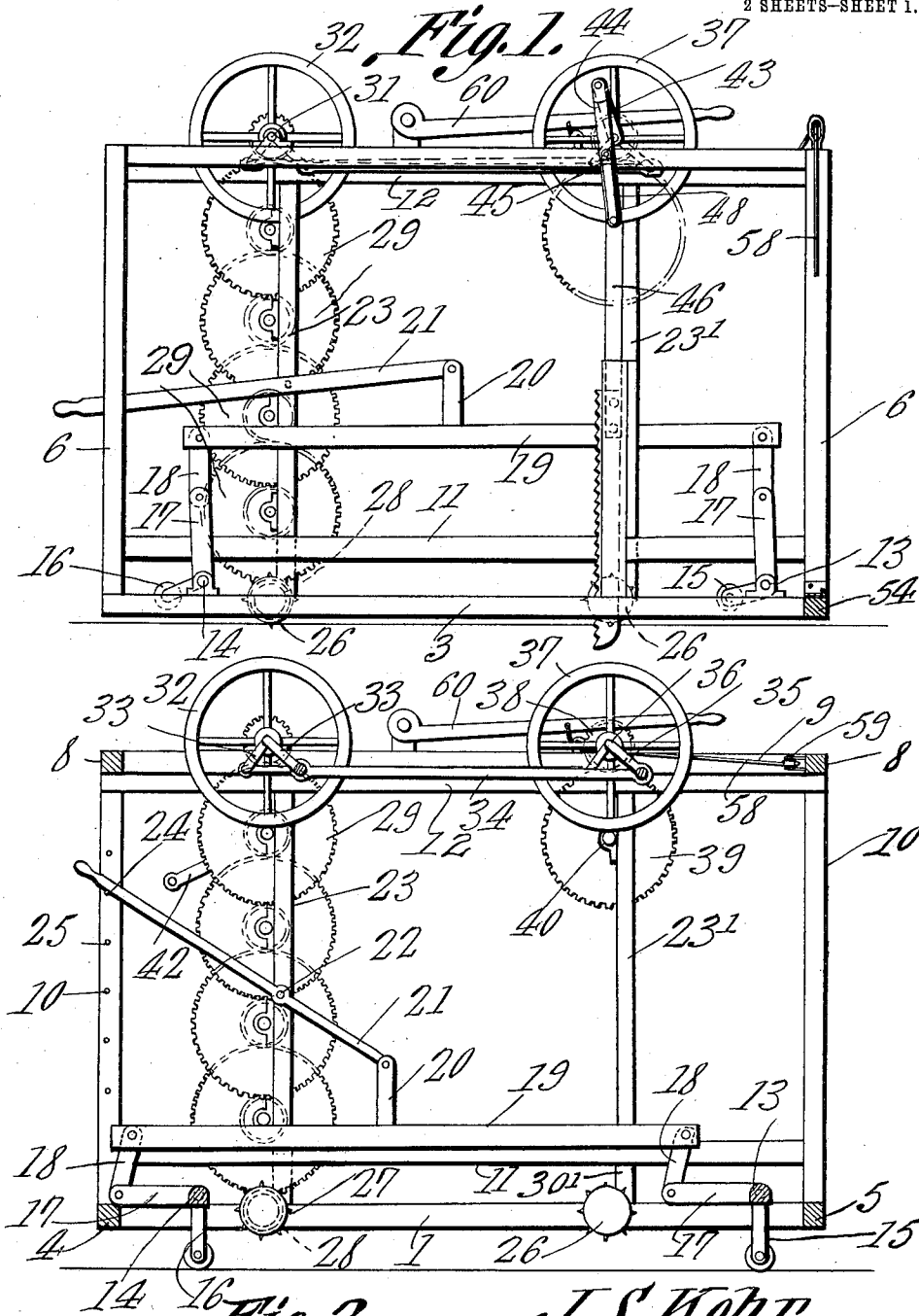


J. S. KOHR.
ICE CUTTING MACHINE.
APPLICATION FILED NOV. 7, 1910.

1,029,133.

Patented June 11, 1912.

2 SHEETS—SHEET 1.



Witnesses

J. S. Kohr
Herbert Lawson

Fig. 2.

