R. C. BROWN.

Construction of Hulls of Steam-Vessels.

No. 203,586. Patented May 14, 1878.

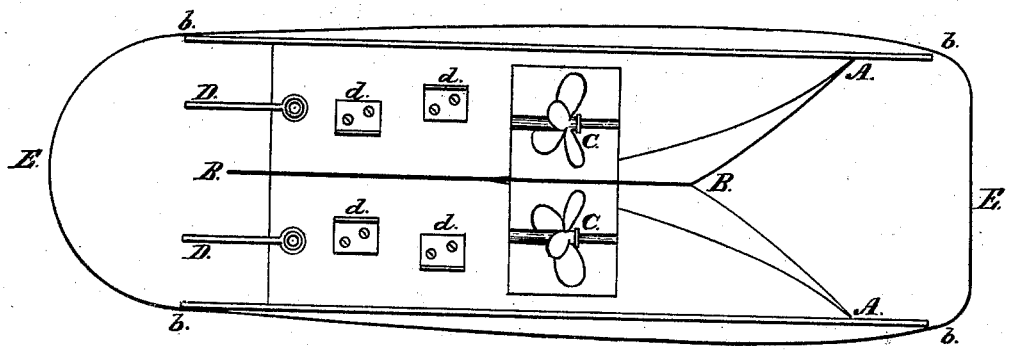

Fig. 1.

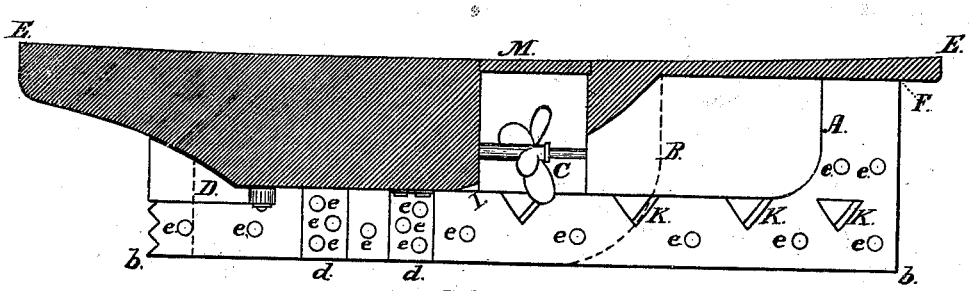

Fig. 2.

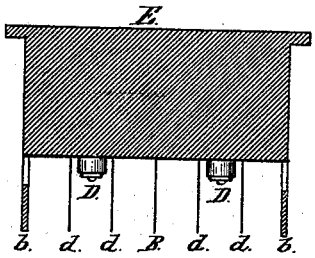

Fig. 3.

Witnesses:

Charles. B. Upton.

John Yantis Strauder

Inventor:

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UNITED STATES PATENT OFFICE.

ROBERT CHARLES BROWN, OF PORTLAND, OREGON.

IMPROVEMENT IN CONSTRUCTION OF HULLS OF STEAM-VESSELS.

Specification forming part of Letters Patent No. **203,586**, dated May 14, 1878; application filed June 20, 1877.

To all whom it may concern:

Be it known that I, ROBERT CHARLES BROWN, of the city of Portland, county of Multnomah, and State of Oregon, have invented certain Improvements in the Hulls of Steamboats and other Water-Craft, of which the following is a specification:

The object of my invention is the application of steam-power to canal-boats and other water-craft, in such a manner as to entirely avoid the swell or disturbance of the water usually made by a boat in rapid motion. This is accomplished by means of the short, center, and side keels, the latter projecting fore and aft beyond the hull, all of which is more fully shown in the accompanying drawings.

Figure 1 represents a view of the bottom of the proposed boat. A A, the two stems; B B, center, and *b b b b* side, keels; C C, propellers; D D, rudders; *d d d d*, short keels; E E, deck, projecting over the bow and stem.

Fig. 2 is a longitudinal section, showing one propeller. A, stem; E E, deck, projecting over bow and stem; B, center keel; *b b*, side keel; F, point at which the side keel *b b* meets deck projected over the bow; C, propeller, situated a little forward of amidships and within the hull; *d d*, short keels; D, rudder; I, hull, cut away at any desired angle to allow the water to escape freely astern away from the propellers; K K K, openings of large size in side keels, to allow the water to pass in and out freely in making turns; *e e e e e e*, small openings in side, center, and short keels for the same purpose as K K K; M, hatch over well, in which the two propellers work, for the more easy access to them in order to make any necessary repairs they may require.

Fig. 3 is a transverse section. E, deck; B, center keel; *b b*, side keels; *d d d d*, short keels; D D, rudders.

The shape of the bow causes the water to come together and pass underneath the boat at the point C C, where the propellers are situated.

The side keels *b b b b* prevent the water from sliding out from underneath the boat and causing a wave or ripple that would wash the banks of the canal or stream. The center keel B B prevents the water from surging from side to side underneath the boat. The short keels *d d d d* are so placed as to divide the water into three equal parts between each side and center keel.

The great object of the various keels, besides those above stated, is to cause the water to leave the stern of the boat with a current in a direct line with the forward movement of the boat, and without any roughness or swell.

The two side keels *b b b b* are extended forward beyond the stems and astern at an equal distance, or beyond and above the water-line of the boat when fully loaded, in order to entirely prevent the waves or swell usually caused by the bow and stern of a boat in rapid motion.

The large openings K K K in the side keels and small ones *e e e e e e* in the side, center, and short keels are made for the purpose of allowing the water to pass in and out from one side to the other in changing the direct course of the boat, thus aiding in the steering of, and giving greater control over the movements of, the boat.

I claim as my invention—

In a steamboat or other vessel, the combination of the side keels, extending fore and aft of the hull and below the bottom thereof, with the center keel, extending the same vertical distance as the side keels, and the intermediate short keels, all of said keels being provided with orifices for the free passage of water, as and for the purpose set forth.

ROBERT CHARLES BROWN.

Witnesses:

WILLIAM LINDEMANN,

FREDERICK ROBINSON STUNG.