

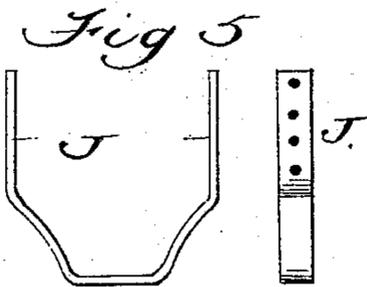
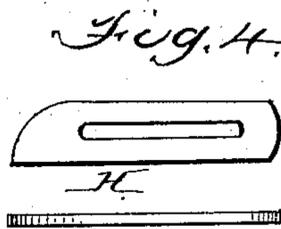
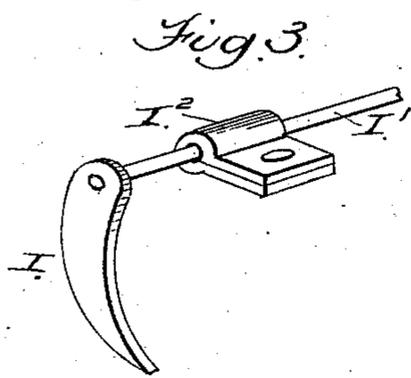
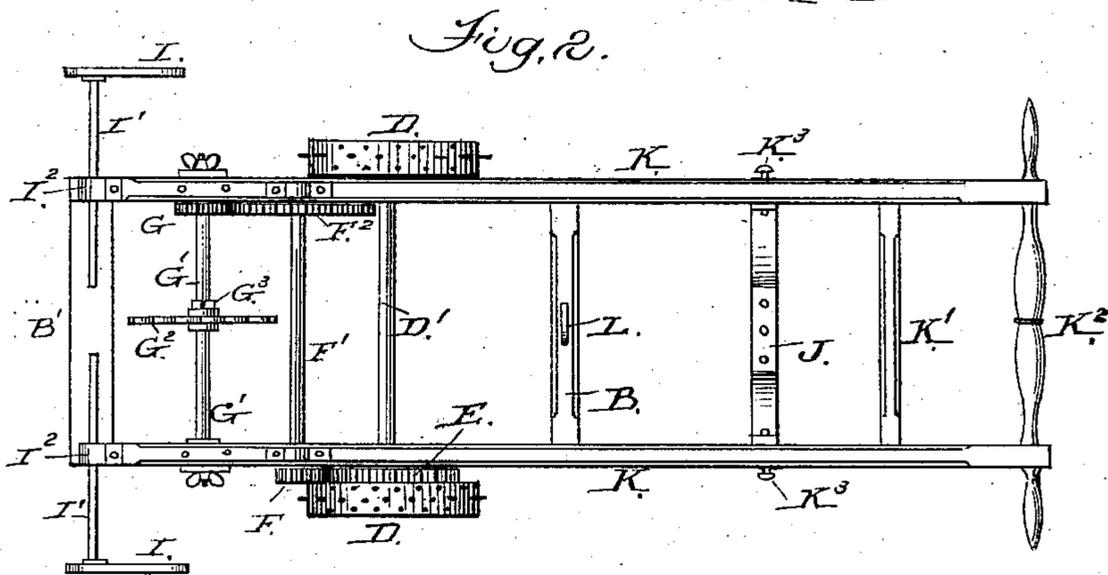
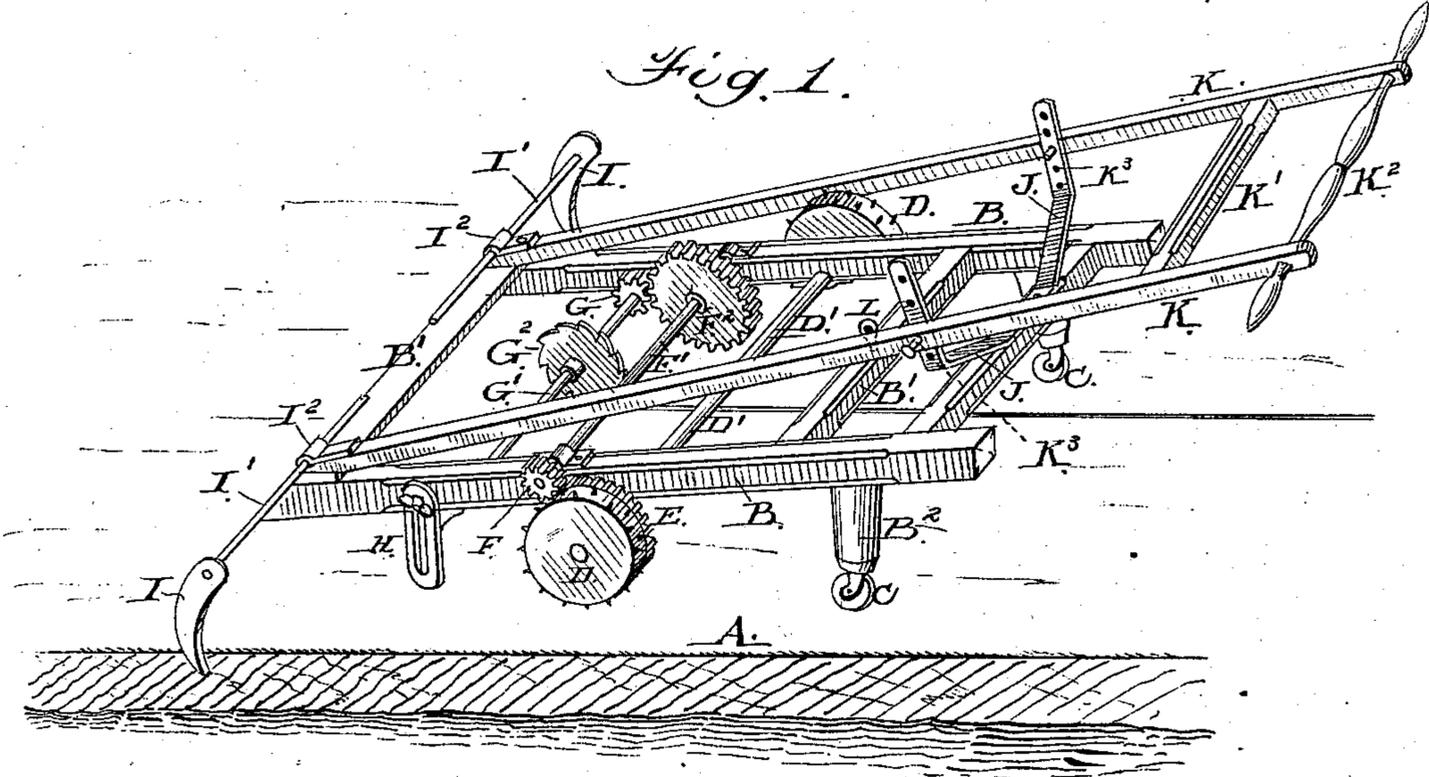
(No Model.)

