

(No Model.)

J. H. PORTER.
Self Leveling Berth.

No. 241,062.

Patented May 3, 1881.

Fig. 1.

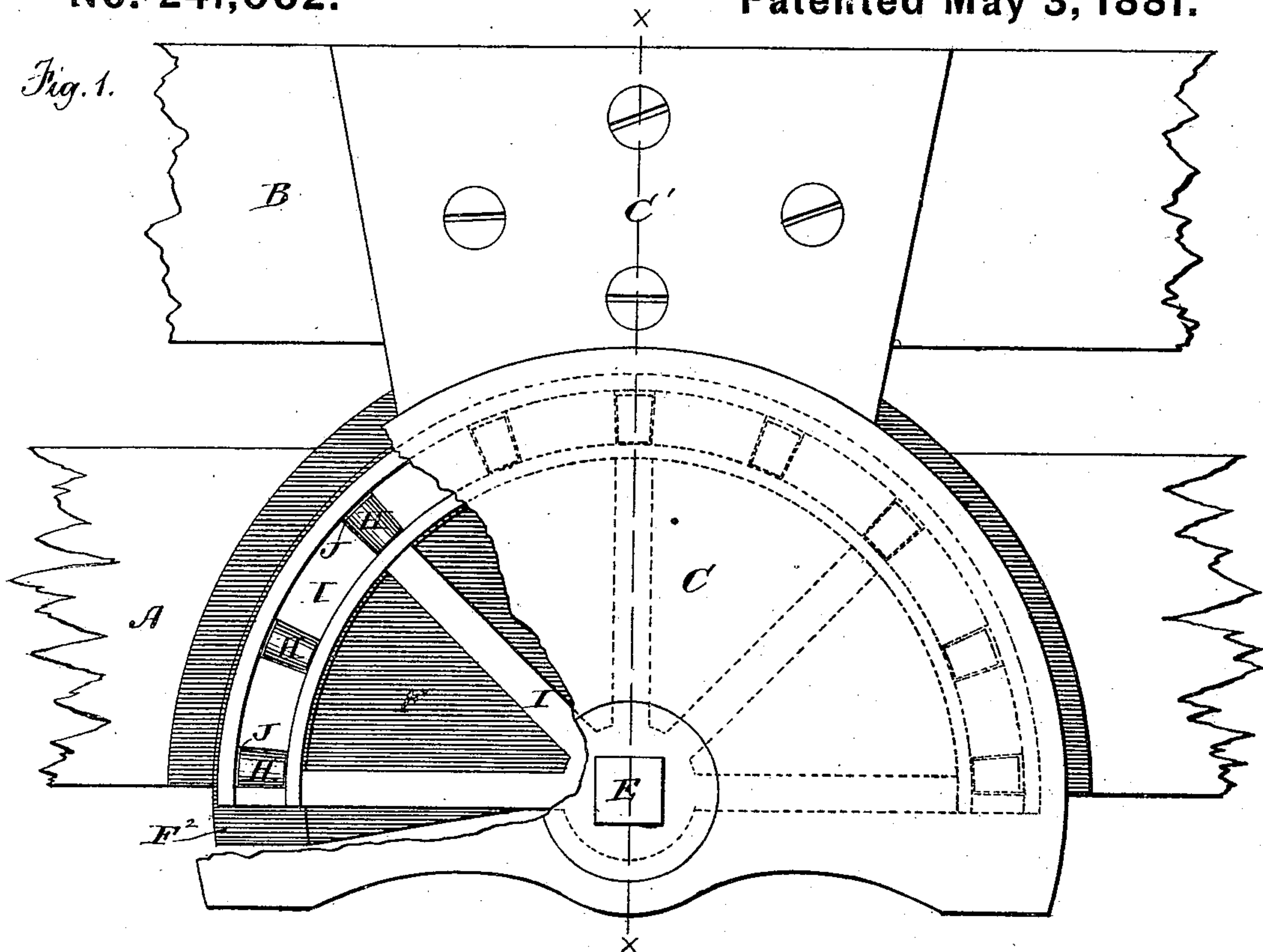


Fig. 2.

