

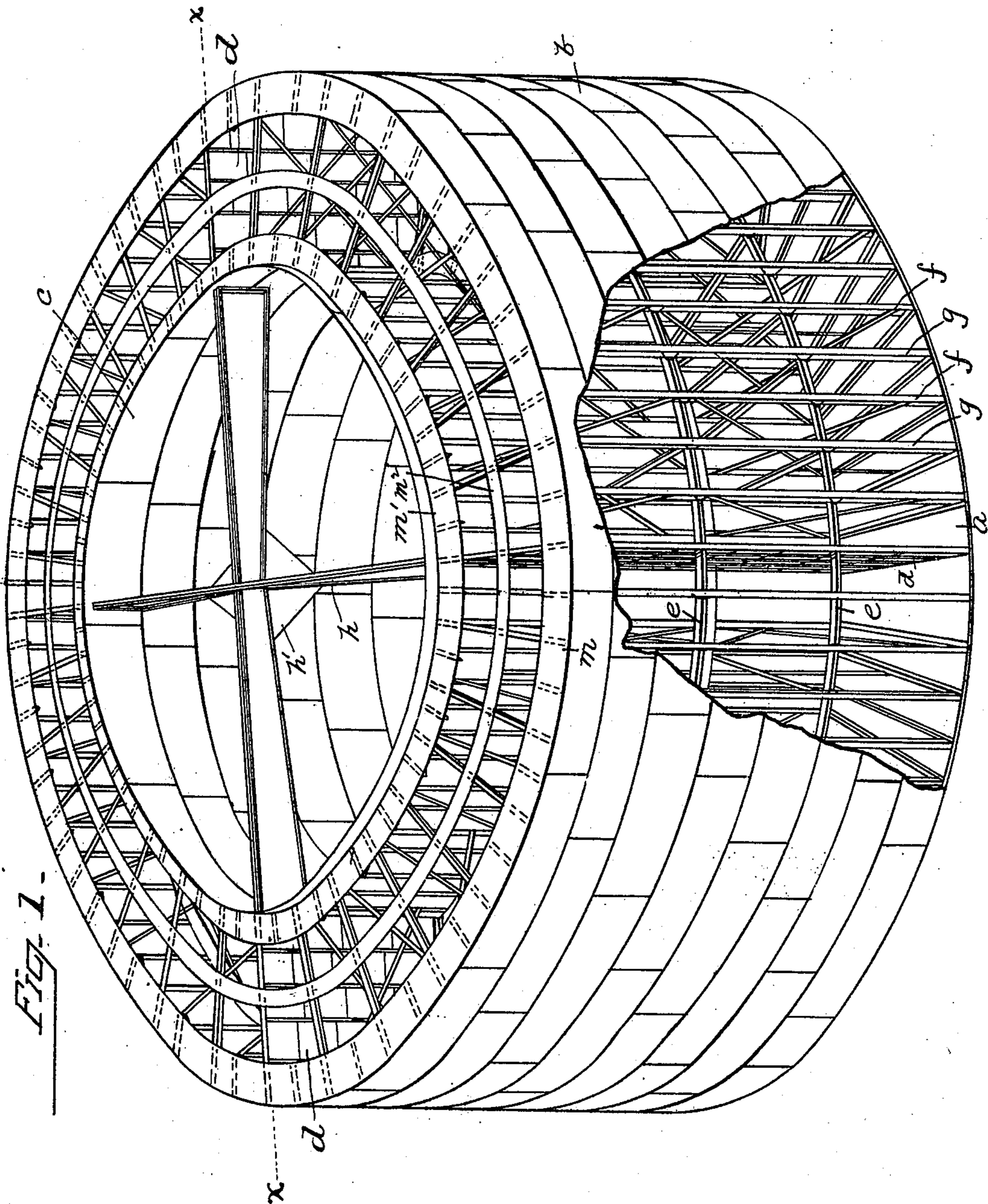
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4 Sheets—Sheet 1.

G. BLANCHARD.
FOUNDATION FOR LIGHTHOUSES OR OTHER HEAVY STRUCTURES IN
DEEP WATER.

No. 502,845.

Patented Aug. 8, 1893.



