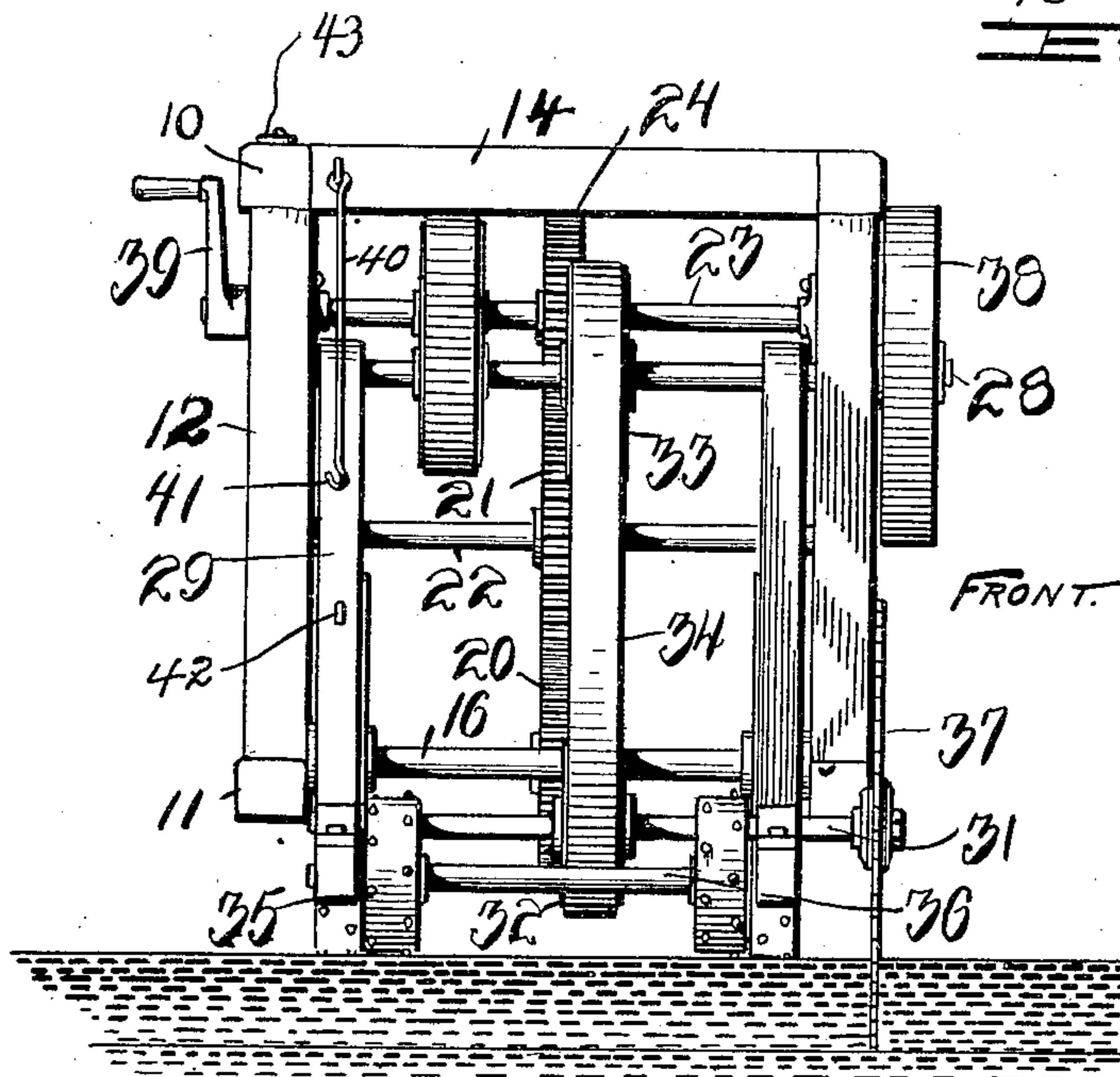