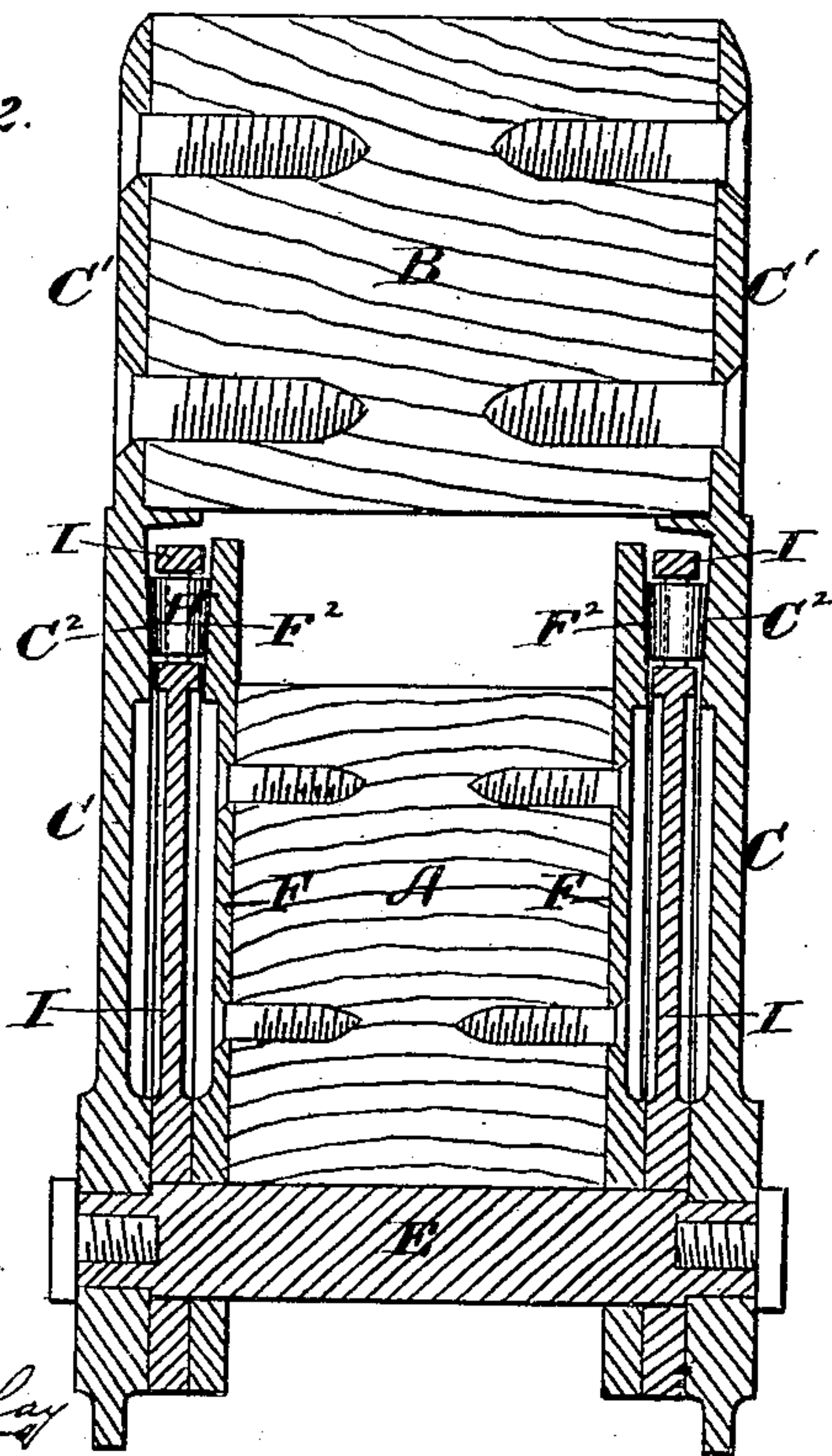
