J. Ghisi,

Buoyant Propeller.

No. 103,040. Patented May 17. 1870.

Fig. 1.

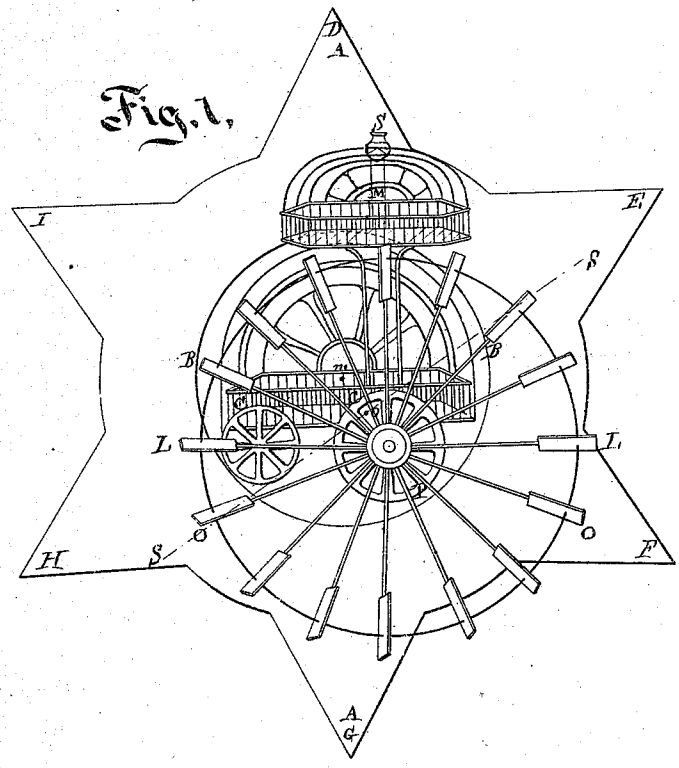
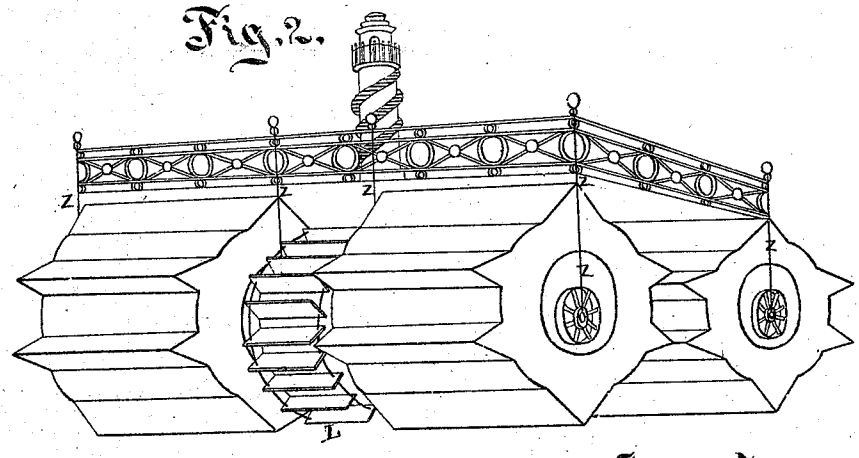


Fig. 2.



Witnesses.

H. E. Price.

R. Roulston

Inventor.

Joseph Ghisi

by his Attorney

D. D. Stetson

UNITED STATES PATENT OFFICE.

JOSEPH GHISI, OF GENOA, ITALY.

IMPROVEMENT IN PROPELLING VESSELS.

Specification forming part of Letters Patent No. **103,040**, dated May 17, 1870.

To all whom it may concern:

Be it known that I, JOSEPH GHISI, of Genoa, in Italy, have invented a new and useful Improvement in the Construction and Means of Propelling of Spheric Ships for Marine Locomotion, allowing the application of every kind of engines in which the expansive power of steam or of any other gas is employed as motive power.

Referring to the drawings which form a part of this specification, I construct a large open tube, B, Figure 1, surrounded by a much larger casing of hexagonal, or rather of star, shape, D E F G H I, which I will term the "case A," the space between being shut at its sides like a drum.

In the inside of the inner casing, B, runs easily on circular rails (not represented) a locomotive, C, which, being set in movement in the inside of the tube by a steam-engine, the weight of this locomotive produces a want of equilibrium in the large floating cylinder A B, and therefore, as the locomotive runs in the interior of the annular tube B, this floating mass is continually animated by a rotary motion.

