(No Model.) 2 Sheets—Sheet 1.

J. H. PORTER.

SELF LEVELING BERTH.

No. 251,632. Patented Dec. 27, 1881.

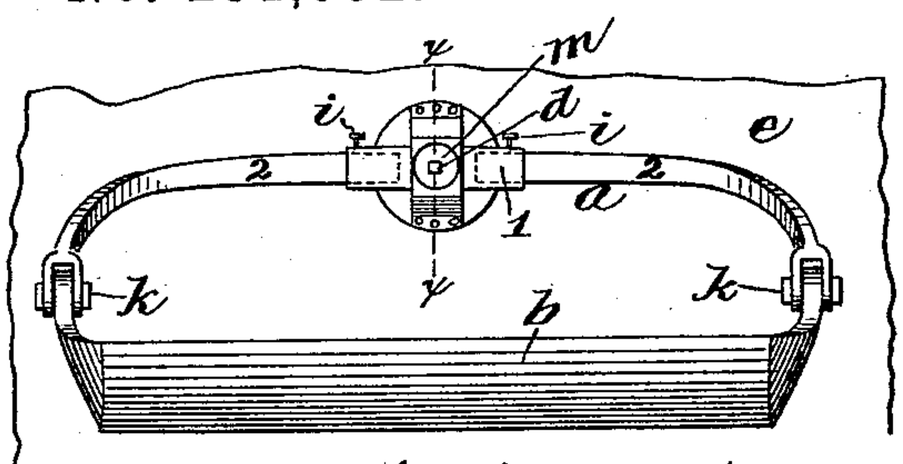

Fig. 1.

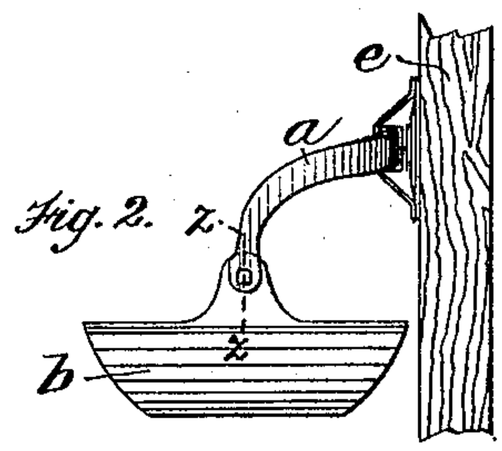

Fig. 2.