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Inventor

by

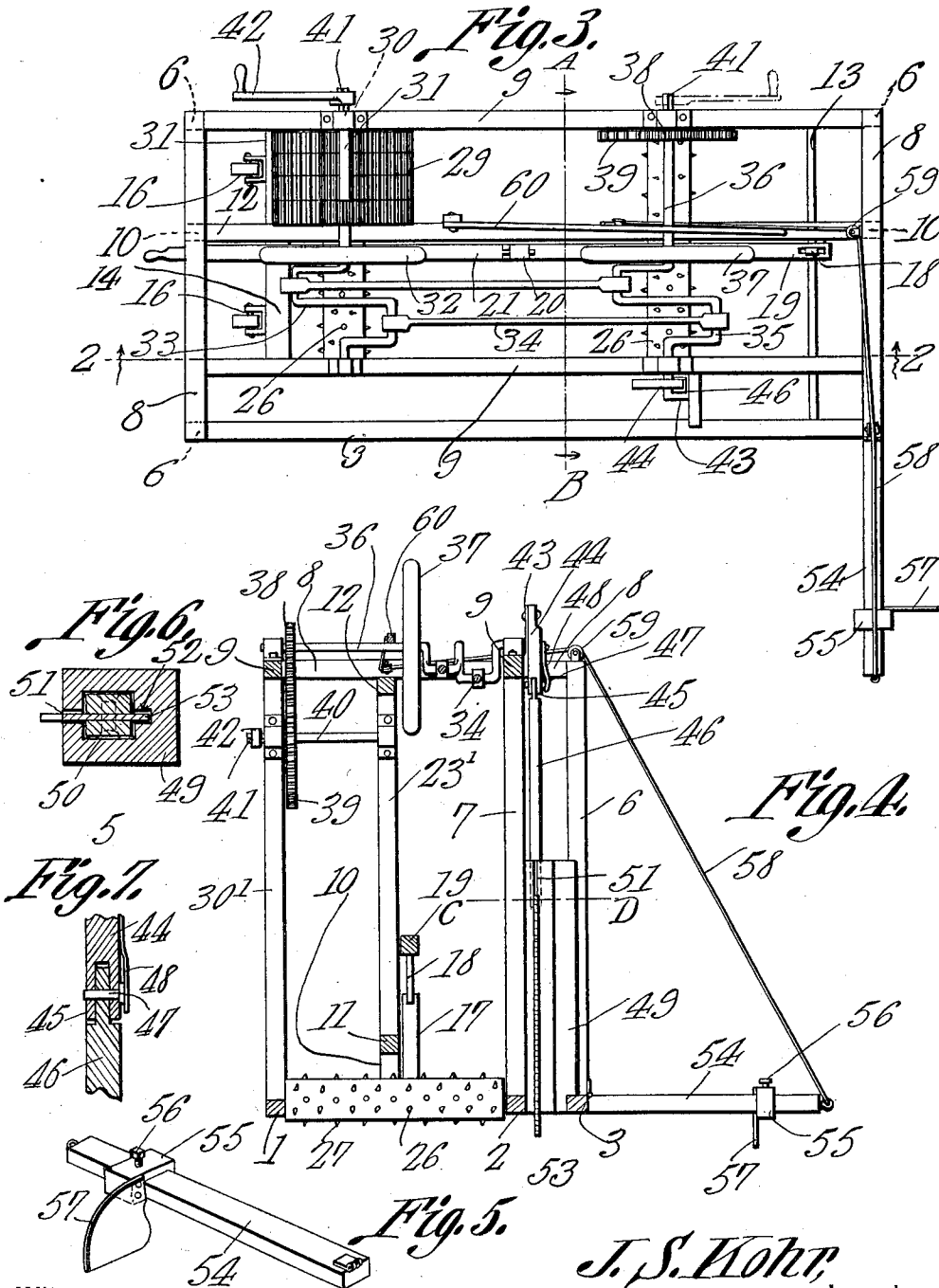
Cashow & Co.
Attorneys

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Witnesses

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UNITED STATES PATENT OFFICE.

JOHN S. KOHR, OF ONSET, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO RAYMOND W. KRALL, OF YORK, PENNSYLVANIA.

ICE-CUTTING MACHINE.

1,029,133.

Specification of Letters Patent.

Patented June 11, 1912.

Application filed November 7, 1910. Serial No. 591,141.

To all whom it may concern:

Be it known that I, JOHN S. KOHR, a citizen of the United States, residing at Onset, in the county of Lebanon and State of Pennsylvania, have invented a new and useful Ice-Cutting Machine, of which the following is a specification.

