

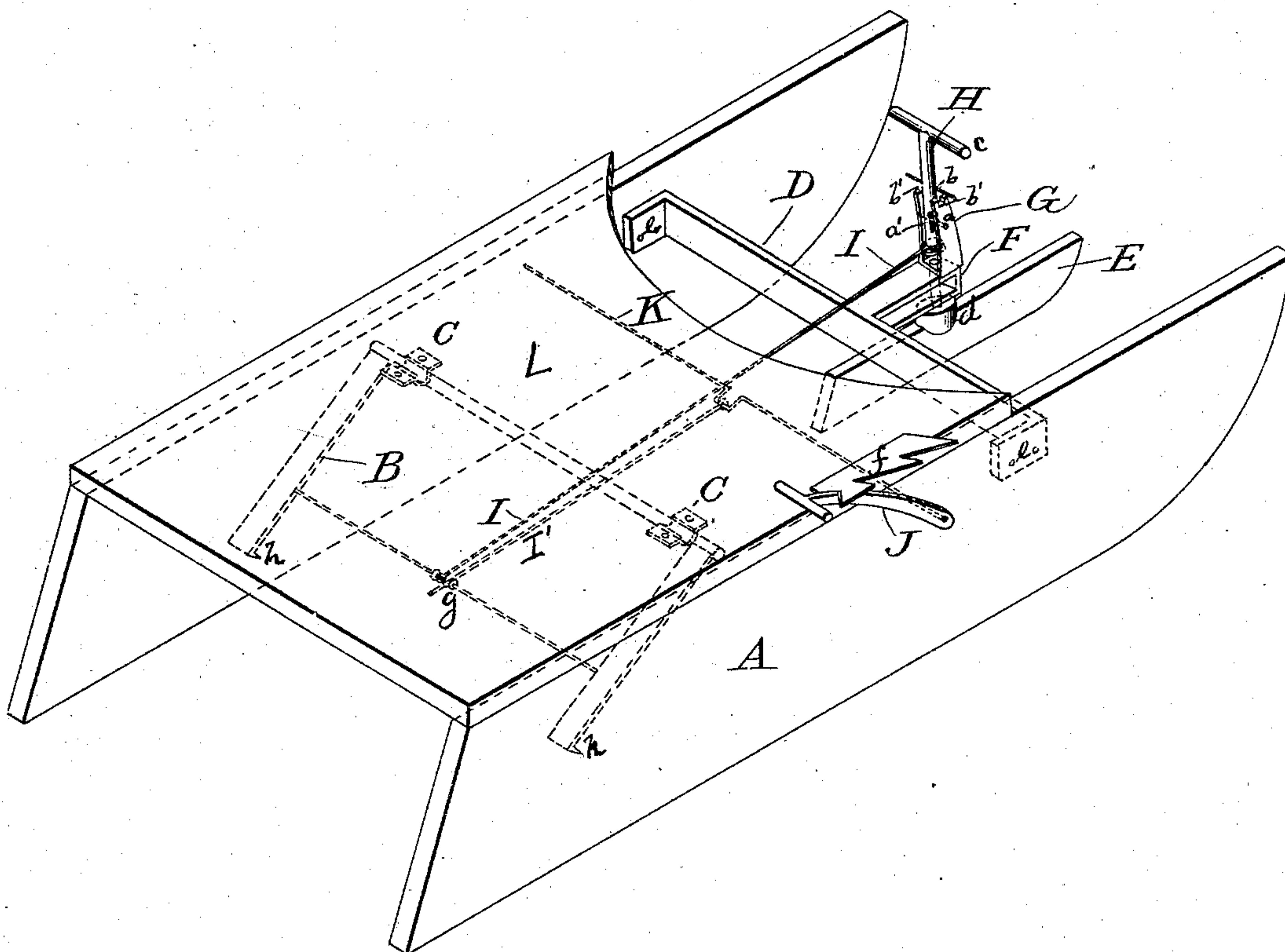
(Model.)

W. EXNER.

SLED.

No. 284,196.

Patented Sept. 4, 1883.



*Witnesses:*

James Conway  
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# UNITED STATES PATENT OFFICE.

WILLIAM EXNER, OF HARPER'S FERRY, WEST VIRGINIA.

## SLED.

SPECIFICATION forming part of Letters Patent No. 284,196, dated September 4, 1883.