The entire ship or double casing A, turning by the motion of the locomotive C, causes these projecting angles D E F G H I to take hold of the water, so that the simple rotary motion produced by the locomotive C is changed and transformed into a transitory motion or continuous progression. There is also a third combination, which helps this vessel in its sea-going, consisting in two paddle-wheels, L, fixed on the extended motive axis of the locomotive C. The extreme skirt O of these two wheels opposes resistance to the sea, and acts thus like a propeller, since the resistance encountered at point O—that is, at the extremities of the paddles in the water—is all felt at the center of the floating mass, or at point P.

The security and swiftness increase always with the greater dimensions given to the ship. Whatever may be the circumference of the extreme periphery of this floating bulk, it is always compelled to develop itself on the water and make as much progress as the amount of its own circumference in that very short time occupied by the locomotive C to run through the little turn in the tube B. We may then give, if we like, gigantic dimensions to this kind of ships, and we shall have obtained by this new and simple contrivance an assured means of marine locomotion produced by a pure and simple effect of a balancing rotary motion.

I can make my casings or ships A B of wood and various other materials; but I prefer iron strongly braced. I can combine several of these together, thus making a compound spheric ship, and can in such case provide paddle-wheels on both sides, or only on one side of each of these separate casings.

In Fig. 2 I show the wheels only between the casings. I can, if preferred, extend the shafts outside, and then affix other paddle-wheels. I can vary the combinations in various ways.

Among the other forms may be the following: In Fig. 2 four of these floats are shown similarly propelled. The great naval framework is supported by eight columns, Z, with bearings on the moving axis of the inner locomotives, and these points of suspension may be increased or diminished according to the shape, disposition, and number of the spheric floats employed. Two floats, combined longitudinally by means of a frame, in the center of which is suspended the passengers' room by means of ropes. Other ropes confine it sidewise, and, whatever swinging of the sea, the rolling will never be felt in the great hull or passengers' room, which, being thus suspended, will prevent the disagreeable jumping motion from being sensible to the passengers, as well as all kinds of shocks and strokes; or there may be two fore-floats, followed behind by a hull or chest, which runs protected by the wake left by the said floats, and this for the purpose of obtaining a ship of great stowage.

All these forms and many others can be moved by any power of whatever kind, mounted in the locomotives. I prefer a circular steam-engine invented by myself, and which is intended to be secured by another patent.

With any of the combinations, or when, as in Fig. 1, one set of my cases and propelling apparatus and paddle-wheels is employed alone, it will be observed that the wheels of the locomotives tend to climb up on one side of the hollow cylinder, within which it con-

tinuously rolls around in the act of impelling the ship forward. In other words, the ship is moved by the absence of equilibrium due to the fact that the locomotive and all its contents, including the passengers and provisions and the coal for a voyage, are standing in an inclined position up one of the sides of the hollow space in which they are inclosed.

Now, in proportioning and arranging the parts, I determine by calculation and experience about how much the locomotive will usually mount on one side, which is the forward side as the ship generally works, and I so mount the locomotive upon the wheels as represented, that its main body will be not inclined, but be in a horizontal position when the wheels have thus assumed their average position.

This arrangement increases the inconvenience due to an occasional backward propulsive movement, because, when the locomotive climbs on the other side of the hollow space in driving the ship backward, it causes a still greater inclination of the deck or floor of the locomotive; but such a condition is obviously of very short duration, while on a long journey the continual inclination due to the ordinary position of the wheels is entirely obviated by my arrangement of the floor of the locomotive in an inclined position relatively to the wheels.

In Fig. 1 the center of the rolling ship A B is marked *m*, and the center of gravity of the locomotive is marked *o*. By the natural tendency of the gravity of the parts, the center *o* tends to stand directly under the center *m*.

The dotted line *s s* represents a position for the deck of the locomotive, which would stand level in such a condition.

Instead of constructing my deck in that position I construct it inclined at an angle of about thirty degrees thereto, as represented, and when the ship is in full motion the deck is about level under all ordinary conditions of weather, &c.

It will be understood, then, that the drawing, Fig. 1, represents the condition which obtains, not when my spheric ship is at rest, but when, on the contrary, it is under full headway.

What I claim as my invention, and desire to secure by Letters Patent, is as follows:

1. The auxiliary propelling means L, in combination with the rolling structure and actuated by power within the said structure, and at a higher velocity, as herein specified.

2. The locomotive C, constructed as represented, so as to stand in its proper horizontal position when it has partially climbed up one side of the concave in which it is mounted, arranged as represented relatively to the rolling structure A and to the paddle-wheels L, or equivalent auxiliary propelling means, mounted on the extended shaft of one of the supporting-wheels, as herein specified.

In witness whereof I have hereunto subscribed my name the 10th day of December, eighteen hundred and sixty-nine.

GHISI, GIUSEPPE
(JOSEPH GHISI.)

Witnesses:
F. OLCOTT,
N. THIRION.