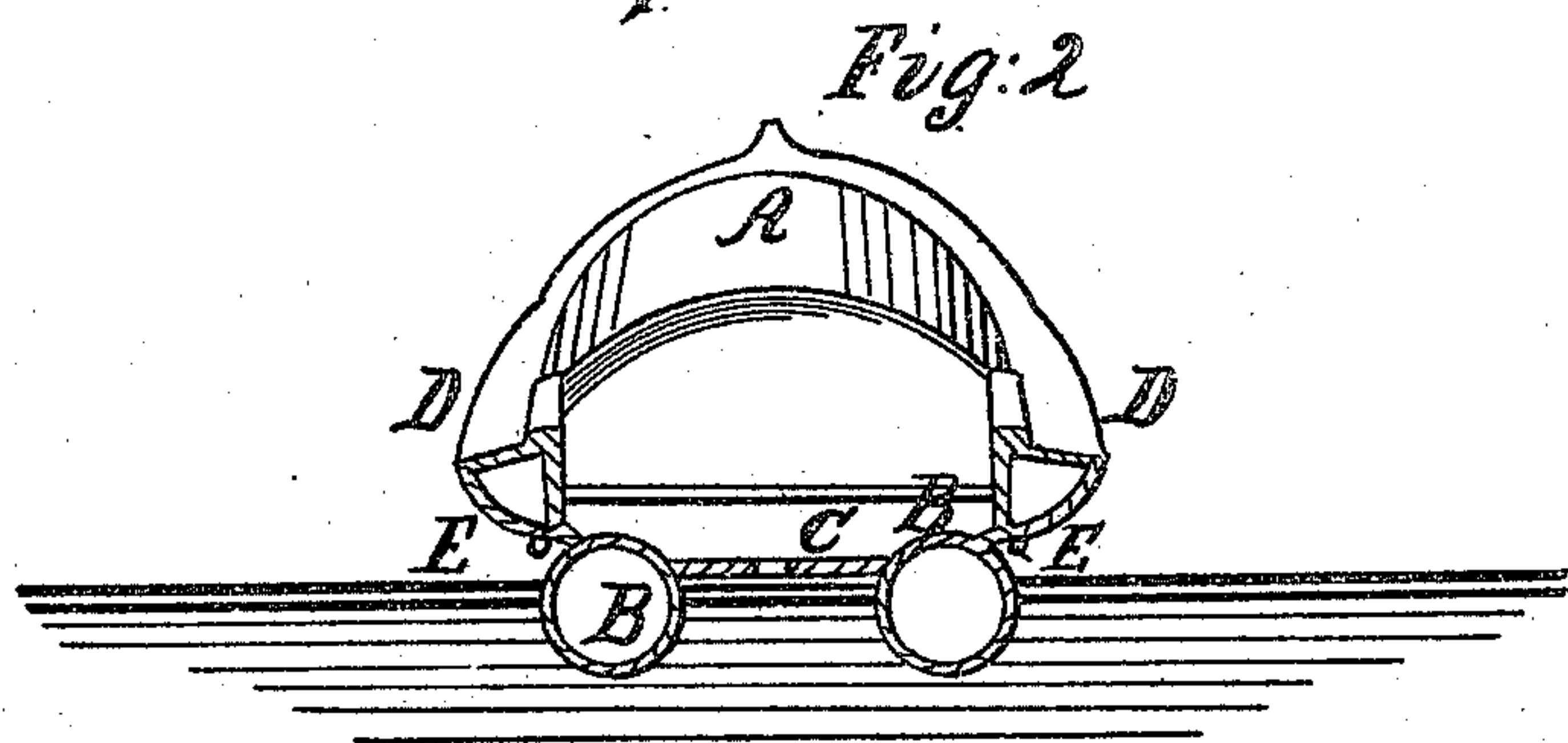
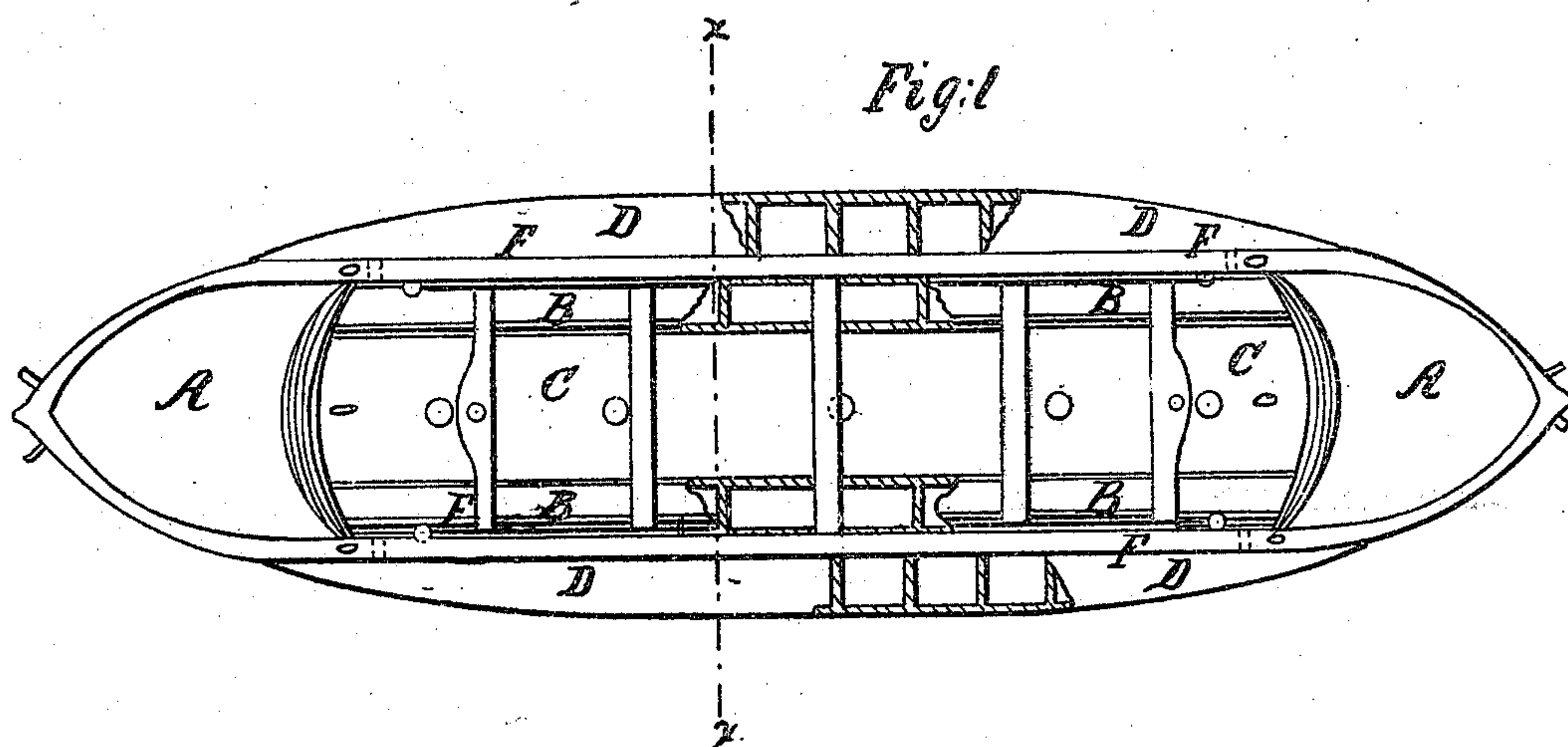


