

No. 843,016.

PATENTED FEB. 5, 1907.

O. HOLBY.

HULL FOR SHIPS.

APPLICATION FILED SEPT. 27, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

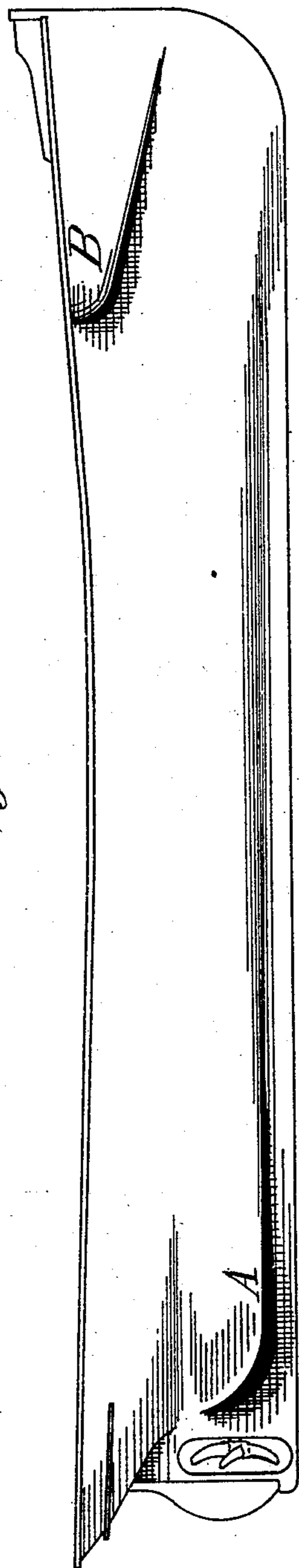
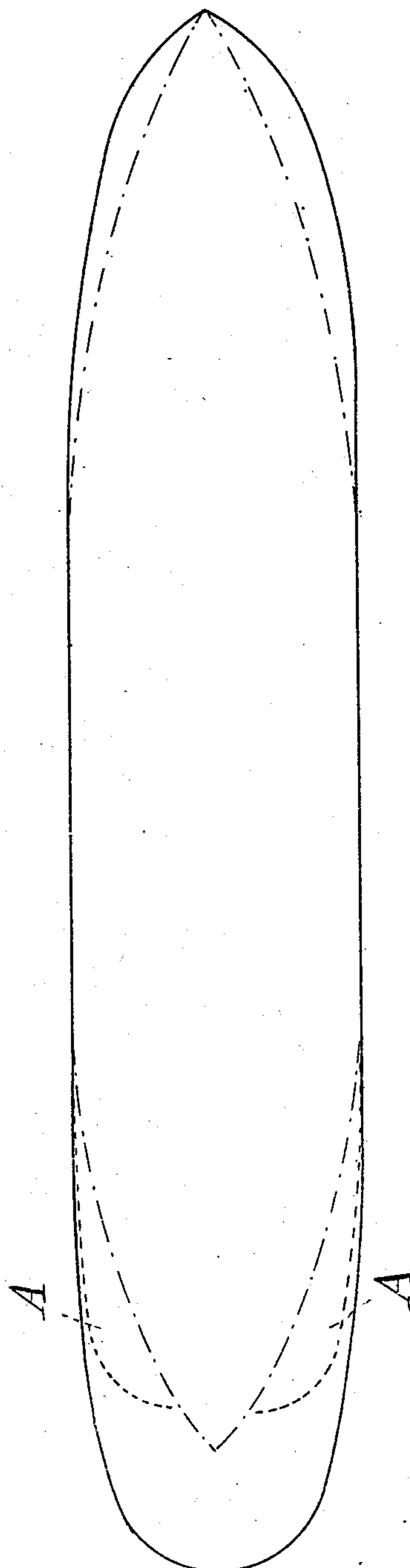


Fig. 2.



Witnesses.

H. L. Amel.

W. J. Sommers

Inventor.