A. L. & P. STAUFFER.

MANUAL POWER ICE CUTTING MACHINE.

No. 287,883.

Patented Nov. 6, 1883.



Witnesses;
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UNITED STATES PATENT OFFICE.

ABRAHAM L. STAUFFER AND PHILIP STAUFFER, OF STEVENS, PA.

MANUAL-POWER ICE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 287,883, dated November 6, 1883.

Application filed March 21, 1883. (No model.)

To all whom it may concern:

Be it known that we, ABRAHAM L. STAUFFER and PHILIP STAUFFER, citizens of the United States, residing at Stevens, county of Lancaster, State of Pennsylvania, have invented a new and useful Improvement in Manual-Power Ice-cutting Machines, of which the following is a specification.

Our invention relates to ice-cutting machines operated by hand or manual power.

The object of our improvement is to furnish a machine adapted to the purpose, simple in its construction and positive in its operation, easily adjusted, guided, and operated. We attain the above results by the mechanism illustrated in the accompanying drawings, forming part of this specification, in which similar parts are referred to by letters of similar character throughout.

Figure 1 is a perspective view of the machine upon the ice. Fig. 2 is a plan of the machine; Fig. 3, a perspective view of the gage for regulating the width of ice-cake; Fig. 4, a plan and side elevation of the gage for depth of cut; Fig. 5, a front and side elevation of the handle-adjuster.

A represents the ice; A', the edge of a cut; B, the side frames of the machine; B', cross-rails; B², legs; C, casters; D, carrying and driving wheels; D', shaft for same; E, spur-gear wheel; F, spur-pinion; F', shaft for same; F², second spur-wheel; G, second pinion; G', saw-spindle; G², saw; G³, nut for securing same; H, gages for depth of cut; I, side gages for width of cake of ice to be cut; I', rods to same; I², clamps for rods; J, handle-adjuster for height; K, handles; K', cross-bar; K², pressure-bar; K³, pins for adjusting the handles; L, rope-eye.