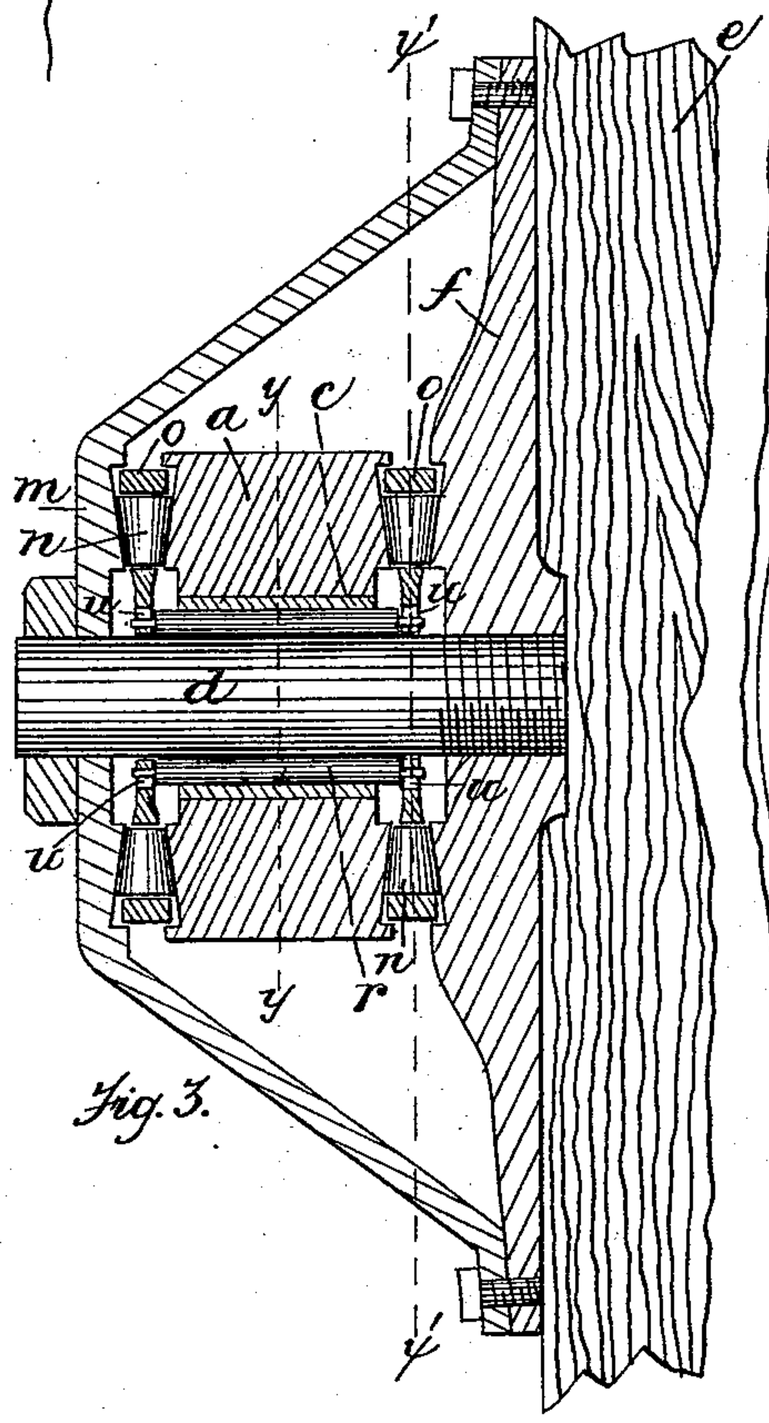

Fig. 3.

