(No Model.) 3 Sheets—Sheet 1.

J. STORK.

ICE CUTTING MACHINE.

No. 259,941. Patented June 20, 1882.

Fig. 1.

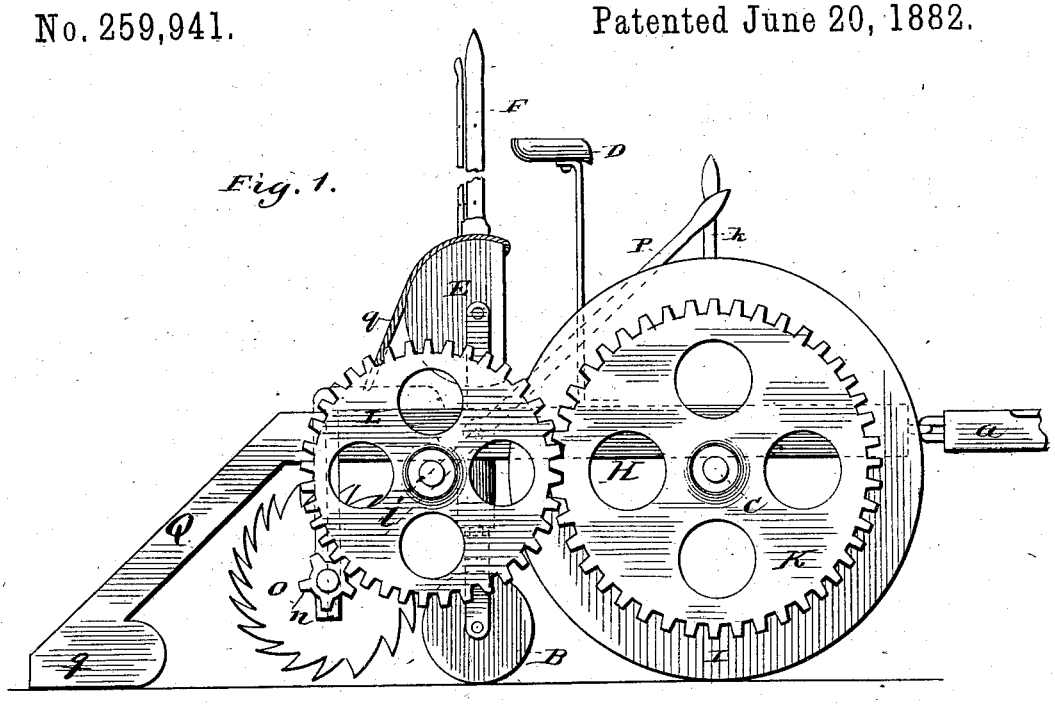
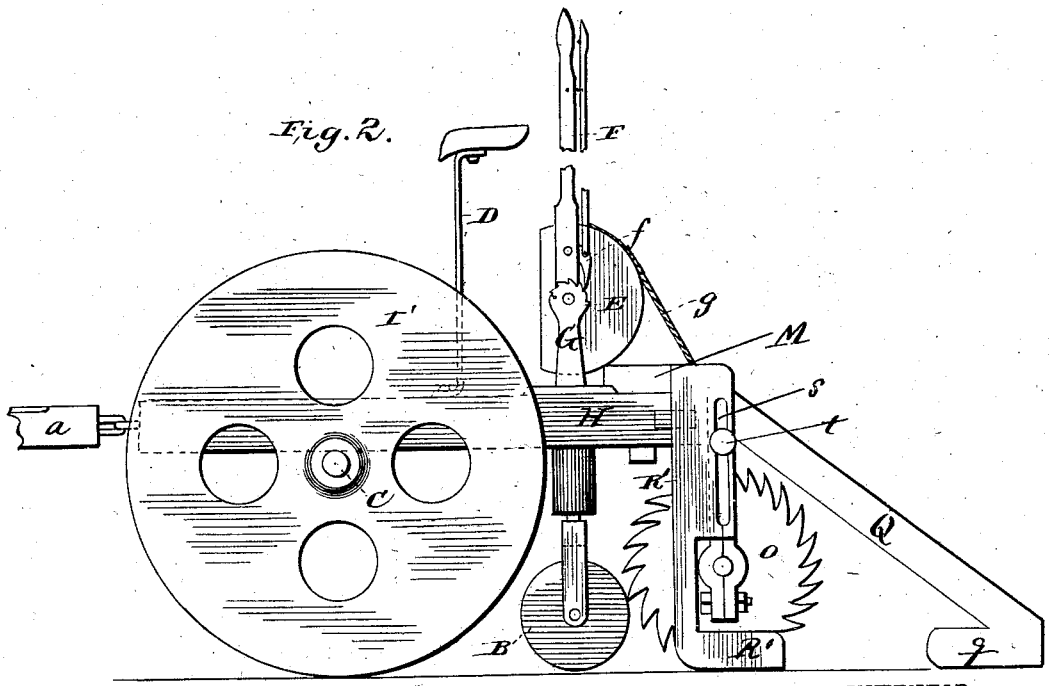


Fig. 2.