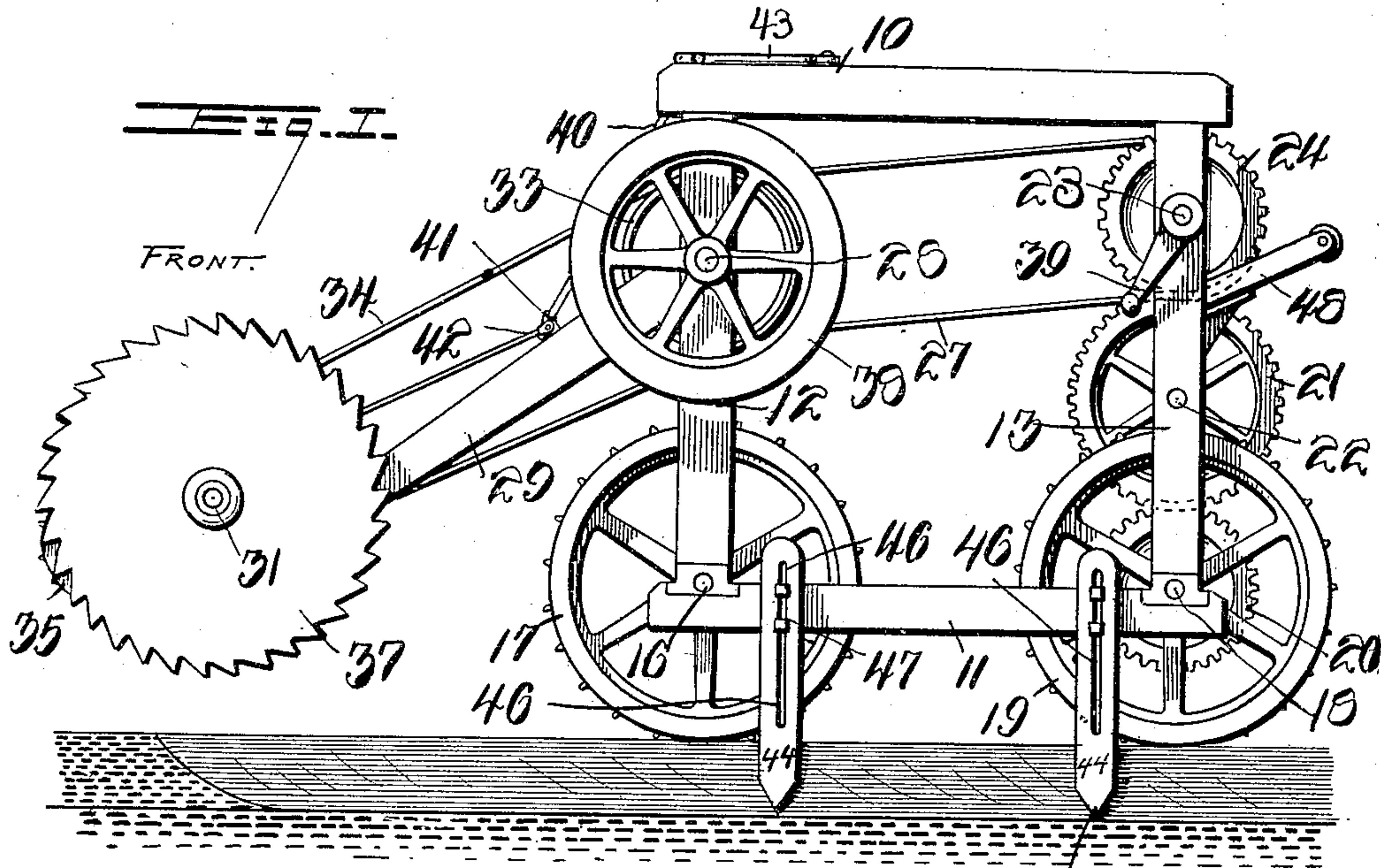


