact with the ice slides freely over the surface and serves in connection with shoes 25 to steady
20 the frame of the machine and keep it constantly in the same position.

In use markers are placed upon one or both sides of the machine, both sides preferably, especially in a double machine. These markers
25 consist of metallic guide-plates 37, which engage the cuts already made and serve as guides in cutting the cakes of ice to uniform size. The guide-plates are carried by arms 38, the inner ends of which are rigidly secured to rock-shafts 39, journaled in brackets
30 40 upon the frame of the machine. In use the rock-shafts are oscillated by means of hand-levers 41, which are adapted to engage between pins 42, or, if preferred, racks upon
35 the cross-piece 43 of the frame, which also serves as a foot-rest for the driver. It will be seen that an inward or outward movement of either of these hand-levers will place the guide-plate on that side either in operative
40 position or will raise it out of operative position where it is locked by engagement of the hand-lever with one of the pins.

The operation of the machine in use will, it is thought, be clearly understood from the
45 description given.

Where but one saw and one guide is used the operator may pass continually around the four sides of the field of ice that he is cutting. Where two saws and two guides are
50 used it is common to turn at each end of the cut and drive back, placing the guide-plate in engagement with the last cut and making new cuts side by side with those last made, the guide-plates being used alternately and
55 the one not in use being lifted out of the way. As already stated, the saws may be ad-

justed to cut to any required depth by engaging levers 21 with racks 28. It is of course not practical to cut entirely through the ice. In practice, however, it is quite
60 practical to make the cuts from one-half to three-fourths of the thickness of the ice and then to break away the cakes in the usual manner. This gives nice smooth-sided cakes which pack much more conveniently than
65 where the sides are rough.

Having thus described my invention, I claim—

1. Shafts 15, carrying saws and belt-pulleys 14, and blocks 17, in which said shafts are
70 mounted, in combination with a shaft having belt pulleys 12, belts connecting said pulleys 12 and 14, levers 21, adapted to turn on the shaft, and connections between the blocks in which shafts 15 are mounted, so that downward
75 movement of the forward ends of said levers will lift the saws out of operative position.

2. The driving-shaft having pulleys 12, shafts 15, carrying the saws and having belt-pulleys 14, and belts connecting said pulleys,
80 in combination with levers 21 and blocks 17, which turn on the driving-shaft, other blocks 17, in which shafts 15 are mounted, and adjustable connections between the driving-shaft and shafts 15, by which said shafts 15
85 may be moved in or out to adjust the belts.

3. The driving-shaft having belt-pulleys 12, and shafts 15, mounted in blocks 17, said shafts carrying the saws and having belt-pulleys 14, and belts connecting said pulleys,
90 in combination with levers 21, which turn on the shaft and are provided with slots at their ends, rods 18, having lugs 19, bolts 23, passing through the slots in the levers and engaging rods 18, and screws 20, engaging the lugs and
95 bearing against the ends of the levers, whereby shafts 15 may be moved in or out to tighten the belts.

4. In a machine of the class described, the combination, with shafts 15, carrying the saws,
100 blocks 17, in which said shafts are journaled, and rods 18, to which the blocks are connected, of cross-pieces 26 between the rods, and shoes 25, adjustably secured to said cross-pieces, as
105 and for the purpose set forth.

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

JOSEPH S. NEWELL.

Witnesses:

A. R. NETTLETON,
Z. E. STOUGHTON.