

WALL BED.

Patented Mar. 30, 1909.

3 SHEETS-SHEET 1.

Fig. 1.

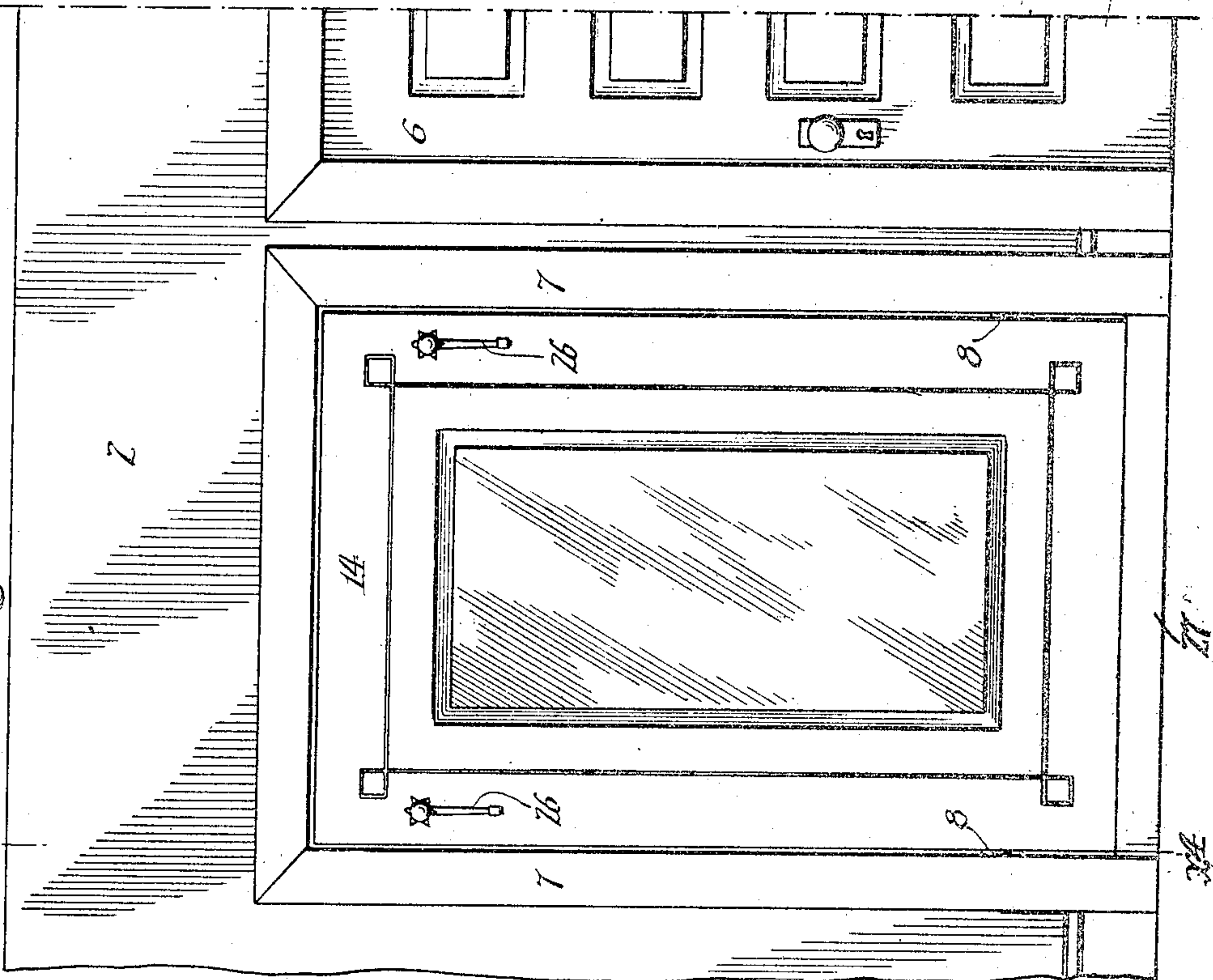
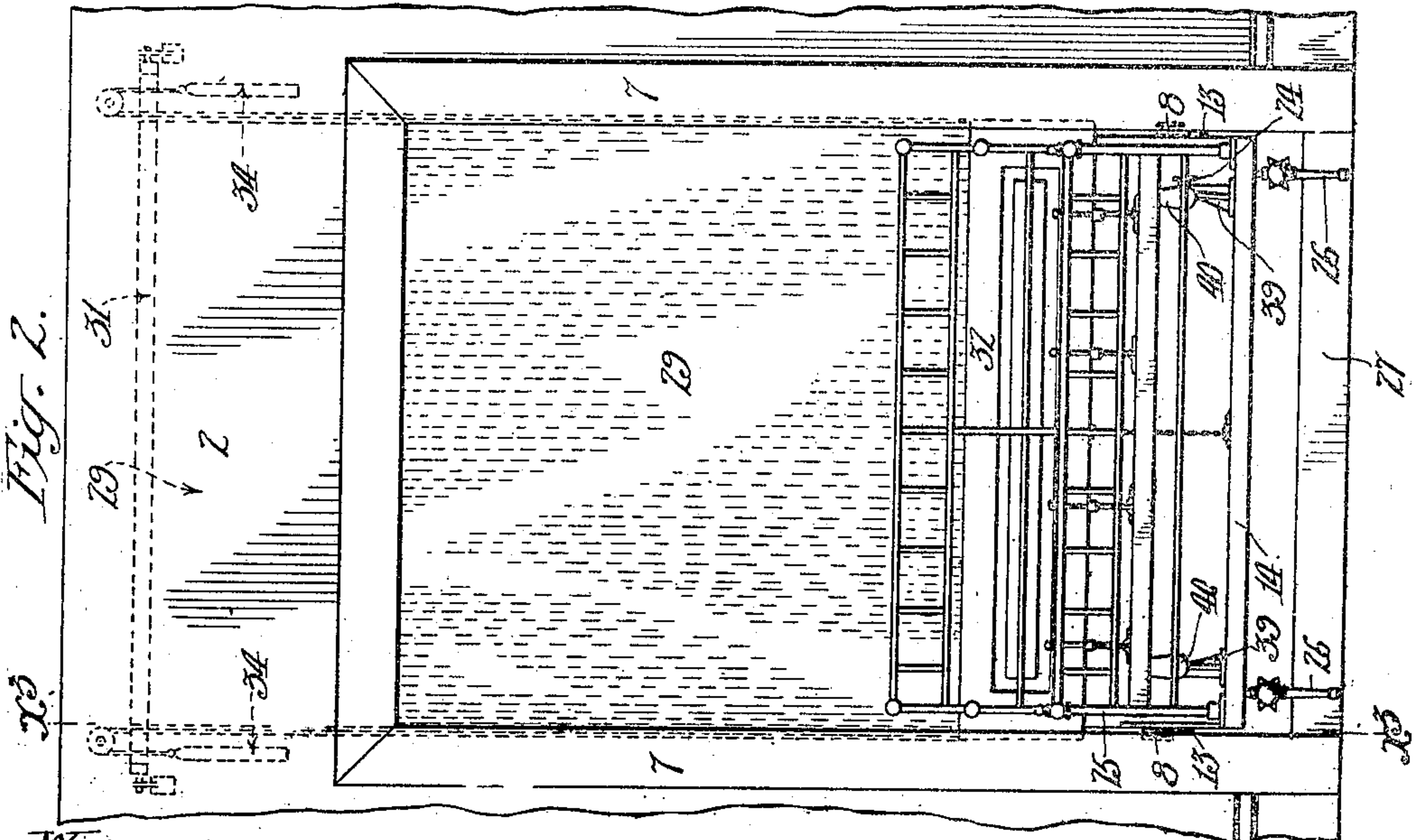