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ICE CUTTER.
APPLICATION FILED DEC. 1, 1909.

999,091.

Patented July 25, 1911.

3 SHEETS-SHEET 1.



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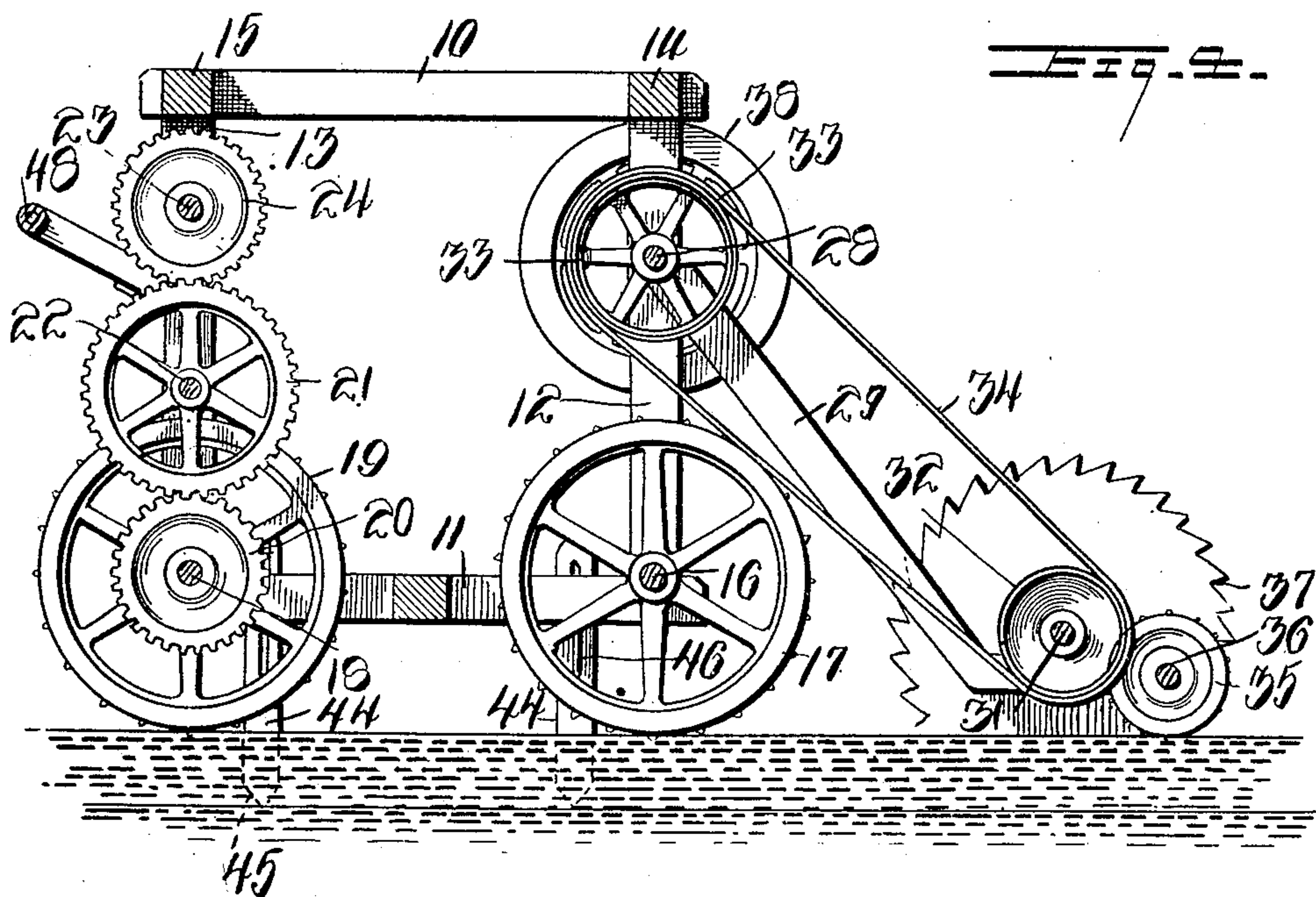
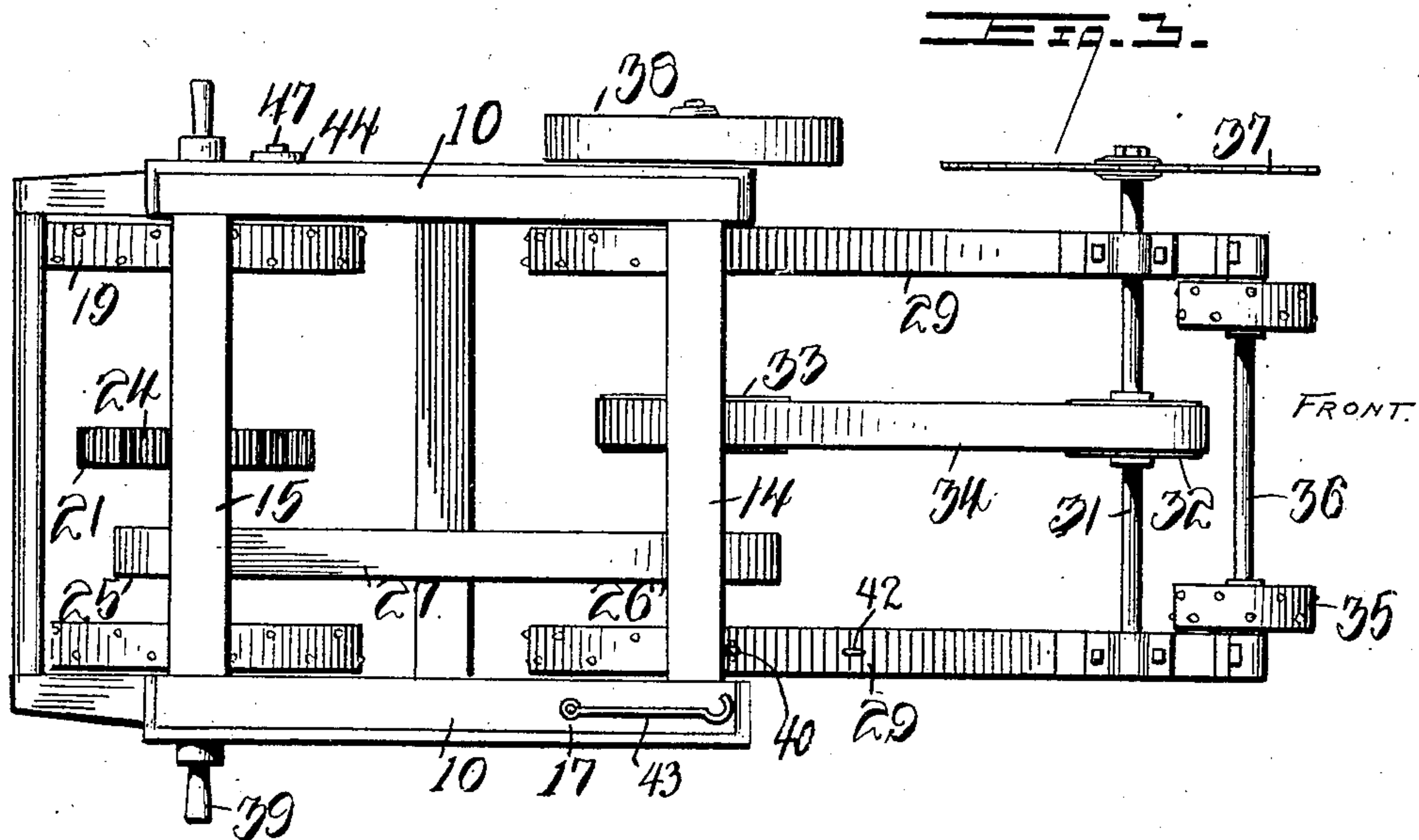
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3 SHEETS-SHEET 2.



