

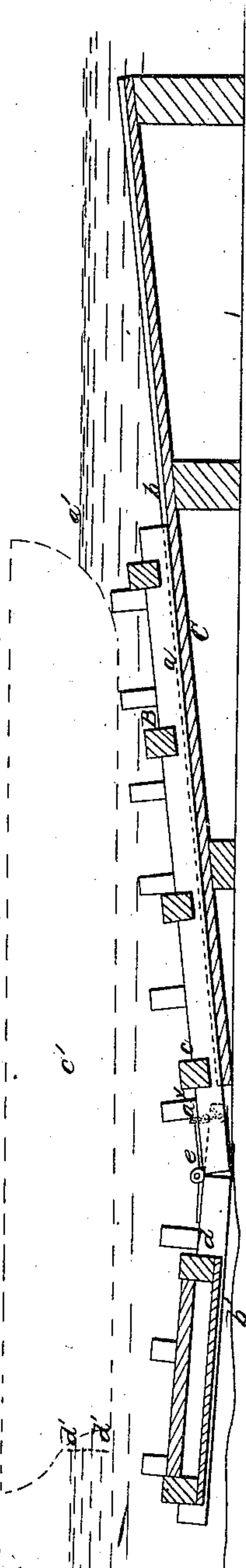
A.O. Crane.

Marine Railway.

N^o 36,340.

Patented Sept. 2, 1862.

Fig 1.



Witnesses:
J.W. Coombs
John W. Jackson

Fig 2.

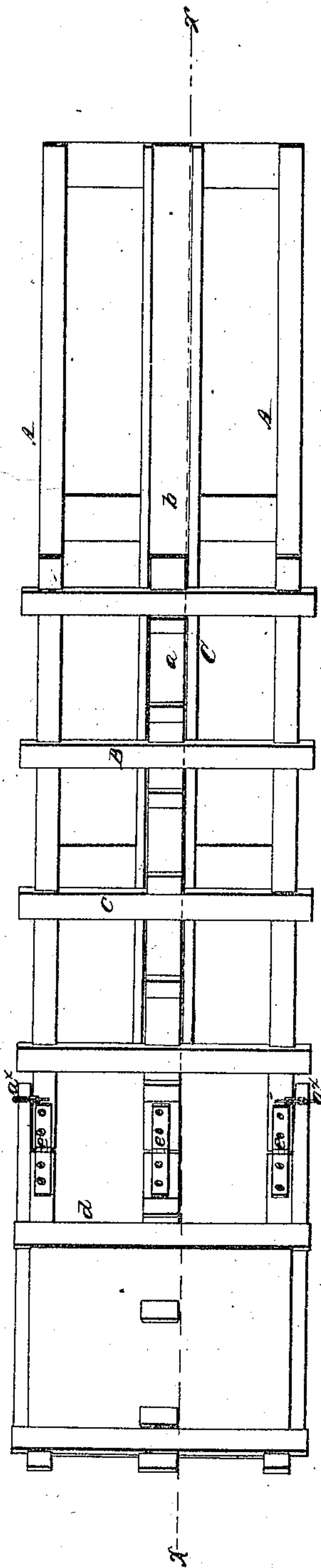
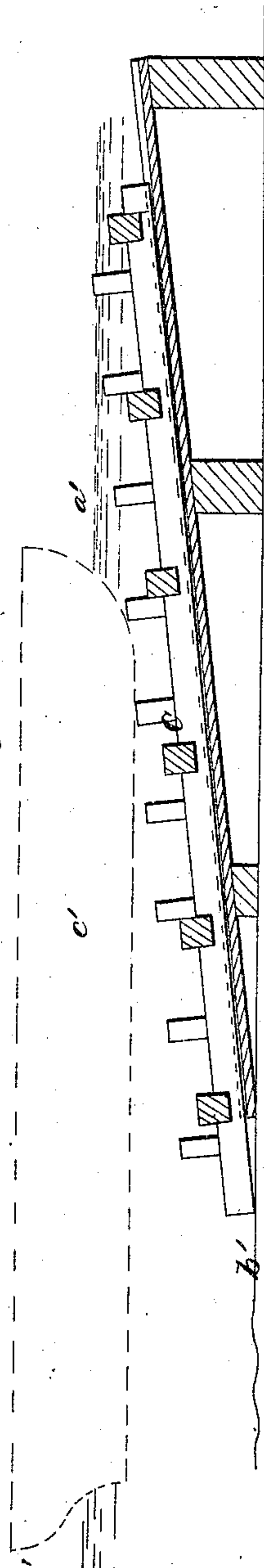


Fig 3.



