

(No Model.)

2 Sheets—Sheet 1.

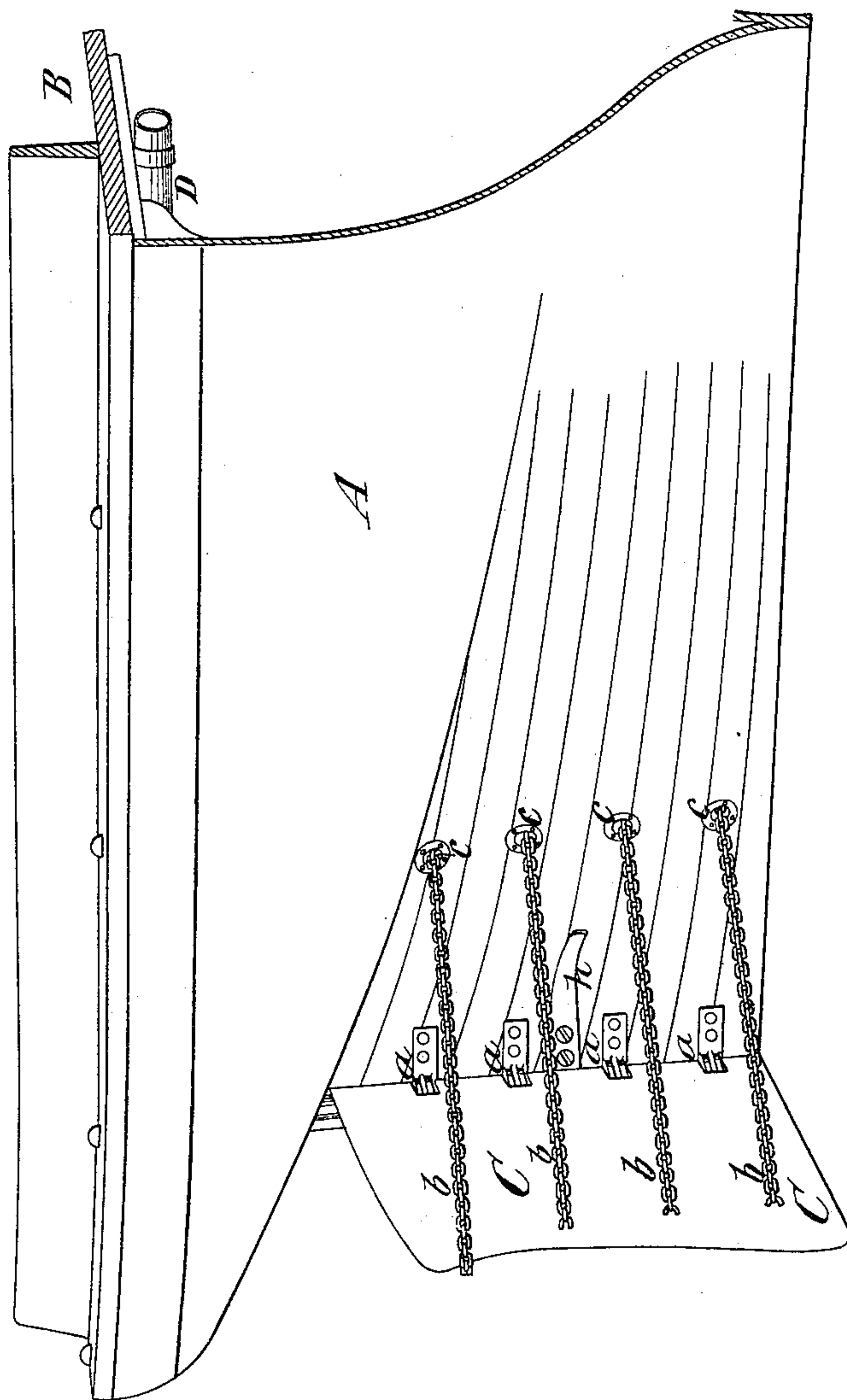
J. McADAMS.

MARINE BRAKE.

No. 330,034.

Patented Nov. 10, 1885.

Fig. 1.



Witnesses:

O. Sundgren

Matthew Pollock.

Inventor:

John McAdams  
by his attys  
Brown & Hall

(No Model.)