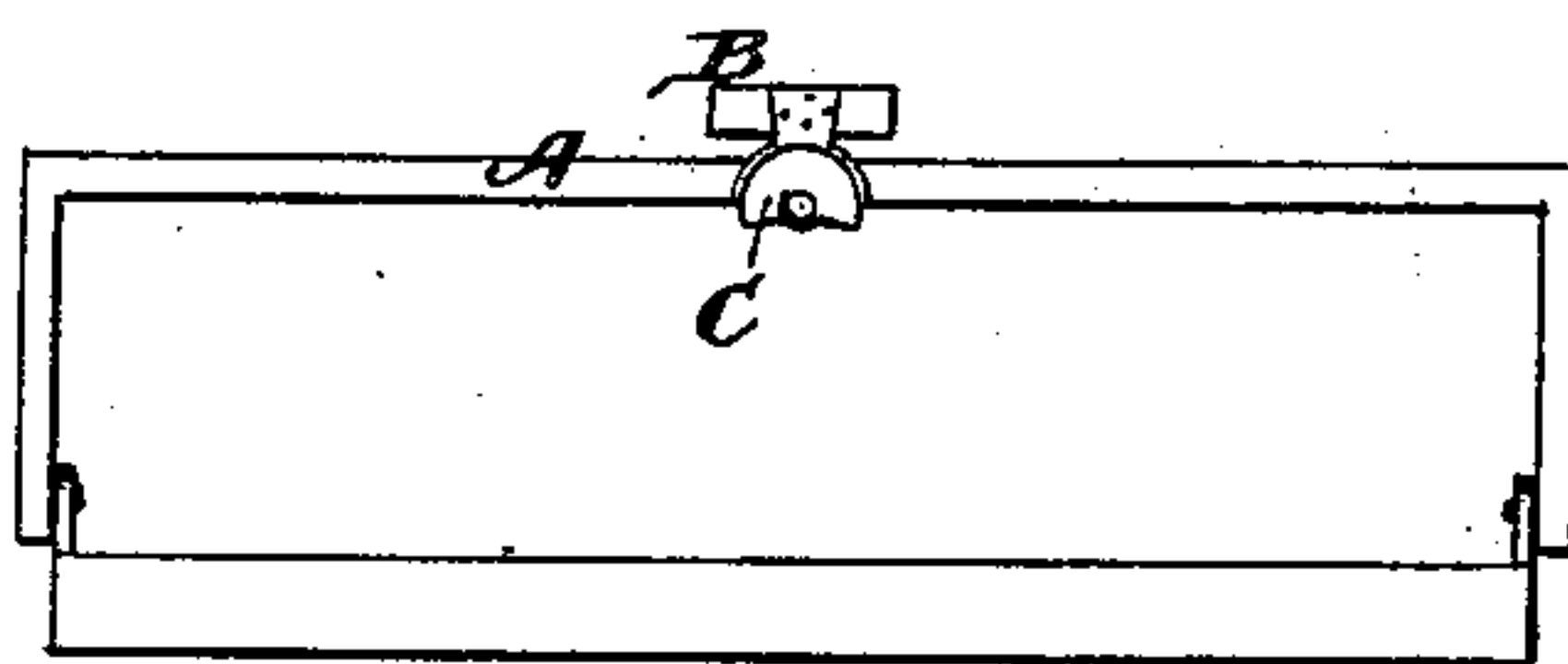


