

(No Model.)

J. B. FISCHER.

ICE MARKER.

No. 394,917.

Patented Dec. 18, 1888.

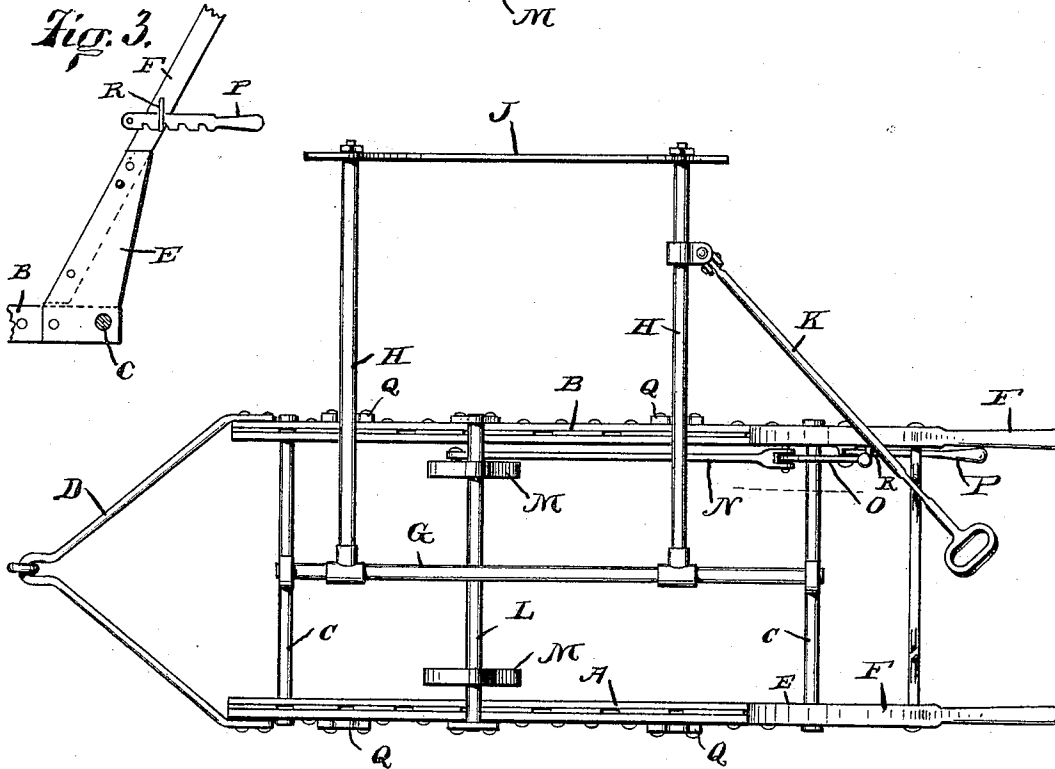
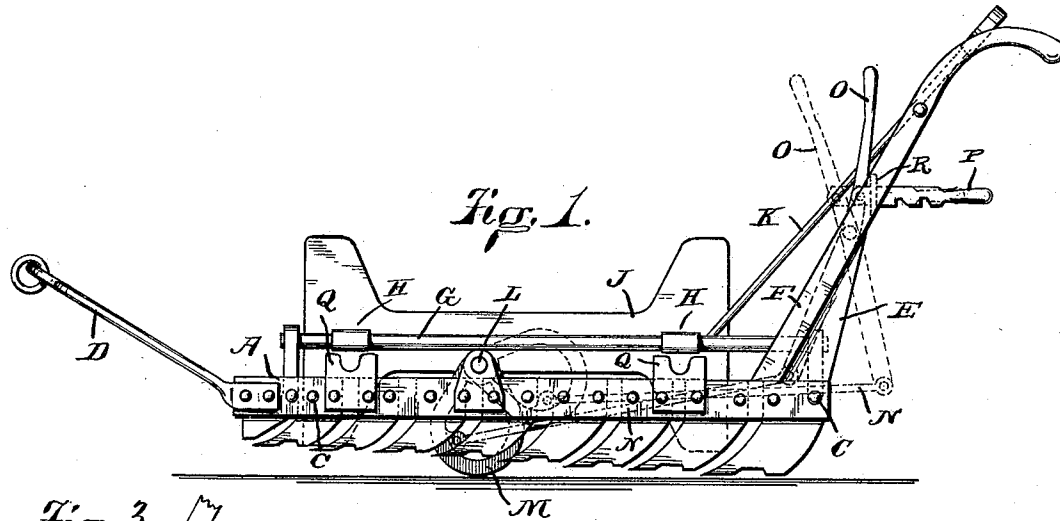


Fig. 2.

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JOSEPH B. FISCHER, OF HAMILTON, OHIO, ASSIGNOR TO THE FISCHER ICE TOOL COMPANY, OF SAME PLACE.

ICE-MARKER.

SPECIFICATION forming part of Letters Patent No. 394,917, dated December 18, 1888.

Application filed March 5, 1888. Serial No. 266,145. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH B. FISCHER, of Hamilton, Butler county, Ohio, have invented certain new and useful Improvements in Ice-Markers, of which the following is a specification.

This invention relates to improvements in ice-markers of that well-known class intended to be drawn across an ice-field to cut shallow furrows, serving as lines to be followed later by the cutting-plow.

My improvements will be readily understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of my improved marker, shown as elevated from the ice and resting upon its runners M; Fig. 2, a plan of the same; and Fig. 3, a vertical transverse section of the implement, exhibiting in elevation the inner face of the rear end of one of the cutter-beams and the parts attached thereto.