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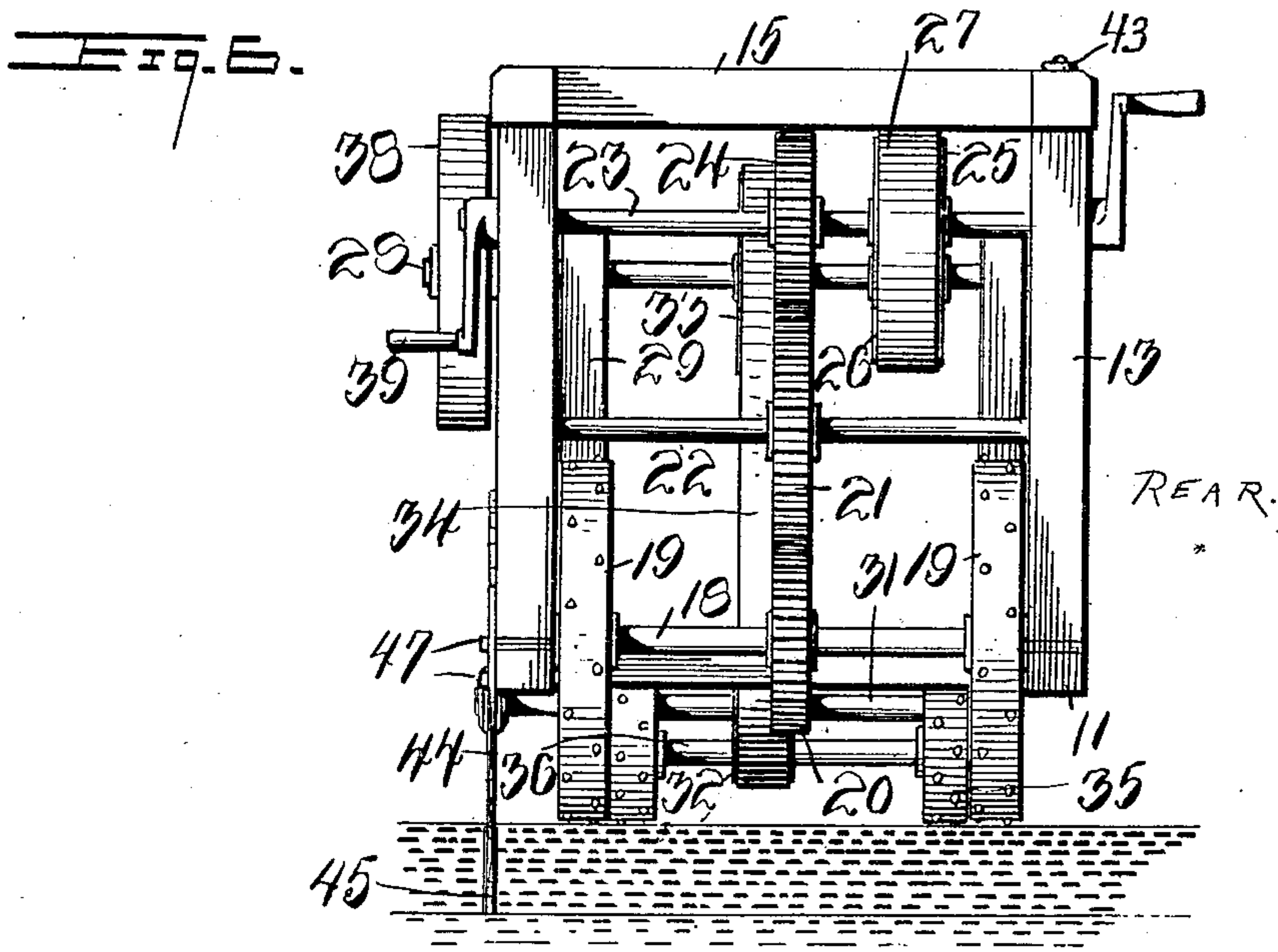
