

(No Model.)

J. H. MILLIGAN.
SELF LEVELING BERTH FOR SHIPS.

No. 291,070

Patented Jan. 1, 1884.

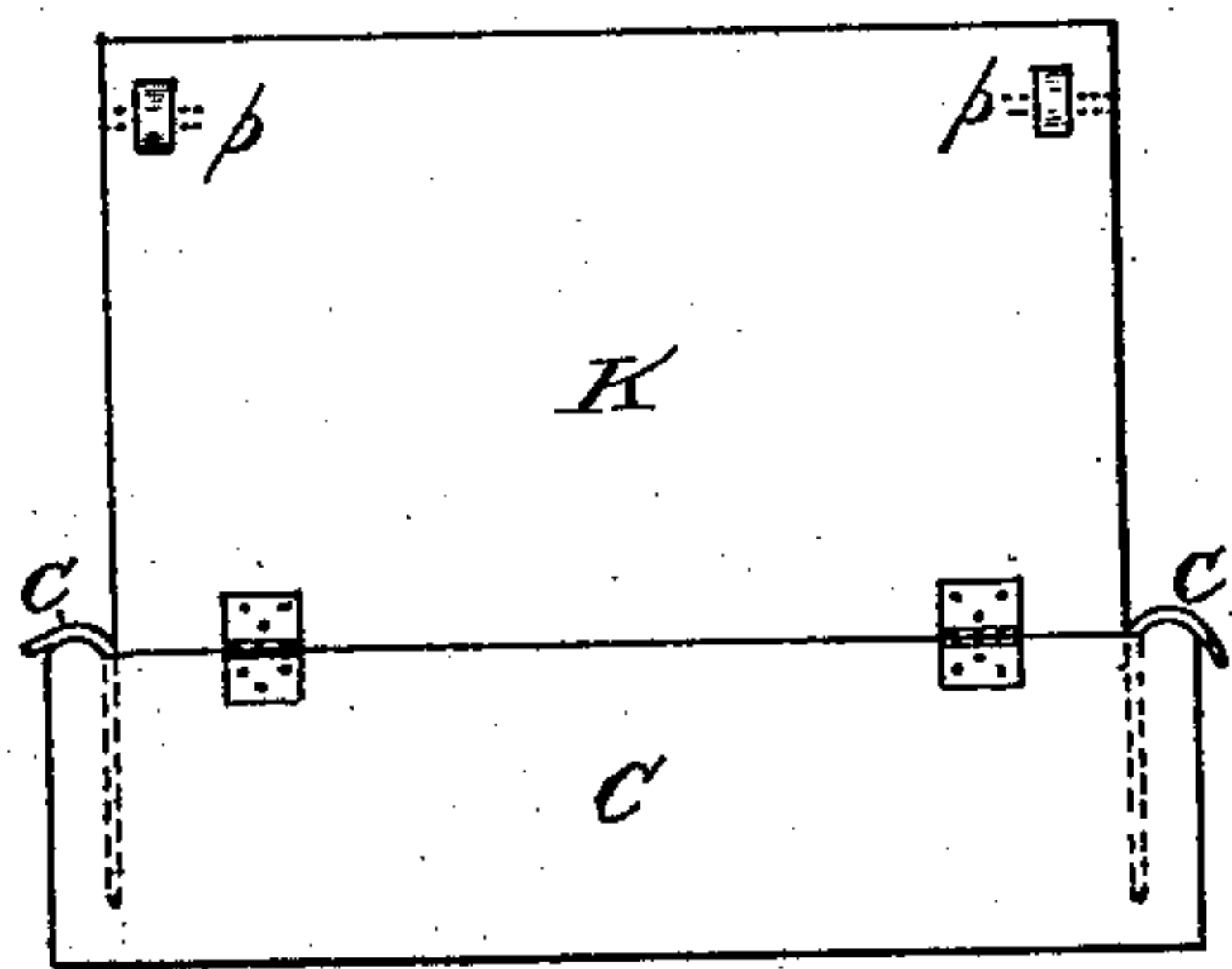
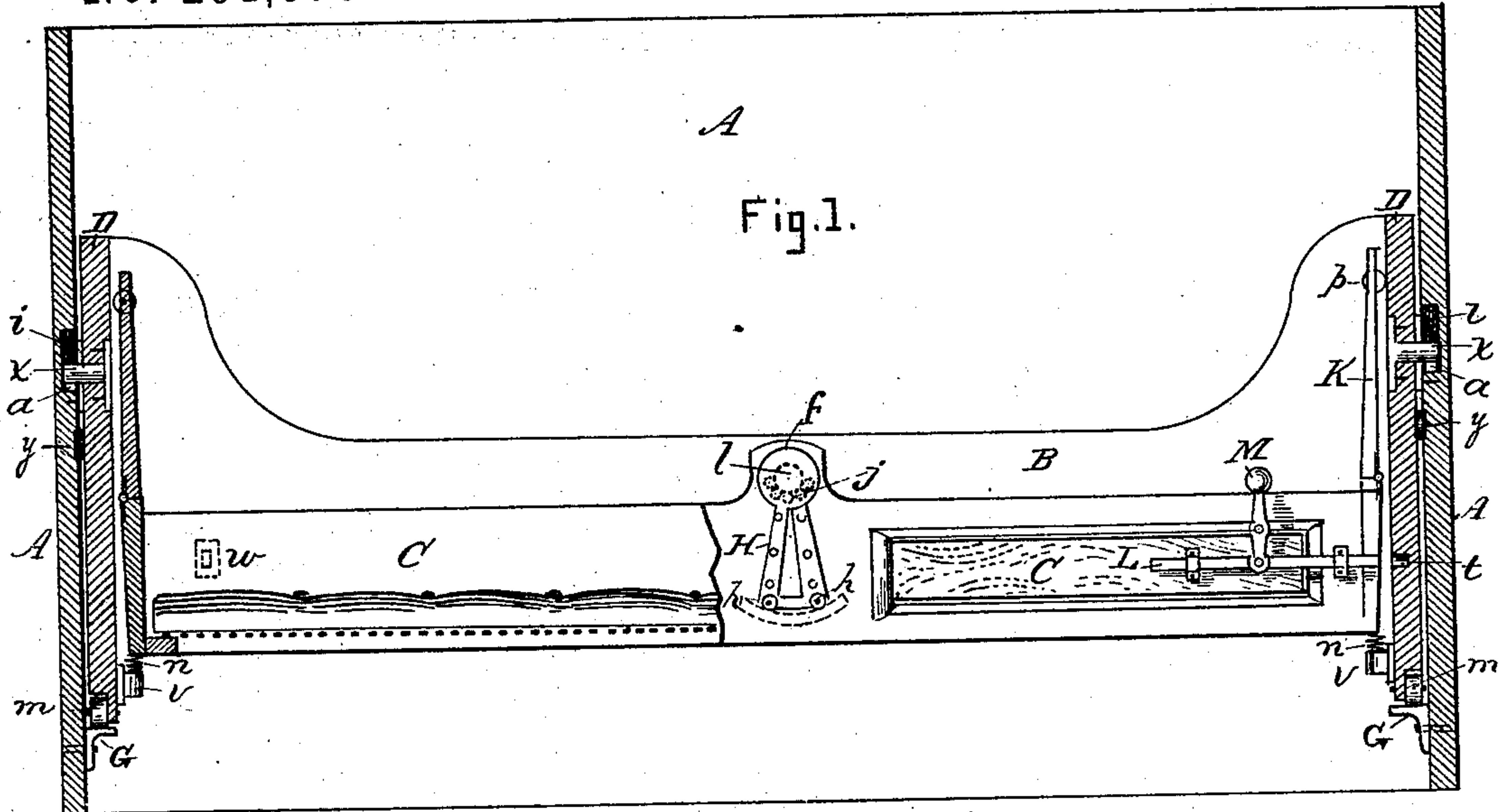


