J. SCHATER.

Ice Cutting Machine.

No. 167,413. Patented Sept. 7, 1875.

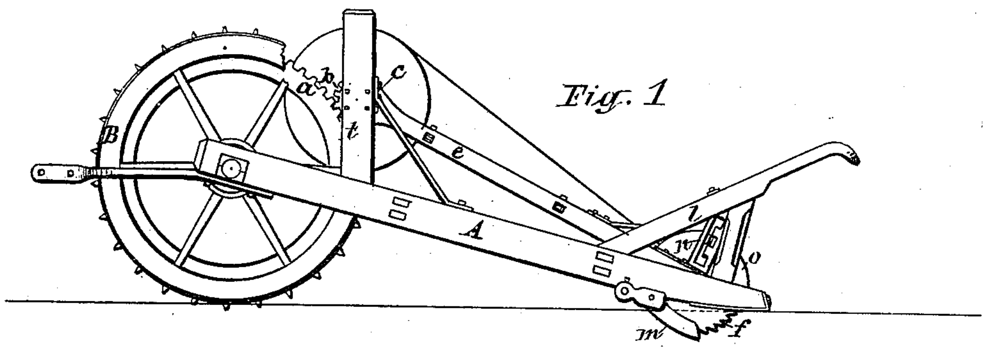

Fig. 1

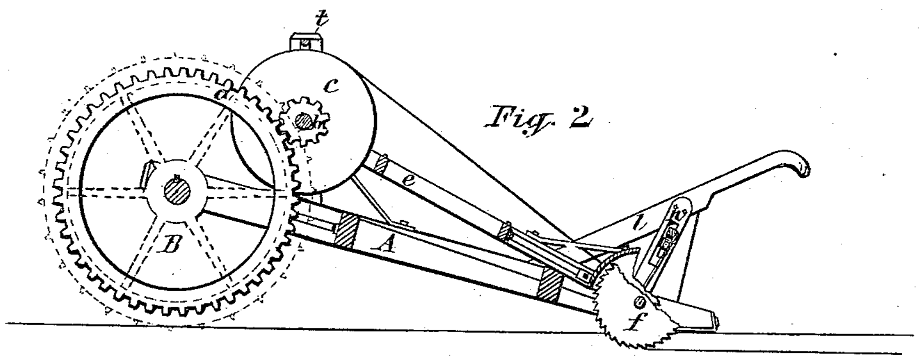

Fig. 2

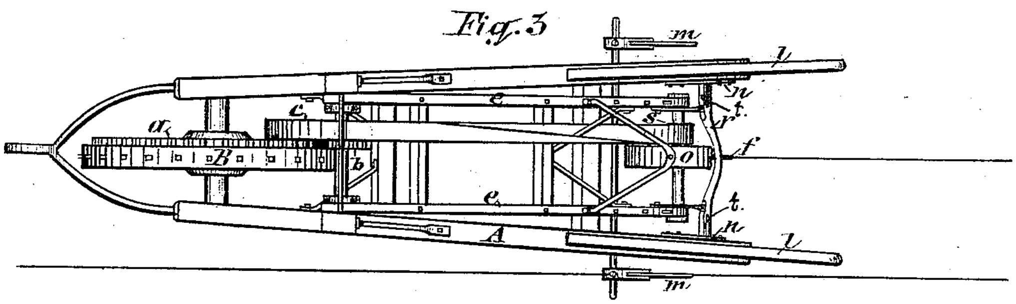

Fig. 3

WITNESSES:

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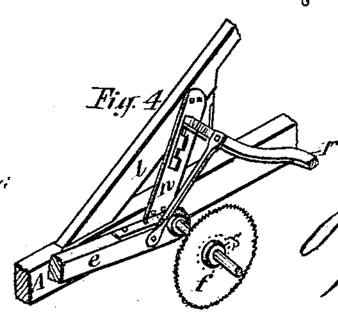

Fig. 4

INVENTOR:

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UNITED STATES PATENT OFFICE.

JOSEPH SCHATER, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN ICE-CUTTING MACHINES.

Specification forming part of Letters Patent No. **167,413**, dated September 7, 1875; application filed June 9, 1875.

