

W. H. FAIRBANK.

ICE-BOAT.

No. 169,794.

Patented Nov. 9, 1875.

FIG. 1.

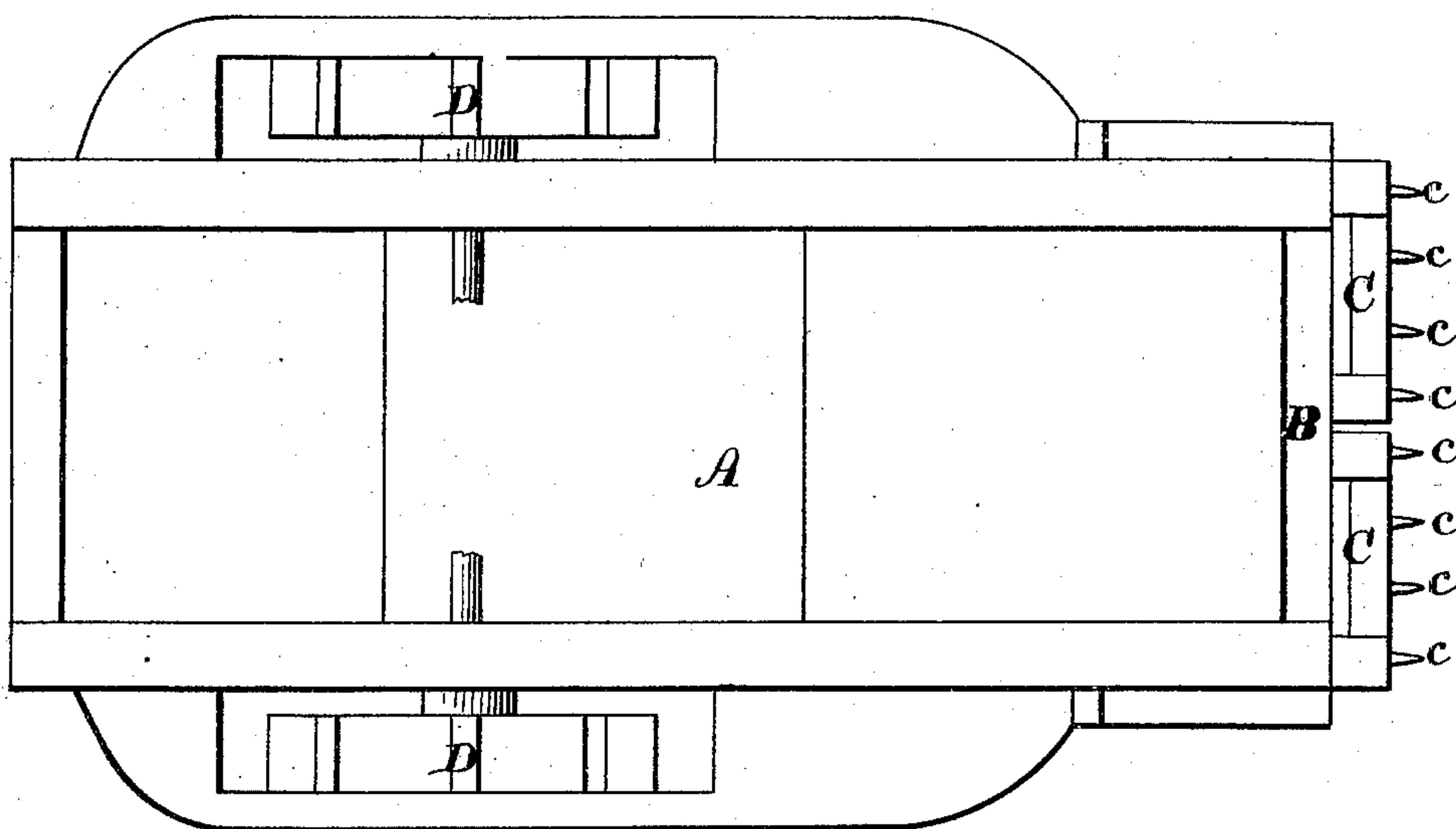
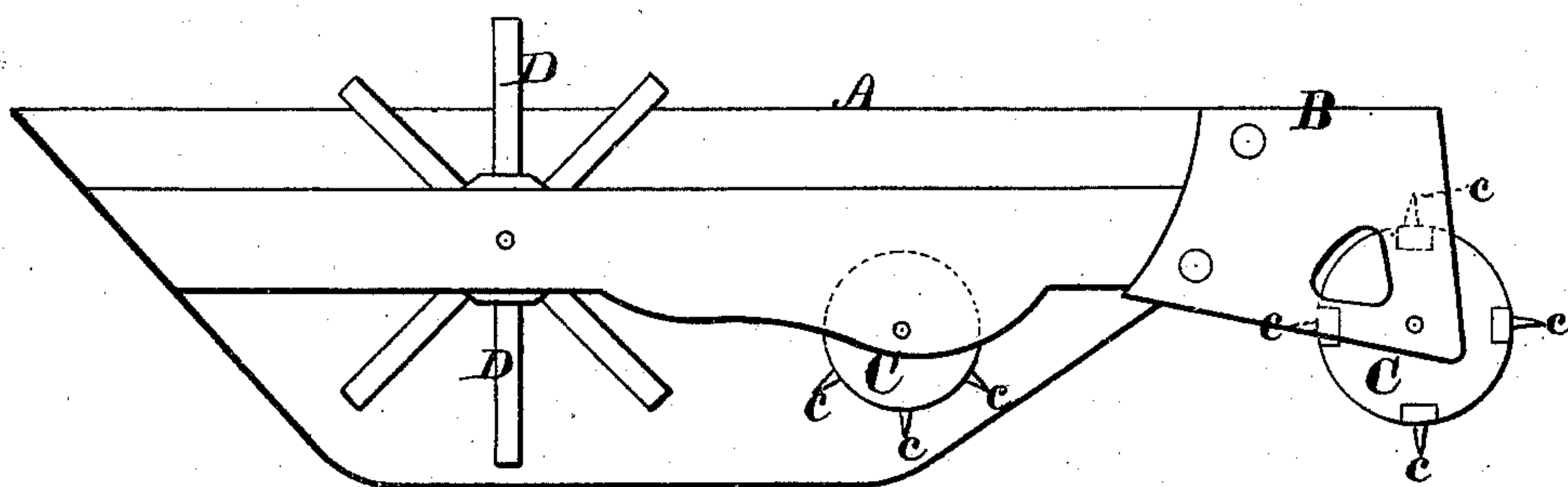