Fig. 2.

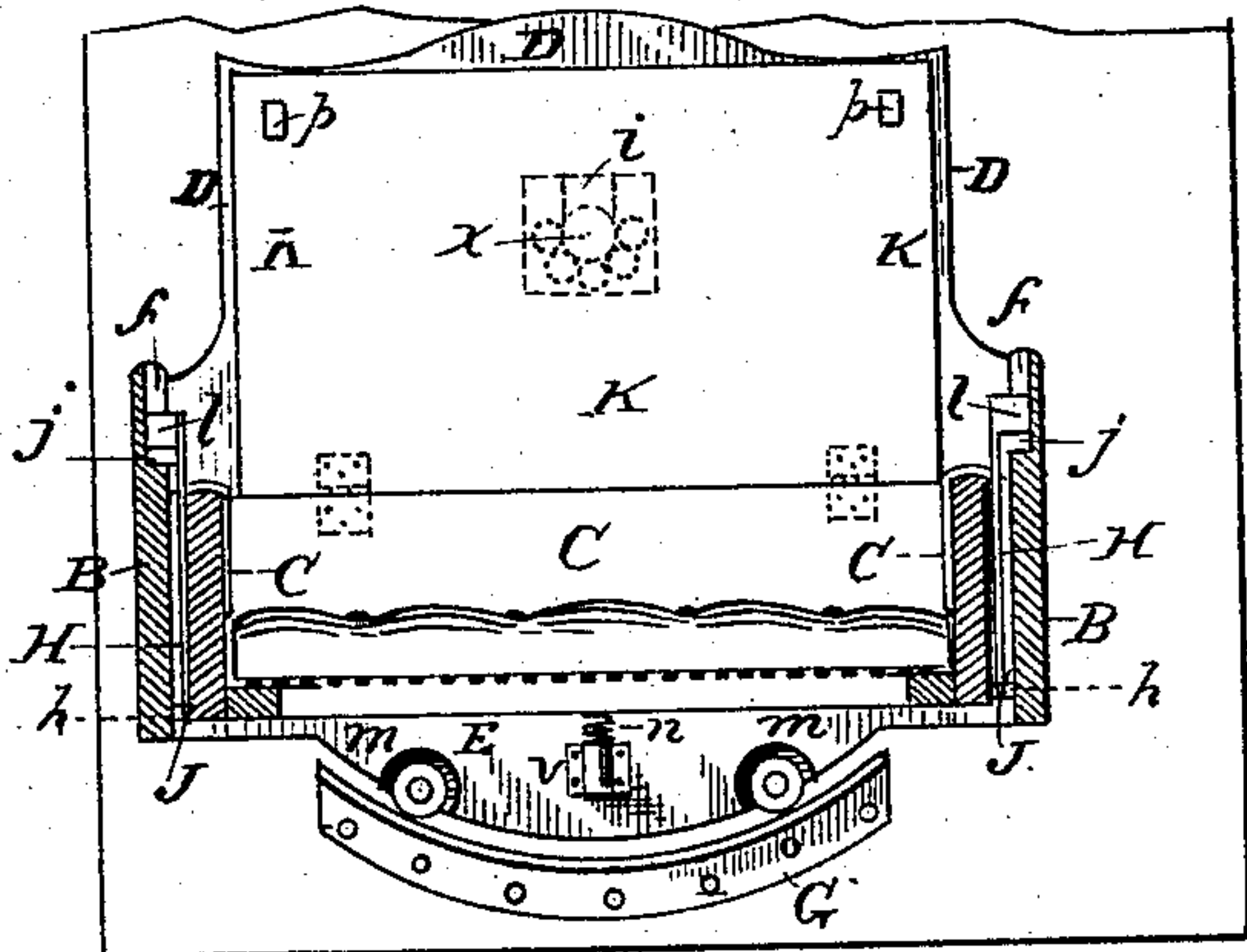


Fig. 3.