This invention relates to ice cutting machines and has for its object the provision of a machine for cutting blocks of ice out of doors and wherein the entire mechanism, including the saw, and the driving apparatus, may be operated by one or more persons.

A further object is to provide driving or propelling wheels of novel form and special means for actuating the same and for moving them into and out of operative positions.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a side elevation of the complete machine with the exception of the laterally extending guide carrying arm, which arm is shown in section. Fig. 2 is a vertical longitudinal section through the machine on line 2—2 Fig. 3. Fig. 3 is a plan view of the machine. Fig. 4 is a section on line A—B of Fig. 3. Fig. 5 is a perspective view of the guide arm and the plate carried thereby. Fig. 6 is a section on line C—D Fig. 4, said section being taken solely through the saw and its guide-way. Fig. 7 is an enlarged section through the connection between the saw rod and its actuating link.

Referring to the figures by characters of reference 1, 2 and 3 constitute sills extending longitudinally of the machine and connected together at their ends by cross sills 4 and 5, all of said sills cooperating to form the base frame of the machine. Corner posts 6 extend upwardly from the ends of the sills 1 and 3 and additional posts extend upwardly from the ends of the sills 2, these

last mentioned posts being indicated at 7. Posts 6 and 7 support end strips 8 and side strips 9 constituting the top frame of the machine, there being intermediate end posts 10 mounted between the strips 4 and 5 and the top strips 8. These posts 10 are connected, adjacent their lower ends by a longitudinally extending sill 11 and another longitudinal member 12 connects the upper end portions of the posts 10.

Rock shafts 13 and 14 are journaled upon the sills 1 and 2 adjacent the front and rear ends respectively of the machine, the shaft 13 being provided with a centrally disposed caster 15 while the rock shaft 14 is provided with casters 16 located preferably adjacent its ends. Both of these shafts have radially extending arms 17 each connected as by means of a link 18 to a lifting head 19 movably mounted within the machine. This head has a central upstanding arm 20 pivotally connected to one end of an operating lever 21, said lever being fulcrumed, as at 22, upon a post 23 which connects the strips 11 and 12 at intermediate points. This lever projects beyond the front end of the machine and is adapted to be held in any position to which it may be adjusted, by means of a pin 24 or the like insertible into any one of the series of openings 25 in the adjacent post 10.

Propelling rollers 26 are journaled upon the sills 1 and 2 adjacent the ends thereof, each of these rollers being provided with spurs or projections 27 adapted to engage the ice when the casters 15 and 16 are elevated and thus propel the machine when power is transmitted to one of the rollers. One of these rollers has a gear 28, shown by dotted lines in Fig. 2, this gear meshing with one of a train of gears 29 carried by and between the post or standard 23 and a corresponding standard 30 interposed between the sill 1 and the top strip 9. The upper gear of this train is secured to a drive shaft 31 journaled upon the strips 9 and carrying a fly wheel 32. Said shaft also has cranks 33 connected, by pitmen 34 to similar cranks 35 constituting parts of a shaft 36 which is journaled on the strips 9. This shaft also carries a fly wheel 37 and has a gear 38 keyed or otherwise secured to it and meshing with a gear 39 secured to a supplemental drive shaft 40 journaled in posts or standards 30' and 23' similar to the

posts 30 and 23 heretofore described. Both of the shafts 31 and 40 are provided with angular heads 41 adapted to be engaged by cranks 42 or the like whereby the shafts may be rotated. The shaft 36 is provided, at that end thereof remote from the gear 38 with a crank 43, pivotally connected to a link 44. This link has a forked end 45 for the reception of a rod 46. Said rod is pivotally connected to the forked terminal of the link by means of a removable pivot pin 47 which is held against accidental displacement by means of a retaining leaf spring 48.

A guide-way 49 is secured to the frame of the machine at a point below the crank 43 and has a central longitudinal passage 50 from which opens a slot 51 through one face of the guideway. In the opposite wall of the passage is a groove 52 in the same plane with the slot 51. The saw 53 is located in the passage 50, one edge portion of the saw engaging the groove 52 while the other or toothed edge portion projects through the slot 51. The saw blade extends below the frame of the machine so as to engage the ice to be cut and the saw is fixedly connected to the rod 46 in any manner preferred. It will be apparent that the saw can thus be reciprocated through the actuation of link 44 by the crank 43. By removing the pin 47, rod 46 can be quickly disengaged from the link and the saw readily lifted out of position so that it will not engage the ice while the machine is not in use or while it is being propelled to or from the point of use.