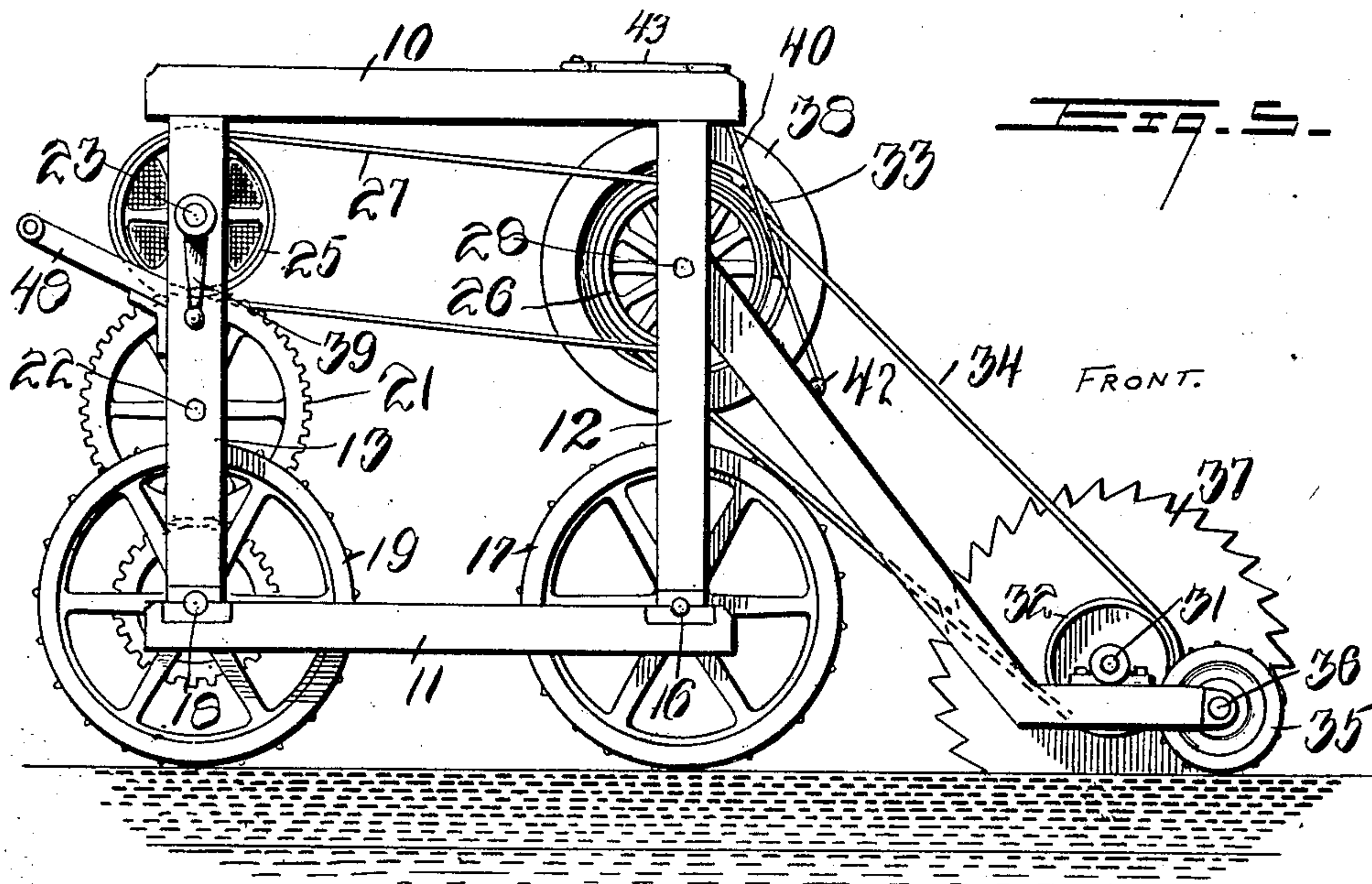
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3 SHEETS-SHEET 3.



