Oct. 23, 1945.

E. F. CRIBB

2,387,700

HULL OF MOTOR VESSELS

Filed April 8, 1944

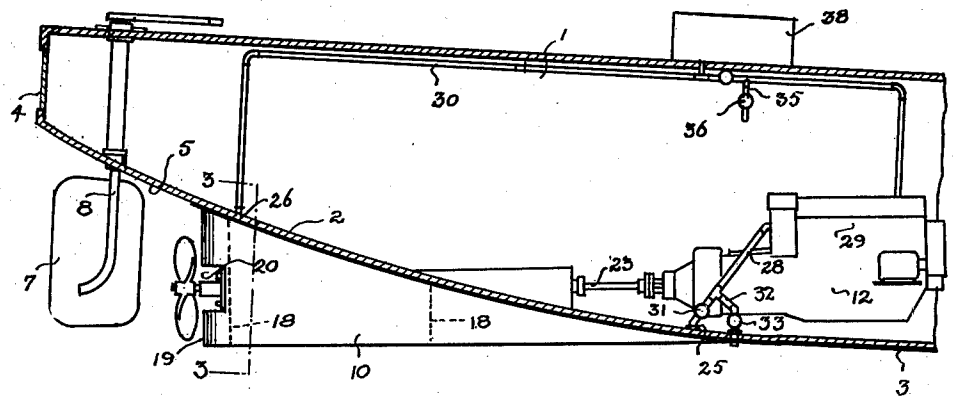


Fig. 1.

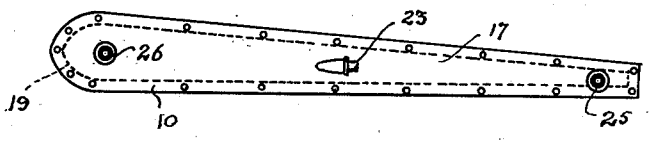


Fig. 2

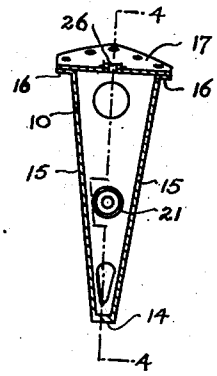


Fig. 3.

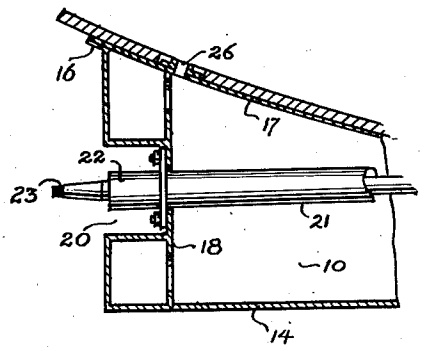


Fig. 4.

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HULL OF MOTOR VESSELS

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5 Claims. (Cl. 115—0.5)

My invention relates to improvements in hulls of motor vessels.

The objects of the invention are to provide means whereby the thermo syphon system of cooling for vessels can be materially improved by increasing the static head between the base of the radiator and the top of the engine jacket; to provide means for carrying a large supply of fresh water for engine cooling; to provide means whereby said water supply can be used as stable ballast, and to provide that the cooling water container or radiator shall form a component part, readily interchangeable, of the hull of the vessel. A further object is to provide a skeg structure for the vessel which being capable of being bolted or otherwise attached to the hull of a ship reduces the cost of construction of the hull through eliminating the necessity for sharply bent planking under the counter.

The invention consists of a skeg in the form of a tank, which is adapted to be secured to the bottom of the hull and connected to the engine by suitable pipes to form a water cooling system therefor.

Referring to the drawing:

Fig. 1 is a sectional view of the stern end of a motor vessel fitted with the invention, the latter being shown in side elevation.

Fig. 2 is a plan view of the invention.

Fig. 3 is a detail transverse sectional view taken on the line 3—3 of Figure 1.

Fig. 4 is a detail longitudinal view taken on the line 4—4 of Figure 3.

