added to a saturated solution of vateria resin, or East Indian copal, in oil of turpentine.

Two specimens of Ceylon resin, which I have here from the Paris collection, are merely species of dammer.

(To be Continued.)

For the Journal of the Franklin Institute

Description of H. & W. Brown's Ice Boat.—Patent granted August 5th, 1856. H. Howson, Civ. Eng.

This invention consists in constructing a steamboat with a recess at the bows, the bottom of the recess consisting of two inclined shelves, one on each side, and divided by an angular rib tapering upwards from the bows, and terminating with a curve on the deck, the end of the recess forming an angle, the sides of which taper towards the bows of the boat. In connexion with the above, is employed a guard on each side suspended from and secured to the deck. The whole is arranged and constructed as fully described hereafter, for the purpose of breaking the ice, and directing the broken pieces under the body of the ice which remains unbroken on each side of the boat, thus forming a clear channel in frozen rivers and harbors, for the passage of sailing and other vessels.

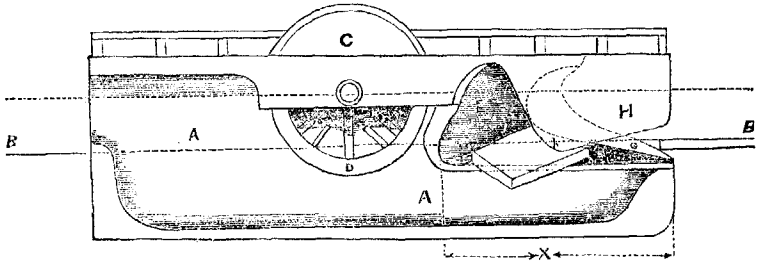
On referring to the accompanying engravings—

Fig. 1. is a side view of the ice boat.

Fig. 2. an end view looking towards the bows.

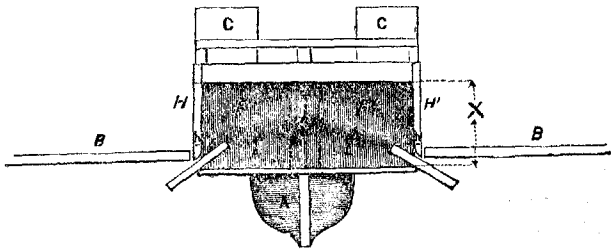
Fig. 3. a sectional plan on the line 1—2 (Fig. 1).

FIG. 1.



A is the hull of the boat; B, the water line; C, the boxes in which work the paddle wheels D, the latter being of the ordinary construction.

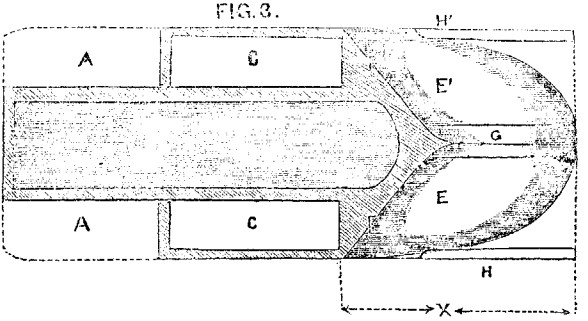
FIG. 2.



In the bows of the boat is constructed a recess x, the bottom of which

consists of two shelves E and E′, the distance between the outside edges of which at their greatest width, and viewed transversely as in Fig. 2, is the same as, or somewhat greater than, the distance between the outsides of the two paddle wheels. The edges of the opposite shelves viewed as in Fig 3, taper with a gentle curve towards a blunt point at the bows, where they meet each other. From their edges the shelves taper upwards with a rounded curve longitudinally towards the termination F and F′ of the recess, as well as laterally towards the angular projecting rib G, which separates the two shelves. This pointed rib at the bows projects slightly above the shelves, but increases in depth as it tapers upwards, and terminates with a curve at the underside of the deck (see Fig. 1). The terminations F and F′ of the recess which meet the shelves E and E′, taper towards the bows of the vessel, as seen in Fig. 3.

FIG. 3.



Suspended from the deck of the vessel, and firmly secured thereto on each side of the bows, are the guards H and H′, the points *h*, of which project a short distance below the water line. From these points the guards taper both ways, being beveled on the inside. It should be understood that the edges of the shelves E, E′, must be from 12 to 18 inches below the level of the water line B, so as to pass under ice of reasonable thickness.

Supposing the above described boat to be propelled towards a cake of ice, the first portion that comes in contact with the latter, will be the tapering point of the angular rib G; the further progress of the boat will cause the rib to so act on the underside of the ice, as to raise and consequently split the same as the boat continues to advance. The guards H and H′, will also have a tendency to break the ice at the point where their beveled edges come in contact with the latter. Thus the ice will for the most part be broken into square blocks, which must necessarily fall on each side of the projecting rib G, and on to the inclined sufaces of the shelves E and E′, as the boat continues to advance; the shape of the shelves will direct the blocks under the ice on each side of the vessel as seen in Fig. 2, and such an impetus is given to the broken pieces by the angular terminations F and F′, of the recess, that they are forced a considerable distance under the remaining ice, and thus by the propulsion of the boat, a clearer channel is cut than by the usual process of breaking up the ice into small pieces by striking the same by the bows of vessels and the action of paddle wheels.

The claim appended to the specification, is for the formation of a recess in the bows of a steamboat, said recess having inclined shelves, E and E', angular terminations, F and F', and angular rib, G, in combination with the guards, H and H', the whole being arranged and constructed substantially in the manner herein set forth, and for the purpose of breaking a channel through ice, and directing the broken pieces under the ice remaining on each side of the channel.

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*On the Manufacture of Iron and Steel by Bessemer's Process.**

To the Editor of the Mining Journal.

SIR,—In your Journal of the 16th is reported a paper, read before the British Association at Cheltenham by Mr. Bessemer, on the "Manufacture of Iron and Steel." In calling attention to the subject, I have no desire to question the value of the invention, which is almost illimitable, but as, in reading your report, the public will imbibe the false impression that Mr. Bessemer is the original patentee of the application of the principles involved in the process he describes for treating crude iron, I think it only just to those interested in the manufacture of iron, to Mr. Bessemer himself, and, above all, to my client, to remark that a patent which I obtained on behalf of Mr. J. G. Martien, of Newark, U. S., dated Sept. 15, 1855 (and noticed in the *Mining Journal* a few months ago), for "Improvements in the Manufacture of Iron and Steel," will prevent the use of Mr. Bessemer's patent, unless license be obtained from Mr. Martien, for whom I claim the honor of first inventor and patentee of the process of treating crude iron—the subjecting it to the direct agency of, and disseminating through and amongst it, atmospheric air under pressure, as it flows from, or after it has flowed from, a blast furnace, and prior to congelation, as described by Mr. Bessemer.

I trust you will see the justice of giving this claim all the publicity possible, in order to correct the false and prejudicial impressions which will otherwise exist on this important subject.

JOHN AVERY, Patent Agent, 32 Essex Street, Strand.

Paris, Aug. 19.

P. S. It may be well to mention that Mr. Martien has publicly proved his invention in Britain, prior to the date of Mr. Bessemer's patent.—J. A.

FRANKLIN INSTITUTE.

Proceedings of the Stated Monthly Meeting, September 18th, 1856.

B. Howard Rand, President, pro tem.
Isaac B. Garrigues, Recording Secretary.
The minutes of the last meeting were read and approved.

*From the London Mining Journal, No. 1047.