Application filed June 11, 1883. (Model.)

*To all whom it may concern:*

Be it known that I, WILLIAM EXNER, a citizen of the United States, residing at Harper's Ferry, in the county of Jefferson and State of West Virginia, have invented a new and useful Improvement in sleds and sleighs for coasting and sleighing on snow and ice, of which the following is a specification.

My invention relates to certain new and useful improvements in sleds; and it consists in arranging a central runner near the front of the sled, whereby said sled may be guided; and it further consists in attaching a brake to operate between the runners, that is connected to the tiller or operating-lever of the guide-runner and be operated by the same, or by a separate side lever attached to one of the sled-runners.

The object of my invention is to arrange and attach to a sled a steering device and brake adapted to be controlled and operated by the occupant of the sled. I attain this object by means of the peculiar arrangement of the various parts of my device, which will be more fully pointed out and described in the specification and claims, in which the figure presented is a perspective view of my invention, showing the sled, guide-runner, brace, and brake.

Similar letters refer to similar parts throughout the drawing.

Referring to the drawing, A represents a sled, formed of any desirable-size and shape. The runners are held at the proper distance apart by the seat-board L and the brace D, said brace being formed angular in cross-section, with its ends turned at right angles to the body of the same. The ends are perforated, and the brace is secured by its ends to the inner face of the runners below their upper edges and a short distance in front of seat-board L. An angular hollow bracket, F, is secured by its inner end to the front face of the brace D. Said bracket F is formed with a central perforation near its outer end, through which an upright shaft, F', passes. The lower end of said shaft terminates in a metal plate, d, to which it is rigidly secured, said plate d being in turn secured to a single runner, E, which acts as a guide or rudder in steering

the sled. When operated by the shaft H, said shaft rises in a vertical position, and is surmounted by a cross-handle, c, said shaft F' connecting the housing G and runner E.

Below the cross-handle c, and in line with the same, projections b are secured to the shaft H, and below projection b said shaft is recessed to receive pivot-pin a, and below the same said shaft terminates above bracket F.

A housing or hollow support, G, is formed outside of shaft H, having on its upper edges recesses b', within which projections b move. The slot a' in shaft h allows the shaft a slight vertical movement against the pin a.

A chain or rod, I, is secured at one end to the shaft H, the opposite end passing over a cross-bar on the brake and returned toward the front, and secured to a crank formed in the brake-rod K. Said brake-rod K is journaled by its ends in the runners of the sled, and the outer end of said rod has rigidly secured to the same a brake-lever, J, and directly above the same is secured to the seat-board L a rack-bar, f, against which the lever J works.

In rear of brake-rod K is secured to the under side of seat-board L, by means of hinges or concave bearing-plates C, a brake, B, said brake being formed of two rod cross-bars and two angular side pieces, the lower cross-bar having a spool, g, centrally secured, around which rod I moves or is attached.

The outer ends of the side pieces of the brake B are sharpened and turned at right angles, forming calks or stops h, adapted to dig into the snow, ice, or ground when power is applied to the rod I by means of the standard H or the lever J.

The brake-frame B is loosely held by the bearings C and works freely in the same.

The operation of my device is as follows: The operator, seated on the sled A, at the top of an incline, seizes the cross-handle c. By gravity the sled descends the incline, when the operator directs its course by turning the handle c to the right or left, as desired, and when desired to stop, the brake-arm J is forced into the lower notches of rack-bar f, when, by means of rod I, the lower ends of brake B are forced into the ice or ground, thus retarding the motion of the sled; or shaft H is raised until pro-



jections *b* are free from notches *b'*, when the operator pulls backward on handle *c*, thus drawing brake B against the ground or ice by rod I.

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

1. A sled having one or more guide-runners secured between the runners of said sled and near the front of the same, said guide runner or runners having an operating-shaft, to which is attached one end of a rod which connects a brake and brake-rod having an operating-lever, substantially as shown and specified.

2. The combination of a sled having a seat-board, L, bearing-plate C, the cross-bar D, 15 bracket F, the brake B, brake-rod K, lever J, and the rack-bar *f*, with the guide-runner E, plate *d*, shaft H, having cross-arm *c*, projection pins *b*, and slot *a'*, the housing G, pin *a*, and the rod I, all arranged and operated substantially as shown and specified. 20

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Witnesses:

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JAMES C. MCGRAW.