Inventor:
A.O. Crane

UNITED STATES PATENT OFFICE.

A. O. CRANE, OF HOBOKEN, NEW JERSEY.

SUBMARINE CARRIAGE.

Specification of Letters Patent No. 36,340, dated September 2, 1862.

To all whom it may concern:

Be it known that I, A. O. CRANE, of Hoboken, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Submarine Carriages for Hauling Up Vessels for Repairs and also for Launching the Same when Built; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line x, x , Fig. 2. Fig. 2 is a plan or top view of the same. Fig. 3 is a side sectional view of the old submarine carriage or those in present use.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in constructing the carriage with a joint in such a manner that it may be shoved along on the bed of the river a greater or less distance beyond the lower end of the ways so as to enable vessels to be floated over and upon the carriage and touch at a point near the upper end of the latter.

The object of the invention is to avoid the difficulty hitherto attending the hauling up of vessels of heavy draft in shallow places or where there is not a sufficient depth of water to enable a vessel to be floated properly upon the carriage and also to avoid the difficulty attending the launching of vessels in shallow water, as will be hereinafter fully set forth.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents inclined ways which descend at a proper inclination into the river or stream from which the vessel is to be hauled up. These ways may be constructed in the usual manner and therefore do not require a minute description.

B, Figs. 1 and 2 represents the carriage or "cradle" as it is sometimes termed. This carriage or "cradle" is constructed to run on the ways A, it being retained thereon by a longitudinal bar a , which fits in a longitudinal groove b , in a bar C, placed midway between the ways A, A, and parallel therewith, as shown in Fig. 2. This carriage or "cradle" B, is composed of two parts c, d , connected by hinges e , or any suitable joints, as shown in Figs. 1 and 2,

and the outer part d , of the carriage or "cradle" may be termed a float and may be comprised mostly of a shallow box in order to obtain a requisite degree of buoyancy, see Fig. 1. This feature of constructing the "cradle" or carriage to two parts connected by hinges or joints constitutes the invention and the advantage of it will be now set forth.

In Fig. 1, a' , represents the water level b' , the bed of the stream on which the lower ends of the ways A, A, rest or to which they extend, and c' , is a vessel the draft of which is indicated by the line d', d' .

By referring to Fig. 3, in which a vessel c' , is shown having the same draft as that represented in Fig. 1, and in a stream of the same depth, it will be seen that the vessel c' , cannot be floated on or over the carriage C, which is of the old mode of construction as said carriage is not provided with any joint, it being perfectly rigid throughout and consequently cannot extend down any farther than the bed of the stream at the bottom of the ways A, A. The vessel c' , therefore will not strike much above the center of the carriage C, and could not be properly supported by the latter in order to be drawn up on the ways A, for the carriage should extend the whole length of the keel of the vessel. But by constructing the carriage with a joint as described and shown in Figs. 1, and 2, it may be shoved down on the ways A, its lower part d , passing along on the bed b' , of the stream so that the vessel may be floated over it and made to strike pretty near its upper end, as shown in Fig. 1. Hence when the carriage B, is drawn up on the ways A, the latter will extend the whole length of the keel of the vessel c' , and the latter be properly supported.

It will be seen therefore that by my improvement vessels of much greater draft than usual may be drawn or hauled up out of a stream or river of a given depth. This is a very great advantage for at present the shallowness of water is frequently attended with a great deal of embarrassment involving the necessity of vessels of certain draft being taken to such places, frequently much out of the way, where there is a requisite depth of water to admit of them being drawn or hauled up.

I would remark that the part d , of the float naturally rises under the buoyancy of the water when the carriage B, is shoved

down on the ways A, A, and there is consequently no danger of the bed of the stream or river affording any obstruction to the free movement of the same over it. The invention it will be seen is equally applicable for the launching of vessels as for hauling them up—as the carriage or “cradle” is allowed to run back in shallow water and thereby admit of the vessel being buoyed up off from the carriage or “cradle.” Chains *a*^x, may be applied to the part *d*, of the carriage to prevent said part being unduly raised.

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

A carriage or “cradle” for sub-marine railways constructed of two or more parts connected by hinges or joints to operate as and for the purposes herein set forth.

A. O. CRANE.

Witnesses:

J. W. COOMBS,

JOHN W. JACKSON, Jr.