WITNESSES

Chas. J. Livingston
William Glancie

INVENTOR—
George Blanchard

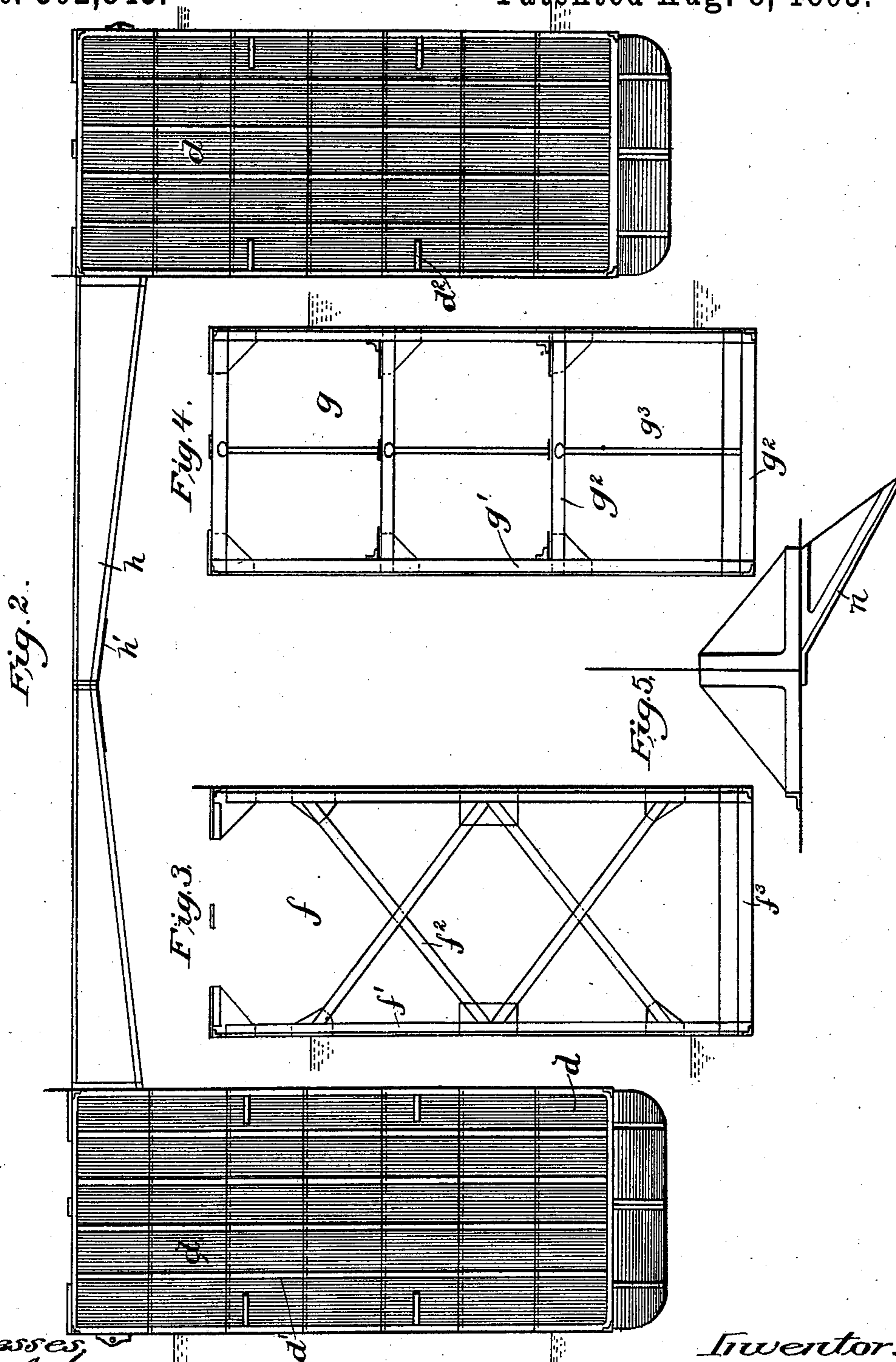
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Witnesses,
A. H. Simpson
R. J. Postwick

