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NEW ICE CUTTING MACHINE.

The enormous and very general consumption of ice for manufacturing and domestic purposes has made ice harvesting one of our great industries. Important as the ice crop is, it is extremely precarious, being controlled not only by the variable forces of nature, but also by a great army of men, who cut, gather, and store the ice for distribution and use. The ice harvesters, like men employed in many other kinds of business, are liable to disaffection, and it has at times occurred that the best ice of the season has been wasted in consequence of the want of a force of men necessary to secure it.

In view of the great amount of labor required in harvesting ice, and in view of the necessity for accomplishing it at the most favorable time, Mr. Chauncy A. Sager, of Valparaiso, Ind., has devised a very ingenious and effective steam ice cutter, which makes a longitudinal cut while the machine is advancing, and at the same time making transverse cuts, thus forming cakes of suitable size for handling.

The machine propels itself forward slowly, the engine at the same time driving the saws. The saw making the longitudinal cut is suspended on a long arm pivoted to the rear end of the machine on the axial line of the driving shaft, and extending some little distance rearward, and is driven by a cord or belt from the sheave on the driving shaft.

At the side of the main frame of the machine there is a swinging frame supported from a countershaft journaled in an overhanging frame. The swinging frame carries at its lower and free end a saw shaft, on which is secured the cross-cutting saw, and which is provided with a key way, receiving the spline of the driving pulley, the shaft being free to move endwise while the pulley remains in one position. On the end of the saw shaft is a sharp edged curved shoe, which engages the ice, and is steadied by a rod extending from the forward end of the swinging frame. Motion is communicated to the countershaft of the cross-cutting saw by means of miter gearing and a shaft running lengthwise of the main frame of the machine. On the forward end of a shaft geared to the longitudinal shaft there is a crank, which gives lateral motion to the swinging frame, and causes the saw to make the crosswise cut.

The motion of the saws is controlled by levers at the forward end of the machine. The driving wheels are provided with spikes to give them a firm hold on the ice, and the forward axle of the machine is movable on a king bolt to permit of steering.

The two saws with their supporting frames are capable of being folded over on the machine when they are not in use, or when the cutter is to be moved from one place to another.

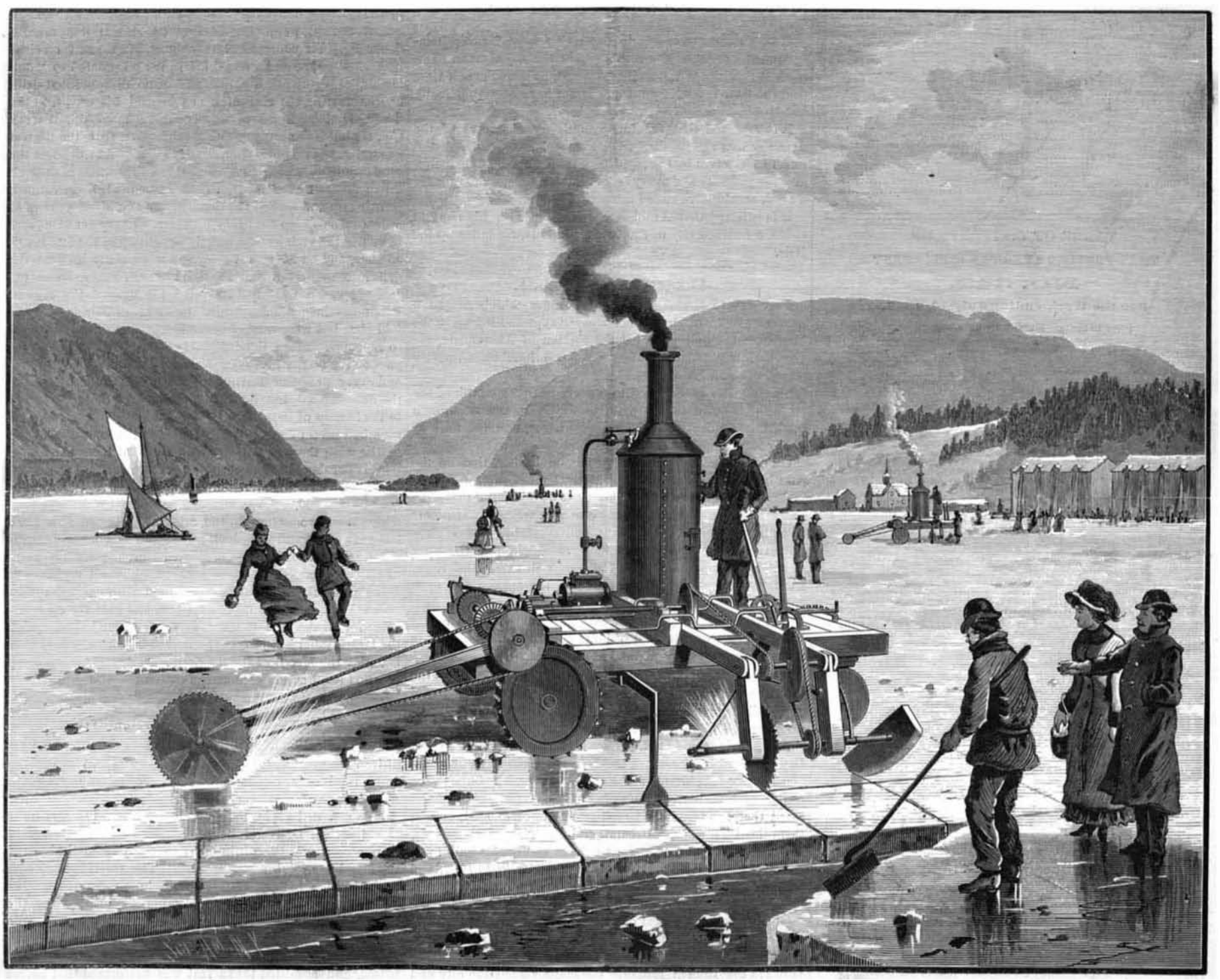
In operation the machine is propelled forward by the action of the engine, the saw at the rear is revolved, cutting the ice longitudinally, at the same time the cross-cut saw is engaged in the ice and the swinging frame receives lateral motion through its crank connection. When the cross-cut saw enters the ice the sharp edged shoe engages the ice and prevents the cross-cutting saw raft from end motion while the saw makes its cut. While this is being done, the machine gradually moves forward, causing the saw at the same time to make the longitudinal cut which separates the ice into blocks as the transverse cuts are passed. When the cross-cutting saw has completed its excursion it has also compressed a spring which carries the shaft and saw back to the point of starting as the saw is released from the ice either by running out or by being raised by cams provided for that purpose. The cross-cutting saw is now ready for another cut, and the operation just described is repeated.

For gauging the distance between the longitudinal cuts in the ice and for facilitating the making of parallel cuts, the machine is provided with a graduating gauge which extends downward from the under surface of the main frame.

This machine is capable of very rapid operation, and will doubtless be appreciated by ice harvesters and dealers who know the value of time in ice harvesting seasons.

Further information in regard to this useful invention may be obtained by addressing the inventor as above.

A CHANCE FOR INVENTORS.—A prize of $10,000 is offered by the French Government to any person who between July 1, 1882, and July 1, 1887, will have invented the most useful application of the Volta pile.



SAGER'S ICE CUTTING MACHINE.