

(No Model.)

T. MILLS.  
PROPELLING VESSELS.

No. 457,361.

Patented Aug. 11, 1891.

Fig. 1.

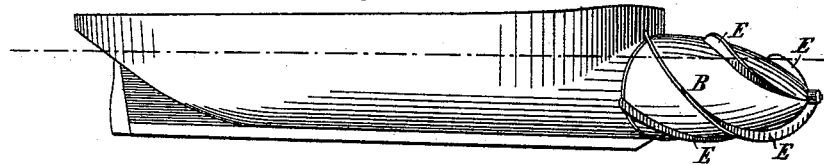


Fig. 2.

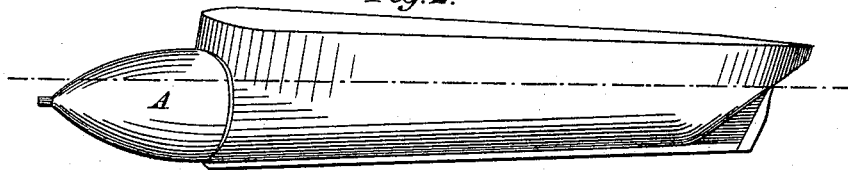


Fig. 3.

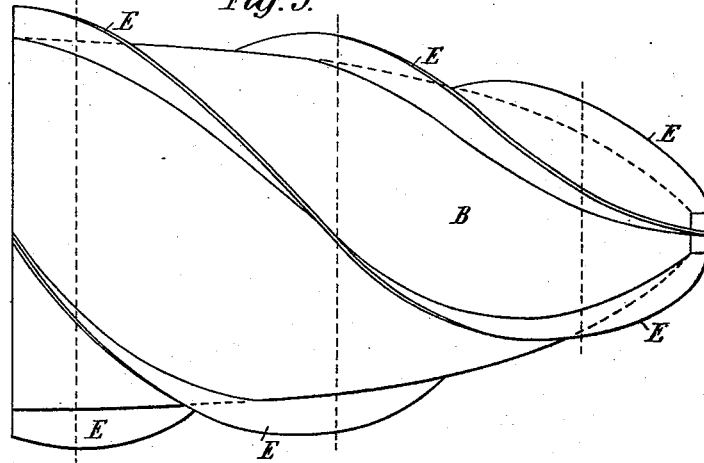
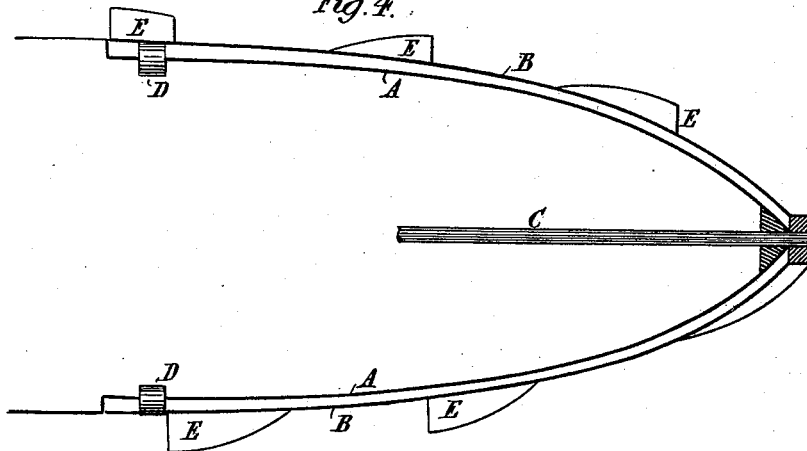


Fig. 4.



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# UNITED STATES PATENT OFFICE.

THOMAS MILLS, OF CHARTERSTOWERS, QUEENSLAND.

## PROPELLING VESSELS.

SPECIFICATION forming part of Letters Patent No. 457,361, dated August 11, 1891.

Application filed February 18, 1891. Serial No. 381,780. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS MILLS, miner, a subject of the Queen of Great Britain, residing at Charterstowers, in the Colony of Queensland, have invented certain new and useful Improvements in Propelling Vessels, of which the following is a specification.

The propeller I place at the front end of the vessel instead of at the stern, as is common with screw-propellers, and I form the propeller in such a manner that it bores, as it were, through the water, displacing the water from the front of the vessel and drawing the vessel forward instead of thrusting it forward from the stern. The front end of the vessel I make in the form of a pointed cone, with the point some distance below the water-line. The propeller I form of a corresponding hollow cone to fit over the coned front end of the vessel, but with a slight space between the two.

The pointed end of the propeller is secured to the end of the driving-shaft, which is carried out through the pointed front end of the vessel. Small rollers are also placed between the front end of the vessel and the rear end of the hollow propeller to give support to this end of the propeller. Holes may also be formed through the front of the propeller to admit water to its interior, if desired.

The exterior of the propeller has a web or webs projecting out from it, preferably, but not necessarily, at right angles to its surface and passing spirally around it, commencing at the point at only a slight inclination to the shaft, and becoming more and more inclined to it as the diameter becomes greater, so that it bores through the water like an auger, each part of the inclined web being adapted to advance through the water an equal distance for each revolution or part of the propeller. The main shaft may be carried back to any desired point within the vessel wherever the propelling-engines are situated. Protection may, if desired, be given to the propeller by a protecting-cage, formed of bars fixed to the keel and sides and deck of the vessel.

Figure 1 of the drawings annexed is a perspective view of a vessel constructed and provided with a propeller, as above described. Fig. 2 is a perspective view of the same with

the propeller removed. Fig. 3 is an elevation of the propeller. Fig. 4 is a vertical section, on a larger scale, of the fore part of the vessel, showing how friction-rollers may be interposed between the ship and the rear end of the propeller to reduce friction and to steady the cone.

As will be seen from the drawings, the whole fore part A of the vessel is made of much the same form as the fore part of projectiles as now made for firing from guns. Surrounding this portion of the vessel is the propeller B.

C is the propeller-shaft, to which the pointed end of the propeller is secured.

D D are rollers interposed between the vessel and the rear end of the propeller. Their axes may be carried in bearings which can be set inward or outward or oiled from the interior of the vessel.

E E are the curved blades projecting out from the exterior of the propeller. They may, if desired, be formed with a flange extending backward from their outer edge, or may be plain, and either at right angles to the surface of the propeller or somewhat inclined to it.

There may be any desired number of and depth and length of blades. The pitch of the blades may also be considerably varied, according to the nature of the vessel and the speed at which it is to be propelled.

What I claim is—

1. A vessel with the whole fore part of a stationary curved conical form, surrounded by a hollow conical propeller of corresponding form and adapted to revolve thereon and having blades projecting from its exterior and winding around it, like the screw-threads at the point of an auger, substantially as described.

2. A vessel having at its front end a stationary conical portion A, in combination with a hollow conical propeller adapted to revolve about said portion A, having spirally-arranged blades and provided with means for revolving it.

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