2 Sheets—Sheet 2.

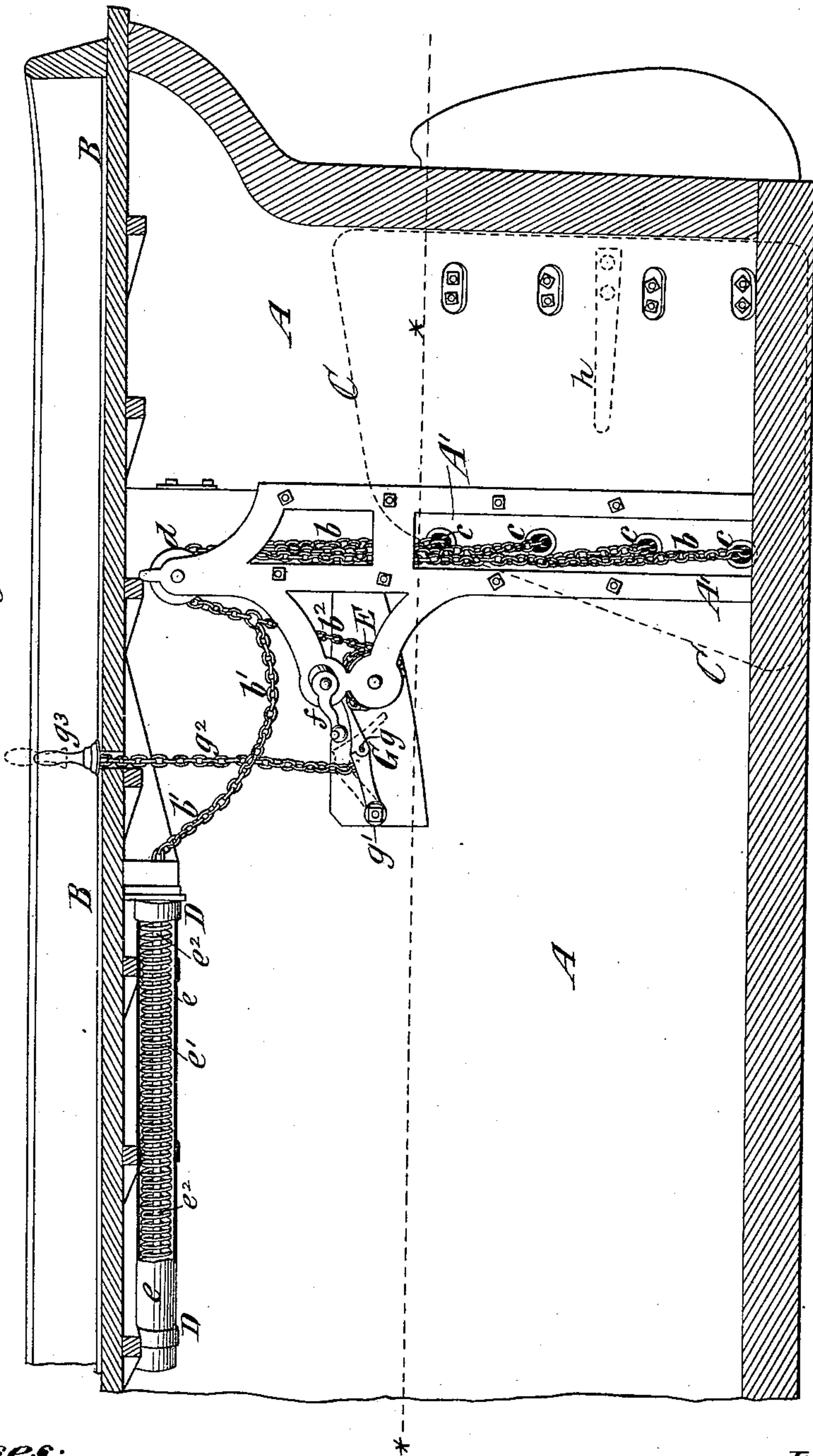
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Fig. 2.



Witnesses:  
C. Sundgren  
Matthew Pollock.

Inventor:  
John McAdams  
by his Atty  
Brown & Hall



# UNITED STATES PATENT OFFICE.

JOHN McADAMS, OF BROOKLYN, NEW YORK.

## MARINE BRAKE.

SPECIFICATION forming part of Letters Patent No. 330,034, dated November 10, 1885.