Olaf Holby.

by Henry M. J. atty.

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2 SHEETS—SHEET 2.

Fig. 4.

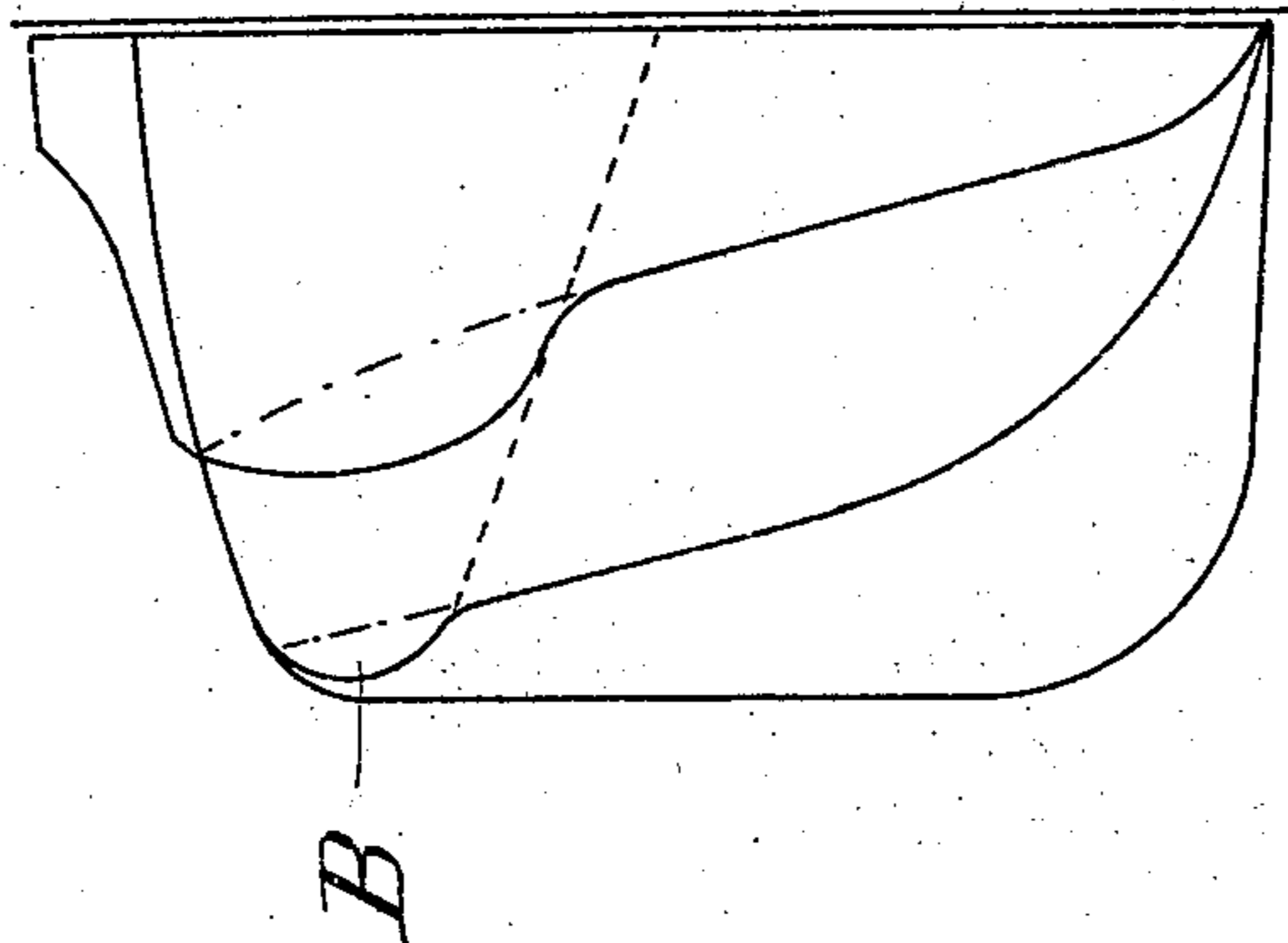
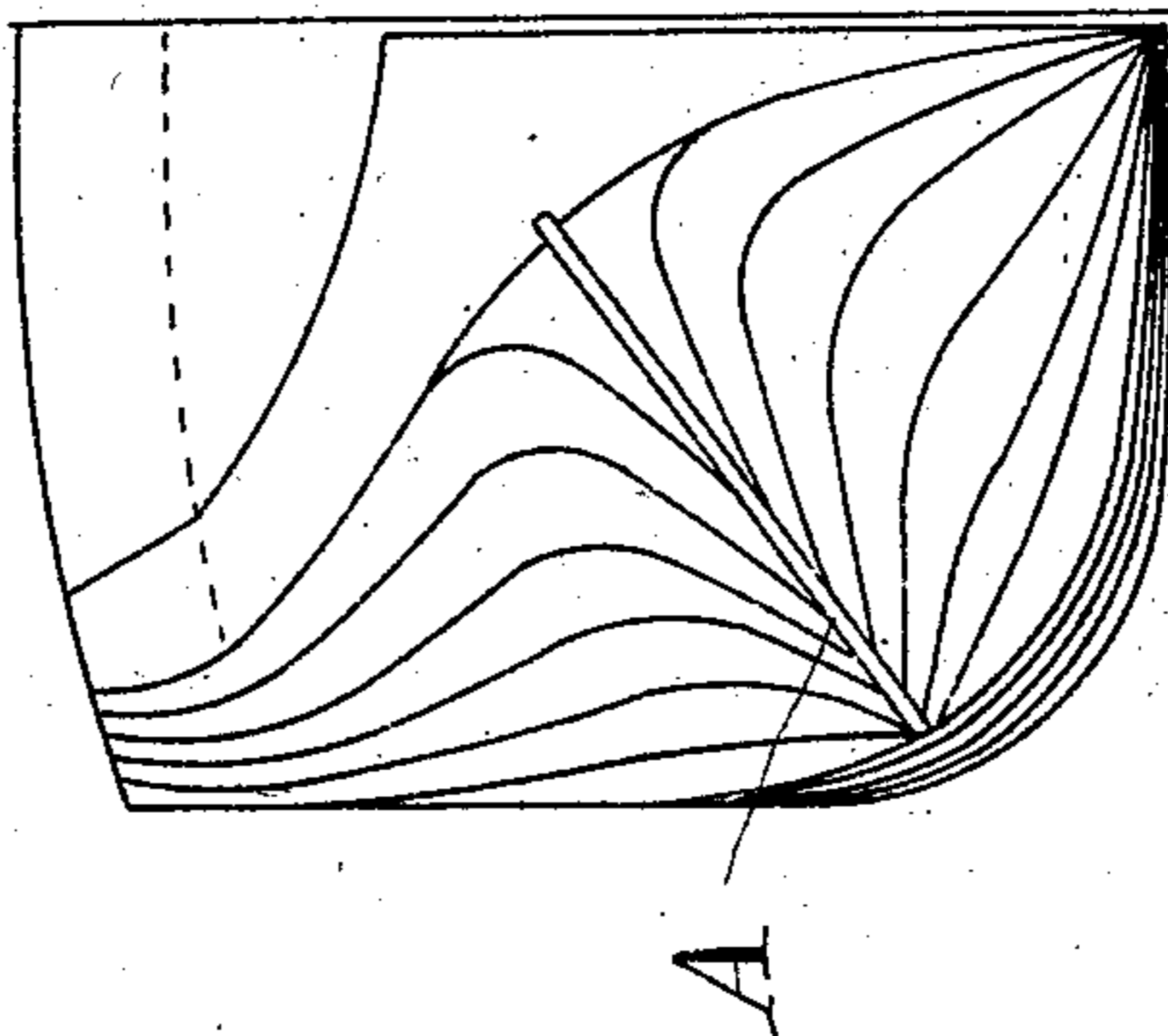


Fig. 3.



