

No. 608,757.

Patented Aug. 9, 1898.

A. J. CULBERTSON.  
PNEUMATIC PROPELLING MEANS FOR VESSELS.

(Application filed Oct. 9, 1897.)

(No Model.)

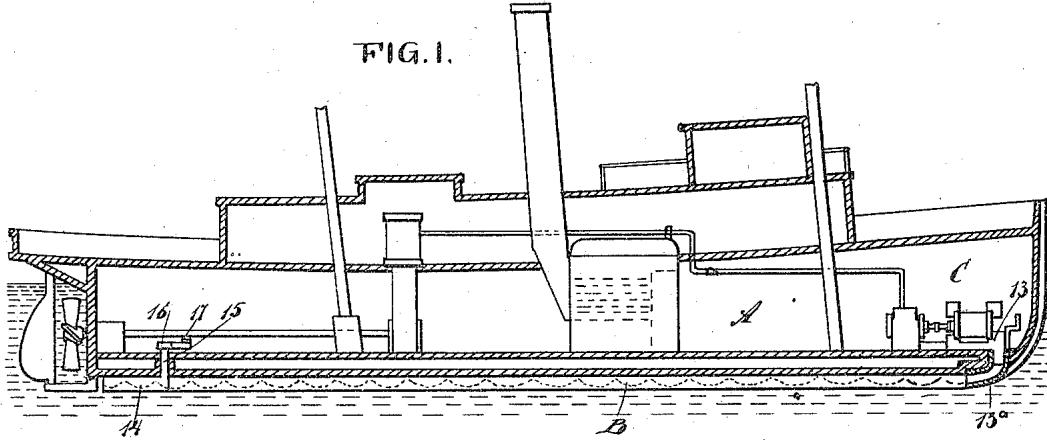


FIG. 2.



FIG. 3.

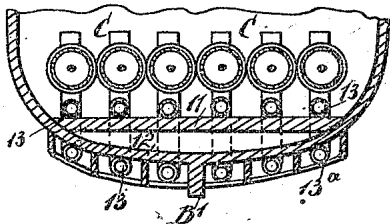


FIG. 4.

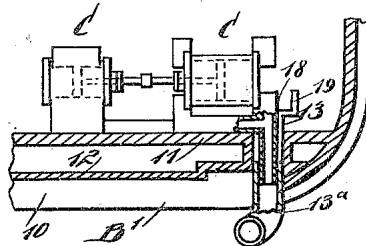
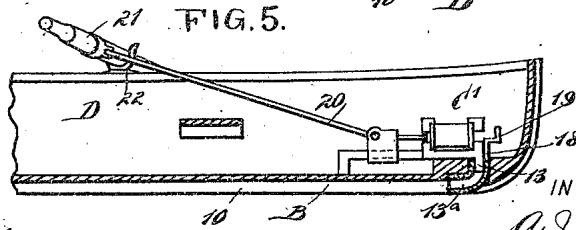


FIG. 5.



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# UNITED STATES PATENT OFFICE.

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## PNEUMATIC PROPELLING MEANS FOR VESSELS.

SPECIFICATION forming part of Letters Patent No. 608,757, dated August 9, 1898.

Application filed October 9, 1897. Serial No. 654,671. (No model.)

*To all whom it may concern:*

Be it known that I, ANDREW J. CULBERT-  
SON, of San Andreas, in the county of Cala-

tend practically from the bow to the stern, 50  
and between the cleats channels or chambers  
10 are formed. The lower deck 11 is built

duced into the chambers between the cleats the said cleats will serve as auxiliary keels or fins, and they will not in any manner interfere with the progress of the boat when air is not supplied to the chambers or channels 5 10. The cleats B may be quite shallow. In fact, the width of the cleats or their dimensions will be governed largely by the character of the stream or body of water in which 10 the boat is to do service.

When the pumps C are in operation, air is forced continuously into the channels or chambers 10 from the bow, and the air will pass to the stern in wave-lines, as indicated 15 in Fig. 1, and will present a cushion intervening the hull and the water. Consequently the boat will move to a greater extent on sheets or cushions of air than on the water, although the water will engage with the aux-

and reduce the labor of rowing. When an attachment is made between the pistons of the 50 air-compressors and the oars or sculls, the oar-lock constitutes the hinge or pivot point, and the length of the rowing stroke will regulate the stroke of the piston-rod.

Having thus described my invention, I 55 claim as new and desire to secure by Letters Patent—

1. In the construction of vessels, a hull provided with a series of cleats arranged longitudinally and forming a series of channels 60 open at the bottom and at the stern, means, substantially as described, for forcing a buoyant material through said channels, and also for directing the buoyant material against the water below the cleats to assist in steering, 65 substantially as described.

2. In the construction of vessels, a hull pro-