Application filed March 27, 1885. Serial No. 160,394. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN McADAMS, of the city of Brooklyn and county of Kings, in the State of New York, have invented a new and  
5 useful Improvement in Marine Brakes, of which the following is a specification.

My invention relates to automatic drags or marine brakes, such as are shown in my United States Letters Patent No. 261,369, granted  
10 July 18, 1882, and which consist of fins or blades pivoted at the rear edge to the sides of the vessel, thereby forming vertical hinges, on which they may be turned to swing their free  
15 edges against the sides of the vessel in front of their pivotal points.

My present invention consists in the combination, with a vessel and fins or blades hinged or pivoted to the sides thereof, as before described, of chains or flexible connections attached to the free edge of each fin or  
20 blade at different points in its height, and extending inward through holes in the side of the vessel, and a windlass, whereby said chains or flexible connections may be drawn inward  
25 to close and to hold the fin or blade against the side of the vessel, or may be paid out to permit the fin or blade to swing into a position transverse to the length of the vessel, and to sustain the fin or blade in such out-  
30 ward and operative position.

The invention also consists in the combination, with a vessel and fins or blades hinged, as above described, of chains or flexible connections extending from the free edge of each  
35 fin or blade through holes in the side of the vessel, a windlass whereby said chains or flexible connections may be drawn inward or paid out, as described, and a spring or springs connected with the chains or flexible connections  
40 and offering a yielding resistance to the outward or opening movement of the fin or blade, as more fully hereinafter described.

In the accompanying drawings, Figure 1 is a perspective view of one side of the stern  
45 portion of a vessel and a fin or blade hinged thereto and swung outward into operative position; and Fig. 2 is a longitudinal section of the stern portion, showing the chains or flexible connections, the mechanism for ma-  
50 nipulating them, and the spring-cushion with

which are connected the inner ends of the chains or flexible connections, and which forms a yielding resistance to the outward movement of the fin or blade with which such chains  
or connections are connected. In Fig. 2 the  
55 parts are shown in the position which they occupy when the fin or blade is swung inward and held close against the side of the vessel.

Similar letters of reference designate corresponding parts in both figures.

A designates the stern portion of the hull  
60 of a vessel, and B the deck thereof. On each side of the vessel is a fin or blade, C, which, by means of suitable hinges, *a*, is attached to the stern-post of the vessel, or to  
65 the side of the vessel at a point preferably very near the stern-post. Each fin or blade C is of metal, and is pivoted at its rear edge, as described, so as to form a vertical hinge, which permits the fin or blade swinging out-  
70 ward into a position transverse to the line of the vessel, as shown in Fig. 1, or of being swung inward, so that its free edge will lie close against the side of the vessel forward of  
75 its pivot or hinge. Attached to each fin or blade near its forward or free edge, and at different points in its height, are chains *b*, or other flexible connections, which extend in-  
ward through holes *c*, placed one above another in the side of the hull. On the side of  
80 the hull, and at each side of the center thereof, is a water box or compartment, A', which, by a suitable plate or timber, may be closed on its inner side to a point above the water-  
line, which is represented by the dotted-line \*  
85 in Fig. 2.

The plate or board which closes the water box or compartment is removed in Fig. 2, so as to show clearly the arrangement of the chains *b*, which pass through the holes *c* in  
90 the side of the hull. These several chains (here shown as four in number) are connected together at different points, and are thereby finally merged into a single chain, *b'*, which  
95 passes up over a sheave or pulley, *d*, and is connected with the spring-cushion device D. (Here shown as arranged below the deck.) This spring-cushion device may consist of an  
outer casing or tube, *e*, a spring, *e'*, arranged therein, and a rod, *e''*, with one end of which  
100



is connected the chain  $b'$ , and which has a follower supported by the spring at its opposite end.

It will be seen from the above description that a pull upon the chain  $b'$  will draw forward the rod  $e^2$  and compress the spring, and hence this spring will offer a yielding resistance to the paying out of the chain. I have here shown the spring-cushion as consisting of a single spiral spring; but in lieu thereof it may consist of a number of springs, such as are employed upon railway-cars and locomotives, and which comprise several separate springs of different diameters coiled one within another. In lieu of metal springs I may employ rubber blocks or buffers so arranged as to produce a like result.