Inventor.
George Blanchard

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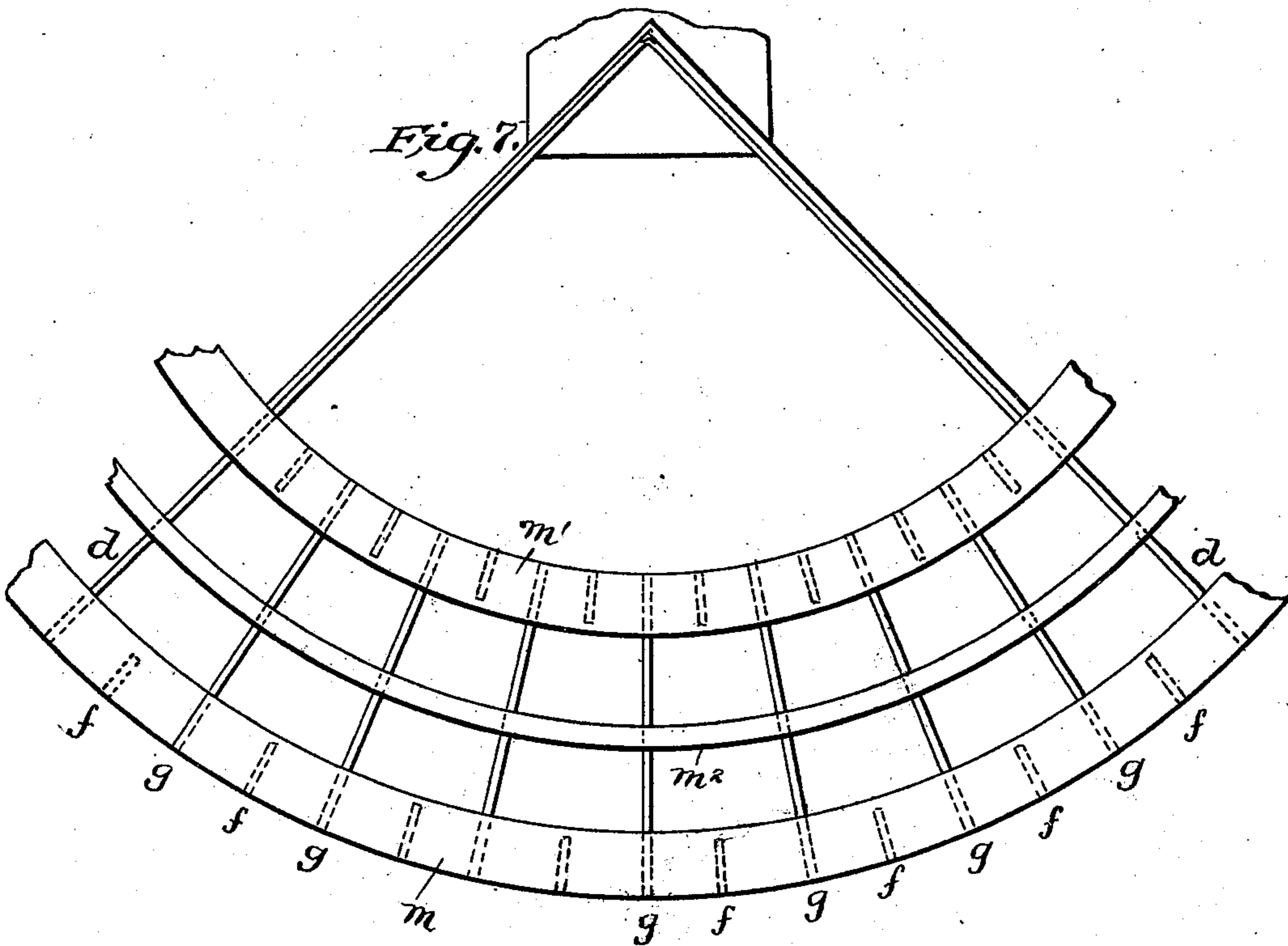
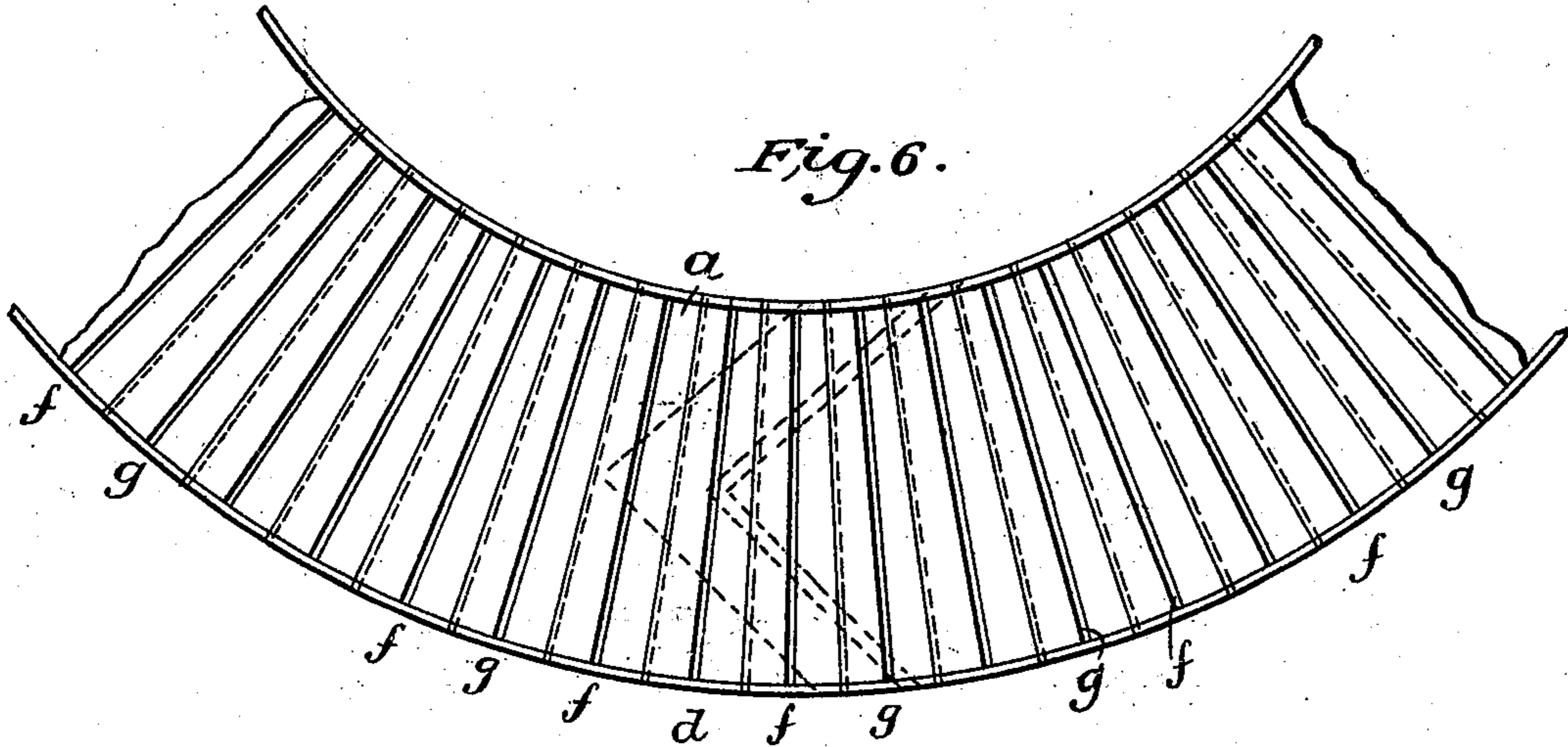
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Fig. 8.