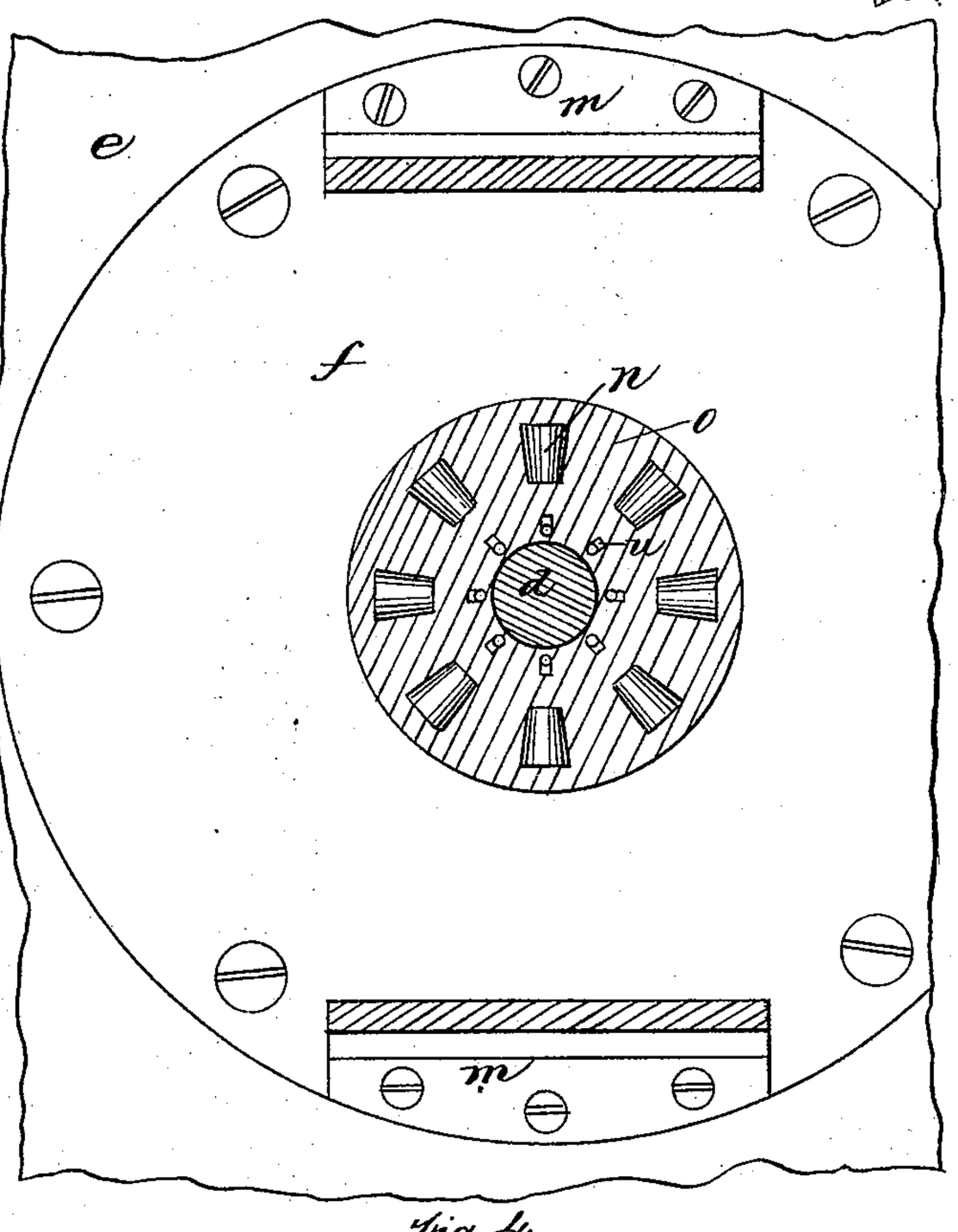

Fig. 4.

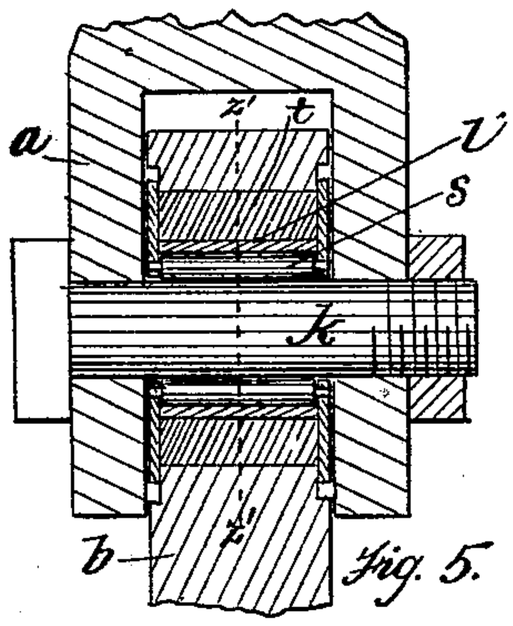

Fig. 5.

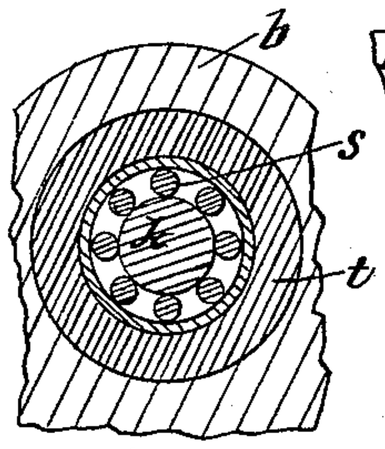

Fig. 6.