The construction of the machine is as follows: We take hard wood for the sides and cross-rails, and, making the sides about three feet long, frame the first cross-rail into the same, two inches from the rear end, and with a space of thirteen inches between it and the center rail. The forward rail is capped on the top of the sides about fifteen inches from the center rail. The carrying-axle is placed, about fifteen inches from the rear, upon the lower edge of the side pieces, B, and has

mounted upon it the two prodding driving-wheels D, and on the left side, between the wheel D and the frame, a spur-wheel of about twelve inches diameter, one-inch face and three-eighths-inch pitch. The prod-wheels are preferably made of wood, (or iron,) slightly larger in diameter than the gear-wheel, of about two inches face, and the prods driven (or screwed) in staggering across the face. A counter-shaft, F', is mounted upon the top edges of the frame, has at its outer end a pinion, F, of about one-inch diameter, in gear with the wheel E, and at the opposite end, inside of the frame, a second gear-wheel, F², of the same diameter as the first. The saw-spindle G' is mounted below the frame, with a pinion, G, in gear with the wheel F², and the saw G² central to the frame, resting against a collar on the spindle, and secured in place in the usual manner by a screwed nut, G³. The gages for depth of cut H are of three inches by one-fourth inch, wrought iron or steel, about eight inches long, having a slot in the center, and are secured to the outside forward ends of the frame by a bolt and nut. The handles K are formed of one-and-three-fourths inch square hard wood, with a cross-handle, K², for pushing or pulling; a cross-rail, K', for stiffness, are secured to the top of the frame-cap, at the forward end, by a bolt in each passing upward through the sides B and cap-rail B'. On the rear rail of the frame is placed an adjusting-fork, J, secured by bolts to the rail, the arms of the fork extending upward about ten inches, and perforated with four or more holes in each. The fork is made of one-and-one-half inch by three-eighths-inch wrought-iron, and of such width over the arms as will make a snug fit between the handles K. A pin or bolt, K³, passes through the handles K and arms of adjuster J, and the hole selected will regulate the height of the cross-handle K² from the ice. To regulate the width of the ice-cakes, we place in clamps I² the rods I', upon the outer ends of which we secure the bent pieces I, of one-eighth inch by one and three-fourths inch by one-half inch. The clamps I² have a bolt-hole, by which they are strung upon the same bolt that secures the forward end of the handles, and the nut, when

screwed, fastens all together. To adjust the side gages the nut is slackened off and the rod I' drawn out to the proper distance, the nut tightened, which clamps the rod and holds the gage I immovable. The cross-handle K² projects beyond the rear of the frame about twenty-two inches.

The operation of the machine is as follows: Depressing the handle K² to bring the casters in play, the machine is pushed or drawn to the point upon the ice from which the cut is to commence. The gages H are then adjusted to permit the saw to cut to the desired depth, which will be governed by the thickness of the ice, about one-third of the thickness being all that is necessary to give good wedging-surface to insure the cake following the cut in breaking away from the main body. The handles K are then adjusted in height to suit the operator, and the side gages, I, for regulating the width or distance between the cuts, and thereby the width of the ice-cake, are set and clamped, and the machine is ready. According to the depth of cut made, one or two persons will with ease push it forward. The prods catching in the ice compel the wheels D and axle D' to turn, and with them the wheel E, which drives the counter-shaft F' by pinion F, and wheel F², in gear with the pinion G on the saw-spindle, drives the saw G², which in this case is about seven inches diameter, the saw cutting as it is advanced at the rate of about one-fourth inch per revolution, and making a longitudinal cut of thirty-six inches to every revolution of the carrying-wheels D.

We do not confine ourselves to a manual

operation of the described machine, as the parts may be proportionally enlarged, and horse-power used for operating the same.

To ease and assist in operating the machine by manual power, an eye, L, attached to the central rail, may have a rope attached to the same, when any number of persons may assist in the ice-cutting. We place a box on the frame, which we load with sufficient weight to give the desired adhesion to the prods for working the several shafts, which are all supplied with bearings of the simplest form.

We are aware that we are not the first to produce a hand or manual-labor ice-cutting machine; but we believe our invention to be an improvement on all which have preceded it, and well adapted to perform its duty as an ice-harvester.

Having shown the construction, operation, and advantages of our invention, we desire to secure by Letters Patent the following claim thereon:

In combination with a manual-power ice-cutting machine, the arrangement of gears E, F, F², and G, with fixed wheels D on shaft D', counter-shaft F', saw-spindle G' and saw G, and side gages clamped by clips I², the whole arranged to be operated through the prodded wheels D, and force applied thereto through the handle K², substantially as and for the purpose set forth.

ABRAHAM L. STAUFFER.
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Witnesses:

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EMMA H. SELTZER.