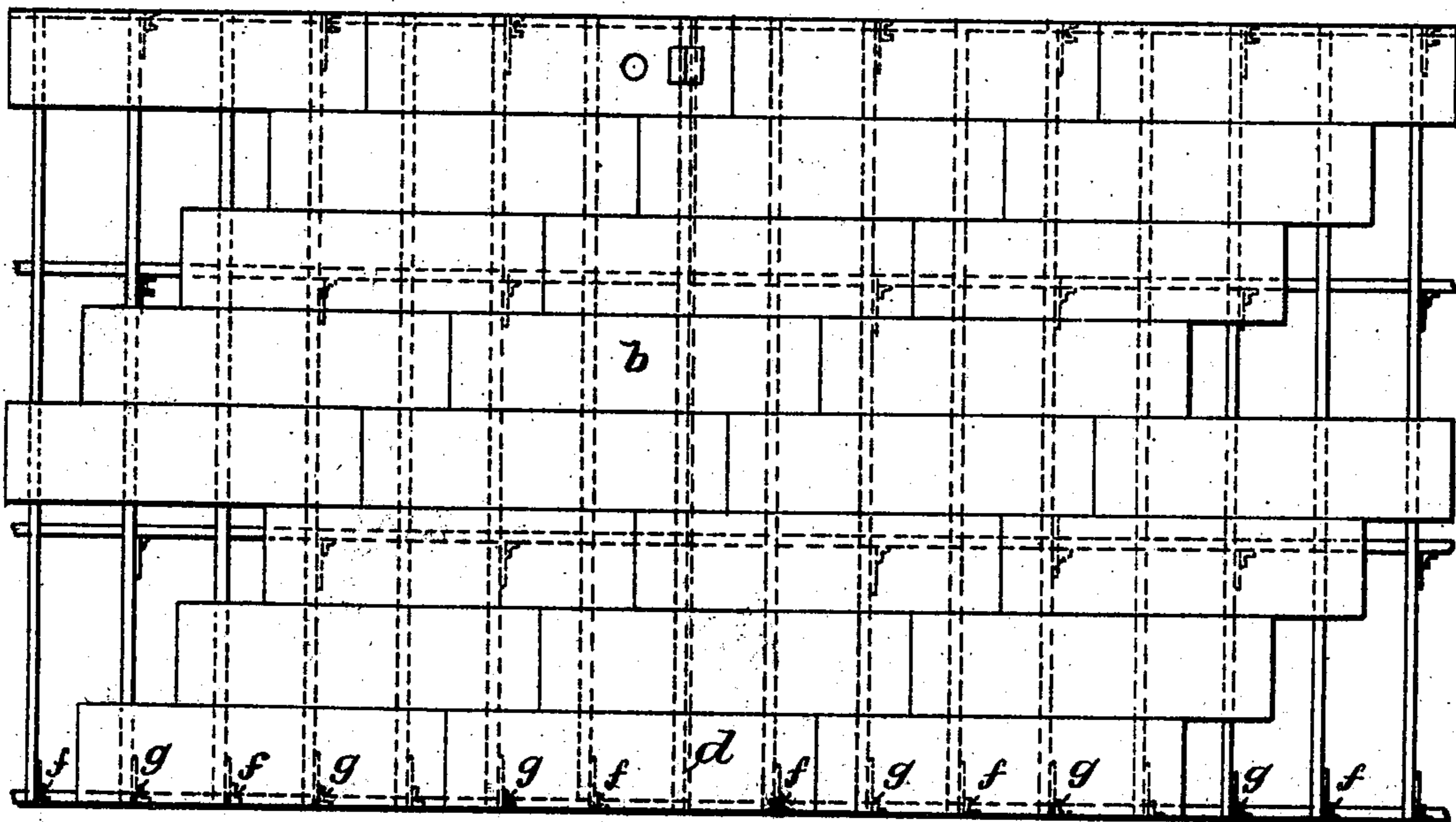