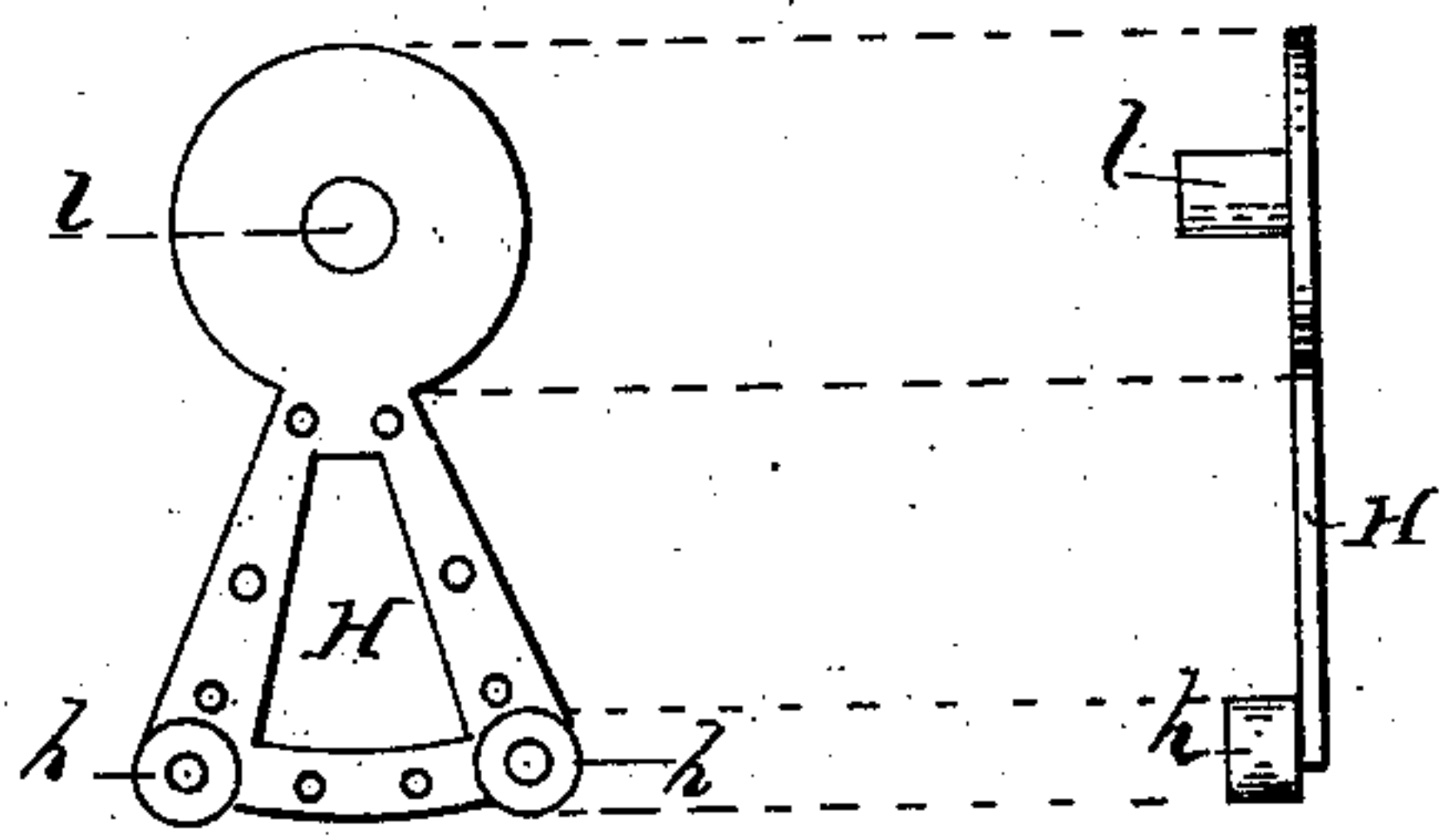


Fig. 4.

