Sheet 1, 2 Sheets.

C. H. Edwards.

Marine Railway.

No. 41,426. Patented Feb. 2, 1864.

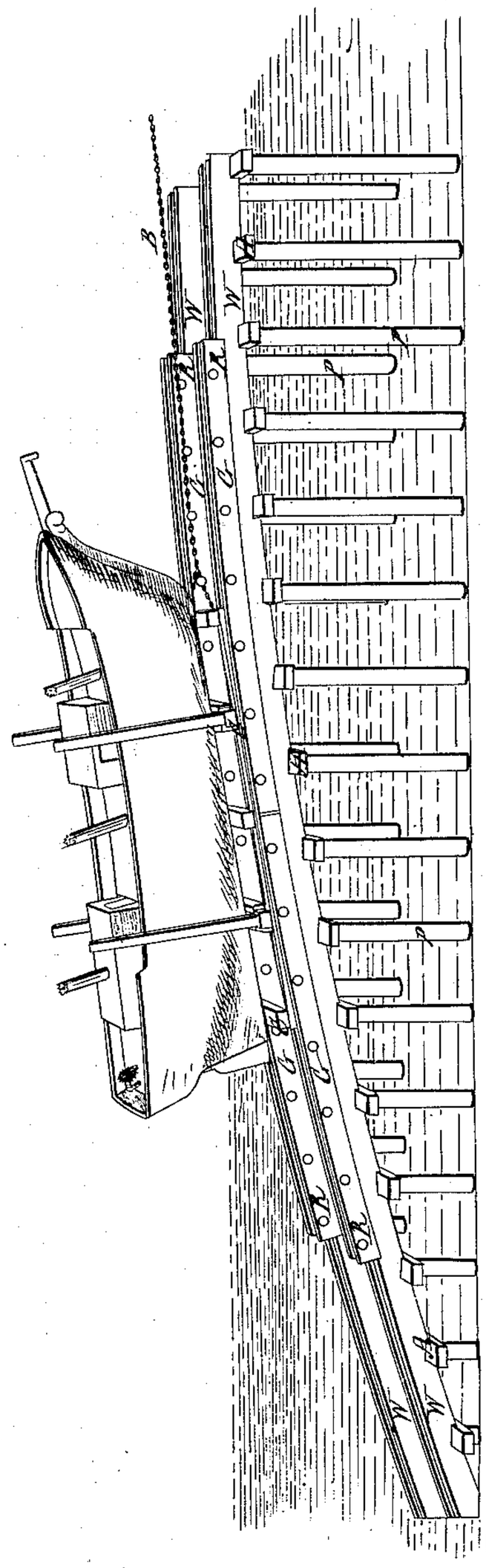

Fig. 1

Witnesses
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William Edson

Inventor
Chas. H. Edwards

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

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Fig: 2

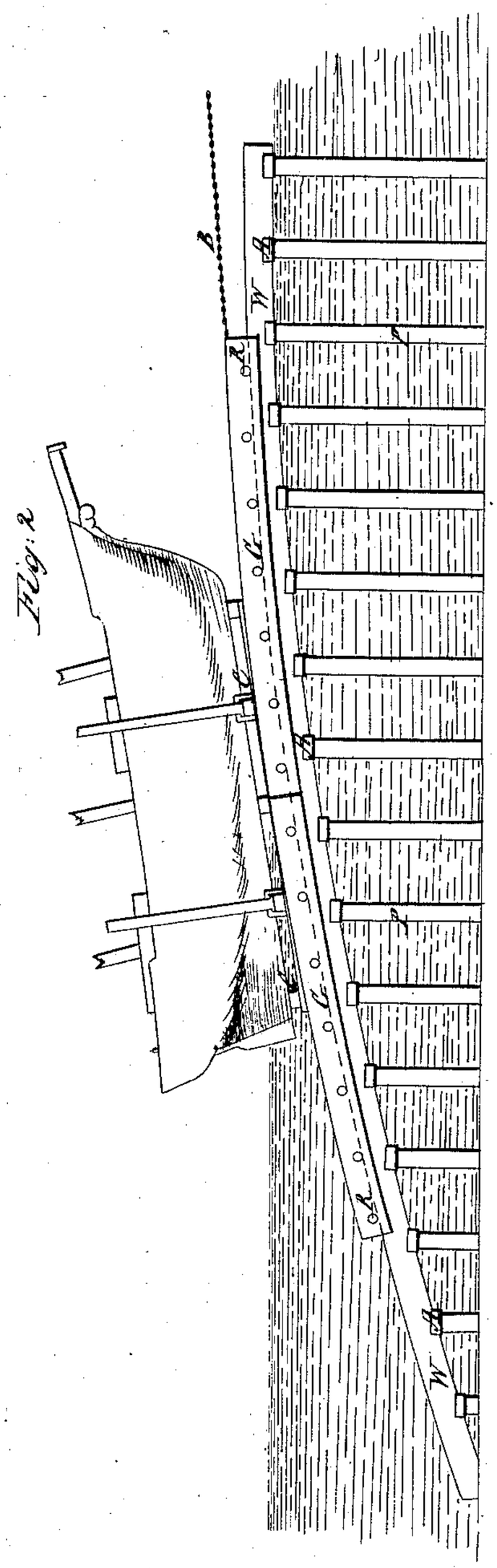
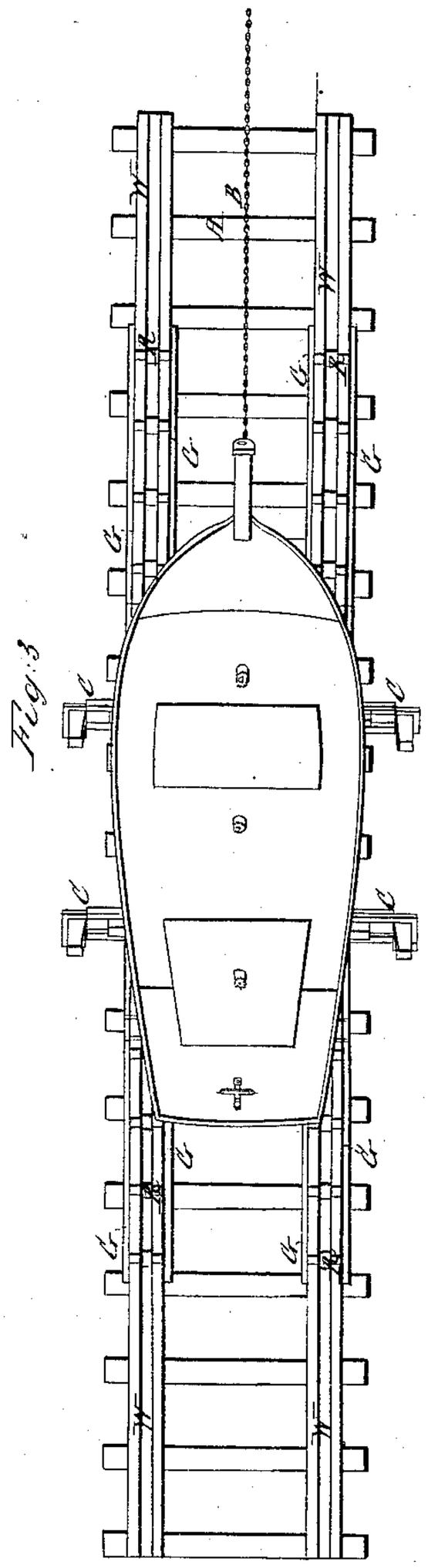


