(No Model.) 3 Sheets—Sheet 1.

T. F. WELLS.

SELF LEVELING BERTH.

No. 533,624. Patented Feb. 5, 1895.

FIG. 1.

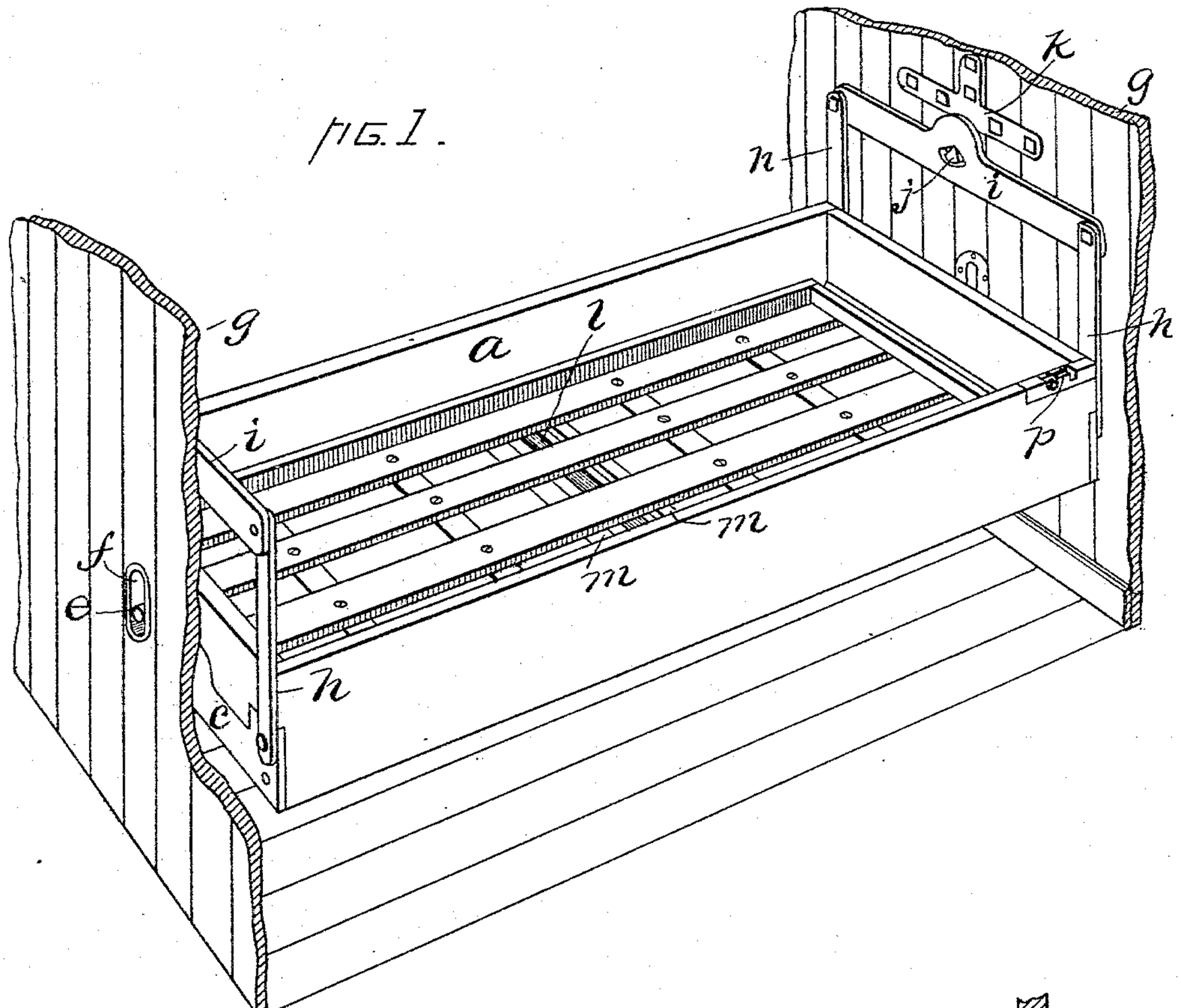
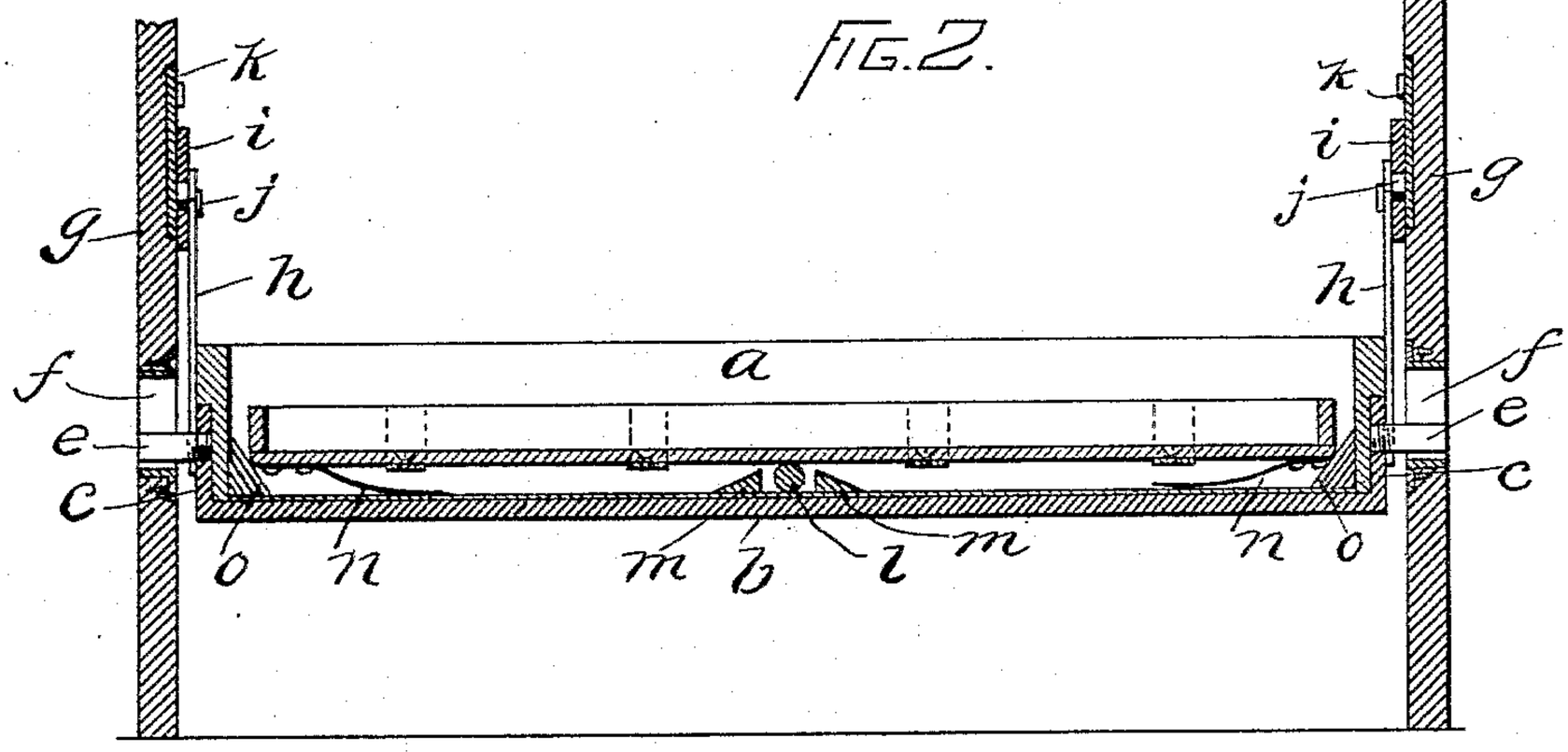