In order that the machine may be properly guided during the sawing operation, a laterally extending guide arm 54 is hingedly connected to the sill 3 at the rear end, this arm carrying a sleeve 55 which may be locked thereon in any position to which it may be adjusted by means of a set screw 56 or the like. This sleeve has a blade or plate 57 fixed relative thereto and arranged so as to travel upon one edge, this edge being adapted to extend into the cut previously made. For the purpose of swinging the arm 54 into raised or lowered position, a cord 58 is attached to the arm and extends upwardly into engagement with guide sheaves 59 suitably located on the frame of the machine the upper end of the cord being attached to an operating lever 60 fulcrumed on the machine. By swinging this lever so that the free end thereof will project beyond the front end of the machine, the cord 58 will be pulled longitudinally and thus elevate the arm against or close to the adjacent corner posts 6. When the lever is swung in the other direction, as shown in Fig. 3 the arm 54 will swing downwardly and bring the blade 57 into engagement with the ice.

In using the machine the lever 21 is first shifted so as to force the head 19 down-

wardly and thus swing the casters 15 and 16 below the rollers 26. As the saw is normally elevated within the guide-way and disconnected from link 44, the machine can be pushed to the point of use or conveyed thereto in any other manner preferred. After the machine has been brought to the desired position, the lever 21 is released from pin 24 and the machine will therefore drop down until the rollers 26 come into engagement with the ice. By connecting the saw with the link 44 and lowering the arm 54, the machine is placed in condition for use. The mechanism can now be operated by actuating shaft 31, motion being transmitted therefrom through gears 29 to the roller 26 and through the pitmen 34 to the shaft 36. If preferred, however, the machine can be operated by rotating the shaft 40, motion being transmitted therefrom through gears 39 and 38 to shaft 36 and from said shaft, through the pitmen 34, to shaft 31 which, in turn, drives the gears 29 and thus actuates the roller 26. As the machine is thus propelled forward the saw is reciprocated vertically, blade 57, by riding in the adjacent cut, serving to hold the machine against lateral displacement.

What is claimed is:—

1. In an ice cutting machine, the combination of the supporting frame, a vertically guided saw carried thereby, mechanism for reciprocating said saw, a pair of spiked rollers extending transversely of the frame of the machine and serving to support the same during the cutting operation of the saw, gearing connecting a portion of the saw operating mechanism to one of said rollers, a pair of shafts extending transversely of the frame of the machine at points near the ends thereof, arms secured to said shafts, a pair of supporting wheels carried by the shaft at one end of the machine, a single supporting wheel carried by the shaft at the other end of the machine, a lifting head, and means upon the frame and head for simultaneously operating the arms to simultaneously raise or lower the supporting wheels.

2. In an ice cutting machine, the combination with a supporting frame, of a guide-way carried thereby, and including a central passage, a slot through the front of the guide way and communicating with the passage, and a groove in the rear wall of the passage in alinement with the slot, a saw disposed in said guide-way with its inner edge in the groove and its toothed edge projecting through the slot, driving rollers journaled upon the frame, and means connected with the rollers and the saw for operating the saw and rollers simultaneously.

3. In an ice cutting machine, the combination with a supporting frame, of a vertically guided saw carried thereby, means

for reciprocating the saw, ice-engaging rollers extending transversely of the frame and constituting supports for the frame during the cutting operation of the saw, gears connecting the saw-operating mechanism to one of said rollers, arms adjacent the ends of the frame and mounted to swing relative thereto, supporting wheels carried by the arms, and means for swinging the arms to shift the supporting wheels into or out of engagement with the surface on which the machine is mounted.

4. In an ice-cutting machine, the combination with a supporting frame, of arms mounted to swing relative to the frame, means for actuating the arms, supporting wheels carried by the arms and movable therewith into or out of engagement with the surface supporting the frame, a saw

carried by the frame, mechanism for actuating the same, spiked rollers extending transversely of the frame and constituting means for supporting said frame during the cutting operation of the saw, mechanism for transmitting motion to the saw-operating mechanism from one of the rollers, and means for locking the supporting wheels in their lowermost position to hold the frame elevated and the rollers out of engagement with the ice.

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

JOHN S. KOHR.

Witnesses:

F. B. OCHSENREITER,
HERBERT D. LAWSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."