No. 667,056. Patented Jan. 29, 1901.

H. ANDERSON.

ICE PLOW.

(Application filed Feb. 20, 1900.)

(No Model.)

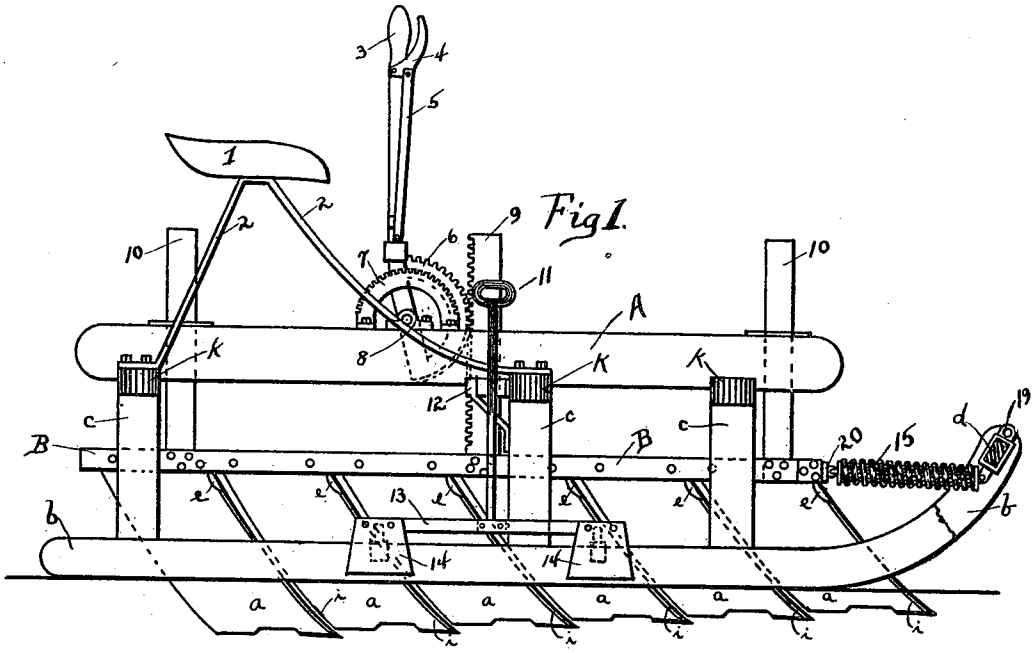

Fig 1.

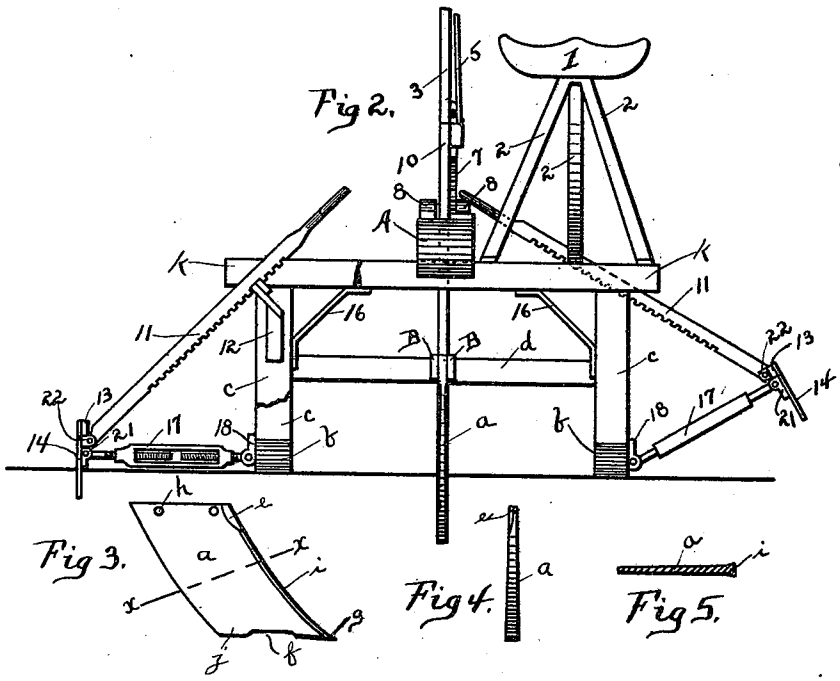

Fig 2.

Fig 3.

Fig 4.

Fig 5.

Witnesses
George Ackman
Lodie D. Hennicke

Inventor
Harry Anderson

By Attorney
Victor J. Evans

UNITED STATES PATENT OFFICE.

HARRY ANDERSON, OF OMAHA, NEBRASKA.

ICE-PLOW.

SPECIFICATION forming part of Letters Patent No. 667,056, dated January 29, 1901.

Application filed February 20, 1900. Serial No. 5,929. (No model.)