J. R. Grace. *Life Boat*

N^o 81,623.

Patented Sep. 1, 1868.



Witnesses

Wm A Morgan
G C. Colton

Inventor

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UNITED STATES PATENT OFFICE.

JOHN R. GRACE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN LIFE-BOATS.

Specification forming part of Letters Patent No. 81,623, dated September 1, 1868.

To all whom it may concern:

Be it known that I, JOHN R. GRACE, of Brooklyn, in the county of Kings, and State of New York, have invented a new and useful Improvement in Life and Surf Boats; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a top or plan view of my improved life and surf boat, parts being broken away to show the construction.

Figure 2 is a vertical cross-section of the same, taken through the line *xx*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to improve the construction of my improved life and surf boat, patented March 6, 1860, and numbered 27,362, so as to make it more convenient and safer in use.

And it consists in making the cylindrical air-chambers a part of the bottom of the boat, and in the arrangement of the same, together with the side air-chambers with relation to each other and the boat.

A are the ends of the boat, which are roofed over so as to form air-chambers, all the outward sides of said chambers being made arched or curved, so as to give it greater strength, and thus enable it more safely to resist the rough treatment to which such boats are exposed. These air-chambers are divided up into any desired number of air-tight compartments by partition, so that should one of the said compartments be stove in, the others may remain intact.

B are two cylindrical air-chambers, extending along the sides of the bottom of the boat from end to end, forming an integral part of the bottom, and not placed within it. These cylinders are divided into any desired number of air-tight compartments by partitions, as shown in Fig. 1.

The central compartments may be used to contain provisions and water, to which access may be had through holes in the upper sides of said cylinders, which said holes should be closed in such a way as to be water-tight, and yet so that they may conveniently be opened when required.

C is the bottom of the boat, extending from cylinder to cylinder, and which should have a

number of holes formed through it, closed by valves opening outward, so that the water cannot enter through them, but may flow out freely.

Upon the upper part of the sides of the boat are formed air-chambers D, made in about the shape of a quarter of a cylinder in their cross-section, as shown in Fig. 2, and which are curved with the curve of the boat, as shown in the drawings. The air-chambers D are divided into any desired number of air-tight compartments by partitions, as shown in Fig. 1. The air-chambers D should be so arranged that their lower sides may be about upon a line with the upper sides of the cylindrical air-chambers B, as shown in Fig. 2.

E are grab-lines running along the sides of the boat, in the angle between the air-chambers B and D, as shown in Fig. 2, so that persons in the water may conveniently catch hold of them and be supported until they can be taken into the boat.

F are grab-lines running along the inner sides of the boat, so that persons in the boat may catch hold of them and protect themselves from being thrown or washed out of the boat. If desired, another set of grab-lines may be run along the upper side of the air-chambers D.

A boat thus constructed will instantly right herself should she be overturned, will instantly empty herself should she be filled with water, and will take the beach with an even keel whether swept on shore sideways or end first.

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

1. The partitioned cylindrical air-chambers B B, arranged as described, forming fixed parts of the bottom C, and extending below the same, to form one or more keels, as herein described, for the purpose specified.

2. The described arrangement of the air-chambers E E and cylinders B B, with relation to each other, the walls of the boat and the bottom, C, as herein described for the purpose specified.

The above specification of my invention signed by me this first day of May, 1868.

JOHN R. GRACE.

Witnesses:

ALEX. F. ROBERTS,
JAMES T. GRAHAM.