(No Model.)

2 Sheets—Sheet 1.

R. TURNBULL.

Pontoon and Dock.

No. 242,077. Patented May 24, 1881.

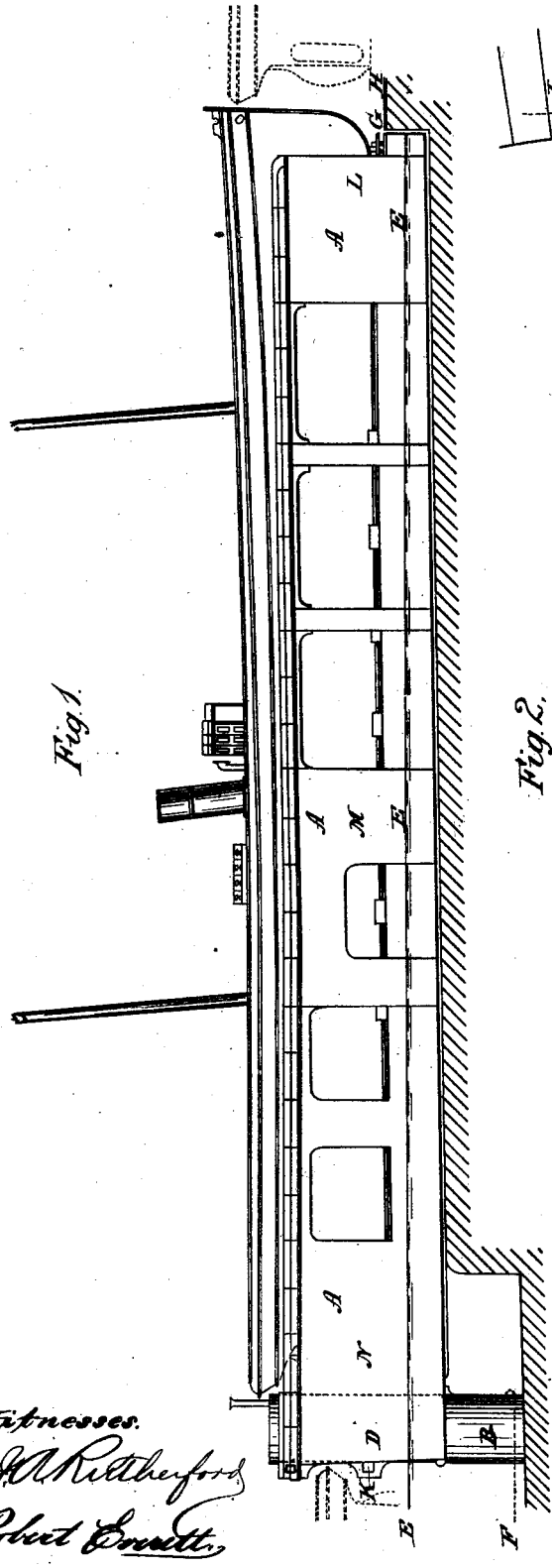


Fig. 1.

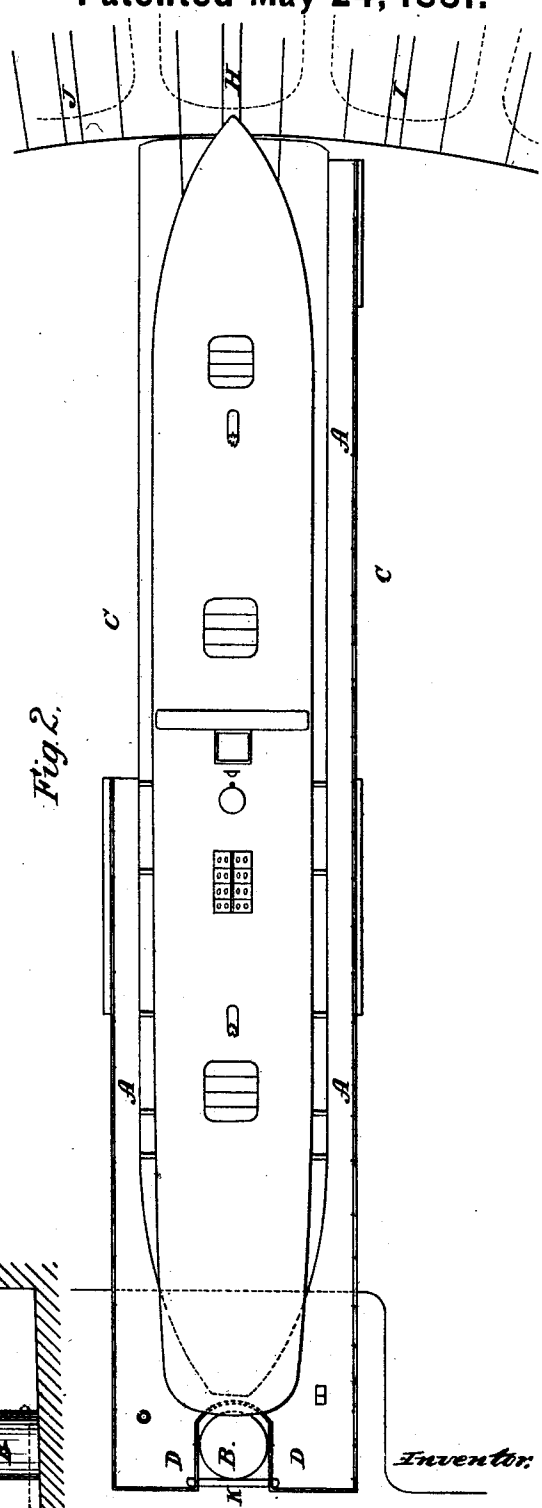


Fig. 2.