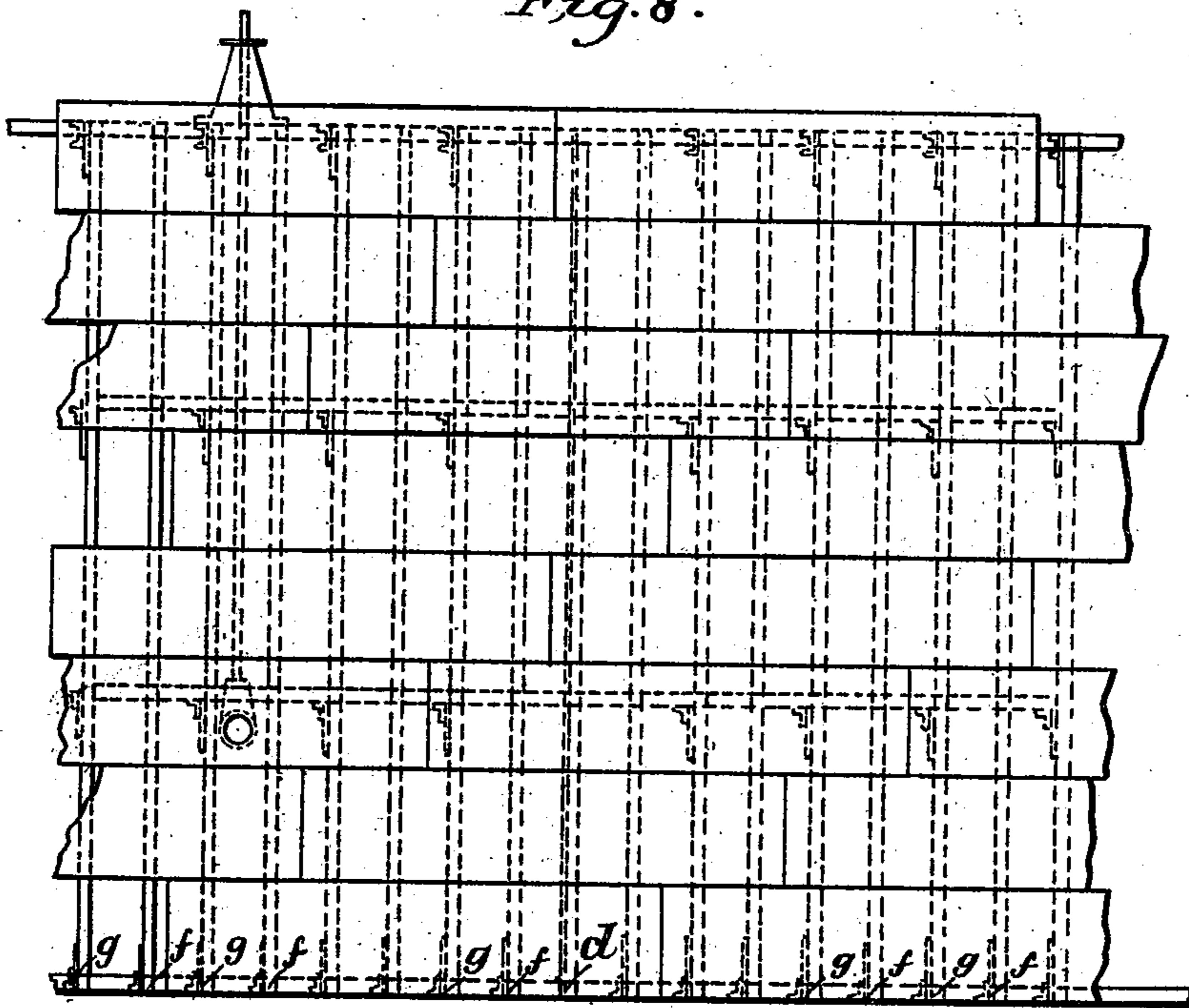