FIG. 2.



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(No Model.) 3 Sheets—Sheet 2.

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FIG. 3.

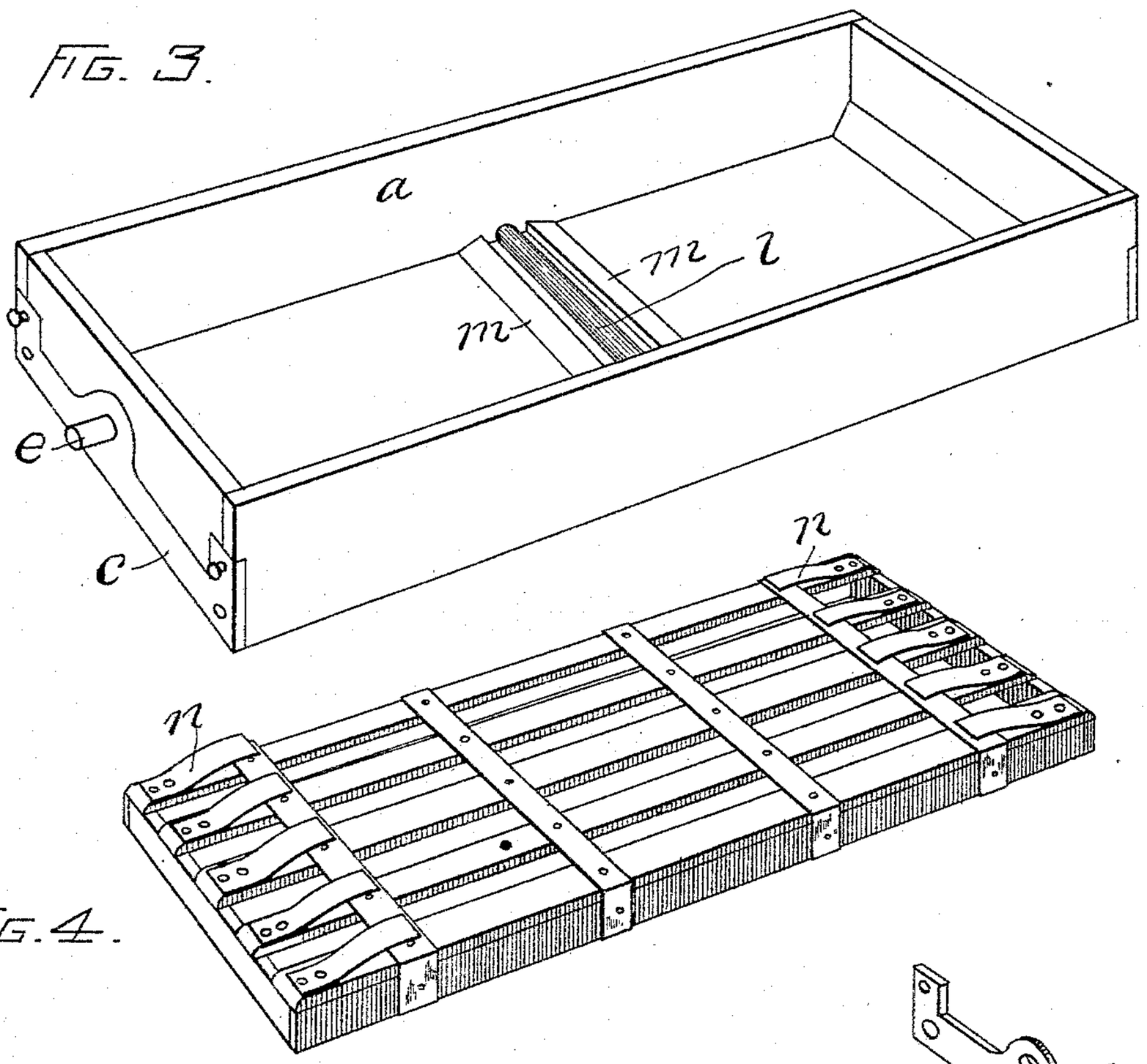

FIG. 4.