To all whom it may concern:

Be it known that I, HARRY ANDERSON, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Ice-Plows, of which the following is a specification.

This invention relates to new and useful improvements in ice-plows; and its primary object is to provide a simple, cheap, and efficient device of this character having an adjustable gage whereby ice may be marked off during the operation of the plow.

To these ends the invention consists in the novel construction and combination of parts hereinafter more fully described and claimed, and illustrated in the accompanying drawings, showing the preferred form of my invention, and in which—

Figure 1 is a side elevation of the complete machine, showing the front portion in section. Fig. 2 is an end view thereof. Fig. 3 is a detail view of a cutting-blade. Fig. 4 is an end view thereof; and Fig. 5 is a section on line *x x*, Fig. 3.

Referring to said figures by letters and numerals of reference, 1 is a seat having suitable supports 2, fastened to cross-beams K, which are mounted upon uprights *c* of the frame of the machine, said uprights having secured upon them runners *b* at suitable intervals.

Connecting the cross-beams K at the center is a longitudinally-extending brace or strengthening-beam A, provided at the center and near each end with vertical slots, as shown. The end slots are each adapted to receive a guide-strip 10, loosely mounted therein and both secured at their lower ends to and between horizontal plow-beams B B. These beams are secured at each side of cutting-blades *a*, arranged in a line, the blades gradually increasing in length from front to rear of the machine. These blades are preferably curved forward, as shown, the front edges *i* being thickened and each terminating at the bottom in a sharp cutting-point *g*. In order to reduce friction, the bottom *j* of each blade is cut away, as at *f*. The upper portions of the blades are perforated, as at *h*, for the reception of the fastening-bolts, and the thickened edges *i* thereof are reduced at the upper end *e*, so that the same may be readily inserted between the beams B. To the forward ends of the beams B is secured a coupling 20, connected to a singletree *d* by means of a spring 15. Said singletree may be provided with suitable shaft-coupling, as 19.

Through the slot formed in the center of beam A is adapted to slide a rack 9, secured at its lower end to the beams B B of the plow. This rack is engaged by teeth formed on a segment 6, secured to a lever 3, which is mounted in suitable journals 8 and adapted to be secured in adjusted position by means of a segment secured to the beam A and normally engaged by a sliding detent operated by a small lever 4, as shown.

Secured to one side of my improved device is an ice-gage of peculiar construction. This consists of, preferably, blades 14, connected by a bar 13, as shown, and hinged at suitable points 21 to threaded bolts adjustable within couplings 17, having similar bolts extending from their opposite ends and hinged to brackets 18 on a runner *b*.

At a suitable point 22 on the connecting-bar 13 of the marker is hinged a toothed rod 11, adapted to engage a bracket 12, fastened to one of the uprights *c* of the frame. This rod is provided with a suitable handle, which may be readily grasped by an operator within the seat 1.

A gage or marker similar to that hereinbefore described may, if desired, be placed on each side of the machine, as shown. Suitable braces, as 16, may be used for strengthening the frame at required points.

In operation the depth of the cut of the plow may be readily regulated by throwing the lever 3 back or forward, as is obvious. It will be understood that the strips 10 will serve as guides for the plow and prevent the same from twisting, &c.

When it is desired to mark the ice, it is merely necessary to turn the coupling 17 until the proper distance from the plow to the blades 14 is attained. The rod 11 is then disengaged from its bracket 12 and the blades 14 pressed down upon the ice and locked in such position by replacing the rod upon the said bracket.

It will be seen that by means of the spring 15 the strain upon the horse is lessened and all jarring, &c., reduced to a minimum.

In the foregoing description I have shown the preferred form of my invention; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an ice-plow, the combination with the runners; of uprights thereon, cross-beams upon said uprights, a central beam upon the cross-beams having apertures therein, a plow-beam, cutting plow-blades secured to the beam, rigid guides at opposite ends of the beam and slidable within the apertures of the central beam, a rack secured to the plow-beam and extending through the central beam, a pivoted, toothed segment engaging the rack, and means for operating the rack.

2. In an ice-plow, the combination with a frame having runners and an adjustable plow; of brackets upon the runners, extensible bolts hinged to said brackets, a bar hinged to the outer end of the bolt, blades secured at opposite ends of the bar, brackets secured to the bar at a point between its ends, a toothed rod hinged thereto, and a bracket secured to the frame and adapted to be engaged by the toothed rod.

3. In an ice-plow, the combination with the runners; of uprights thereon, cross-beams upon said uprights, a central beam upon the cross-beams having apertures therein, a plow-beam formed of parallel sections, cutting-blades of varying lengths therebetween, means for securing the blades and sections together, rigid guides at opposite ends of the beam and slidable within the apertures of the central beam, a rack secured to the plow-beam and extending through the central beam, a pivoted, toothed segment engaging the rack, and means for operating the rack.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY ANDERSON.

Witnesses:
C. JARL,
A. NYBERG.