Fig. 9.

Witnesses.

A. H. Simpson
R. S. Portlock

Inventor.

George Blanchard

UNITED STATES PATENT OFFICE.

GEORGE BLANCHARD, OF NEWBURG, NEW YORK.

FOUNDATION FOR LIGHT-HOUSES AND OTHER HEAVY STRUCTURES IN DEEP WATER.

SPECIFICATION forming part of Letters Patent No. 502,845, dated August 8, 1893.

Application filed January 13, 1893. Serial No. 458,257. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BLANCHARD, an Englishman, but a declared citizen of the United States, residing at Newburg, in the county of Orange and State of New York, have invented and produced a new and original Device for Making Foundations for Light-Houses and other Heavy Structures in Deep Water, of which the following is a specification, reference being had to the accompanying drawings, showing parts thereof.

This invention has for its object to construct a foundation for light houses and other heavy structures on the open coast, where there is considerable depth of water, or in open harbors and other places, which are subjected to heavy storms.

In accordance with this invention the foundation is made as a float of metallic plates, angle irons, &c., rigidly secured together, which float when conveyed to the desired place may be sunk, and filled with concrete, stone, sand, &c., and water. Means are provided by which a solid foundation may be found, which consists of flukes, pointing diagonally downward, which plow into the soft bottom, and thereby find a solid foundation. This operation is carried out by turning the entire apparatus.