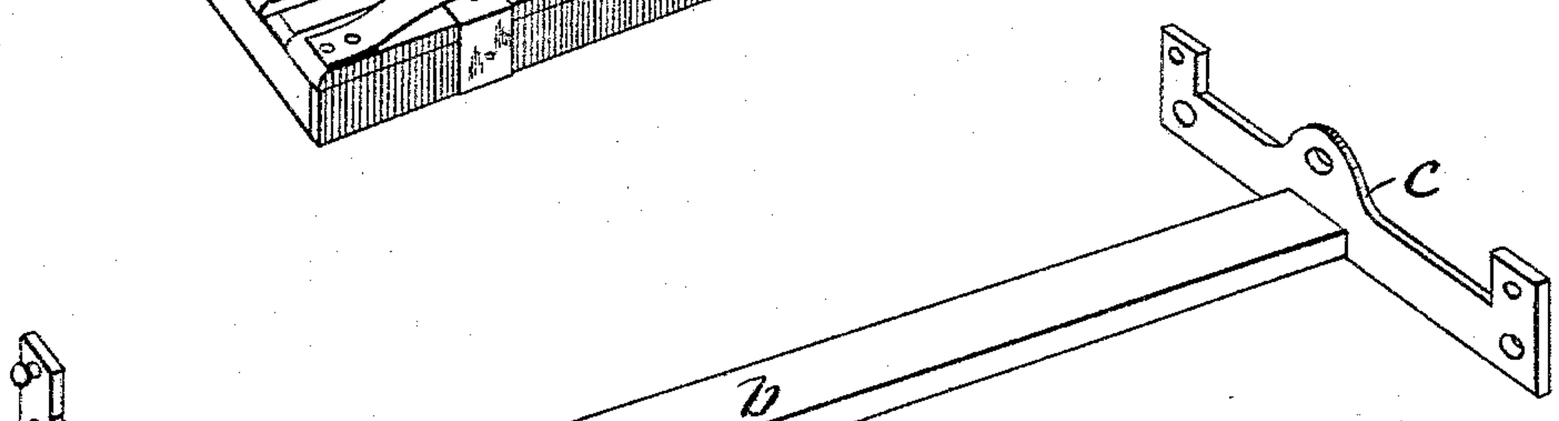

FIG. 5.

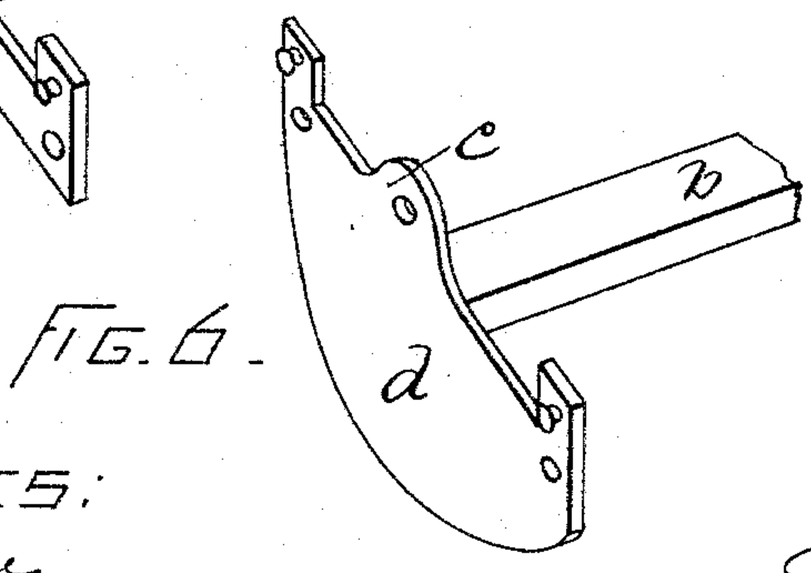

FIG. 6.

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FIG. 7.

