

V. BRIDGMAN.
SWINGING BERTH FOR SHIPS.
APPLICATION FILED MAR. 2, 1909.

943,380.

Patented Dec. 14, 1909.

2 SHEETS—SHEET 1.

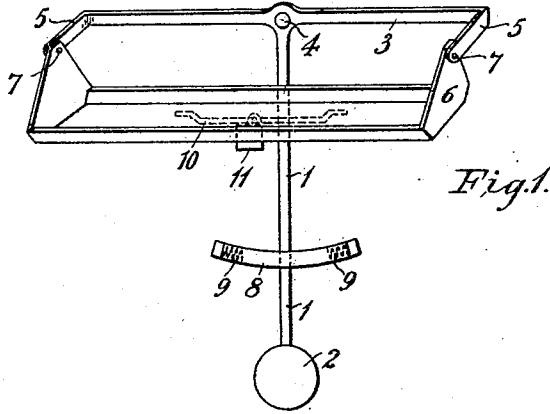


Fig. 1.

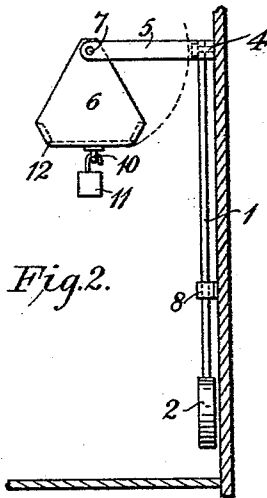


Fig. 2.

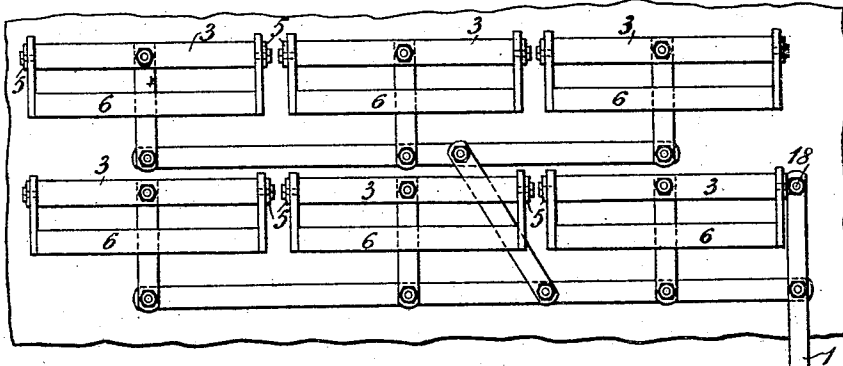


Fig. 3.

Witnesses—

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Fig. 4.

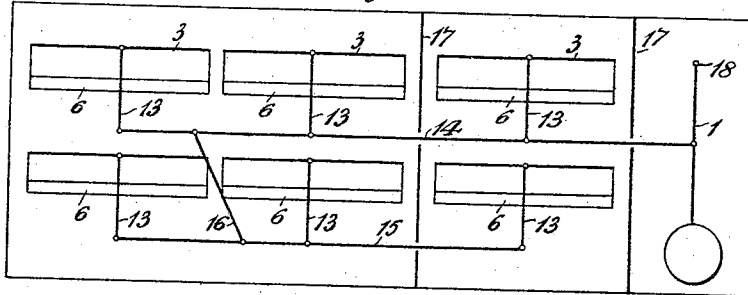


Fig. 5.

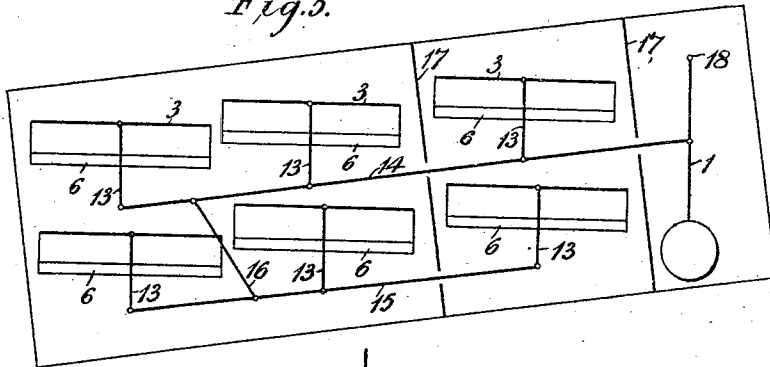
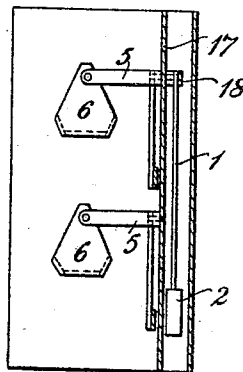