Figure 1 is a general perspective view of the foundation. Fig. 2, is a vertical section of my improved foundation for light houses and other heavy structures taken on line $x-x$ of Fig. 1; Figs. 3 and 4, vertical frames contained between the vertical outer and inner walls of the foundation; Fig. 5, one of the flukes which is secured to the under side of the bottom of the device; Fig. 6, a detail showing in plan view a portion of the bottom or base plate of the foundation; Fig. 7, a detail showing in plan view a portion of the top of the foundation; Figs. 8 and 9, details showing portions of the outer side wall.

The foundation or float is herein shown as made circular having a bottom or base a , made of metallic plates joined together by lap seams or otherwise, vertical outer walls b and inner walls c , likewise made of metallic plates joined by lap seams or otherwise, said walls being concentrically arranged with a suitable space between them. All these plates are so joined together as to form

a water tight structure, or said structure may be made water tight in any other desirable way. The annular space between the outer walls and inner walls b, c , is divided in sections by bulkheads d , extending vertically from top to bottom, and made up of several metallic plates joined together and stiffened by angle irons d' or otherwise. There are four such bulkheads herein shown, yet any other desirable number may be employed. The bulkheads are provided with holes d^2 , which receive the stringer plates e , which pass around the annular space between the outer and inner walls b, c , four such stringer plates being herein shown as passing through the holes in the bulkheads. Vertically arranged in each section between the bulkheads are frames f , and g , the frames f consisting of vertical angle irons f' for the sides, and diagonal braces f^2 , connecting them between their ends, and a horizontal angle iron f^3 , connecting them at their lower ends; and the frames g consisting of vertical angle irons g' , horizontal bars g^2 , connecting them, and a central vertical bar g^3 . These frames f and g , are arranged alternately, and supported by the stringer plates as well as being secured to the outer and inner walls b, c . There may be as many such frames f and g as desired.

Within the inner wall c at or near the top cross bars h are secured extending diagonally across the opening, and at the center or point of junction of said cross bars a foot plate h' is secured.

Upon the top of the outer and inner walls b, c , and intermediate frames, and bulkheads, flat circular plates are secured, one at or near each wall as m, m' , and one m^2 , between them.

Tapering flukes n are secured to the under side of the bottom or base plate, pointing diagonally downward in the same direction, there being four such flukes herein shown, and arranged beneath the bulkhead. These flukes are designed to enter the mud or soft bottom and plow the way to a solid foundation, by turning the float when sunk.

The float may be sunk in any desirable way, but preferably by filling it partially with concrete, properly packed, and stones, and finally with water. When sunk the float may be turned by arranging upon it suitable winches and providing it with hawse holes

through which a cable runs to an anchor dropped tangentially to the float, after which the cable will be drawn in thereby slowly turning the float. I do not however desire to
 5 limit my invention to any particular way of settling the foundation in place.

After the foundation is sunk the inner wall *c* may be filled with any desirable material.

I claim—

10 1. In a foundation for light houses and other heavy structures, the combination of the base *a*, outer and inner vertical walls *b* *c*, concentrically arranged, and rising from said base, and a bulkhead *d* placed between
 15 and secured to the outer and inner walls *b*, *c*, substantially as described.

2. In a foundation for light houses and other heavy structures, the combination of the base *a*, outer and inner vertical walls *b*,
 20 *c*, bulkheads *d*, placed between and secured to the outer and inner walls *b*, *c*, and intermediate frames also placed between and secured to said walls, substantially as described.

3. The combination of the base *a*, outer and

inner walls *b*, *c*, joined together by braces, 25 and flukes *n*, projecting diagonally downward from the under side of said base *a*, substantially as described.

4. The combination of the base *a*, outer and inner walls *b*, *c*, and interposed braces, and 30 the cross bars *h*, and foot plate *h'*, substantially as described.

5. The combination of the base *a*, outer and inner walls *b*, *c*, bulkheads *d*, having holes therethrough, stringers *e* passing through said 35 holes, and frames *f*, *g*, placed between and secured to said walls, substantially as described.

6. The combination of the base *a*, outer and inner walls *b*, *c*, bulkheads *d* having holes therethrough, stringers *e* passing through said 40 holes, and intermediate frames placed between and secured to said walls, and the top plates *m* *m'*, *m*², substantially as described.

GEORGE BLANCHARD.

Witnesses:

JAMES BIGLER,
 E. W. BIGLER.