Fig: 3



Witnesses
Geo Putnamp
William Eddon

Inventor
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UNITED STATES PATENT OFFICE.

CHARLES H. EDWARDS, OF QUINCY, MASSACHUSETTS.

IMPROVEMENT IN MARINE RAILWAYS.

Specification forming part of Letters Patent No. **41,426**, dated February 2, 1864.

To all whom it may concern:

Be it known that I, CHARLES H. EDWARDS, of Quincy, in the county of Norfolk, in the State of Massachusetts, have invented an Improved Marine Railway; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in so constructing the ways of a marine railway that the upper surface, upon which the rolls traverse, shall form a vertical curve, and so placed that that part of the ways which is under water shall be the most inclined to the horizon, the inclination gradually lessening as the ways approach the shore end, so that when the vessel or other body has been drawn entirely out of the water the cradle shall stand upon an inclination no greater than upon the ways of a marine railway constructed in the ordinary manner. It is obvious that while a vessel is water-borne the same power applied will draw it up a greater incline than if the vessel was not water-borne, and precisely in the same proportion as the vessel is water-borne, so the ways may be more or less inclined. My invention is for the express purpose of taking advantage of this principle. Two principal advantages from the use of this improvement are, first, much shorter ways can be used; second, the power required to draw the vessel is nearly equalized and generally lessened, thus saving expense and wear of machinery.

To enable others skilled in the art to make and use my invention, I will give a description of the method of construction.

Drawing No. 1 is a perspective view showing the vessel on the ways partly drawn up; No. 2, side elevation, and No. 3 plan of the same.

In order to make the principal parts plainly appear, it was necessary to distort the drawings vertically and transversely, so that the drawings are not accurate to any scale. For the same reason details are omitted.

Similar letters refer to similar parts.

P P on drawings Nos. 1 and 2 are piles, worked and pinned into caps A A; A A, on all the drawings, caps; W W, on all the drawings, timber-work forming the ways, framed and put together in the ordinary manner, but differing in line of surface, the upper surface of the improved ways forming a curve, while that of the common ways is a straight line. This curve is to a certain extent to be determined by experiment, and will vary in different places, being dependent upon the length and elevation required. When the inclination is slight, the curve will have a longer radius, and as the inclination increases the radius decreases. I find by experiment that for ways three hundred and fifty feet in length, the mean inclination being one in twenty, a radius of about four thousand four hundred feet works well. I find in practice that a circular curve is better than any other, and I prefer that construction.

R R on all the drawings are rolls on which the cradle C C runs; G G, guides, curved to fit the ways for keeping the rolls in place; C C, on all the drawings, cradle, curved to fit the ways, but otherwise made in the ordinary manner; B, on all the drawings, chain by which the power is applied for drawing the vessel up the ways.

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

The construction of the ways of a marine railway so that the upper surface, upon which the rolls traverse, shall form a vertical curve, substantially as described, and for the purpose as set forth.

CHAS. H. EDWARDS.

Witnesses:
GEO. PUTNAM, Jr.,
WILLIAM EDSON.