(No Model.)

F. J. FISCHER.

GUIDE FOR ICE PLOW AND MARKER.

No. 287,428. Patented Oct. 30, 1883.

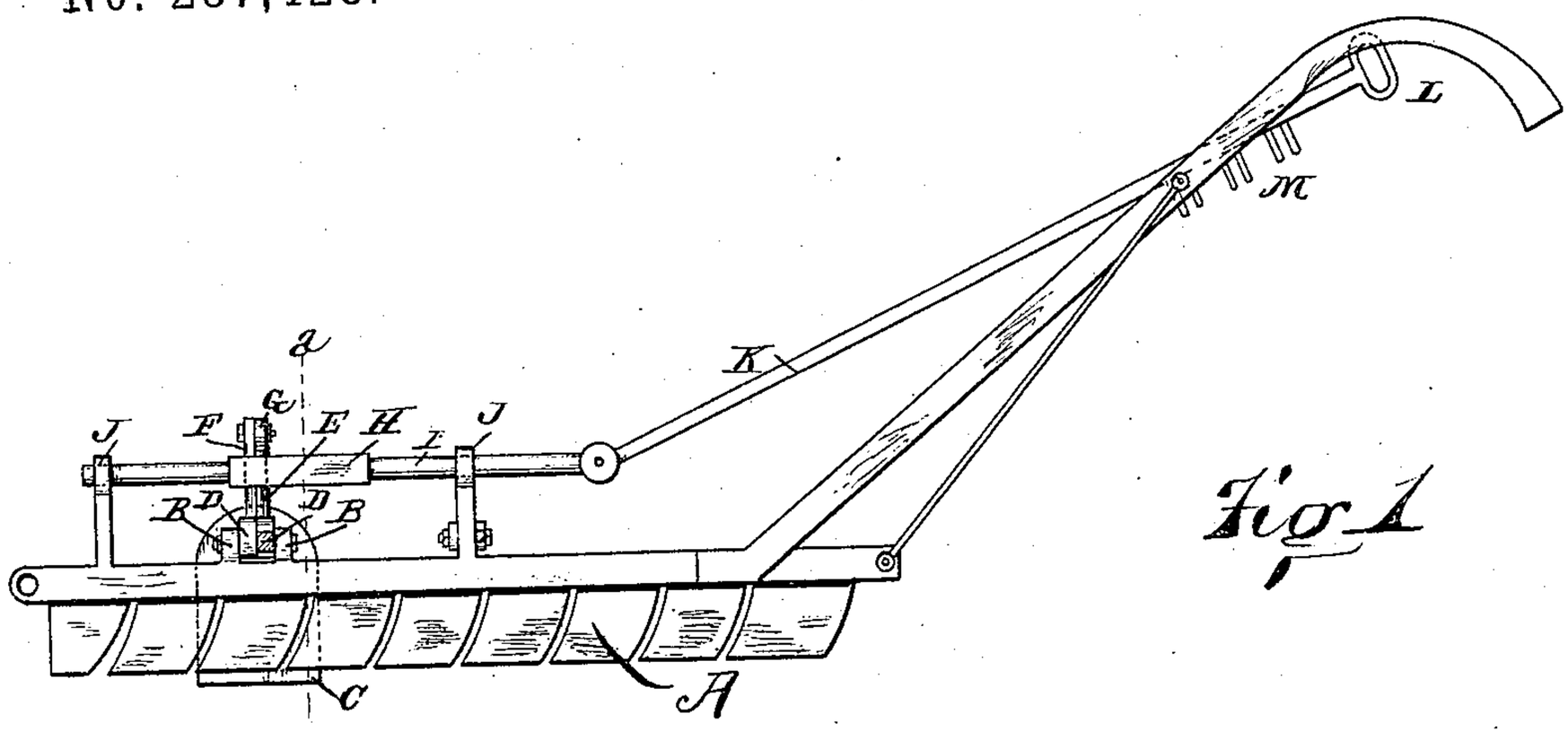

Fig. 1

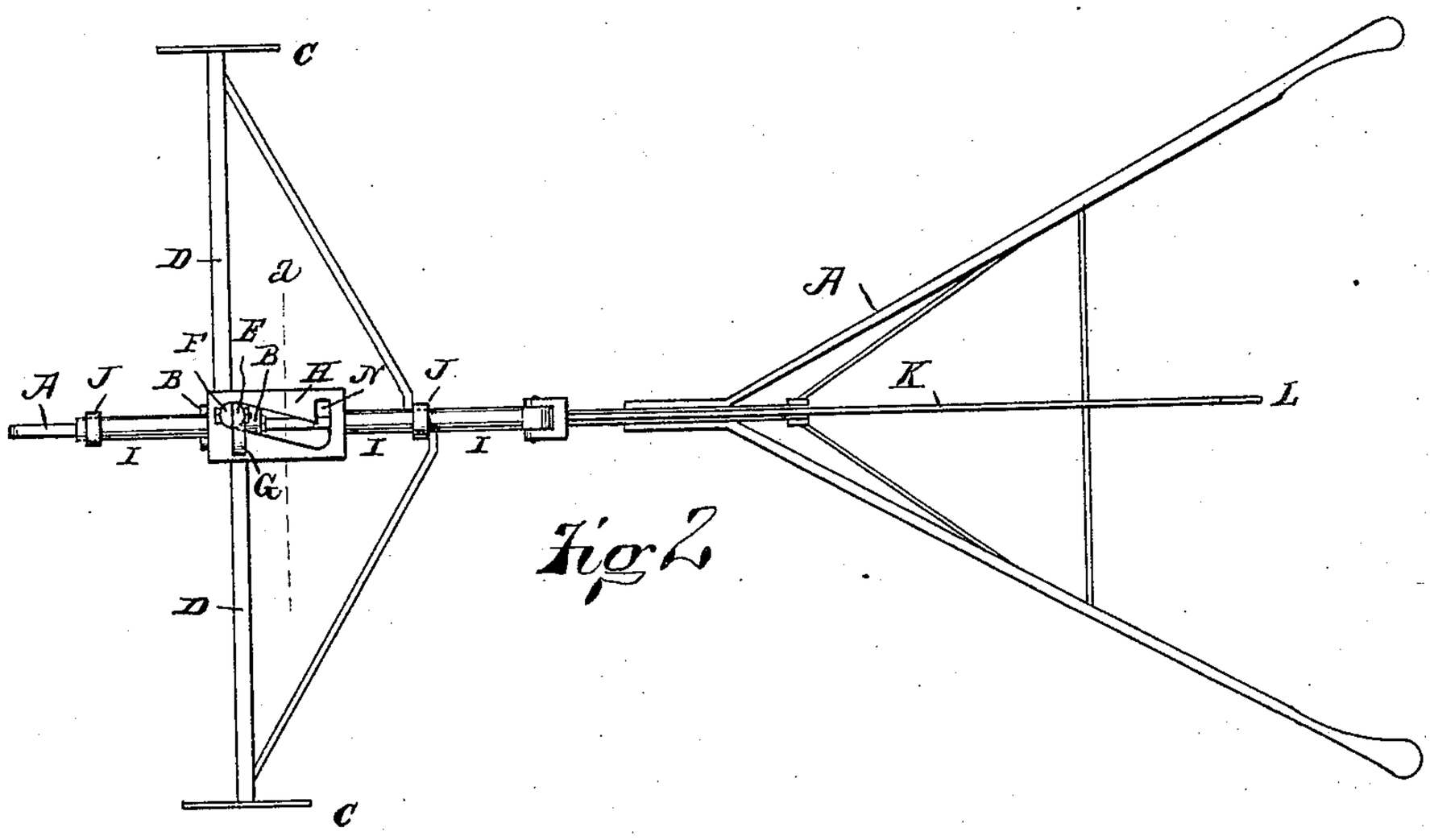

Fig. 2

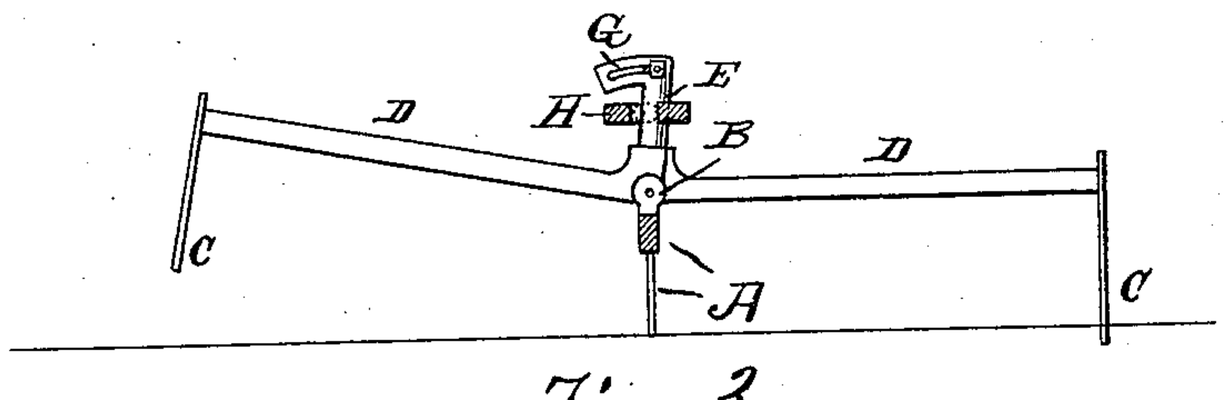

Fig. 3

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FRANSZ J. FISCHER, OF HAMILTON, OHIO.

GUIDE FOR ICE PLOWS AND MARKERS.

SPECIFICATION forming part of Letters Patent No. 287,428, dated October 30, 1883.

Application filed July 26, 1883. (No model.)

To all whom it may concern:

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

This invention pertains to the arrangement of the guiding-blades of ice markers and plows.

The invention relates to devices whereby the guide is adapted for use upon either side of the plow or marker, the guide being in reality double-ended; to devices for keeping the plow in side balance, regardless of the weight of the acting guide; to devices for throwing the guide into action, and to devices for throwing the guides out of interference with the ice when deep plowing is to be done.