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(No Model.) 3 Sheets—Sheet 2.

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Fig. 3.

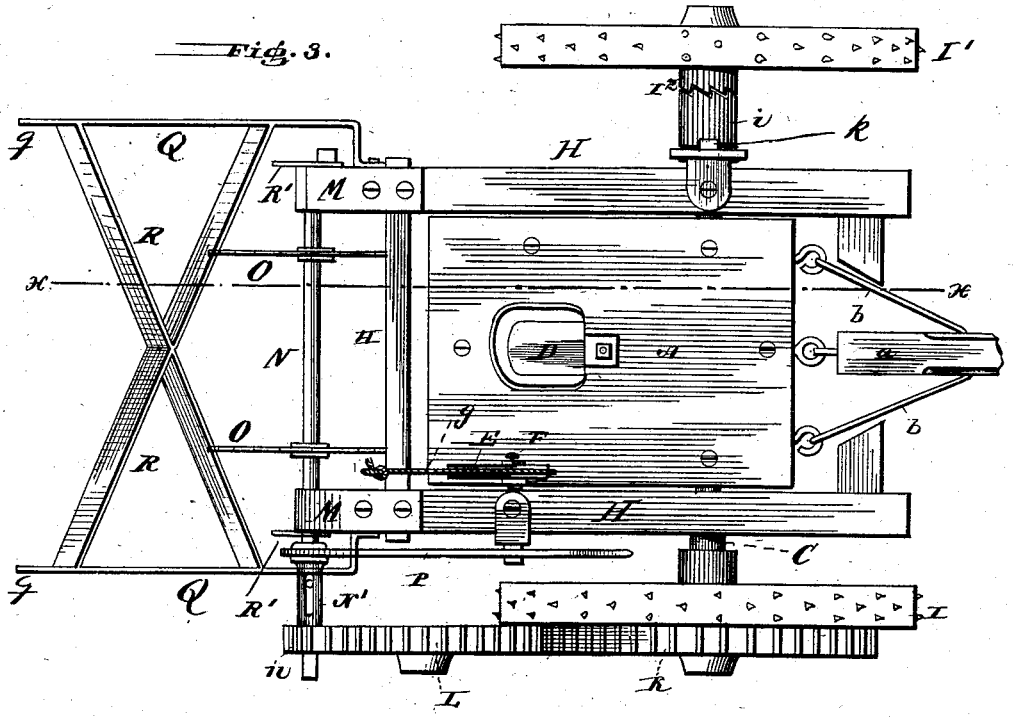

Fig. 6.

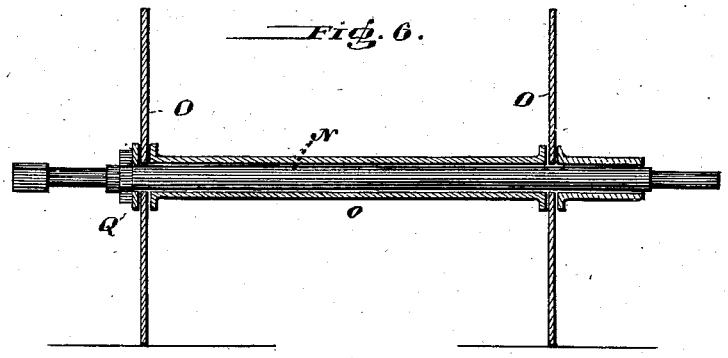

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Fig. 5.