Fig. 6.



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UNITED STATES PATENT OFFICE.

VICTOR BRIDGMAN, OF LONDON, ENGLAND.

SWINGING BERTH FOR SHIPS.

943,380.

Specification of Letters Patent.

Patented Dec. 14, 1909.

Application filed March 2, 1909. Serial No. 480,940.

To all whom it may concern:

Be it known that I, VICTOR BRIDGMAN, a subject of His Majesty the King of Great Britain and Ireland, residing at 36 Ravenscourt Gardens, Ravenscourt Park, London, W., England, have invented certain new and useful Improvements in Swinging Berths for Ships, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to improvements in swinging berths the swinging of which is controlled by a pendulum, and according thereto each berth is pivotally mounted on a bar that is pivoted at a fixed point on the side of the cabin or the like and is so controlled by the action of the pendulum as to assume a horizontal position while the pendulum hangs vertically, so that the berth swings practically opposite to and on a level with the pivoted bar requiring little or no extra space to enable the movements of the vessel to be counteracted.

According to one construction each pivoted bar is controlled directly by a pendulum attached to and suspended from the pivot of the bar; while according to an alternative construction the pendulum is suspended independently, and controls the bar through a suitable parallel-motion mechanism, this latter construction possessing the advantage that several pivoted bars with their berths can be controlled by means of a single pendulum.

In the accompanying drawings, which illustrate apparatus according to my invention, Figure 1 is a perspective view, and Fig. 2 an end view of a single berth, the pivoted bar of which is controlled by a pendulum suspended from the same pivot as the bar. Fig. 3 shows in front elevation a group of berths controlled by a single pendulum; Figs. 4 and 5 are diagrammatic representations of the positions respectively assumed by them when the ship is horizontal and inclined; and Fig. 6 is a diagrammatic transverse section illustrating an alternative arrangement of the pendulum 1.

The pendulum 1 provided with its weight 2 is attached at its upper end to the cross bar 3 pivoted at 4. Projecting at right angles to the ends of the bar 3 are two arms 5 from which the berth 6 is suspended, preferably by means of studs 7. The pendulum 1 and cross-bar 3 thus form a T-piece, at the junction of the three arms of which both

the bar and the pendulum are pivoted. To prevent the pendulum from swinging forward laterally there is provided for it a guide 8 consisting of two curved parallel bars having for their center of curvature the point of suspension 4 of the pendulum. At the ends of the guide 8 there are preferably provided springs 9 that serve to limit its swing without subjecting it to sudden shock. There may also be provided on the pendulum anti-friction rollers that run on the bars of the guide 8.

To permit of the satisfactory balancing of the berth 6 when occupied, there may be attached to it a rod 10 on which there can be slid an adjustable weight 11. The edges 12 of the berth are preferably rounded off, as shown in Fig. 2 to reduce its swinging radius; and the projection of the arms 5 must be sufficient to insure that the berth will swing clear of the pivot 4, as indicated by dotted lines in Fig. 2.