Witnesses.

J. A. Rutherford

Robert Emmett.

Inventor.

Robert Turnbull.

by James L. Norris

Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

R. TURNBULL.

Pontoon and Dock.

No. 242,077. **Patented May 24, 1881.**

Fig 3.

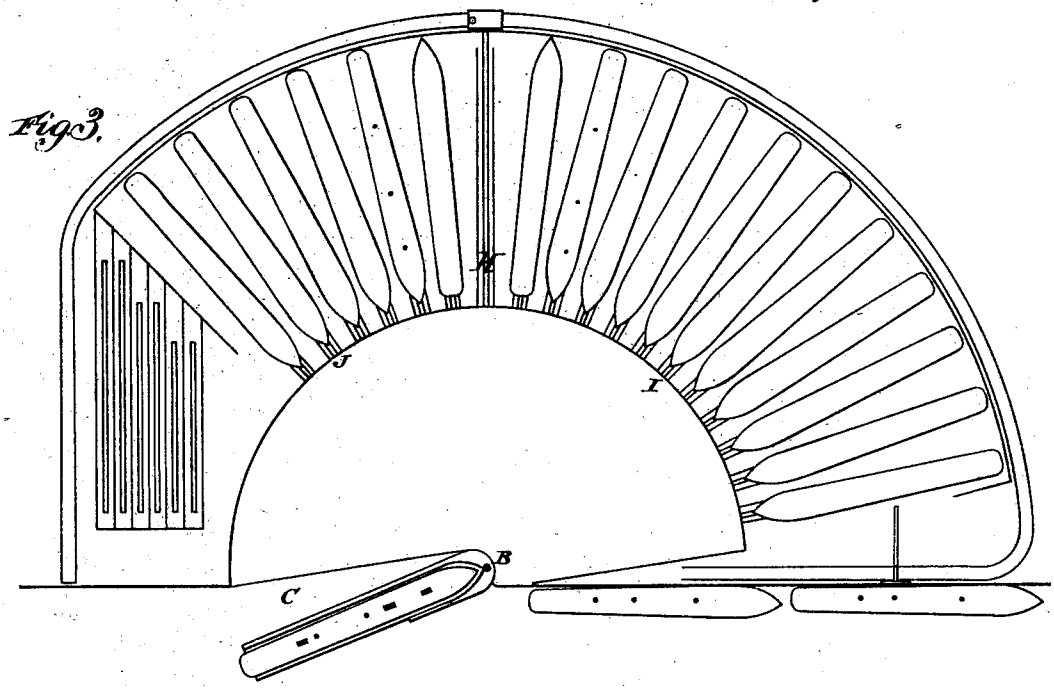
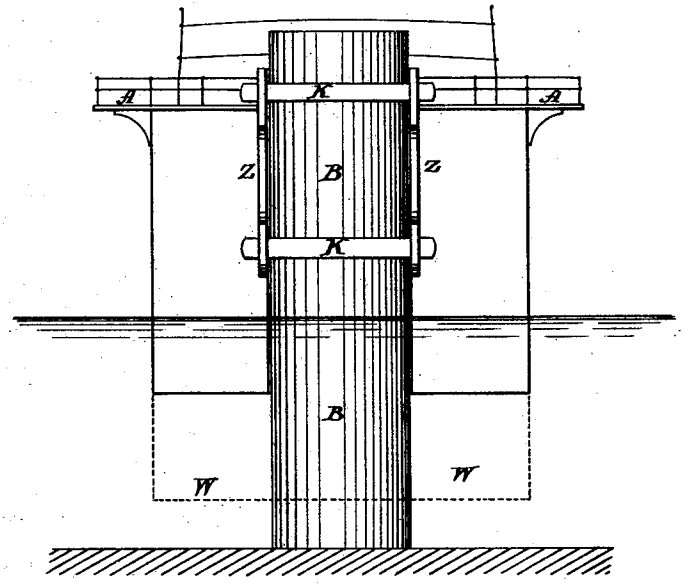


Fig 4.



Witnesses.
J. A. Rutherford.
Robert Ewett.

Inventor.
Robert Turnbull.
by James L. Norris
Atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

ROBERT TURNBULL, OF SOUTH SHIELDS, COUNTY OF DURHAM, ENGLAND.

PONTON AND DOCK.

SPECIFICATION forming part of Letters Patent No. 242,077, dated May 24, 1881.

Application filed March 25, 1881. (No model.) Patented in England September 14, 1878.