Fig. 2.



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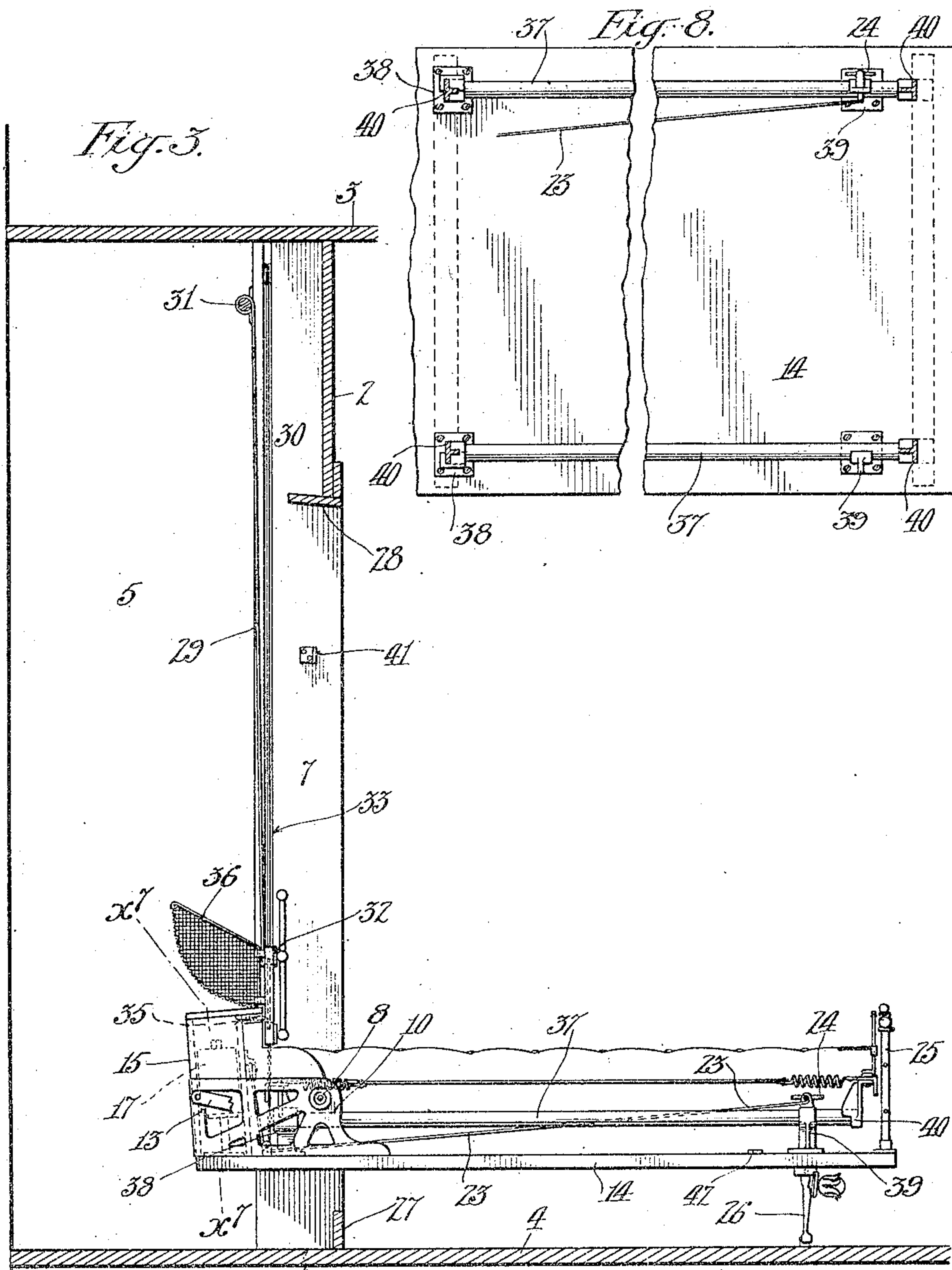
WALL BED.