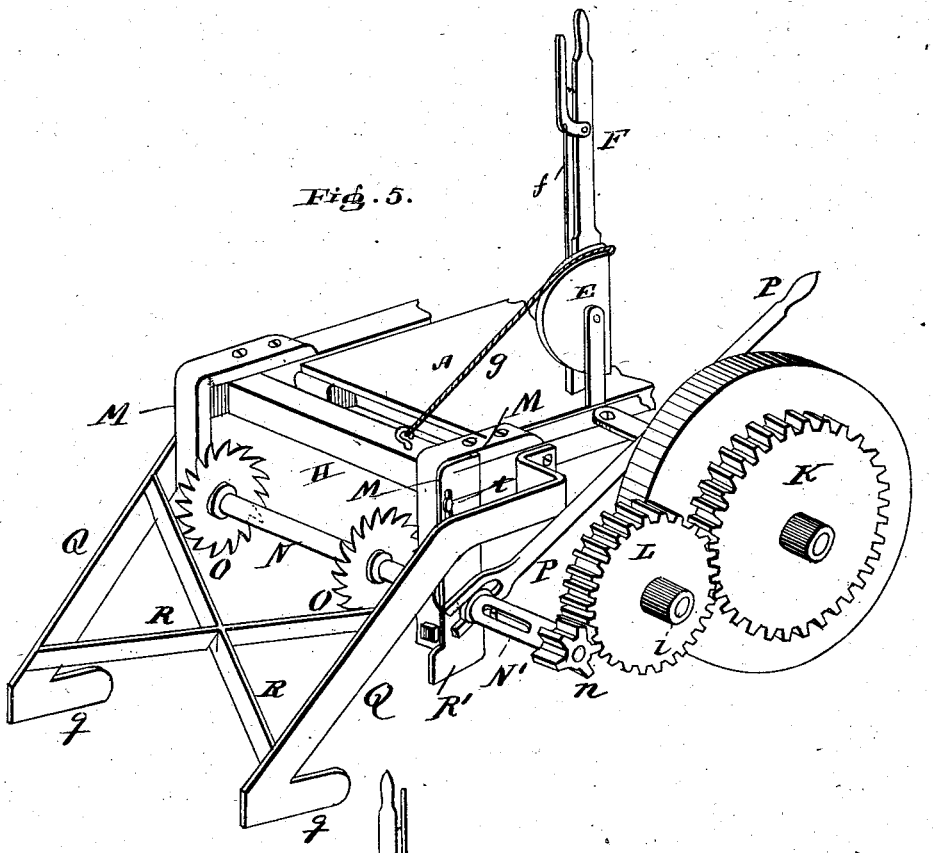
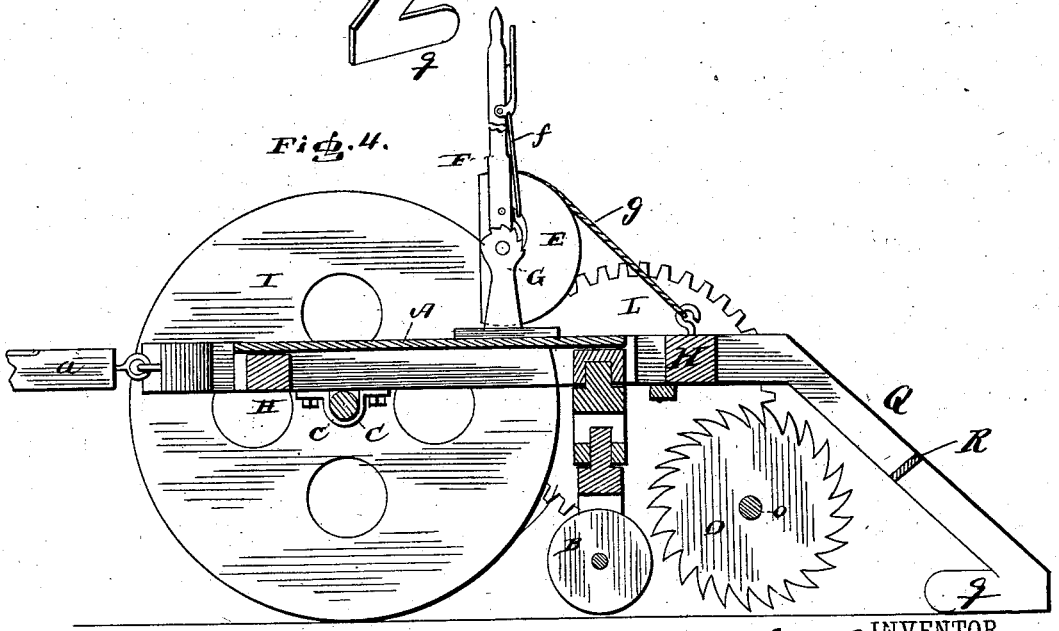


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN STORK, OF CANTON, MISSOURI.

ICE-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 259,941, dated June 20, 1882.

Application filed April 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN STORK, of Canton, in the county of Lewis and State of Missouri, have invented certain new and useful Improvements in Machines for Cutting Ice; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figures 1 and 2 are side elevations, showing opposite sides of the machine. Fig. 3 is a plan or top view. Fig. 4 is a longitudinal vertical section through the plane indicated by the broken line marked *x x*, in Fig. 3. Fig. 5 is a perspective rear view of part of the machine, and Fig. 6 is a longitudinal section through the saw-arbor with its clutch and pinion.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to machines for cutting and harvesting ice on lakes, ponds, and rivers during the season of the "ice-harvest" or ice-gathering; and it consists in the detailed construction and combination of a machine of that class which is adapted to be operated by horse-power, as hereinafter more fully described and claimed.