From the chain  $b'$  another chain,  $b^2$ , extends to and is passed around the windlass E, which may be operated by a crank,  $f$ , geared thereto, and which may be held against turning by a pawl, G. (Here shown as consisting of two sections hinged together at  $g$ , and pivoted at one end,  $g'$ .) From this pawl G a chain or other connection,  $g^2$ , extends upward, and is provided with a handle,  $g^3$ , so that by pulling upon the handle and chain the pawl will be lifted into the position shown by dotted lines in Fig. 2, and will thereby be freed from the teeth of the windlass with which it engages. It will be understood that the same arrangement of chains, spring-cushion, and windlass is to be provided for each of the fins or blades C.

Ordinarily the fins or blades C are swung inward, so as to lie close against the sides of the vessel, as indicated by dotted lines, Fig. 2, and are held in such position by the chain  $b^2$  and the windlass and pawl E G. (Shown in Fig. 2.) During such time as the fins or blades are so held inward that portion of the chain  $b'$  which is connected with the spring-cushion will hang slack, as shown in Fig. 2.

Whenever it is desired to stop the vessel suddenly to avoid collision, or for any other purpose, the handle and chain  $g^3$   $g^2$  are to be pulled up instantly to free the windlass, and then the water catching inside the free edges of the fins or blades as the vessel moves forward will swing them outward at once into the position shown in Fig. 1, the chains  $b$   $b'$   $b^2$  being allowed to pay out freely as the fin or blade opens. Before the fin or blade reaches the position shown in Fig. 1 the chain  $b'$ , which is attached to the spring-cushion, becomes taut, and this spring-cushion then forms a yielding resistance to stop the outward movement of the fin or blade when it reaches a position nearly or quite transverse a center line of the vessel, and serves to hold the fin or blade in said position through the chains  $b'$   $b$ .

The chains or flexible connections and the spring-cushion are very much more desirable than a rigid stop, as they arrest the outward movement of the fins or blades without shock, and hold them against rearward movement

and past their operative position without danger of the breakage of parts. It will therefore be seen that the chains or flexible connections perform the double purpose of drawing the fins or blades inward into an inoperative position and of sustaining them while in operative position.

The opening movement of the fins or blades sufficiently to permit the catching of their free edges by the water may be facilitated by attaching to the side of the vessel a spring,  $h$ , which will be deflected or held in tension when the fin or blade is closed, and will suffice to throw the fin or blade slightly outward when the pawl G is raised to release the windlass E.

In my Patent No. 261,369, above referred to, each fin or blade has connected with it at different points in its height three or more folding or hinged braces, which, when the fin or blade is closed, fold inward between it and the side of the vessel, and to each fin or blade is attached a chain, which serves simply to draw it inward or close it against the side of the vessel. A single chain would not properly support or hold the fin or blade when swung outward into operative position, and hence where only a single chain is used a number of hinged folding braces are needed to sustain the fin or blade in an open or operative position.

I do not desire to include in my present invention what is shown in my former patent. By employing for each fin or blade a number of chains or flexible connections attached thereto at different points in its height, and a windlass whereby said chains or connections may be drawn in and paid out simultaneously, I dispense with the folding braces, which are indispensable to the construction shown in my former patent, and still sustain the fins or blades properly in their open or operative position.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a vessel and fins or blades hinged at their rear edges to the sides thereof, so as to close against the sides of the vessel in front of their hinges, of chains or flexible connections attached to the free edge of each fin or blade at different points in its height, and passing through holes in the side of the vessel, and a windlass around which the chains or flexible connections are passed, and which may be turned to draw inward simultaneously the chains or connections, and so close the fin or blade against the side of the vessel, or to pay out the chains or connections simultaneously to permit the fin or blade to swing outward, the chains or flexible connections serving to both draw inward the fin or blade and to sustain it in outward or operative position, substantially as herein described.

2. The combination, with a vessel and fins or blades hinged thereto and capable of swing-



ing inward and outward, as described, of chains or flexible connections attached to the free edge of each fin or blade at different points in its height, and passing inward  
5 through holes in the side of the vessel, a windlass for controlling the chains or flexible connections, and a spring - cushion to which the chains or flexible connections are attached, and which offers a yielding resistance to the outward or opening movement of the fin or 10 blade, substantially as herein described.

JOHN McADAMS.

Witnesses:

FREDK. HAYNES,  
HENRY McBRIDE.