2 Sheets—Sheet 1.

D. HUSTON.

Self-Leveling Berth for Vessel.

No. 209,264. Patented Oct. 22, 1878.

Fig. 1.

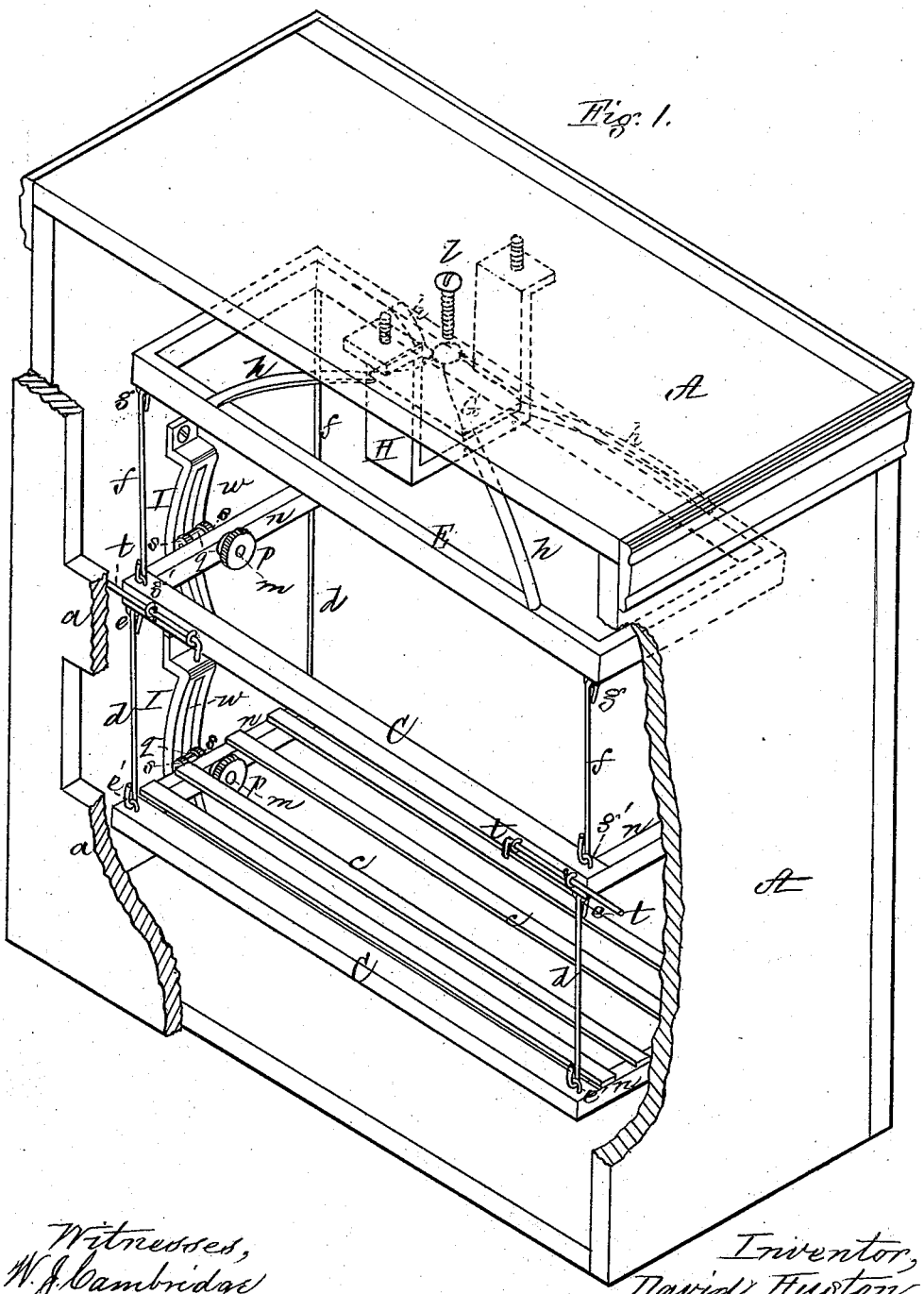

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Fig. 2.