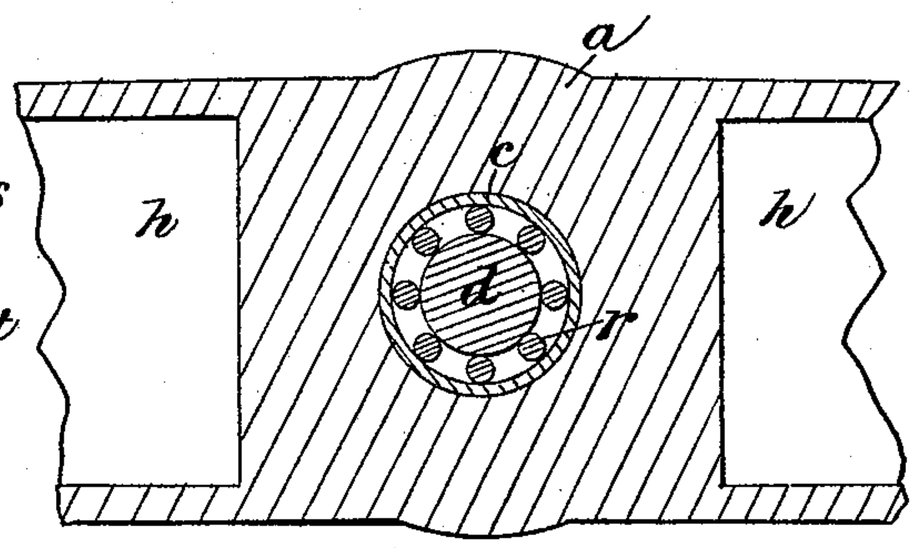

Fig. 7.

Witnesses:
H. G. Wadlin.
S. W. Tomkridge

Inventor:
James H. Porter
by Wright Brown & Thorp

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

(No Model.) 2 Sheets—Sheet 2.

J. H. PORTER.

SELF LEVELING BERTH.

No. 251,632. Patented Dec. 27, 1881.