In the alternative arrangement shown in Figs. 3 to 6 of the drawings the pendulum 1 is suspended independently of the pivoted bars 3. Each berth 6 of the group shown in front elevation in Fig. 3 is suspended on arms 5 as hereinbefore described, the bars 3 being connected together to swing simultaneously so that they can be controlled by a single pendulum. Each berth 6 is in this construction suspended from the arms 5 of a bar 3 pivoted at 4 as already described. From the middle of each bar 3 there extends downwardly below its pivot 4 a short arm 13. The pendulum 1 may be suspended at any suitable portion of the ship, and connected with the arms 13 by any convenient parallel motion mechanism such that the movement of these arms is identical with that of the pendulum. A convenient arrangement is that diagrammatically illustrated in Figs. 4 and 5, wherein the point of suspension 18 of the pendulum is in alignment with the pivots 4 of the bars 3 of the upper set of berths, and the arms 13 of these berths are linked to the pendulum by a bar 14, while the arms 13 of the lower set of berths are linked together by a bar 15 actuated from the bar 14 through a link 16. Alternatively, the pendulum 1 may be attached to one of the bars 3 as already described with reference to Fig. 1 the other berths being controlled by parallel motion link-work such as shown in Fig. 3. In some cases the pendulum may be provided at its

upper end with a cross-bar that is linked to the cross-bars 3 to secure parallel movement thereof. The pendulum may also be mounted laterally with respect to the berths, and co-axially with one of the pivots 4, as diagrammatically shown in Fig. 6, this arrangement being adopted in the case of the pendulum shown in Fig. 3. Obviously the arrangement employed to secure the parallelism of the pendulum and the arms 13 may be considerably varied, according to the situation of the pendulum and the position and arrangement of the berths to be thereby controlled.

The pendulum weight 2 should be sufficiently heavy to control the swing of all the berths linked to it. The berths controlled by a pendulum need not be contained in a single cabin, and a separate pendulum compartment may be provided, the link work 14, 15 passing through the partitions 17 between the cabins or compartments as diagrammatically indicated in Figs. 4 to 6. The control of several berths by means of a single heavy pendulum possesses the advantage that greater steadiness is thus secured, and that each berth is less liable to tilt as a passenger enters or leaves it. Each berth may, in the construction last described, be provided with a balance weight such as the weight 11 of Fig. 1.

By the suspension of ships' berths as herein described the risk of sea-sickness is minimized and the general comfort of the passengers is very considerably increased, these advantages being moreover secured without waste of space, as berths suspended and controlled as hereinbefore described can be as compactly arranged as the usual fixed berths and practically no additional space need be allowed in consequence of their swinging movement.

What I claim is:—

1. In swinging berths, the combination of a pivotally mounted bar; a berth pivotally mounted at its ends to the extremities of said bar to swing transversely thereto; an arm extending at right angles to said bar from the central portion thereof; and a pendulum connected with said arm to retain the same normally vertical.

2. In swinging berths, the combination of a bar pivotally mounted at its center, and having its end portions bent outward at

right angles to its main portion; a berth pivotally suspended at its ends on said angular end portions; an arm depending from the central portion of said bar at right angles thereto, and a pendulum connected with said arm to retain it normally in a vertical position.

3. In swinging berths, the combination of a bar pivotally mounted at its center and having its end portions bent outward at right angles to its main portion; a berth pivotally suspended at its ends on said angular end portions; an arm depending from the central portion of said bar at right angles thereto, and a pendulum connected with said arm by a parallel motion link-work to retain it normally in a vertical position.

4. In swinging berths, the combination of a bar pivotally mounted at its center and having its end portions bent outward at right angles to its main portion; a berth pivotally suspended at its ends on said angular end portions; an adjusting weight slidably mounted on said berth; an arm depending from the central portion of said bar at right angles thereto, and a pendulum connected with said arm to retain it normally in a vertical position.

5. In swinging berths, the combination of a plurality of bars each pivotally mounted at its center and having its end portions bent outward at right angles to its main portion; a berth pivotally suspended at its ends on said angular end portions; an arm depending from the central portion of each such bar at right angles thereto, and a pendulum connected by parallel motion link-work to said arms to retain them normally vertical.

6. In swinging berths, the combination of a plurality of pivotally mounted bars; a berth pivotally mounted at the extremities of each bar to swing transversely thereto; an arm extending at right angles to each bar; and a pendulum connected by parallel motion link-work to said arms to retain them normally vertical.

In testimony whereof I affix my signature in the presence of two witnesses.

VICTOR BRIDGMAN.

Witnesses:

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FREDERICK WM. LAKE.