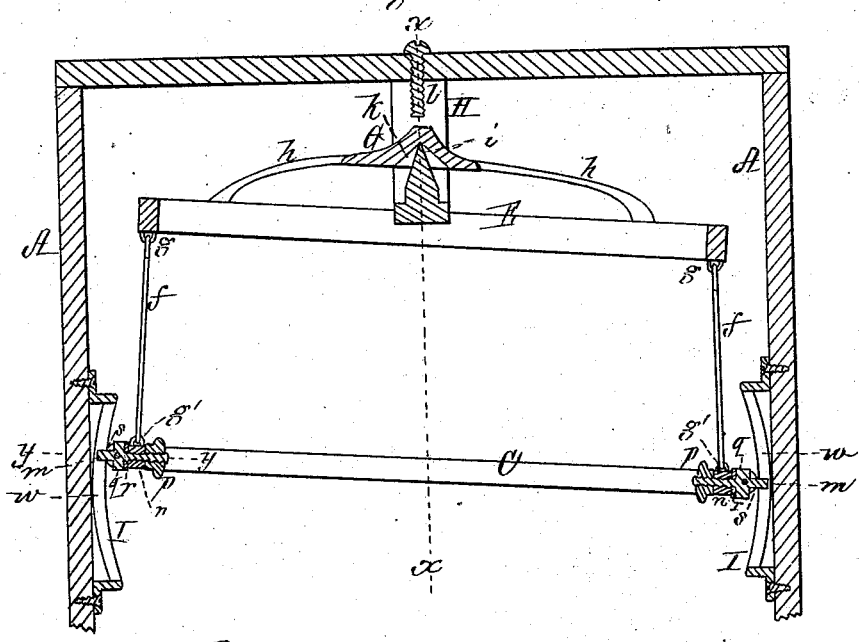


Fig. 3.

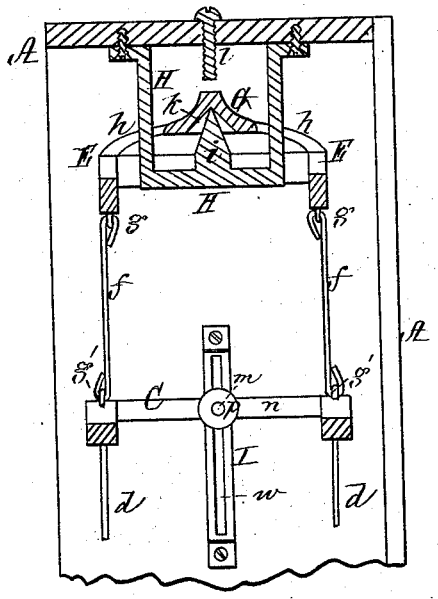
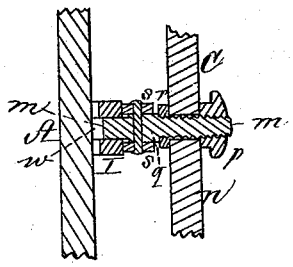


Fig. 4.



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UNITED STATES PATENT OFFICE.

DAVID HUSTON, OF BOSTON, ASSIGNOR TO HIMSELF, ROBERT VOSE, JR., OF BOSTON, AND FLORENTINE W. PELTON, OF DEDHAM, MASSACHUSETTS.

IMPROVEMENT IN SELF-LEVELING BERTHS FOR VESSELS.

Specification forming part of Letters Patent No. **209,264**, dated October 22, 1878; application filed September 25, 1878.

To all whom it may concern:

Be it known that I, DAVID HUSTON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Self-Leveling Berths for Vessels, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of a self-leveling berth constructed in accordance with my invention. Fig. 2 is a longitudinal vertical section through the center of the same. Fig. 3 is a transverse section on the line *x x* of Fig. 2. Fig. 4 is a horizontal section, enlarged, on the line *y y* of Fig. 2.

My invention relates to a self-leveling sleeping-berth for vessels in which the bed-bottom shall at all times remain in a horizontal plane independently of the motion of the vessel in pitching or rolling, thereby removing the causes which induce sea-sickness, and promoting the ease and comfort of the occupant of the berth; and my invention consists in suspending one or more berths from a swinging frame, supported thereover at a single point, so as to be, together with the berth or berths suspended therefrom, capable of a universal movement in all directions, thus constantly preserving the equilibrium of the berth or berths as the vessel pitches or rolls, suitable guides being employed for keeping each berth in its proper position during the various movements of the vessel; and my invention also consists in certain details of construction, to be hereinafter described.