Witnesses.

H. L. Amer.

B. Rommers

Inventor.

Olaf Holby.

by *Henry Orth* atty.

# UNITED STATES PATENT OFFICE.

OLAF HOLBY, OF CHRISTIANIA, NORWAY.

## HULL FOR SHIPS.

No. 843,016.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed September 27, 1905. Serial No. 280,303.

*To all whom it may concern:*

Be it known that I, OLAF HOLBY, a subject of the King of Norway, residing at Christiania, Norway, have invented certain  
5 new and useful Improvements in Hulls for Ships; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others  
10 skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to hulls for ships; and  
15 the object of the present improvements is to give the hull such form which will in heavy sea lessen the rolling and pitching of the vessel and also decrease the loss of speed which is caused by the pitching. These ends are  
20 attained by way of sloping surfaces provided for at such parts of the hull which are most exposed to the pitchings, said surfaces being of such form that at the movements of the ship in heavy sea they will press on the water  
25 in a rearward direction.

In the drawings, which show one form of carrying out my invention, Figures 1 and 2 are side view and plan view of the improved hull. Figs. 3 and 4 are rear and front end  
30 views of one side of the hull at a larger scale, showing the shape of the frames or ribs of the vessel at different planes.

The hull proper is near the rear end provided with a projecting wing of the shape of  
35 a keel or stem, the axial plane of which has an inclination relatively to the vertical plane. At the back this wing is preferably of a somewhat sharp or pointed form, whereas in front it is broader and successively approaches the shape of the hull at its bottom  
40 and its sides. The said projection in this manner will form a kind of bilge or rolling keel, although its function is somewhat different, as the downward face of the projection forms a slope the pitch of which is so  
45 placed that when the ship is pressing its rear part down in the water the projection will force the water in a rearward direction, it being, so to say, caught between the wing and  
50 the hull proper.

As the top side of the projecting wing also has a pitch of a backward direction, both the downgoing and the upgoing movement of hull will cause a pushing action to take  
55 place by the water pressing on the wing. As compared with a usual rolling keel, the pres-

ent invention has the advantage that quite broad reaction-surfaces may be obtained without coming outside of the profile of the hull, as will be clearly seen in Fig. 3. More-  
60 over, the additional space obtained may be utilized as ballast-tank, whereby useful space for loading purpose may be saved.

The wing A is placed below the water-line; but I may provide similar projections  
65 above the water-line. Such projection is preferably placed at the stem of the ship, as at B. In this case only the lower side of the projection acts as a reaction-surface. When the ship sets its stem down in the sea, the  
70 lower side of the projection B will render resistance against the water and prevent the stem from coming too far into the water. At the same time it will cause a forward pressure on the ship on account of its sloping  
75 form. It is not necessary, of course, that the projection B shall be in all its extent above the water-line. It may partly dip into the water. It may also be given a  
80 greater length, so that it extends over quite a long distance of the side of the hull.

I preferably provide the hulls with the described projections as well in the front as in the rear of the ship; but I may in certain cases prefer to make use only of the front or  
85 the rear projections.

I claim—

1. A ship's hull having a bilge projection at its forward end whose under surface slopes upward and rearward and is normally  
90 wholly above the water-line and inactive in calm weather, said under surface serving to propel the ship forward during pitching in heavy seas.

2. A ship's hull having a forward bilge pro-  
95 jection at its forward end whose under surface slopes upward and rearward and is normally above the water-line and a bilge projection at each side of the keel at the stern projecting downwardly and outwardly and  
100 inclined upwardly toward the rear and concave surfaces connecting the bilge projections with the keel and extending upwardly toward the rear whereby the pitching of the vessel will propel it forward.  
105

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

OLAF HOLBY.

Witnesses:

O. MÜLLER,  
JON VAALER.