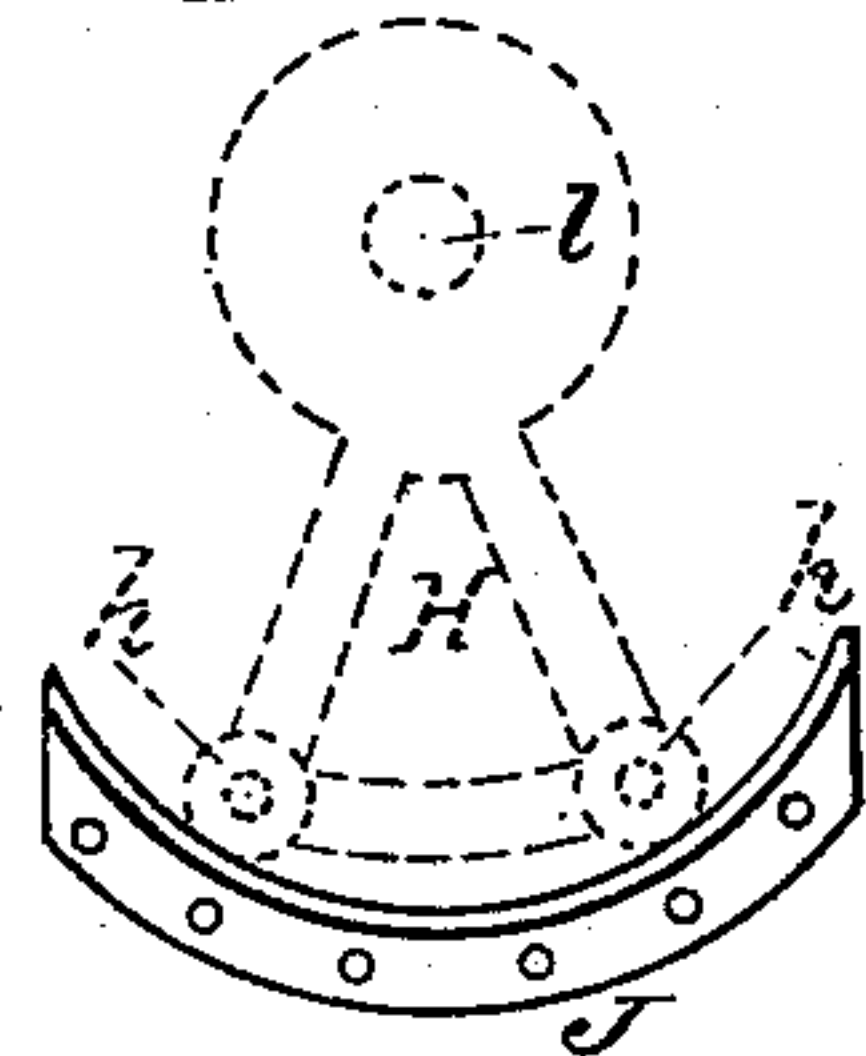


Fig. 5.

Witnesses:
H. E. Remick
L. J. White.

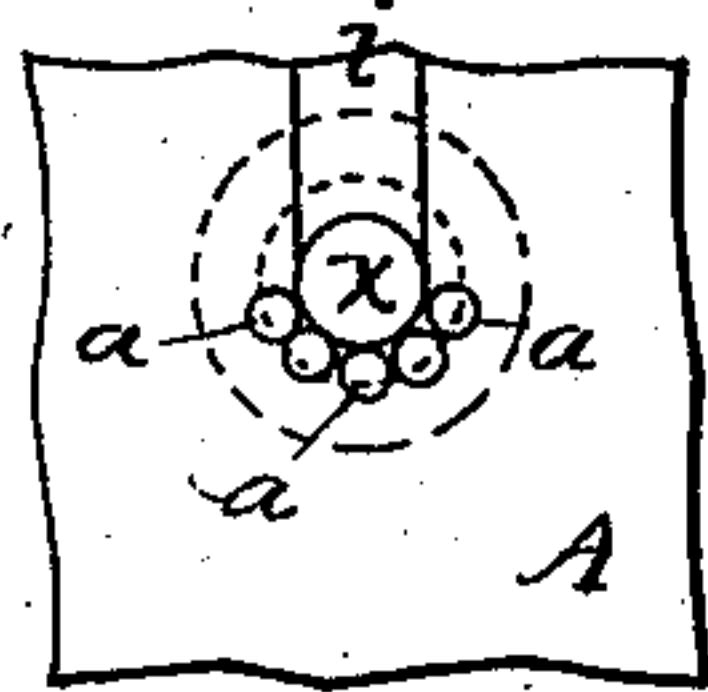


Fig. 6.

Inventor:
Joseph H. Milligan,
Per C. C. Shaw
Att'y.

UNITED STATES PATENT OFFICE.

JOSEPH H. MILLIGAN, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO WILLIAM NEWSOME, OF SAME PLACE.

SELF-LEVELING BERTH FOR SHIPS.

SPECIFICATION forming part of Letters Patent No. 291,070, dated January 1, 1884.

Application filed September 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. MILLIGAN, of Boston, in the county of Suffolk, State of Massachusetts, have invented a certain new and
5 useful Improvement in Ships' Berths, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings,
10 forming a part of this specification, in which—

Figure 1 is a vertical longitudinal section, including a side elevation of a portion of the crib; Fig. 2, an end view of the crib, showing
15 the guard; Fig. 3, a vertical transverse section; Figs. 4 and 5, views of the supporting-plates, and Fig. 6 a view showing the friction-bearing.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of ships' berths which are self-leveling; and it consists in a novel construction and arrangement of the
25 parts, as hereinafter more fully set forth and claimed, by which a simpler, cheaper, and more effective device of this character is produced than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation, its extreme simplicity rendering an elaborate description unnecessary.