To enable others skilled in the art to understand and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A represents the casing, within which the berths are located, and *a a* the longitudinal berth-boards. C C are two rectangular frames, upon which the bed-bottoms *c* of the berths are secured, the two frames being loosely connected at their corners by rods *d*, which hook into eyes *e e'*. These frames C are suspended by rods *f*, hooked into eyes *g g'*, from the four corners of a metallic frame, E, of the form seen in Fig. 1, having four arms, *h*, extending up from the top of its front and rear sides, and terminating in a plate, G, supported on a conical projection, *i*, rising from a hanger, H, bolted firmly to the under side of the top or ceiling of the casing A.

The point of the projection *i* enters a socket or recess, *k*, in the plate G, and the latter is prevented from being thrown off the point of suspension during the movements of the vessel by a screw, *l*, which extends through the top of the casing nearly down to the top of the plate G, immediately over the point of suspension, which is located a little in front of a point over the center of the supporting-frame E, in order to compensate for the excess of weight of the upper portion of the body of the occupant of the berth, which will thus insure his being properly balanced.

Instead of the rods *d f*, cords or wire ropes may be employed, and these rods, cords, or wire ropes may be provided with snap-hooks, to allow of their being attached and detached.

To each side of the casing A, opposite the center of the end of each of the frames C, is secured a vertical guide, I, the two guides of one side being placed in line with each other, as seen in Fig. 1. Each guide is provided with a longitudinal central slot, *w*, for the reception of the outer end of a bolt or pin, *m*, extending out from the center of the end piece *n* of the frame C, upon which the bed-bottom is placed, the face of each guide being made to correspond to that of the opposite one, in which the adjacent end of the frame moves. These guides I serve to maintain the berths in their proper position within the casing A, and yet allow of their free movement in all directions. Each pin *m* passes through the end *n* of the frame, and is provided at its inner end with a screw-thread, over which turns a clamping-nut, *p*, by which the pin is held in place, a head, *q*, being formed on the pin outside the frame, between which and the head is a rubber spring, *r*, which surrounds the pin and is compressed by the nut *p*. On opposite sides of the head *q* are secured friction-rolls *s*, which bear upon the face of the adjacent guide I on opposite sides of the slot *w*, and serve to reduce the friction between the surfaces in contact, the rolls being forced against the face of

the guide by the expansion of the spring *r*, the tension of which is regulated or adjusted to compensate for wear by means of the nut *p;* and by this construction the longitudinal play of the berths and the rattling of the parts are entirely avoided.

When the berth is unoccupied it is held immovable by bolts *t*, or other locking or fastening devices, which are withdrawn when the berth is occupied; and these locking or fastening devices may also be used at the will of the occupant to secure the berth and hold it immovable while getting in or out.

It is evident that my invention may be applied to ship's tables, chairs, and settees, and also to the floors of state-rooms, without departing from the spirit of my invention.

By thus suspending the berths from a swinging frame, E, supported thereover at a single point, they are free to move in all directions as the vessel pitches forward or rolls to one side, and consequently the balance or equilibrium of the berths will be preserved, and they will thus be maintained in a horizontal position when occupied independently of the vessel's motion, and all liability to sea-sickness and all danger of being thrown out of the berths in heavy weather are thereby avoided.

I hereby fully disclaim the curved guides shown in the drawing as not of my invention.

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

1. One or more berths suspended from a swinging frame, E, supported upon the cone *i* of the bracket H, to allow of a movement in all directions, in combination with the screw-stop *l*, to prevent the frame from being thrown off of the point, and suitable guides for keeping the berth or berths in their proper position, substantially as and for the purpose described.

2. In combination with the frame C and guide, the pin or bolt *m*, with its head *q*, friction-rolls *s*, and nut *p*, and the spring *r*, operating substantially in the manner and for the purpose set forth.

Witness my hand this 21st day of September, 1878.

DAVID HUSTON.

In presence of—
P. E. TESCHEMACHER,
N. W. STEARNS.