The invention will be understood from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 represents a side view of an ice-plow embodying my improvements, one of the guide-arms being cut away; Fig. 2, a plan of the same, and Fig. 3 a rear view in section on line *a*.

In the drawings, A represents an ordinary ice plow or (aside from the form of the teeth) marker; B B, a pair of pivot-lugs fixed to the beam of the plow, to support the guide-arms; C C, the guide-plates, one on each side of the plow-line, at such distance as to give the proper width between the new groove being cut and the old groove, in which the guide, whichever guide may be in action, travels; D D, the guide-arms, pivoted to the lugs B, and having the guide-plates secured to them; E, a short semi-cylindrical lever projecting at right angles from one of the guide-arms, over its pivot; F, a similar lever upon the other guide-arm, forming, in conjunction with the lever E, a cylindrical lever for both guide-arms; G, a slotted bolted connection for uniting and adjusting, with reference to each other, the two levers; H, a diagonally-slotted plate, whose slot engages the cylindrical double lever E F; I, cylindrical guide-stems for the plate H; J J, lugs fixed to the plow-beam, and forming bearings in which slides the stem I, and also serving, in the case of the rear one, as a pivoting-point for braces for the guide-arms; K, a connecting-rod from the rear end of stem I to a convenient position to be reached by the hand of the plowman; L, a handle on the rear end of the rod K; M, detents for the rod K, and N a slot in plate H, at the rear end of and transverse to the slot of that plate.

The two guide-arms, with their guide-plates, form a rigid balanced structure, supported upon the pivots at B, the bolt at G rigidly uniting the two arms. The two arms are so related to each other, as shown in Fig. 3, that when one guide-plate—the right one in this figure—is seated in a groove in the ice, and thus adapted to guide the plow, the other guide-plate—the left one—will be supported idly above the surface of the ice. The weight of the acting guide is thus prevented from exerting any tipping tendency upon the plow. The guide structure being oscillated by the means shown, or otherwise, either guide-plate may be brought into action, and the guide thus caused to be upon the right or left side of the plow. Sliding the slotted plate H endwise will obviously oscillate the lever E F, and thus rock either guide into action. The means for sliding this plate—the rod K and handle L—while not the only contrivances adapted to that end, will be found simple and efficient. No stooping or leaning is required as the plowman effects the change in guides. The round stem I of the plate permits slight rotation of the plate, to compensate for the changing angularity of the lever E F while being shifted; but still sufficient lost motion in the fit of the lever in the plate-slot is permissible, to render the rotation of the plate and the round stems I non-essential.

The plate H may be so set that the right-hand guide is in the ice-groove, or so that the left-hand guide is in the ice-groove, or so that both guides will be idly supported a reasonable distance above the surface of the ice. For shallow work, only such adjustments are needed; and hence for such work the entire guide structure may be formed in one rigid piece capable of oscillating, as mentioned.

For very deep cutting, with both guides idle, the plow may be sunk so deeply into the ice that the idle guides may form undesired contact with the ice. Thus in Fig. 3 the left-hand guide may be up high enough for deep cutting by the plow; but when both guides are up and idle, they would only be up half as high as the left-hand one in Fig. 3. I pro-

vide simple means for securing full elevation to both guides when both are idle. Such is the object of the bolted connection at G, and the transverse slot N. In Fig. 2, if the plate H be pushed clear forward, the right-hand guide will be lifted to its highest point and the left-hand guide dropped to its lowest point. The bolt at G is then to be loosened and the left guide lifted as high as the other guide. The slot at G permits the lever E to slide past the lever F into transverse slot N, after which the bolt is to be tightened. Both guides will then be supported idly, high up, and deep plowing may be executed without interference from the guides. Other devices equivalent to the slot and bolt may be found suited to permit the two levers to be divided and then secured.

I claim as my invention—

1. In an ice plow or marker, the combination, substantially as set forth, of the plow or marker, a pivoted lever balanced upon the same, guide-plates on the ends of said lever, and means for securing the lever in different positions.

2. In an ice plow or marker, the combination, substantially as set forth, of plow or marker A, guide structure D D C C, balanced thereon, lever E F, formed with the guide structure, slotted plate H, rod K, and handle L.

3. In an ice plow or marker, the combination, substantially as set forth, of the plow or marker, a pair of guide-arms pivoted thereto and projecting oppositely, guide-plates on the ends of said arms, means for oscillating the two arms into different positions simultaneously and securing them, and a bolted connection, as set forth, or its equivalent, for permitting the arms to be adjusted with reference to each other.

4. The combination, substantially as set forth, of plow or marker A, independent guide-arms D, with guide-plates C, and levers E and F, uniting-bolt G, slotted plate H, with slot N, transverse to main slot, stem I, rod K, and handle L.

5. The combination, with the plow or marker A, of the balanced guide structure, the slotted plate arranged to oscillate the guide structure, the rod and handle to slide the plate, and the cylindrical plate-stems I, to guide the plate and permit rotation, substantially as set forth.

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Witnesses:
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