

Dec. 24, 1946.

A. H. HANSON

2,413,227

SAFETY SPEED BOAT

Filed June 2, 1944

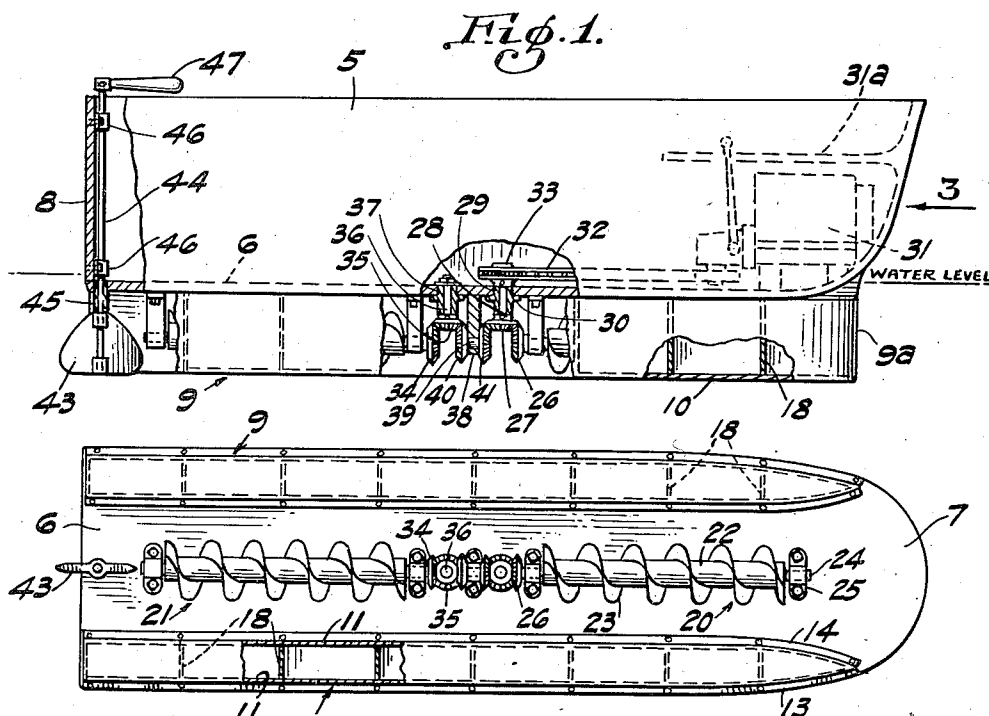


Fig. 2.

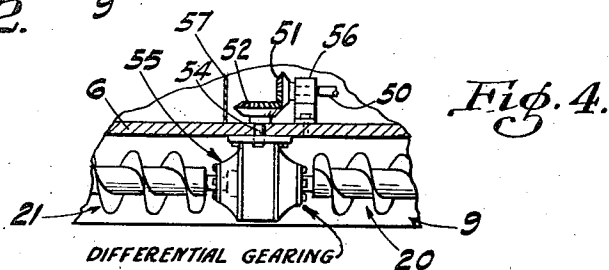


Fig. 4.

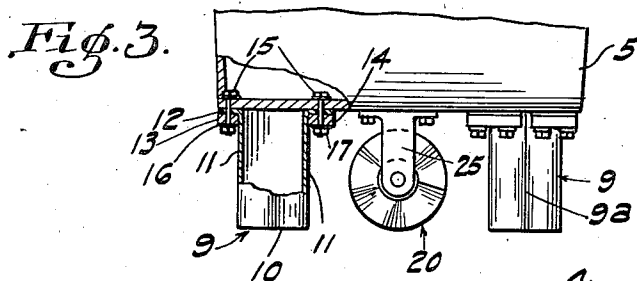


Fig. 3.

ALFRED H. HANSON,
INVENTOR.

BY
R. L. Carlson
ATTORNEY.

UNITED STATES PATENT OFFICE

2,413,227

SAFETY SPEED BOAT

Alfred H. Hanson, Long Beach, Calif.

Application June 2, 1944, Serial No. 538,354

1 Claim. (Cl. 115—39)

1

This invention relates to a safety speed boat.

Among the objects of the invention are: to provide a motor boat in which is combined to a greater extent the qualities of speed and safety; to construct a motor driven boat in such a manner that the water offers less resistance to its propulsion; and to construct the boat in such a way that it is of a more unsinkable character.

A more specific object of the invention is to provide under the hull of the boat an improved combination of buoyant members and propeller members wherein said buoyant members will direct the water toward the propeller members in such a manner that the latter will perform their function in a more efficient manner.

Another object of the invention is to provide a dual screw propeller structure operated by a differential gearing driven by a single motor, said differential gearing being located between the two parts of the propeller and driven by a single motor; thus insuring that at least one propeller will continue to operate even though the other is prevented from rotating.

Yet another object of the invention is to provide a rudder which is so constructed and positioned that its operation causes a quicker change of direction in the course of the boat.

Other objects, advantages and features of invention will hereinafter appear.

Referring to the accompanying drawing which illustrates what is at present deemed to be a preferred embodiment of the invention,

Fig. 1 is a side elevation of the boat portions of its structure being broken away in order to disclose underlying parts;

Fig. 2 is a bottom plan view of the boat, a portion of one of the pontoons being broken away in order to disclose more clearly its interior structure;

Fig. 3 is a front end view of the boat, the upper part of the hull being broken away to contract the view;

Fig. 4 is a partly sectional, fragmental view of a modification wherein the power transmission means is provided with a differential gearing.