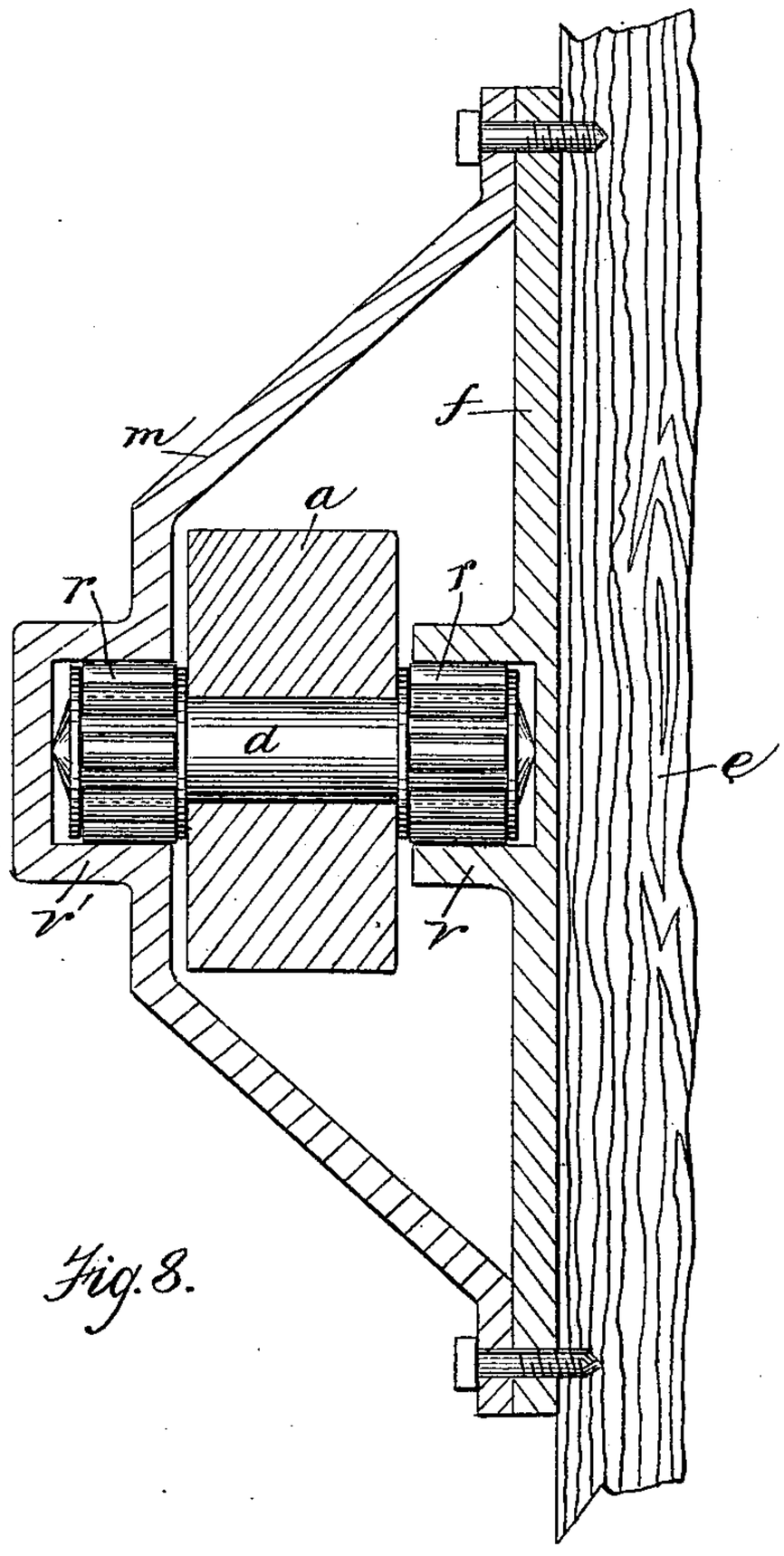

Fig. 8.

Witnesses:
H. G. Bradlin.
S. W. Crowbridge

Inventor:
James H. Porter
by Wright Brown
Attys

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

UNITED STATES PATENT OFFICE.

JAMES H. PORTER, OF BOSTON, MASSACHUSETTS.

SELF-LEVELING BERTH.

SPECIFICATION forming part of Letters Patent No. 251,632, dated December 27, 1881.

Application filed May 20, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. PORTER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Self-Leveling Berths, of which the following is a specification.

This invention relates to that class of self-leveling berths in which the berth is pivoted at its ends to a beam or lever pivoted centrally to a fixed support, the beam and berth being adapted to oscillate respectively in two planes at right angles to each other.

The invention has for its object to provide certain improvements in the form and construction of the beam, whereby the same is prevented from obstructing the space above the berth, and is enabled to be adjusted as to length and as to position with relation to its pivot, and in the means employed for pivoting the beam to its support, and for pivoting the berth to the beam, whereby the friction is reduced to the minimum.

To these ends my invention consists, first, in giving the ends of the beam a lateral curvature, so that the main portion of the beam is located at one side of the berth instead of over the center thereof, as heretofore; secondly, in making the ends of the beam adjustable, so that they can be moved with relation to the pivot of the beam, and can accommodate themselves to berths of different lengths; thirdly, in the provision of certain friction-rollers around the pivots of the beam and of the berth, all of which I will now proceed to describe and claim.

Of the accompanying drawings, forming part of this specification, Figure 1 represents a side elevation of a berth and its supporting-beam embodying my invention. Fig. 2 represents an end elevation of the same. Fig. 3 represents an enlarged section on line *x x*, Fig. 1. Fig. 4 represents a section on line *x' x'*, Fig. 3. Fig. 5 represents an enlarged section on line *z z*, Fig. 2. Fig. 6 represents a section on line *z' z'*, Fig. 5. Fig. 7 represents a section on line *y y*, Fig. 3. Fig. 8 represents a sectional view of a modification.

The same letters indicate the same parts in all the figures.

In the drawings, *b* represents the berth, and *a* the supporting-beam. The beam is provided with a central journal, *c*, adapted to receive a bearing or pivot, *d*, which is suitably attached to a wall or other fixed support, *e*. In the present instance the pivot *d* is secured to a metallic plate, *f*, which is secured to the wall *e*. The beam *a* is adapted to rock or oscillate longitudinally on its pivot *d*. The ends of the beam *a* are curved or extended outwardly or laterally as well as downwardly, so that they project from the wall or support *e* sufficiently to allow the berth *b* to clear the same, as shown in Fig. 2. By this form I avoid any obstruction of the space over the berth by the beam, the latter being set off at one side of said space, excepting at its ends, which are brought over the ends of the berth only. The berth and beam can therefore be made to occupy less vertical space than if the beam were directly over the center of the berth, because the location of the beam at one side of the berth enables the pivot of the beam to be as near the level of the top of the berth as is desirable. Several berths may therefore be placed one above another in the same room. If desired, the beam may be placed below the berth, its ends being curved outwardly and upwardly to meet the ends of the berth.