To all whom it may concern:

Be it known that I, ROBERT TURNBULL, a subject of the Queen of Great Britain, residing at South Shields, Durham, England, have invented certain new and useful Improvements in Floating-Pontons, Ponton-Docks, and Method of Berthing for Ship's Repairs, (for which I have obtained a patent in Great Britain No. 3,637, bearing date 14th September, 1878,) of which the following is a specification.

The object of my invention is to so construct or arrange floating docks or pontons that they may, when desirable, be fitted to rise and fall in a "berth" and be swung or rotated round from one end upon a center post (dolphin) or cylinder projecting vertically above from the ground at a slight distance from the berth. The post or cylinder is in deep water, and when the dock or ponton is swung about a quarter of a circle it can be sunk to the desired depth by letting in the amount of water. A vessel can then be floated in and there secured, the ponton with the vessel on it being then raised by ordinary means (pumping) until she is a little above the level of the berth. The whole is then swung round over the berth, the vessel being then high and dry for repairs or otherwise. In some cases the ponton is provided with a cradle, so that when in the berth the ponton is allowed to sink by opening the valves. The vessel on the cradle can be hauled up a slip, whose rails are arranged as a continuation of the cradle-rails. The ponton can then be furnished with another cradle, and the foregoing operation repeated for lifting another vessel.

In this case I purpose arranging my fulcrum post or cylinder so that the ponton may deliver a vessel onto the rails or slips provided radially, taking the post or cylinder as a center. There may be any number of slips so arranged, and one ponton may be made available for several posts or cylinders at the deep-water parts of neighboring repairing or building yards, in which case the recessed portion of the ponton, when arranged around or over the post or cylinder, can have stays or retaining-bars fitted to prevent it leaving the post when the swinging is taking place, such as might happen in a tideway.

A ponton attached to a fulcrum post or cylinder may be fitted within an ordinary wet dock according to my invention, and then the ponton, before or after the vessel is upon it, can be slewed round to suit the slips up which the vessel has to be moved, supposing there are several slips arranged radially therefrom. In this case the pivot end of the ponton would be a fixture, so to speak, to the fulcrum post or cylinder.

My fulcrumed ponton may be made available for lifting heavy weights from other vessels by fitting sheer-legs or a crane-jib or other apparatus at one end, the lifting power being in the ponton itself.

I have referred to providing a recess in the end of a ponton or floating-dock; but I do not limit myself thereto, as other modes of accommodating a ponton-floating dock to a fulcrum or pivot for the purposes of my invention can be adopted.

Figure 1 is a side elevation of a ponton, A, fulcrumed to a dolphin or cylinder-post, B, and with a vessel upon it within a berth, C. Fig. 2 is a plan of the same with the ponton cut short on one side.

The after part D of the ponton is formed with an opening; but it may be full-ended and provided with keys or stays to fit over the dolphin, if desired.

E is the ordinary high-water line, and when the ponton is not engaged it can be swung round a quarter-circle or a half-circle, so as to be clear of the berth C. It can then be sunk to the desired depth by pumping into it a sufficient quantity of water, in order to adapt it to receive a vessel which has to be repaired or otherwise operated upon to be drawn over it and lashed in position. The water is then pumped out of the ponton, and this is made buoyant enough to lift the vessel above the water-level E, the ponton being then swung round into the position shown.

The deck of the ponton may be provided with rails, on which a cradle, G, can be arranged, so that the vessel can be hauled up a slipway, H, to enable the ponton to be used in a similar manner for the reception of another vessel.

Figs. 2 and 3 show several slipways arranged radially from the dolphin B, as at I J, with vessels upon them. By this means several vessels can be brought into a ship-repairing yard

and the ponton be available as a floating-dock; or it may be swung round to be clear of the berth C, when, by removing the keys K, it can be hauled away to be used at another repairing-yard for a similar operation, if desired, whether the other yard be provided with a dolphin at the entrance or not.

I purpose making my ponton with air-chambers L M N at the bow, center, and stern only, the latter being the larger of the three, so that the ponton can be utilized for lifting heavy weights—such as boilers, big guns, &c.—from barges or other vessels placed near the dolphin for that purpose.

Fig. 4 is a stern view of my ponton with projecting cheeks Z Z, which, with the keys K K, embrace the dolphin B, the dotted line W W showing the depth the ponton can be lowered to outside the berth, where the dolphin is fixed vertically in the ground.

The dolphin B may be close to the berth, or at a distance therefrom, according to the arrangement of the berth or of the yard in which the repairing of the vessel has to take place.

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

The combination of a ponton and a cylinder, post, or dolphin arranged in connection with a ship-repairing dock, the ponton being capable of swinging motions from a shallow berth to deep water, or conversely, without leaving the cylinder, post, or dolphin, substantially as described, whereby vessels may be received from the water and delivered in dock, and conversely, as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ROBERT TURNBULL.

Witnesses:

JAMES SHORT,

WILLIAM OWEN,

Clerks to Messrs. Mather, Cockcroft & Mather, Solicitors, Newcastle-on-Tyne.