In the drawing like characters of reference indicate corresponding parts in each figure.

The numeral 1 indicates generally a portion of a motor driven vessel's hull having a bottom 2, sloping upwardly from the keel 3 to a transom 4 and forming a counter 5. A rudder 7 having a rudder post 8 extending through the stern is fitted in the usual way.

A hollow skeg, generally indicated by the numeral 10, is fitted lengthwise of the hull 1, which serves as a radiator or heat exchanger for the internal combustion engine 12 of the vessel. The skeg is formed with a bottom wall 14, flaring side walls 15 which are outwardly flanged at their upper extremity as at 16 and a cover plate 17. One or more transverse partitions 18 having apertures 18A are welded within the skeg to add to its stability. The side walls 15 are inturned as at 19 to streamline the stern end of said skeg and a gap 20 is formed therein to receive the end of a stern tube 21 and a stern bearing 22 for the propeller shaft 23 of the engine 12. The stern tube 21 is extended to the cover plate 17.

Pipe connections 25 and 26 are fitted to the cover 17 of the skeg, which extend through the bottom 2 to be connected to the engine 12 in the following manner. From the connection 25 a flow pipe 28 extends to the water jacket 29 of the engine and from said water jacket a return pipe 30 extends towards the stern and back down to the connection 26. The flow pipe 28 is provided with a valve 31 for controlling the flow of water from the skeg to the engine and a branch pipe 32 having a valve 33, which pipe extends through the bottom of the hull to provide means for supplying sea water to the vessel if desired. The pipe 30 is provided with a branch 35 which leads overside and is fitted with a valve 36 to facilitate the direct discharge of water overside from the engine when desired. Also connected with the pipe 30 is a fresh water supply tank 38, which may alternately be connected with the pipe 28.

The operation of a thermo syphon system is well known and it will be seen that the heat of the engine is partly transferred through the pipe 30 to the skeg where it is dissipated through the skeg walls to the sea, and fresh cold or cool water is drawn up by the engine heat from the lower part of the skeg to the engine, expansion being normally taken care of in the supply tank 38.

If the skeg becomes damaged or the fresh water supply is lost, it suffices to open the valves 33 and 36 and allow the engine to draw its cooling water from below the hull through the branch pipe 32 and discharge the heated water through the pipe 35.

As a heat exchanger, the skeg is particularly efficacious on account of its large radiating surfaces. Its capacity is ample and by virtue of its being full at all times the water remains as a non-shifting ballast for the ship and in a position where it acts to the greatest advantage.

What I claim as my invention:

1. In a motor driven vessel, a hull having a counter and a skeg secured to said hull below the counter, said skeg comprising a hollow body pipe connected to the motor of the vessel to form a heat exchanger.

2. In a motor driven vessel, a hull having a counter and a skeg secured to said hull below the counter, said skeg comprising a hollow body having side walls, a bottom wall and a top cover and having pipe connections formed in the top cover, one of said connections being adjacent the stern and the other connection communicating with the hollow body adjacent its bottom wall.

3. In a motor driven vessel, a hull having a counter, and a skeg, said skeg comprising a hollow body secured to the hull below the counter, said skeg having a stern tube extending longitudinally and substantially horizontally therethrough to accommodate the propeller shaft of the vessel and having openings therein adapted to receive water circulating pipes.

4. In a motor driven vessel, a hull having a counter and a skeg, said skeg comprising a hollow body secured to the hull below the counter and pipe connected to the motor to form a heat exchanger, said skeg having side walls converging downwardly, the rear ends of said side walls being inwardly curved and connected together throughout a portion of their vertical height and a stern tube extending substantially horizontally therethrough adapted to accommodate a propeller shaft.

5. A skeg adapted for attachment to the counter of a motor driven vessel, said skeg comprising a narrow tank shaped along its upper edge to fit the hull and having a flange by which it is adapted to be fastened to said hull, said tank having connections for circulating pipes leading to and from the engine.

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