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UNITED STATES PATENT OFFICE.

MARSHEL B. BURROWS, OF HAYNES, WEST VIRGINIA.

ICE-CUTTER.

999,091.

Specification of Letters Patent.

Patented July 25, 1911.

Application filed December 1, 1909. Serial No. 530,805.

To all whom it may concern:

Be it known that I, MARSHEL B. BURROWS, a citizen of the United States, residing at Haynes, in the county of Webster, State of West Virginia, have invented certain new and useful Improvements in Ice-Cutters; 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.

This invention relates to ice cutting machines and has for its object to provide a machine of this class which may be moved over the ice to be cut and while in motion will be operated to cut the ice.

While the machine in general is of a novel construction and embodies many advantages the invention resides more specifically in a novel means for guiding the machine so that a straight cut may be had with practically no attention on the part of the operator. This means is arranged so as to travel in the groove cut by the saw in the ice.

In the accompanying drawings, Figure 1 is a side elevation of the invention. Fig. 2 is a front elevation of the machine. Fig. 3 is a top plan view. Fig. 4 is a vertical longitudinal sectional view therethrough. Fig. 5 is a side elevation of the side opposite that shown in Fig. 1, the saw frame being lowered. Fig. 6 is a rear elevation.

As shown in the drawings, the machine comprises a frame composed of upper and lower pairs of side sills 10 and 11, front and rear pairs of uprights 12 and 13 which connect the corresponding ends of the upper and lower pairs of side sills 10 and 11, and front and rear cross beams 14 and 15.

Fixed at its ends in the lower sills 11 of the frame adjacent their forward ends is an axle 16 and mounted for rotation upon this axle independently of each other are wheels 17 which have their peripheries roughened or provided with spurs so that they will not slip during the passage of the machine over the ice to be cut. The utility of this construction, in which the wheels may have a rotary movement independent of each other, will be presently stated.

Journaled for rotation in suitable bearings in the lower ends of the rear pair of uprights 13 is a shaft 18 and fixed upon this shaft for rotation therewith are wheels 19 which are similar in construction to the wheels 17 but which during their travel over

the ice, serve to rotate the shaft. A gear 20 is fixed upon this shaft between the wheels 19 and meshes with a similar gear 21 upon an idler shaft 22 which is journaled directly above the shaft 18 and also in the rear pair of uprights 13. A shaft 23 is rotatably journaled in the said uprights in a plane above the shafts 18 and 22 and upon this shaft is splined a gear 24 which is normally in mesh with the gear 21 but which may be moved longitudinally upon the shaft so as to be out of mesh with the said gear. A pulley 25 is also fixed upon this shaft 23 for rotation therewith and over this pulley and a similar pulley 26 is trained a belt 27. This pulley 26 is fixed upon a shaft 28 which is journaled in the forward pair of uprights 12 above the axle 16 and it will be readily understood that during the travel of the machine, power will be transmitted through the several gears heretofore described and from the shaft 23 to the shaft 28.

