

(No Model.)

H. C. HAPPOLD.  
SCREW PROPELLER.

No. 507,320.

Patented Oct. 24, 1893.

FIG. 1.

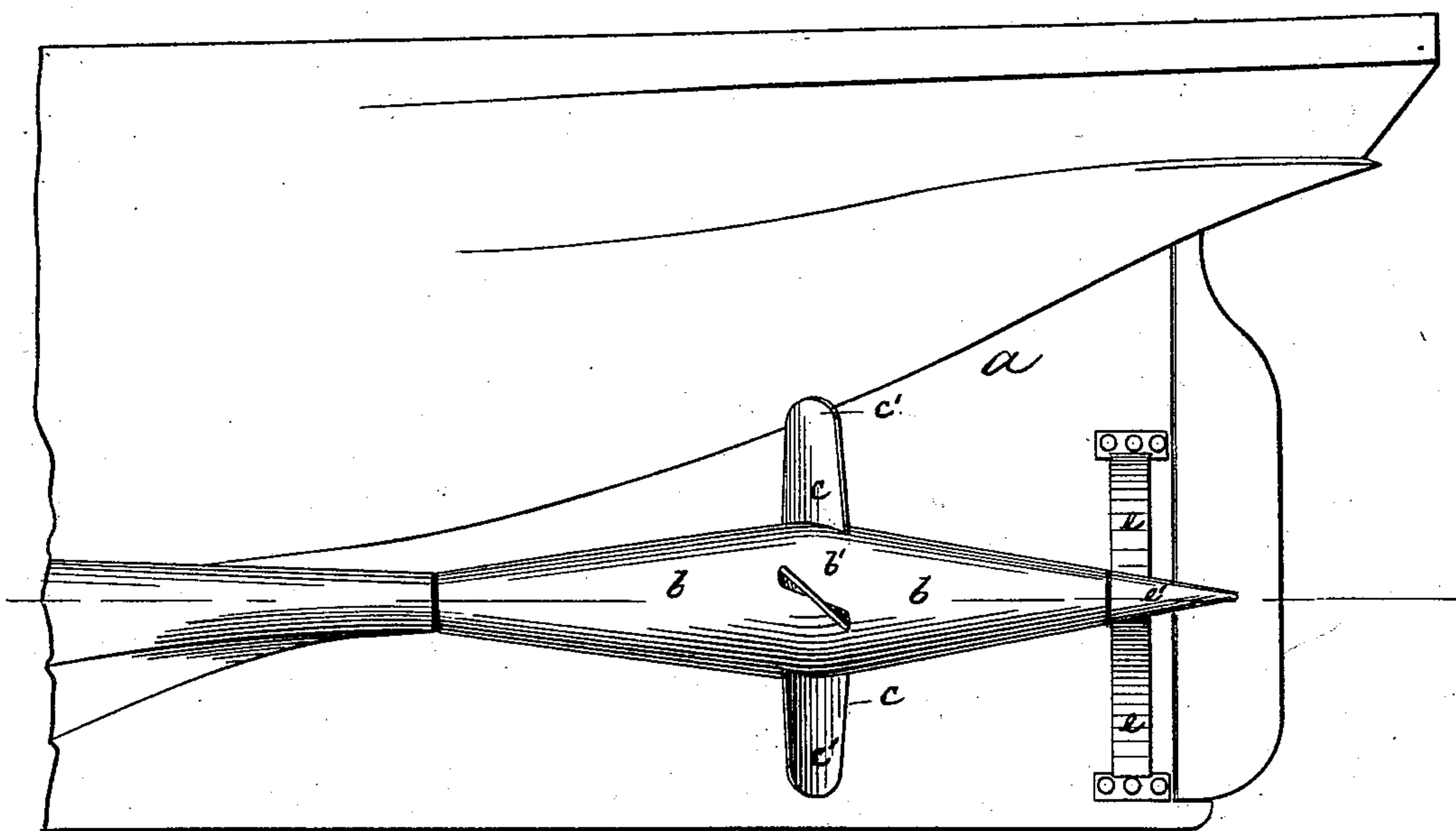
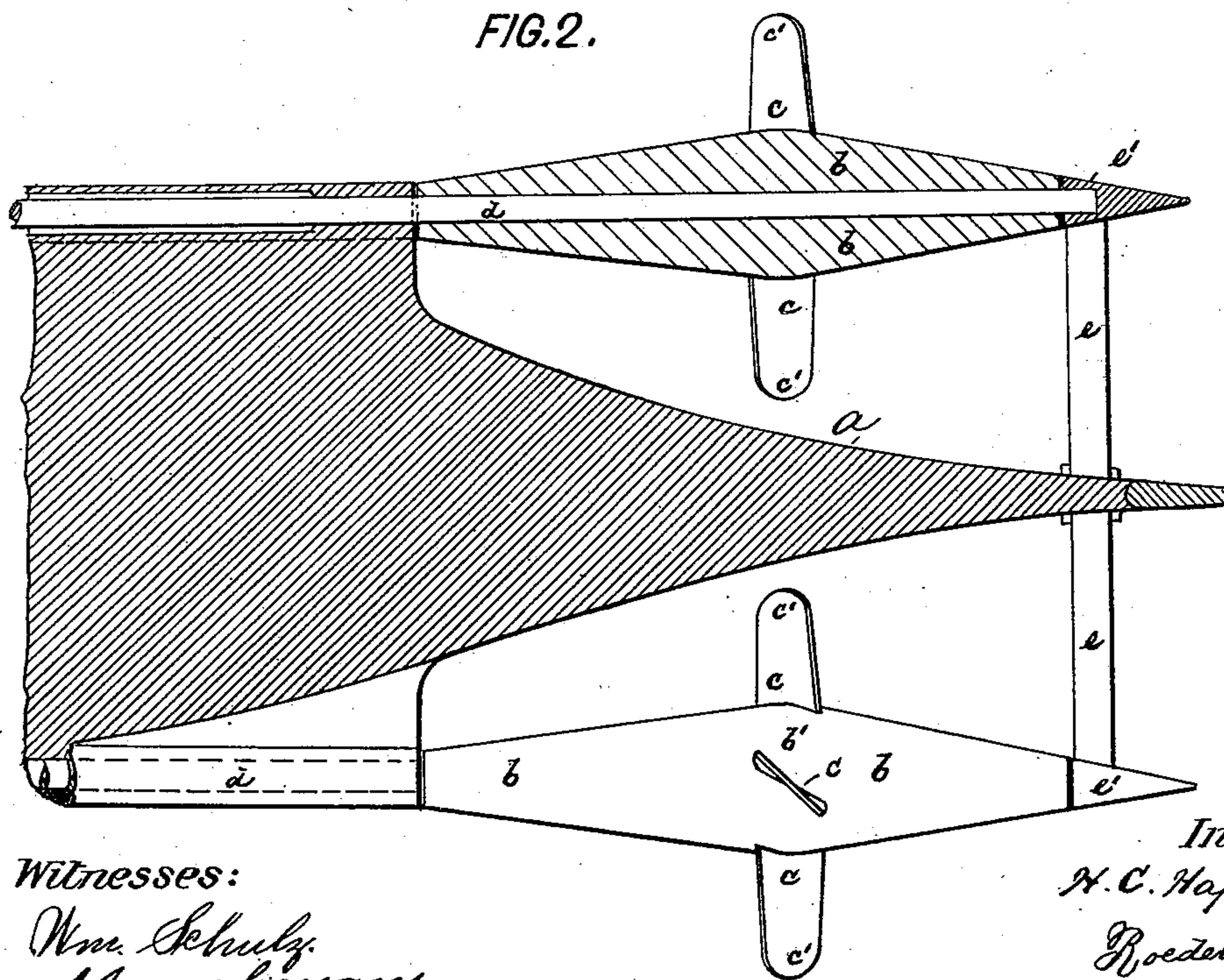