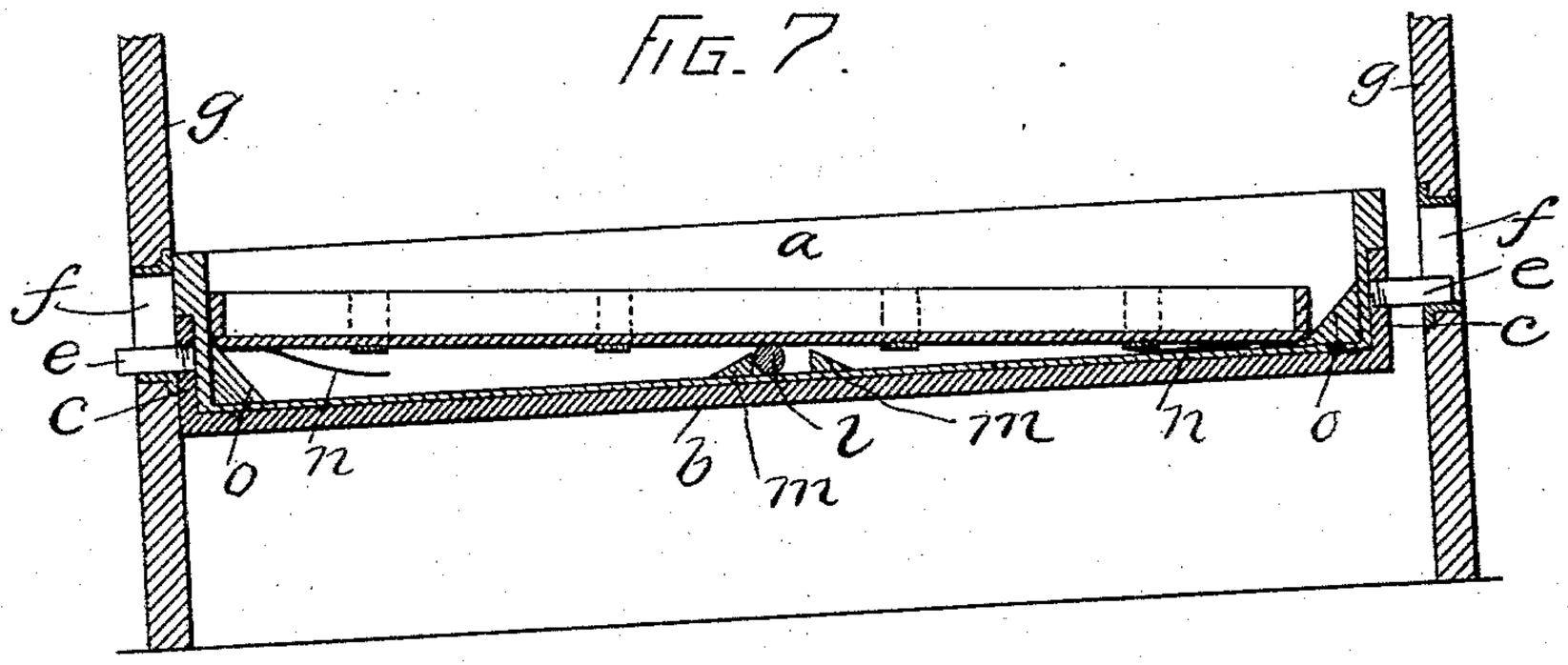

FIG. 8.

