

C. G. E. HENNIG.
Construction of Hulls of Ships, &c.

No. 154,250.

Patented Aug. 18, 1874.

Fig. 1.

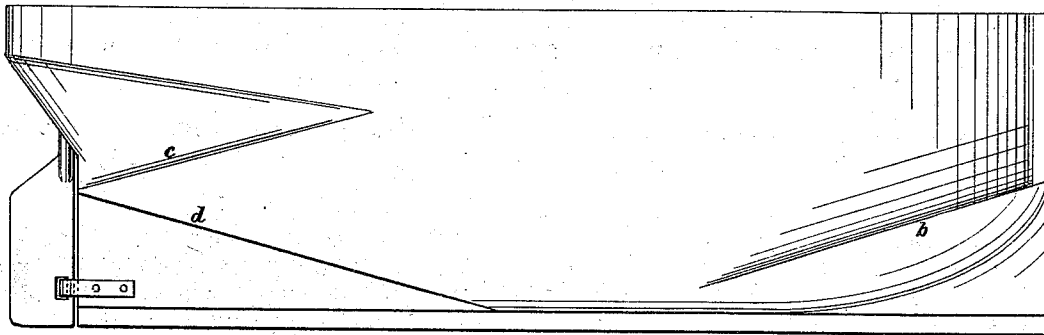


Fig. 2.

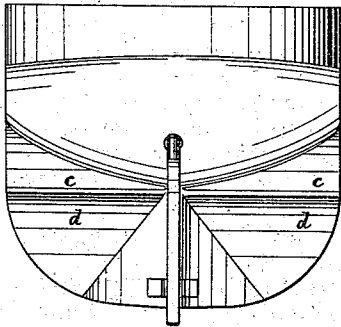


Fig. 3.

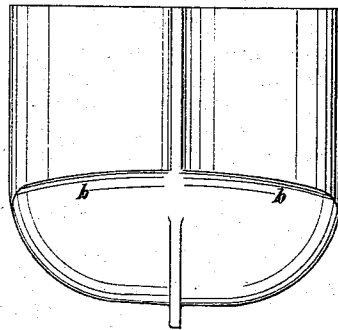
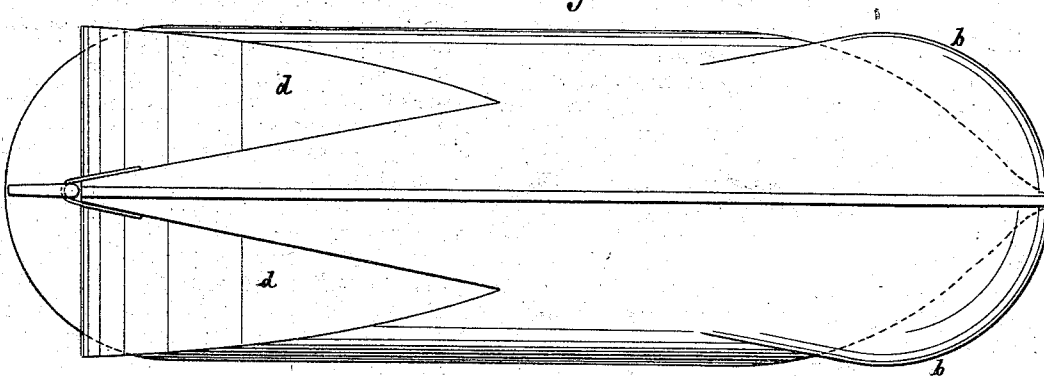


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

CARL G. E. HENNIG, OF PATERSON, NEW JERSEY.

IMPROVEMENT IN THE CONSTRUCTION OF HULLS OF SHIPS, &c.

Specification forming part of Letters Patent No. **154,250**, dated August 18, 1874; application filed July 3, 1874.

To all whom it may concern:

Be it known that I, CARL G. E. HENNIG, of Paterson, in the county of Passaic and State of New Jersey, have invented a new and Improved Wave-Propeller, of which the following is a specification:

This invention is based on the principle that weight acting on an inclined plane promotes locomotion. The vessel is provided with a series of inclined projections below the water-line, placed in such a manner as to bring the same in a position to receive the pressure of the waves, and thereby cause a forward motion, and so that these projections shall not add much to head-water resistance. The inclines are so arranged as to all act toward the same point, (the bow,) throwing the water backward, causing forward motion. The action of the water on the inclined planes in my invention is analogous to the action of the water on a turbine water-wheel. In the case of a turbine water-wheel the water is guided by a stationary trunk, to act on the turbine wheel, always from and to the same point, causing the same to turn on its spindle, in its stationary case or shell. In my invention the inclines are stationary, and permanently attached to the vessel, and the waves strike these inclines from all directions, causing the vessel to rise and plunge; and, further, the vessel, with these inclines attached, by rising and plunging, strikes the water very forcibly with these inclines. Now, as action and reaction are equal, and the inclines, with the vessel, in my invention, have their tendency all forward, a forward motion is produced.

This invention distinguishes itself by being simple, durable, and economical in construction.

Figure 1 is a side elevation of a vessel contrived according to my invention. Fig. 2 is a stern elevation; Fig. 3, a bow elevation, and Fig. 4 a plan of the bottom.

Similar letters of reference indicate corresponding parts.

b b is a scoop-like projection, beginning at the bow on the water-line, and descending toward the middle of the hull. *c c* and *d d* are wedge-like projections on the stern quarters.

The wave encountering the vessel raises that part which it strikes first—for example, if it strikes it on the stern, it raises that end of the vessel; but before it overcomes the momentum it overflows the inclines *c c*, and as action and reaction are equal, the result is propulsion. By raising the stern section of the vessel the bow section will plunge so deep in the water as the momentum will force it, and the buoyancy of the vessel, in combination with the shifting of the waves, will force it to rise again, and by rising will cause the inclines *b b* to discharge that bulk of water under which they were submerged. Here again is action and reaction with the same result, viz., propulsion.

The agitation of the water or waves, as long as it lasts, will keep the vessel in a constant succession of rising and plunging of the different ends, thereby bringing the different inclines to operate on the water.

The speed of the vessel will increase until the line of sweep of the plunge reaches the line of the inclines *b b* and *d d*, which inclines ought not to be less than ten degrees, and not more than twenty-five degrees.

The inclines *c c* do not require so much inclination, for if they come to a level they are out of water, and not in action; but when they are in action, the vessel itself inclines that way.

These projections are not to extend outside the line drawn parallel with the center line of the vessel, touching the hull of the vessel on the outside amidship.

For voyages in high latitude, with free winds and unfrequent calms, the wave-propeller, without the burden of a powerful steam-engine and its fuel, and the costly and troublesome rigging, will probably make better time than ocean steamers, and thereby is far more safe, because there is no machinery to get out of order.

To secure those projecting inclines to a vessel already constructed requires one additional rib between every other one already in. To these is secured an inside shell of at least six inches thickness, covering the whole bottom, at least up to the water-line, and to this shell the inclined projections are bolted with strong bolts, the size and number of the

bolts being in accordance with the size of the vessel.

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

1. The arrangement and combination of the scoop-like projection *b b* with the bow of a vessel below the water-line, as described.
2. The arrangement and combination, with

the stern quarters, of the wedge-like inclined projections *c c* and *d d*, attached to a vessel below the water-line, in such a manner as to produce no head-water resistance, as set forth.

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Witnesses:

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