FIG. 2.



WITNESSES

*Jas. E. Hutchinson
 John R. Young*

INVENTOR.

*Wm. H. Fairbank, by
 Orindler & Co. his attys.*

UNITED STATES PATENT OFFICE.

WILLIAM H. FAIRBANK, OF ALBERTON, MARYLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO H. B. HOLTON, OF SAME PLACE.

IMPROVEMENT IN ICE-BOATS.

Specification forming part of Letters Patent No. **169,794**, dated November 9, 1875; application filed April 20, 1875.

To all whom it may concern:

Be it known that I, WILLIAM H. FAIRBANK, of Alberton, in the county of Howard and in the State of Maryland, have invented certain new and useful Improvements in Ice-Breakers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a plan view of the lower side of a boat containing my improvements, and Fig. 2 is a side elevation of the same.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to enable ice within harbors and rivers to be broken up, so as to render the same navigable; to which end it consists, principally, in combining, with the front end of a boat, cylinders, which are journaled horizontally and at a right angle with the keel, are provided with radial spurs at different points upon their peripheries, and are rotated by suitable mechanism, substantially as and for the purpose hereinafter specified. It consists, further, in arranging such cylinders in front of the paddle-wheels, substantially as and for the purpose hereinafter shown.

In the annexed drawing, A represents a boat, of ordinary construction, except at its bow B, which latter is preferably made square in plan view, and has an upward and forward slope, as seen in Fig. 2. Beneath the sloping bow B is journaled a cylinder, C, which is arranged horizontally and in a line at a right angle to the keel, and at suitable points upon its periphery is provided with rows of radial spurs, *c c*, &c. The cylinder C is connected by suitable mechanism with an engine within the boat A, and when in use is caused to rotate in a forward direction as said boat is driven against a field of ice, by which means said ice is either broken off and forced down-

ward by the action of the spurs *c c*, &c., or if said ice is too thick for such operation said spurs will engage with the same, and draw said boat upward and forward until a sufficient weight is thrown upon said ice to crush it downward.

In order that the paddle-wheels D and D may be protected from the floating cakes of ice, a cylinder, C *c*, constructed as before described, is journaled in front of each wheel, and is driven with such velocity as to reduce said cakes of ice to small pieces, and push the same below the surface of the water before said wheel reaches the same point.

By adding ballast to the boat, and causing it to run during the time when ice is forming, little difficulty will be experienced in keeping any harbor sufficiently clear for the purposes of navigation.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In an ice-boat, the combination, with the bow thereof, of the cylinder C, journaled beneath and in front of the same, provided with radial spurs *c* and *c*, and capable of being rotated forward as said boat is advanced, so as to tend to draw the same upon the ice when the latter is too thick to be broken by the downward movement of said spurs, substantially as is specified.

2. In an ice-boat, the combination of the paddle-wheels D and D and cylinders C and C, each provided with radial spurs *c c*, journaled in front of said wheels, and adapted for operation when the boat A is moved forward.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of April, 1875.

WM. H. FAIRBANK.

Witnesses:

GEO. S. PRINDLE,
WILLIAM FITCH.