FIG. 2.



Witnesses:

Wm. Schulz.  
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# UNITED STATES PATENT OFFICE.

HENRY C. HAPPOLD, OF NEW YORK, N. Y.

## SCREW-PROPELLER.

SPECIFICATION forming part of Letters Patent No. 507,320, dated October 24, 1893.

Application filed May 31, 1893. Serial No. 476,078. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY C. HAPPOLD, of New York city, New York, have invented an Improved Screw-Propeller, of which the following is a specification.

This invention relates to a screw propeller more particularly designed to be used on twin screw steamers and having a boss or hub that tapers toward both ends.

10 In the accompanying drawings: Figure 1 is a side elevation of my improved screw propeller; Fig. 2 a top view partly in section of a hull provided with twin screws constructed according to my invention.

15 The letter *a*, represents the hull of a vessel to which the propeller is attached.

The propeller is formed of a hub or boss *b*, that is widest at or near the center and tapers toward both ends. To the center or widest part *b'*, of the boss the blades *c*, are attached. 20 The rear end of the propeller shaft *d*, is supported by a bracket *e*, secured to the keel *a*, at the top and bottom and provided at the center with a conical tip or pointed bearing 25 *e'*, in which the shaft *d*, revolves. This tip forms in effect the apex of a cone of which

the boss *b* is the body and thus the water divided by the propeller will close behind the point of the tip, so that no suction is created. It will be seen that the boss *b*, projects a considerable distance to the front and rear of the blades and that by being supported at its rear end, it will not be apt to become dislodged. As the boss is thickened where it carries the blades, the latter may be made of reduced length and may be widened at their outer end as at *c'*, to increase their efficiency. My improved propeller will divide the water readily will not create back suction and will be firmly supported in all its parts. 30 35 40

What I claim is—

The combination of a propeller composed of a tapering boss and blades secured thereto, with a bracket attached to the hull in the rear of the boss and with a tip that tapers from front to rear and supports the rear end of the propeller shaft, substantially as specified. 45

HENRY C. HAPPOLD.

Witnesses:

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