Referring in detail to the drawing, the hull 5 has at flat bottom 6, a conventional tapered bow portion 7, and may have a flat sternal wall 8. To the bottom 6 of the hull is secured, along each side of the boat, a stream-lined pontoon or buoyant member 9. These pontoons are preferably formed of sheet metal, thus providing them with an ample interior air space. Each of these pontoons is shown having a bottom wall 10 and side walls 11, each of said side walls having along its

2

upper edge an outwardly directed flange 12 which affords a means for bolting the pontoon to the bottom of the boat in a water-tight manner. For this purpose clamping strips 13 and 14 are provided in an underlying relation to said flanges through which pass bolts 15 surrounded by washers 16 which underlie the strips 13 and 14 and are clamped against them by nuts 17. Each pontoon is divided into a longitudinally extending series of air-tight compartments by means of internal partitions 18. At its front end each pontoon has a vertical edge 9a.

The pontoons which have been described are spaced well apart from each other in parallelism, so as to leave between them a space equal to more than half the width of the bottom of the boat, and along the midwidth of this space extends the front propeller 20 and rear propeller 21, these two propellers being in axial alignment with each other, their adjacent ends being considerably spaced apart. These propellers are shown as twin structures, each of them consisting of a cylinder 22 which is surrounded by a helical blade 23, each propeller having an axial shaft 24 to which its cylindrical portion is attached by any suitable well-known means. Said shafts are rotatably mounted upon brackets 25 which are shown bolted to the bottom of the boat.

The front propeller 20 has fixed to its rear end a bevel gear 26 which meshes with a driving bevel gear 27 fixed to the lower end of the motor driven shaft 28. Through the bottom of the boat extends a bushing 29 to contain this shaft, a suitable liquid tight seal 30 being provided around said bushing.

The motor 31, protected by a cover member or wall 31a, and located in the bow portion of the boat, may be operatively connected with the transmission shaft 28 by any suitable power transmitting connection, Fig. 1 showing a sprocket chain 32 which is led around a sprocket wheel 33 fixed to the upper end of the shaft 28.

The rear propeller 21 has fixed to its front end a bevel gear 34, and as it is preferred to drive both the propellers in the same direction, an idle gear 35 is mounted in mesh therewith, the latter gear being carried by a shaft 36 mounted within a bushing structure 37 which need not be described in detail as it is constructed in the same manner as the bushing structure which supports the motor driven shaft 28. Between the gears 27 and 35 is shown a bracket 38 projecting downwardly from the bottom of the boat to support a bevel gear 40 in mesh with the idler 35, and to the opposite end of which is fixed rotatably a

3

shaft 39 to one end of which is fixed a bevel gear 41 in mesh with the gear 27.

The boat is provided with a rudder 43 which is shown shaped as a triangular plate having rounded corners, the base of the triangle being on the level with the lower edges of the pontoons. To the mid-length of this rudder is attached a vertical steering post 44 which extends through a bushing or sleeve 45 the upper end portion of which has a water-tight connection with the boat's bottom. The sternal wall 8 has internally projecting bearing lugs 46 for the rudder post 44, and to the upper end of said post is attached a steering arm 47.

Owing to the fact that the front portion of the rudder is located within the space between the pontoons, through which space passes a sternally directed stream of water produced by the action of the propellers, said rudder is caused to function more efficiently when it is operated to direct the course of the boat.

The buoyant bodies or pontoons 9 buoy up the hull of the boat to such an extent that resistance thereof to propulsion is greatly lessened, the water level being normally maintained at only slightly above the bottom of the hull. Owing to the pontoons having tapered front ends, the taper at each side meeting in front at a vertical edge, they direct the water inwardly as the boat advances, thereby causing the propellers to act more efficiently.

Among the advantages obtained from the specific structure disclosed may be mentioned the fact that owing to the rudder 43 being pivotally mounted in its midlength portion it is operable by a less extensive swing of the steering arm 47 than would be possible if the rudder were pivotally supported at one end. Also, owing to the fact that each pontoon has a vertical edge at its front end, instead of having a sled runner type of bevel at this point, the water is more effectively directed inwardly toward the front propeller by the tapered front end portions of the pontoons as the boat advances.

4

In Fig. 4 is shown a modification wherein the chain drive of Fig. 1 is replaced by a shaft 50 to which is fixed a bevel gear 51 in mesh with a bevel gear 52 fixed to the upper end of a short vertical shaft 54 that extends through the bottom of the boat in a liquid tight manner. Said shaft 54 is the driving shaft of a conventional differential gear structure 55 which need not be described in detail, and which is operatively connected with the shafts of the screw propellers 20 and 21, so that either a retardation or complete obstruction of the rotation of one of said propellers will not interfere with the operation of the other. The sternal end portion of shaft 50 is shown provided with a suitable bearing 56 under a housing 57.

Owing to the fact that both of the driven propeller sections are located at the midwidth of the boat the arrested relation of one while the other continues to be driven will not affect the direction of the course the boat is taking, no side draft resulting as would be the case if the two propeller sections were bilaterally positioned.

While I have shown and described specific embodiments of my invention I do not limit myself to the exact details of construction set forth, and the invention embraces such changes, modifications, and equivalents of the parts and their formation and arrangement as come within the purview of the appended claim.

What is claimed is:

In a motor driven boat, a hull, two elongated aligned screw propellers mounted subjacent to said hull with their axes extending longitudinally along the mid-width thereof, there being a space between said propellers, a motor carried by said hull, and means for driving said propellers from said motor comprising a differential gearing located between them, whereby one of said propellers may be driven from said motor even though the rotation of the other be accidentally prevented.

ALFRED H. HANSON.