In the accompanying three sheets of drawings, A designates the platform of my machine, to the front end of which the tongue *a*, with its hounds *b b*, is hinged. The platform is supported at its rear end upon a swiveled wheel, B, and at its front end upon the axle C, which passes through boxes *c*, bolted to the under side of the platform.

D is the driver's seat, and E is a cam provided with a lever-handle, F, which has a spring-detent, *f*, adapted to engage with a segmental rack, G, so as to hold the cam, with its lever-handle, in its adjusted position.

H is a frame which hinged upon the axle C. Secured in the rear end of this frame is a rope or chain, *g*, which passes up over a groove or channel in the edge of the cam E, in the forward part of which it is made fast. It follows that when the driver, taking hold of lever F, pushes it in a forward direction, cam E will wind up the rope or chain *g*, and thus elevate the rear end of frame H, in which position the frame is held by the detent *f* interlocking with rack G.

I and I′ are the drive-wheels, the tires of which are studded or serrated, so that they shall not slip on the ice in driving the machine over it. One of these wheels, I′, runs loosely on the axle C, and has a clutch-collar, *i*, operated from the driver's seat by a lever, *k*, and adapted to engage with the clutch-hub I^2 of the wheel. When the driver draws the upper end of lever *k* toward him the clutch-collar *i* is slid upon axle C out against the clutch-hub I^2, with which it will engage, while when the lever is pushed in the opposite direction the clutches are disengaged and wheel I′ will again run loose upon axle C. The other wheel, I, has a concentric gear-wheel, K, which meshes with another gear-wheel, L, journaled upon the outer end of a shaft, *l*, at the rear end of frame H.

M and M are elbows, which are bolted upon the rear end of frame H, and have boxes at their lower ends for the arbor N of the circular saws O, of which there may be two or more, according to the size of the machine. The projecting outer end of the arbor has a sliding collar, N′, upon which is a pinion, *n*, which is adapted to engage or mesh with the gear-wheel L. Collar N′, with its pinion, is thrown into or out of gear by means of a lever, P, operated from the driver's seat. By pushing the upper end of lever P outward from the seat, pinion *n* and gear-wheel L will mesh, while they are thrown out of gear by moving lever P in the opposite direction.

The saws O are secured upon a tubular shaft, *o*, through which the arbor N is inserted, shaft *o* being keyed to the arbor by suitable means, so that it will revolve with it.

Q Q are the guides for properly guiding the machine and gaging the width between the cuts made by the saws. Hence the distance between the shoes *q* of said guides and the saws nearest to them should correspond to the distance between the saws. These guides are bolted firmly to the sides of frame H, and held rigidly in position by wrought-iron cross-braces R R, which will effectually prevent displacement laterally.

R′ R′ are the gages for regulating the depth of cut, and are adjustable up or down upon

the outside of elbows M M, which form the bearings for the saw-arbor. This adjustment may be effected by slotting the gage-plates, as shown at *s*, set-screws *t t* working through the slots, so that by loosening the screws the plates may be moved up or down, while they are fixed in their adjusted position by tightening the screws.

From the foregoing description, taken in connection with the drawings, the operation of this machine will be readily understood. It is drawn over the ice-field by a team of two horses, the driver occupying his seat on platform A, within easy reach of the levers F, *k*, and P, the object and operation of which have been described. By lowering frame H (the rear end of which may be suitably weighted, if desired) the saws will bear against and cut into the ice to a depth which is regulated by the adjustment of the sliding gages R′, the shoes of which slide along the surface of the ice. After the end of the field has been reached, in going back one of the guide-shoes *q* is placed in the cut last made by the saw on the farther side of the machine, the shoe resting in the cut to a depth of about two inches, more or less, which will be found sufficient to keep the machine in the proper track, so as to make the series of cuts parallel to each other. In turning the machine at opposite ends of the field the clutch *i* is shifted so that wheel I′ will run loose upon the axle, thus enabling the machine to make a short turn. After the field has been cut up lengthwise it is gone over crosswise, or checkered, and the square blocks formed by the cuts are then spudded off in the usual manner. The depth of cut made by the saws must of course be regulated or gaged according to the thickness of the ice.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a machine for cutting ice, the combination of the saws or cutters O, fixed guides or gages Q for regulating the distance between the cuts or furrows, and vertically-adjustable gages R′ for regulating the depth of the cuts, substantially as and for the purpose herein shown and described.

2. The combination of the platform A, drive-shaft C, drive-wheels I I′, hinged frame H, carrying the saws O, guides Q, and depth-gages R′, and mechanism for operating the saws, substantially as and for the purpose herein shown and described.

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

JOHN STORK.

Witnesses:
OTTO W. ORTH,
J. M. ERDMAN.