UNITED STATES PATENT OFFICE.

JAMES L. CRANDALL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO H. I. CRANDALL & SON COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

CRADLE FOR MARINE RAILWAYS.


Application filed June 25, 1901. Serial No. 55,645. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. CRANDALL, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Cradles for Marine Railways, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to marine railways, sometimes called "slipways" or "patent-slips," and has for its object to construct a cradle especially adapted for a side-haul marine railway which can be easily removed from beneath a ship after the ship has been hauled in and blocked up.

Heretofore so far as I am aware much difficulty has been experienced in removing the cradle after the ship has been hauled in and blocked up, as the ship has had to be first lifted free from the cradle; but with a cradle embodying this invention the ship is merely blocked up and then without lifting it from the cradle said cradle can be easily removed.

Figure 1 shows in side elevation a cradle for a marine railway embodying this invention. Fig. 2 is an end view of the cradle. Fig. 3 is a detail of a supplemental support which is movably mounted on top of the cradle and which constitutes the essential feature of my invention. Figs. 4 and 5 are sectional details of the supplemental support shown in Fig. 3. Fig. 6 is an enlarged view of a portion of the end of the cradle.

a represents a portion of the runway of an ordinary marine railway sufficient to illustrate my invention.

b represents one of the inclined base-bars of the cradle, which, as herein shown, is composed of a number of bars or plates rigidly secured together to present a channeled base-bar which receives within its channel a number of rolls b', which are journaled in suitable bearings provided for them, said rolls being arranged to run on the rails. There will be at least two of these inclined base-bars arranged in parallelism, and they are rigidly connected together by suitable connecting-bars.

A number of vertical bars c are erected on each of said inclined base-bars, which are made of different lengths, so that their upper ends will terminate in substantially the same plane. As many of these vertical bars c will be provided as desired. A horizontal bar d is mounted on top of said vertical bars c, which is rigidly connected thereto, and said horizontal bar is also rigidly connected to the other component parts of the cradle, so that a rigid structure will be produced having inclined base-bars and horizontal top bars.

The supplemental frame comprises, essentially, side bars e, having rolls e' beneath them which are held in place by suitable means, whereby said rolls e' rest on and are free to move along on top of the horizontal top bars d. The side bars e are arranged in parallelism with each other and are also arranged in parallelism with the horizontal top bars d and are rigidly connected together to constitute a supplemental frame. As herein shown, the side bars e have secured to their undersides at regular intervals bearing-plates e for the rolls e' and also have secured to them at each side opposite said bearing-plates supporting-plates e', which astride the horizontal top bars d, and said plates e' have elongated slots e for the journals of the rolls e'. The supplemental frame thus provided is free to move along on the horizontal top bars of the cradle independently thereof, yet such movement is limited by the elongated slots e' in the plates e.

The cradle provided with the supplemental frame having been drawn under the ship and the cradle with the ship thereon having been hauled in, the ship will be blocked up in any usual or suitable manner, and then the pull upon the cradle is released, and when released said cradle will move back or retreat a short distance independently of and relative to the supplemental frame, which remains at rest, and as the cradle thus moves down the inclined runway a short distance the supplemental frame gradually falls and leaves 100
the ship on the blocks. Thus it will be seen that the cradle is easily removed from beneath the ship without lifting the ship from the cradle.

I claim—

1. In a marine railway, a cradle adapted to be hauled up the inclined runway having inclined base-bars, each provided with a number of rolls, horizontal top bars, and means for rigidly connecting all of said bars together to form a rigid structure, combined with a horizontal supplemental support movably mounted on said top bars which is adapted to receive upon it the ship, and means for limiting the independent movement of said support in opposite ways, substantially as described.

2. In a side-haul marine railway, a cradle having inclined base-bars, each provided with a number of rolls, horizontal top bars and means for rigidly connecting said bars together, combined with a supplemental support mounted on said top bars, and rolls beneath said support, whereby the support is free to move independently within prescribed limits, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES L. CRANDALL.

Witnesses:

B. J. NOYES,

JOHN W. DECROW.