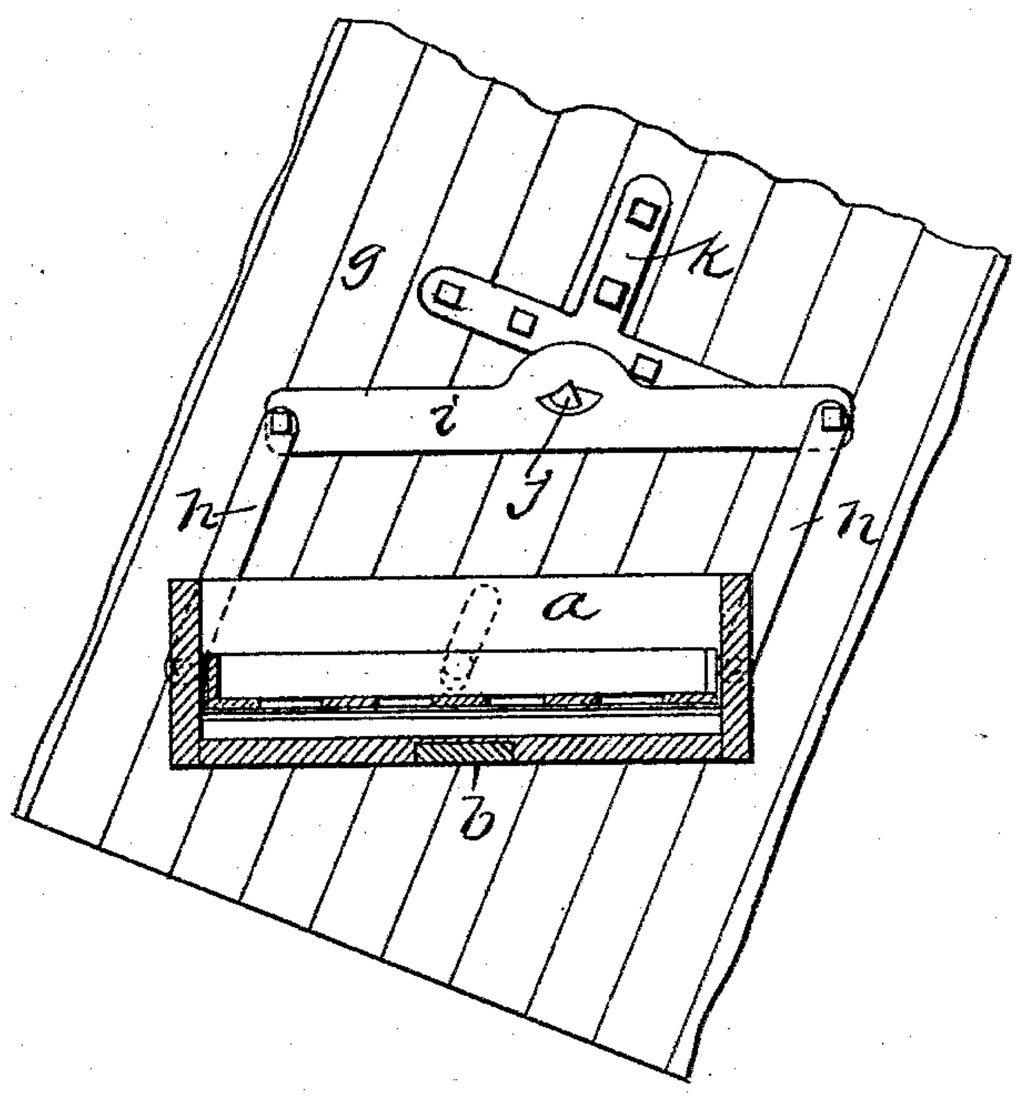

FIG. 9.

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UNITED STATES PATENT OFFICE.

THOMAS F. WELLS, OF WINCHESTER, MASSACHUSETTS.

SELF-LEVELING BERTH.

SPECIFICATION forming part of Letters Patent No. 533,624, dated February 5, 1895.

Application filed May 31, 1894. Serial No. 512,955. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. WELLS, of Winchester, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Self-Leveling Berths, of which the following is a specification.

This invention has relation to ships' berths constructed and arranged to be maintained in level position regardless of the rolling or pitching of the vessel; and it has for its object the provision of such improvements in the manner of hanging and supporting self-leveling berths as will render them practical and acceptable to ship owners and the ocean-traveling public.

To these ends the invention consists of the novel features of construction and combinations of parts hereinafter described in detail and pointed out in the claims.

Reference is to be had to the annexed drawings and to the letters marked thereon, forming a part of this specification, the same letters designating the same parts or features, as the case may be, wherever they occur.

Figure 1 is a perspective view of my improved self-leveling ship's berth, parts of the framing being shown as broken away. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a perspective view of the base or berth proper. Fig. 4 is a perspective view of the mattress or bed support in inverted position. Fig. 5 is a perspective view of the weighting means for the berth detached from the latter. Fig. 6 is a perspective view of a modified form of the weight, shown in Fig. 5. Fig. 7 is a view similar to Fig. 2, but showing the operation of the bed support in the berth proper in case of the pitching of the ship. Fig. 8 is a sectional detail view illustrating the action of the berth in case of the rolling of the ship. Fig. 9 is a detail view showing means for pivoting one end of the berth and governing its operation.