To all whom it may concern:

Be it known that I, JOSEPH SCHATER, of Syracuse, State of New York, have invented an Ice-Cutting Machine, of which the following is a specification:

My invention relates to that class of ice-cutting machines in which a circular saw receives motion from a serrated traction-wheel; and it consists in an improved construction and arrangement of its parts, which reduces the cost of the machine and renders it easily managed and operated.

The construction of my machine is fully shown in the drawing, wherein Figure 1 is a side elevation; Fig. 2, a longitudinal section; Fig. 3, a plan view; and Fig. 4, an isometric view of part of the machine, showing the arrangement for lowering and raising the saw.

A is the carriage, mounted at the forward end on the axle of the traction-wheel B. The other end, which rests on the ice, is provided with handles *l*, similar to those of a plow, by which the machine is guided and steadied. The traction-wheel B has on its periphery spurs or cogs, which, by the weight of the machine, are pressed into the ice and prevented from slipping while driving the saw. To the side of the wheel B is rigidly attached a cog-wheel or circle of toothed gearing, *a*, of a diameter somewhat smaller than that of the former, to prevent it from coming in contact with the surface upon which the machine is moved. Back of the traction-wheel B, and meshing in the gearing *a*, is a small pinion, *b*, attached to a counter-shaft, which has its bearings in posts or standards *t*, attached to the side pieces of the carriage A. On the same counter-shaft with the pinion *b* is attached a pulley or chain-wheel, *c*. *e* is a frame hinged or coupled at the forward end to the last-mentioned counter-shaft, in such a manner as to allow the rear end, which carries the saw *f*, to vibrate vertically. The rear end is suspended from the cross-bar *r*, which is supported at the ends in one of the notches in the slotted guides *n n*, which are fastened to the sides of the carriage A, as shown in Fig. 4. The ends of the cross-bar *r* are provided with springs, which retain it in the notch. By pressing the cross-bar *r* forward it is lifted out of the notch, when the end of the frame *e*, with the saw *f*, can readily be raised or lowered. The saw receives its motion reversed to the movement of the machine by a cross-belt from the pulley *c* to pulley *s* on the arbor of the saw, and throws the fine ice-cuttings toward the rear. The man at this end of the machine is protected by the cover *o* over the saw. *m* is a gage for keeping the saw a uniform distance from the free or cut edge of the ice, and renders the blocks of uniform widths. One of these is attached on each side of the machine to a bar in such a manner that they can be set in or out, according to the size of the blocks to be sawed. The frame *e* is thoroughly braced, to keep the gearing in line and prevent undue friction and strain.

It will be observed that by this simple construction and arrangement the pulleys are kept a uniform distance apart, and the belt at uniform tension during the elevation and depression of the saw.

What I claim as my invention is—

1. The frame *e*, hinged at the forward end on the counter-shaft, which has its bearings in standards *t t*, back of the traction-wheel, and suspended at the rear end from the adjustable cross-bar *r*, and carrying thereat the pulley *s* and saw *f*, in combination with the carriage A, mounted at the front on the axle of the traction-wheel B, and resting on the ice at the rear, and provided with handles *l* and standards *t*, constructed substantially as described and shown, for the purpose set forth.

2. The combination of the pendent saw-frame *e*, herein described, cross-bar *r*, provided with springs at the ends, slotted guides *n n*, having notches for supporting the said bar *r*, and carriage A, all constructed and operating substantially as herein described, for the purpose set forth.

3. The ice-cutting machine herein described, consisting of the carriage A, mounted at the forward end on the axle of the traction-wheel, and resting on the ice at the rear, the traction-wheel B, having gear *a* attached to its side, pinion *b*, and pulley *c* on the counter-shaft, having its bearings in standards *t t*, back of the traction-wheel, the frame *e*, hinged

at the forward end on said counter-shaft, and carrying the saw *f* and pulley *s* at the rear end, and suspended thereat from the cross-bar *r*, which latter is supported by notches in slotted guides *n n*, and held therein by springs on the ends of said bar, and the adjustable gages *m m*, all constructed and combined to operate substantially as described, for the purpose specified.

JOSEPH SCHATER.

Witnesses:
C. HOLMSTRUP, Jr.,
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