In the drawings, A represents the cutter-beam of an ice-marker, constructed substantially as usual, and provided with a longitudinal series of cutting-teeth to serve in cutting the furrow-mark; B, a similar beam placed alongside the first beam and parallel thereto and at a distance therefrom corresponding with the predetermined distance apart of the furrow-markings to be made in the ice; C, a pair of stretchers reaching from beam to beam and serving to hold the two beams in proper relationship to each other; D, a clevis common to both beams, whereby a horse or team may pull both beams along the field as one implement and produce two parallel furrow-marks a proper distance apart; E, an upright triangular metallic plate, rigidly secured at its bottom against one of the cutter-beams at its rear end, there being one of these plates for each of the beams; F, a pair of handles (like plow-handles) attached to the rear of the implement by being rigidly secured to the front inclined edges of the plates E, one handle being secured against the face of each of the plates; G, a center bar disposed centrally over the implement and journaled in bearings secured to the stretchers C, this center bar being made, preferably, of tubing; H, arms secured to and projecting at

right angles from the center bar, one near each end, these arms being formed, preferably, also of tubing for the sake of lightness; J, a guide-blade secured to the outer ends of these arms, this blade lying parallel with the cutter-beams and at a distance from the nearest line of cutters equal to the distance between the two lines of cutters, so that if there were three parallel furrows the marking-cutters could seat in two of them while the guide-blade was in the other one, this guide-blade presenting edges symmetrical above and below the arms H, so as to properly engage a marking-furrow upon either side of the implement, according to which side the guide-blade is turned to; K, a handle articulately attached to the rear one of the arms H and reaching upwardly between the two handles, and serving as a means by which the operator may pull the arms and guide-blade upward and tip them over to the other side of the implement; L, a cross-shaft reaching across the implement from beam to beam, and journaled in bearings upon the beams; M, a pair of cam-like runners rigidly secured to this shaft, these runners being of such form and dimension that when turned downwardly they will project below the bottom line of the cutting-teeth, the runners being located at substantially the center of length of the lines of teeth; N, a connecting-rod connected with the shaft L and reaching rearwardly, this rod in the exemplification illustrated being connected at its forward end to a wrist-pin in one of the runners; O, a handle lever pivoted to one of the handles of the implement, its lower end being pivoted to the rear end of the rod N and its upper end projecting upwardly into convenient position to be reached by the attendant; P, a detent attached to the lever O and provided with a series of notches; Q, arm-rests provided with upwardly-open bearings and secured to the two cutter-beams in position to be engaged by the arms H; and R, a suitably-located bearing for the detent P, adapted to be engaged by any chosen notch of the detent.

The operation of the implement is as follows: A line is laid out across the ice-field and suitably furrowed to receive the guide-blade of the implement. The implement is then set at one end of this furrow with the guide-blade

in the furrow and with the body of the implement upon that side of the furrow toward the field of ice which is to be marked off. The runners M are turned up out of the way. The implement is then drawn across the field, cutting two furrow-marks parallel to the initial furrow and parallel with each other, and at a distance from each other represented by the gage of the implement. Arriving at the opposite end of the trip—the other side of the field—the operator manipulates the lever O and turns the runners end downwardly, thus supporting the implement centrally upon the runners independent of the cutting-teeth. While the implement is thus centrally supported upon its runners it is turned pivotally around to face in the other direction, and this without injury to the teeth or danger of any parts catching in the furrows. He turns the guide-blade over to the other side of the implement and sets the implement so that this guide-blade will engage the final one of the two furrows already made, and with the body of the implement still toward the field to be marked off. He then turns the runners up and again crosses the field, thus producing two more furrow-marks, all of the furrow-marks being, obviously, a uniform distance apart. Instead of turning the runners up entirely out of the way, he may turn them up a certain distance, so that they will form limiting-stops to come in contact with the ice and regulate the depth to which the teeth may cut, choosing the appropriate detent-notch for this purpose.

The plates E, being broadened at their bases and projecting to the rear of the handles, serve at once as attaching devices and as braces for the handles. The two cutter-beams, in conjunction with the guide-blade and its arms resting in the arm-rests Q, form a well-braced structure specially adapted to resist the peculiar side strains to which markers are subjected when the guide-blade runs in a furrow more or less choked by accumulations of snow or ice. A single-beam marker provided with an overhanging guide-blade cannot be constructed, so far as I know, to meet the strains in a satisfactory manner.

The implement, which has been intended

for and described as an ice-marker, obviously presents features adapting it for use for other ice-furrowing purposes—as, for instance, full-depth cutting or plowing.

I claim as my invention—

1. In an ice-marker, the combination, substantially as set forth, of a marker-beam provided with a line of cutting-teeth and a cam-shaped runner pivoted to such beam at its center of length and adapted to project below the teeth and serve to support the implement with the teeth clear of the ice.

2. In an ice-marker, the combination, substantially as set forth, of a cutter-beam provided with a line of teeth, a cam-shaped runner pivoted to such beam at its center of length and adapted to project below said teeth and support the implement with the teeth clear of the ice, and a detent to serve in fixing intermediate positions of said runner and cause the runner to act as a limiting-stop for the depth of cutting of the teeth.

3. In an ice-marker, the combination, substantially as set forth, of a pair of cutter-beams provided with teeth and disposed parallel to each other and rigidly united together, a center bar journaled in bearings supported in a central position between the two beams, a pair of arms projecting at right angles to said center bar, and a double-edged guide-blade secured to the outer ends of said arms parallel to said beams and at a distance from the nearest line of teeth equal to the distance from one line of teeth to the other.

4. In an ice-marker, the combination, substantially as set forth, of a pair of cutter-beams provided with teeth and disposed parallel to each other and rigidly united, arm-rests Q, secured to said beams, a center bar journaled in bearings supported centrally between said beams, arms projecting at right angles over said center bar and adapted to engage said arm-rests, and a double-edged guide-blade secured to the outer ends of said arms.

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