I prefer to make the beam in three parts, 1 2, 2, the part 1 having the journal *c* and sockets *h h*, (see Fig. 7,) and the parts 2 2 being adapted to be inserted in said sockets and held in place therein by set-screws *i i*. The parts 2 2 can therefore be moved simultaneously in either direction to vary the relation of the berth to the pivot, and bring one end or the other nearer the pivot, if desired, by the occupant. The parts 2 2 may also be moved in opposite directions to lengthen or shorten the beam. The ends of the beam are forked, and are provided with pivots or bearings *k k*. (Seen in Fig. 5.) The ends of the berth have journals *l*, receiving said pivots, which are arranged at right angles to the pivot *d* of the beam, so that the berth can oscillate in a plane at right angles to the plane of oscillation of the beam.

To enable the beam to oscillate with the least possible amount of friction, I provide two series of radial tapering friction-rollers, *n*, located between the opposite sides of the beam and the sides of the plate *f*, and a plate, *m*, rigidly attached to the plate *f*, as shown in Fig. 3. The rollers *n* are confined in place in

slots formed in disks *o o* set on the pivot *d*. I also provide the beam with a series of parallel friction-rollers, *r*, interposed between the journal *c* and the pivot *d*, as shown in Figs. 3 and 7, the ends of said rollers *r* being preferably confined in slots *u* formed in the disks *o*. It will be seen that the rollers *n* and *r*, arranged as shown, prevent the beam from binding on its bearings, in consequence of the lateral leverage or torsional force exerted by the offset berth, the rollers *n* preventing such binding at the sides of the beam and the rollers *r* at the journal *c* and pivot.

To relieve the berth from friction on the pivots *k*, I interpose between the journals *l* and pivots *k* parallel friction rollers *s*. (Seen in Figs. 5 and 6.) These friction-rollers enable the beam and berth to turn easily without the necessity of lubricating their bearings, hence obviating all danger of soiling the bedding by gudgeon-grease.

I prefer to interpose between the journals *l* of the berth and the portions of the berth-frame surrounding said journals a suitable spring or springs to absorb the vibrations or trembling caused by the engines of a steam-vessel. In the present case said spring is composed of a thick tube of rubber, *t*, as shown in Figs. 5 and 6.

I do not limit myself in all cases to the employment of the conical rollers *n* to prevent side binding of the beam *a*.

A modification is shown in Fig. 8, in which the pivot *d* is rigidly attached to the beam instead of to the wall, and is pointed at its ends, said pointed ends bearing against faces formed on the plates *m f*, and preventing the beam from moving laterally, so that its sides cannot come in contact with the proximate surfaces of the plates *f m*, or other equivalent parts, between which the beam is located. The friction-rollers *r* are in this modification arranged in two gangs, and are interposed between the pivot *d* and the bearings *v v'* formed in the plates *f m*.

It is obvious that a chair, settee, table, or other structure may be pivoted to the ends of the beam, instead of a berth, without departing from the spirit of my invention. A short beam may readily be made to support a chair, the chair being pivoted by its arms to the ends of the beam.

I am aware that it is not new to pivot a chair to the offset ends of a beam which is pivoted to a support; but such beam has not been provided with friction-rollers arranged to prevent the beam from binding on its bearings in consequence of the lateral strain exerted by the chair.

Having thus described my invention, I claim—

1. The combination of a beam pivoted centrally to a suitable support and offset or extended outwardly or laterally at its ends from said support, a berth or its equivalent pivoted to said extended ends, and thereby offset from the support of the beam, and provided with an unobstructed space overhead, and friction-rollers arranged to prevent the beam from binding on its bearings in consequence of the leverage exerted by the offset berth, as set forth.

2. The combination of the beam, composed of the central socketed section, 1, pivoted to a suitable support, the adjustable offset or outwardly-extended arms 2 2, and a berth or its equivalent pivoted to said arms, as set forth.

3. The combination of the pivoted beam, the berth or its equivalent pivoted to the ends of the beam, and friction-rollers arranged to prevent friction of the pivoted berth on its bearings, as set forth.

4. The combination of the beam having in its opposite ends pivots or bearings *k k*, the berth having enlarged journals *l l*, and the parallel friction-rollers *s*, interposed between said journals and pivots, substantially as and for the purpose set forth.

5. The combination of the beam having in its opposite ends pivots or bearings *k*, the berth having bearings adapted to turn upon said pivots, and springs interposed between said bearings and the surrounding portions of the berth-frame, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 18th day of May, A. D. 1881.

JAMES H. PORTER.

Witnesses:
C. F. BROWN,
H. G. WADLIN.