In the drawings, A represents the walls of
35 the state-room; B, the bunk, and C the crib.

The bunk is rectangular in form, and is provided with ends D, which project below its sides, as shown at E, and are curved on their lower edges and provided with the friction-
40 rollers *m*. Projecting laterally from each of the ends D, on its outer face and near its upper side, there is a stud, *x*, on which the bunk is suspended, the studs resting on a series of friction-rollers, *a*, properly disposed in ver-
45 tically-elongated bearings *i* in the end walls of the state-room. Attached to either end of the state-room there is a curved bearing, G, on which the rollers *m* rest.

The crib C, which corresponds in form with
50 the bunk, is suspended therein by means of

the plates H, one of which is centrally secured to either side of the crib. These plates are provided at their upper ends with laterally-projecting studs *l*, on which the crib is suspended, their lower ends being curved and
55 provided with the friction-rollers *h*, which rest upon curved bearings J, attached to the inner sides of the bunk. The studs *l* project into vertically-elongated bearings *f*, formed in the sides of the bunk, and rest upon a series of
60 friction-rollers, *j*, which are properly disposed therein in substantially the same manner as the studs *x* rest upon the rollers *a* in the bearings *i*.

Hinged to either end of the crib there is a
65 guard-board, K, provided with friction-rollers *p*, the object of the guards being to prevent the clothing from falling down between the crib and bunk, and also to prevent the crib from swinging too freely, this being accomplished
70 by pressing against the board and forcing the rollers *p* against the end of the bunk, thereby steadying the crib.

Disposed beneath either end of the crib C, in a socket, *v*, attached to the inner face of the
75 curved projection, E, there is a coiled spring, *n*, acting expansively against the under side of the crib to afford it a yielding support at these points.

From the foregoing it will be obvious that
80 the bunk B is suspended in the state-room and swings laterally on the studs *x*, and that the crib C is suspended in the bunk and swings longitudinally on the studs *l*, and that, in case either of the studs break, the curved bearings
85 G J will prevent the bunk or crib from falling, as the case may be. The distance from the center of the stud *l* to the bearing-point of the roller *h* represents one-half the diameter of a circle, which has a greater circumference
90 than the circle of which the bearing J forms a segment, so that when the crib vibrates or tends to rotate around the stud *l* as its center of motion the rollers *h* will be brought into forcible contact with the bearing J as they ap-
95 proach its ends, and thereby tend to level the crib or cause it to assume a horizontal position, the studs *l* rising in the elongated slots or bearings *f* as the rollers approach the ends of the bearing J. The curved bearing G also bears
100

the same relation to the bunk B that the bearing J does to the crib C, and tends to level or bring the bunk into a horizontal position in substantially the same manner as the bearing

5 J levels the crib, the studs x rising and falling in the bearings i as the rollers m approach and recede from the ends of the bearing G. A sliding bar, L, provided with the pivoted hand-lever M, is attached to the side of the

10 crib, its end fitting into the socket t in the head of the bunk B, and acting to lock the crib or prevent it from vibrating, when desired. Friction-rollers w are also inserted in the sides of the crib where it is liable to be

15 brought into contact with the sides of the bunk, and also at y between the ends of the bunk and state-room.

Having thus explained my invention, what I claim is—

20 1. In a self-leveling ship's berth, the guard-boards K, provided with the rollers p , in combination with the crib C, substantially as and for the purpose set forth.

25 2. In a self-leveling ship's berth, the elongated bearings i , provided with the friction-rollers a , in combination with the bunk B,

provided with the studs x , to enable said bunk to rise and fall as the rollers m approach and recede from the ends of the curved bearing G, substantially as specified.

30 3. In a self-leveling ship's berth, the elongated bearings f , provided with the friction-rollers j , in combination with the crib C, provided with the studs l , to enable said crib to rise and fall as the rollers h approach and re-

35 cede from the ends of the curved bearing J, substantially as set forth.

4. The improved self-leveling ship's berth herein described, the same consisting of the bunk B, provided with the studs x , bearings 40 J, rollers m , springs n , and bearings f , and the crib C, provided with the studs l , rollers h , bar L, and guards K, in combination with the walls A, provided with the curved bearings G, and elongated bearings i , constructed, com- 45 bined, and arranged to operate substantially as specified.

JOSEPH H. MILLIGAN.

Witnesses:

C. A. SHAW,
L. J. WHITE.