April 7, 1931. C. A. SKÄRLUND 1,799,183

MECHANICALLY PROPELLED BOAT

Filed April 14, 1930

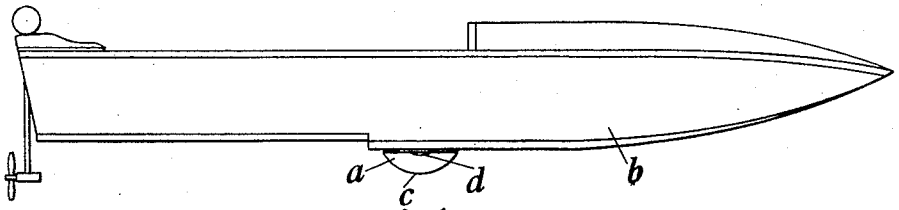


Fig.1

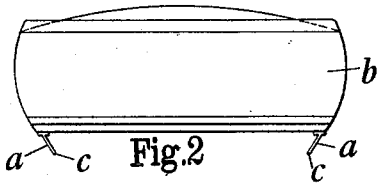


Fig.2

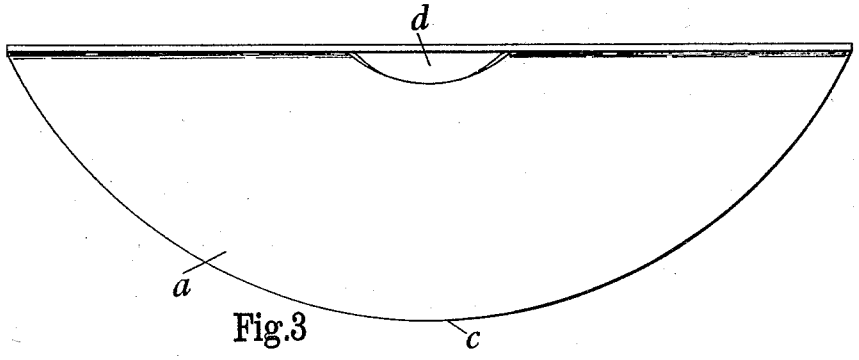


Fig.3

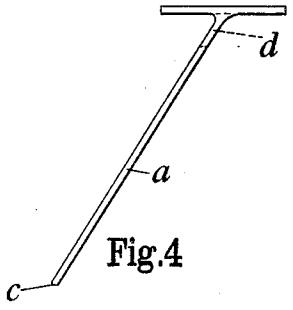


Fig.4

C. A. Skarlund INVENTOR

By: Mars & Clas ATTYS.

Patented Apr. 7, 1931 1,799,183

UNITED STATES PATENT OFFICE

CARL AXEL SKÄRLUND, OF SELLY PARK, BIRMINGHAM, ENGLAND

MECHANICALLY-PROPELLED BOAT

Application filed April 14, 1930, Serial No. 444,210, and in Great Britain June 19, 1929.

This invention relates to mechanically propelled boats of the kind commonly used for racing or speed purposes. Such boats are usually provided with a flat bottom. When moving at high speed round a bend in the course, difficulty is encountered in making the boat take the required course, the effect known as side slip being usually experienced. Moreover, in this circumstance the boat is liable to be overturned. To minimize side slip and risk of overturning, a central fin has been used, but when rounding a curve at high speed, the side slip which is caused by centrifugal force tends to lift the fin out of the water and press the outer side of the boat down into the water, thereby incurring risk of overturning the boat. It will be understood, therefore, that the ordinary central fin is of little or no use for reducing side slip, and as regards the risk of overturning it actually increases the danger.

The object of the present invention is to provide simple and effective means for enabling a sharp bend to be taken with a minimum of risk and slip at high speed.

The invention comprises the employment of a fin which is placed at or towards one side of the boat bottom and is inclined or curved towards the centre. In particular the invention comprises the employment of a pair of such fins arranged on opposite sides of the longitudinal centre line of the boat.

In the accompanying sheet of explanatory drawings:—

Figures 1 and 2 are side elevation and end view respectively of a mechanically propelled boat showing one manner of applying my invention.

Figures 3 and 4 are side and end elevations respectively showing one of the fins to a larger scale than Figures 1 and 2.

In carrying the invention into effect as shown, I prefer to employ a pair of short fins *a* lying parallel with the longitudinal centre of the boat *b* and placed in any convenient position, as for example at about the transverse centre, that is to say, about the centre of the length of the boat. Each fin *a* may consist of a flat plate, and this is secured in an inclined position so that its lower edge *c* is nearer a vertical plane at the centre of the boat than is the upper edge. Preferably each fin is perforated at or near its upper edge as at *d* to allow a free flow of water through it, but this is not essential.

When rounding a curve, the fin at the inner side acts as a drag, and as the water pressure acts mainly on its inner side, it experiences a component of pressure which resists the tendency of the inner edge of the boat to rise out of the water. On the other hand, the outer fin experiences pressure on its outer side, and is therefore subjected to an upward component of pressure which tends to resist the depression of the outer edge of the boat. Consequently the two fins tend to resist overturning of the boat. Instead of making the inclined fins flat, they may be of curved cross section, the lower edge being directed towards the centre of the boat. It will be understood that the fins offer little or no resistance to the motion of the boat along a straight course.

When a boat is being raced over a course in which the bends are all in the same direction, as for example a circular or elliptical course, it may be sufficient to employ a single fin, at the inner side or edge of the boat. The use of two fins is however advantageous in that the boat may then be run over any course, and the outer fin, though exerting but little effect as a drag, materially assists in the prevention of overturning.

Whilst a single fin of suitable length and depth is sufficient at one or each side of the boat, a plurality of fins acting as the equivadent of a single fin may be used.

The invention is not limited to any particular subordinate details as these may be varied as required.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. For use on a mechanically propelled boat of the kind commonly used for racing or speed purposes, a fin firmly fixed to the boat bottom at a position between the ends of the boat and at one side of the longitudinal centre of the boat, the fin being inclined towards such centre, substantially as described.

2. For use with a mechanically propelled boat of the kind commonly used for racing or speed purposes, a perforated fin adapted to be placed at one side of the longitudinal centre of the boat bottom, and inclined towards such centre, substantially as described.

3. The combination with a mechanically propelled boat of the kind commonly used for racing and speed purposes, of a pair of fins each of which are firmly fixed to the boat bottom, the fins being situated at a position between the boat ends, on each side of the longitudinal centre of the boat, and inclined towards such centre.

In testimony whereof I have signed my name to this specification.

CARL AXEL SKÄRLUND.