In the drawings—*a* designates the berth proper which may be of the form shown in the drawings, or of any other suitable or known form.

b designates a bar of metal, extending along the longitudinal center from the ends of the berth at its bottom, and preferably set into the material composing the berth so as to be flush therewith, as shown. The said bar, *b*, is provided at its ends with flanged parts or cross pieces *c*, which extend along the ends of the berth so as to assist in stiffening and strengthening it as well as weighting it, as also to provide means by which it may be suspended. In some instances it may be desirable to provide the cross-pieces, *c*, with depending portions, *d*, as shown in Fig. 6, in order to further weight the berth.

e e designate trunnions extending from the ends of the berth through vertical slots, *f f*, formed in the walls or partitions, *g*.

h designates links pivoted at their lower ends to the corners of the berth, and in like manner connected at their upper ends with the ends of a lever, *i*, hung upon a preferably knife-edge lug or bolt, *j*, connected with the cross-shaped plate, *k*, bolted to the frame or partition, *g*, there being one such lever and lug-provided plate, *k*, at each end of the berth. By this construction the lever with the links and ends of the berth form a parallelogram, and in the oscillations of the parts this parallelogram is always maintained.

The trunnions on the ends of the berth and extending into the slots formed in the partitions or walls, *g*, prevent the berth from swinging out into or striking the walls of the room and also provide safety means in case of a breakage of the other berth supports, so that there is no liability of the berth falling or harm occurring to the occupant in case of breakage of such other supports.

The weighted parts to the berth are provided so as to assist in preventing tilting of the berth in case of the occupant shifting position therein.

l designates a roller arranged transversely and centrally in the bottom of the berth, between guide-strips, *m*, and the immediate bed or mattress support rests at its center thereon, and end portions of the bed support resting upon spring-supports, *n*, and the extreme ends are guided by the inclines, *o*. The diameter of the roller, *l*, will be proportioned to the size of the vessel, the diameter of the roller governing also the extent of pitch of the bed, the whole construction and arrangement being such that in case the vessel pitches the bed will still maintain a level end-to-end position, as is clearly indicated in

Fig. 7. This feature of the invention I regard as very important.

p designates a sliding bolt arranged on one end of the berth and adapted to be moved into and out of engagement with one of the supporting links so as to maintain the berth against self-leveling movement when it is desired to hold it stationary. Other means may, however, be provided for locking the berth against its depressions.

In case the berth is suspended at one end only, and has a fixed or stationary bearing at the other end, as may be desirable in some instances, I may provide the trunnion with teeth, *q*, in the form of a segment of a gear which may mesh with a toothed segment, *r*, journaled on a stud, *s*, connected with the plate, *t*, and having curved arms, *u*, which operate on springs, *v*, in curved sockets or guideways formed in or connected with the plate, *t*, so as to govern, limit or regulate the depressions of the berth, as will be understood by an inspection of Fig. 9. A suitable covering plate may be placed over the mechanism shown in Fig. 9, so as to conceal and protect the mechanism.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. A self-leveling ship's berth comprising in its construction the berth proper provided at each of its ends with a trunnion extending into slots in the walls or partitions of the berth apartment, and levers and links, as described, for supporting the ends of the berth, as set forth.

2. A self-leveling ship's berth comprising in its construction the berth proper provided at each of its ends with a trunnion extending into slots in the walls or partitions of the berth apartment, a lever centrally pivoted to a stationary support at each end of the berth and links pivotally connected with said levers and the ends of the berth, as set forth.

3. A self-leveling berth comprising in its construction a berth, a weighted strip extending along the bottom of the berth and over the ends thereof, trunnions upon the ends of said strip extending into the slots in the wall or partition of the berth apartment, and connecting links and levers for supporting said berth, substantially as and for the purpose described.

4. A self-leveling berth comprising in its construction a berth and weighted strap extending along the bottom of the berth and over the ends thereof, trunnions at the ends of said strap extending into the slots in the wall or partition of the berth apartment, and connecting links and levers for supporting said berth; said berth being provided at its ends with inclines, a roller extending transversely across said berth at its middle portion and suitably retained thereon, and a bed support in said berth provided at its ends with supporting springs said bed support resting in its middle portion on said roller and at its ends upon said inclines, and free to slide on said roller or inclines, substantially as and for the purposes set forth.

5. A self-leveling berth comprising in its construction a berth provided at each of its ends with a trunnion extending into suitable slots, and a spring-controlled regulator, and gear connections between the regulator and one of said trunnions, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 23d day of May, A. D. 1894.

THOMAS F. WELLS.

Witnesses:

ARTHUR W. CROSSLEY,

A. D. HARRISON.