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES H. PORTER, OF BOSTON, MASSACHUSETTS.

SELF-LEVELING BERTH.

SPECIFICATION forming part of Letters Patent No. 241,062, dated May 3, 1881.

Application filed November 26, 1880. (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 Improve-
5 ments in Self-Leveling Berths and other Pivoted Structures, of which the following is a specification.

This invention was conceived and reduced to practice as an improvement on the self-leveling berth patented to Wm. Miller, May 25, 1880, and has for its object to diminish the friction at the point where the oscillating bar or bail supporting the berth is pivoted to its fixed support. The invention, however, is ca-
15 pable of application to other structures having two parts pivoted together.

The invention consists in the means herein-after described and claimed for diminishing friction between two bodies or objects con-
20 nected by a pivot and liable to rubbing contact with each other when one or the other turns on the pivot.

The invention also consists in certain details of construction hereinafter described.

25 Of the accompanying drawings forming a part of this specification, Figure 1 represents a side elevation of an embodiment of my invention. Fig. 2 represents a section on line *xx*, Fig. 1. Fig. 3 represents a side view of
30 the bail or bar and the berth on a reduced scale.

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

In the drawings, A represents the bar or bail to which a vessel's berth is pivoted, as shown
35 in the above-named patent.

B represents a bar or support, of any suitable material and construction, rigidly attached to the vessel and located above the bail A.

40 C C represent metallic plates rigidly attached to the support B, and extending downwardly therefrom, each plate being preferably a semi-circle with a lug or offset, C', as shown in Fig. 1. Through the lower portions of the plates C C extends a transverse bolt, E, which is sup-
45 ported by the plates C C.

50 F F represent semicircular plates attached to the opposite sides of the bail A, so as to move with the latter. The plates F have orifices through which the bolt E passes, the bolt E being the pivot on which the bail A oscillates.

H H represent friction-rollers interposed between the proximate surfaces of the plates C F. Said rollers radiate from a given point at the center of the bolt E, as shown in Fig. 1, 55 and each is the frustum of a cone, which, if continued, would have its apex at the point in the center of the bolt E from which the rollers radiate. The plates C F are provided with semicircular tracks C² F², which are beveled 60 to bear closely against the tapered rollers H, as shown in Fig. 2. The rollers H are kept in their radial position by webs or plates I, placed between the plates C and F, and provided with radial slots J, formed to receive the rollers H, 65 as shown in Figs. 1 and 2, and with orifices through which the bolt E passes loosely.

It will be seen that by the employment of the plates C F and the interposed friction-rollers the friction attending the oscillating mo-
70 tion of the bail A is reduced to the minimum. The form of the rollers H and their tracks C² F² is such that there will be no slipping of any part of any roller on the tracks; hence friction from this cause is prevented. 75

It is obvious that my improvements may be applied to various other pivoted structures besides self-leveling berths without departing from the spirit of my invention.

I am aware that it is not new to employ ta-
80 pering friction-rollers between two surfaces, one or both of which rotate around a center common to both, the rollers being frustums of cones, which, if completed, would reach said center; hence I do not claim, broadly, the use 85 of such friction-rollers.

I claim as my invention—

1. In a self-leveling berth, the combination, with the pivoted bar or bail A, having the berth pivoted to its ends, of the segmental 90 tracks F² F², attached to the opposite sides of said bar and concentric with the pivot E thereof, the segmental tracks C² C², attached to a fixed support and also concentric with the pivot E, the tapered rollers H, interposed be- 95 tween said tracks and radiating from the pivot E, and means for holding said rollers in their radial positions, as set forth.

2. The combination of the fixed support B, the plates C C, attached to said support and 100 provided with the tracks C² C², the pivot E, supported by the plates C C, the bar A, adapted

to oscillate on the pivot, the segmental tracks
F² F², attached to the bar A, the radial tapered
rollers H, interposed between the tracks C² F²,
and the slotted interposed webs or plates I I,
5 supported by the pivot E and holding the roll-
ers H in place, as set forth.

In testimony whereof I have signed my name

to this specification, in the presence of two sub-
scribing witnesses, this 4th day of November,
A. D. 1880.

JAMES H. PORTER.

Witnesses:

C. F. BROWN,
W. CLIMO.