The ice saw frame embodied in this invention comprises a pair of sills 29 which are braced in parallel relation with respect to each other and are pivoted at their rear ends on the shaft 28, the frame in this manner being adapted for vertical swinging movement. A shaft 31 is journaled at its ends in the forward ends of the sills 29 and upon this shaft is fixed a pulley 32 over which and a pulley 33 upon the shaft 28 is passed a belt 34. Wheels 35 having roughened peripheries are fixed upon a rotatable axle 36 journaled in the forward ends of the sills 29 and serve to support the forward end of the saw frame. The saw is indicated by the numeral 37 and is fixed upon one end of the shaft 31, the said end of the shaft being projected beyond the adjacent end of the sill 29. A fly wheel 38 is fixed upon the shaft 28 outwardly of the main frame of the machine and crank handles 39 are carried at the ends of the shaft 23 for a purpose to be presently described.

Loosely suspended from the upper forward cross beam 14 of the main frame of the machine is a rod 40 provided at its free end with a hook 41 which is designed for engagement at times with a staple 42 upon the saw frame so as to hold the frame in raised position and thereby render the saw inoperative, the frame being so raised when it is desired to turn the machine around. When it becomes necessary to move the ma-

chine from one place to another it is desirable to have the saw frame occupy as little space as possible and I have therefore provided upon the upper end of the main frame of the machine a hook 43 which is also adapted for engagement with the staple 42 to hold the frame vertical.

From the above description it will be understood that a saw 37 is employed and this is located at one side of the machine. In order that the machine may be guided so as to produce a straight cut, there are provided suitable guide devices. Each of these guide devices comprises a plate 44 which has its lower end pointed as at 45 and is provided with a longitudinally and vertically extending slot 46 through which are passed two bolts 47 these bolts being engaged also through the corresponding lower sill 11 of the main frame of the machine. These plates are so adjusted by means of the bolts, that their pointed lower ends will travel in the cut made in the ice by the saw and as there are two of these plates, the machine will at all times travel in a straight line except, of course, when it is being turned. Suitable handles 48 are arranged at the rear end of the frame whereby the machine may be pushed over the ice.

From the foregoing description of my invention it will be understood that under normal conditions the gear 24 is in mesh with the gear 21 and that both of the pairs of wheels 17 and 19 rest upon the ice as do also the wheels 35. Forward movement of the machine will result in a rapid rotation of the saw shaft 31 and consequently of the saw 37, a cut being in this manner cut into the ice in a line with the travel of the machine. Should it be desired to saw through a block of ice after the ice has been broken up the gear 24 is slipped longitudinally of the shaft 23 so as to be out of mesh with the gear 21 and the said shaft is then rotated by means of the crank handle 39. This rotation of the shaft 23 will of course result in a rotation of the shaft 31 and the saw

carried thereby. By reason of the fact that the wheels 17 may have an independent turning movement upon the axle 16, one wheel may rotate backwardly while the other rotates forwardly at the time of turning the machine and consequently the machine may be turned very readily, it being understood of course that the saw frame is suspended during such turning movement, and that the gear end of the frame is lifted so as to bring the rear wheels 19 out of engagement with the ice.

Having thus described the invention, what is claimed as new, is:—

An ice cutting machine, comprising in combination, a frame including pairs of front and rear uprights, longitudinal sills connecting the lower ends of the uprights, a driving shaft journaled in the lower ends of the rear pair of uprights, wheels mounted on said shaft for supporting and driving the frame, an idle shaft journaled in the lower ends of the front pair of uprights, supporting wheels mounted on the last-mentioned shaft, a counter-shaft journaled in the upper ends of the first mentioned pair of uprights, actuating means for said shaft connected to the driving shaft, said counter-shaft having its ends projecting through and beyond the uprights, operating handles secured to the said projecting ends of the shaft, a driven shaft mounted in the upper ends of the front pair of uprights, actuating mechanism connecting said driven shaft to the counter-shaft, a saw journaled in the said frame and disposed in alinement with one of the longitudinal connecting sills, driving means for the saw connected to the driven shaft, and vertically adjustable guides carried by the said longitudinal sill.

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

MARSHAL B. BURROWS.

Witnesses:

J. W. McCLUNG,

W. F. HOLLISTER.