APPLICATION FILED SEPT. 4, 1907.

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3 SHEETS—SHEET 2.

916,923.



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3 SHEETS—SHEET 3.

Fig. 4.

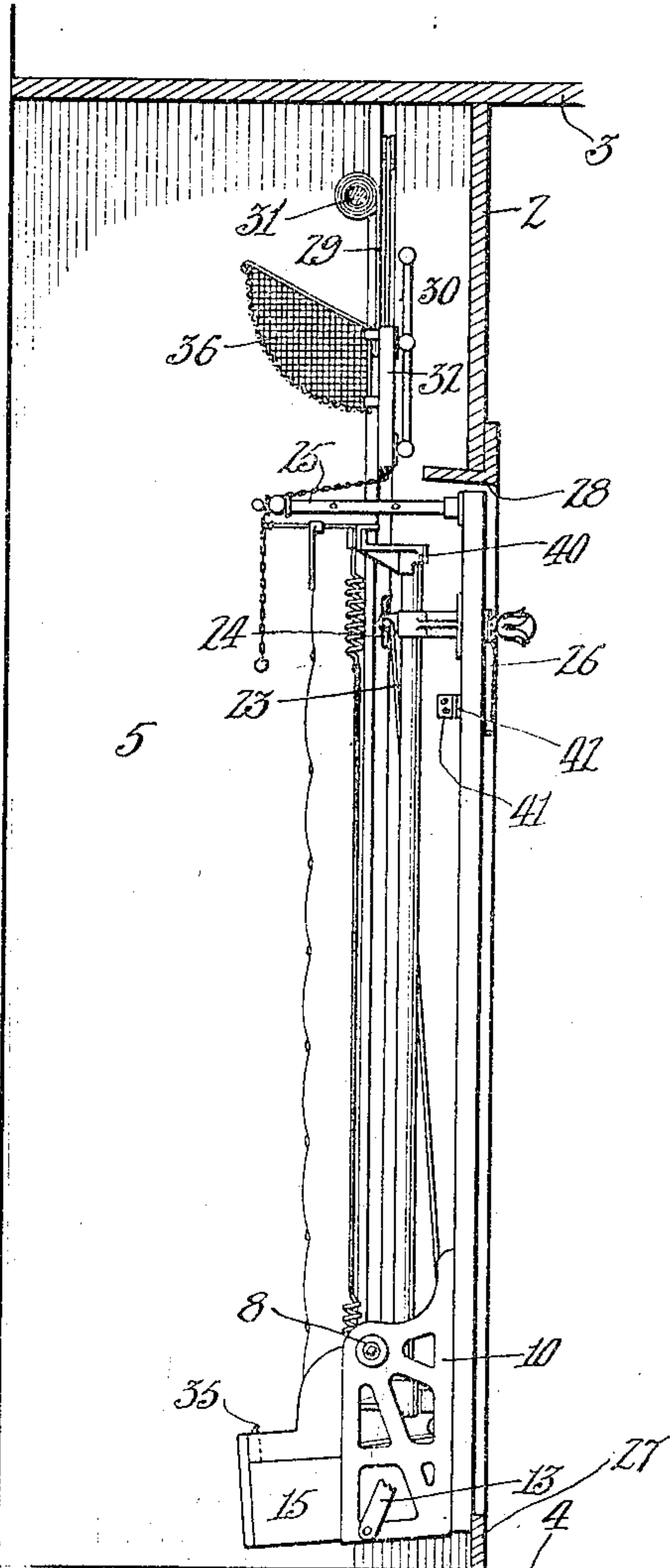


Fig. 5.

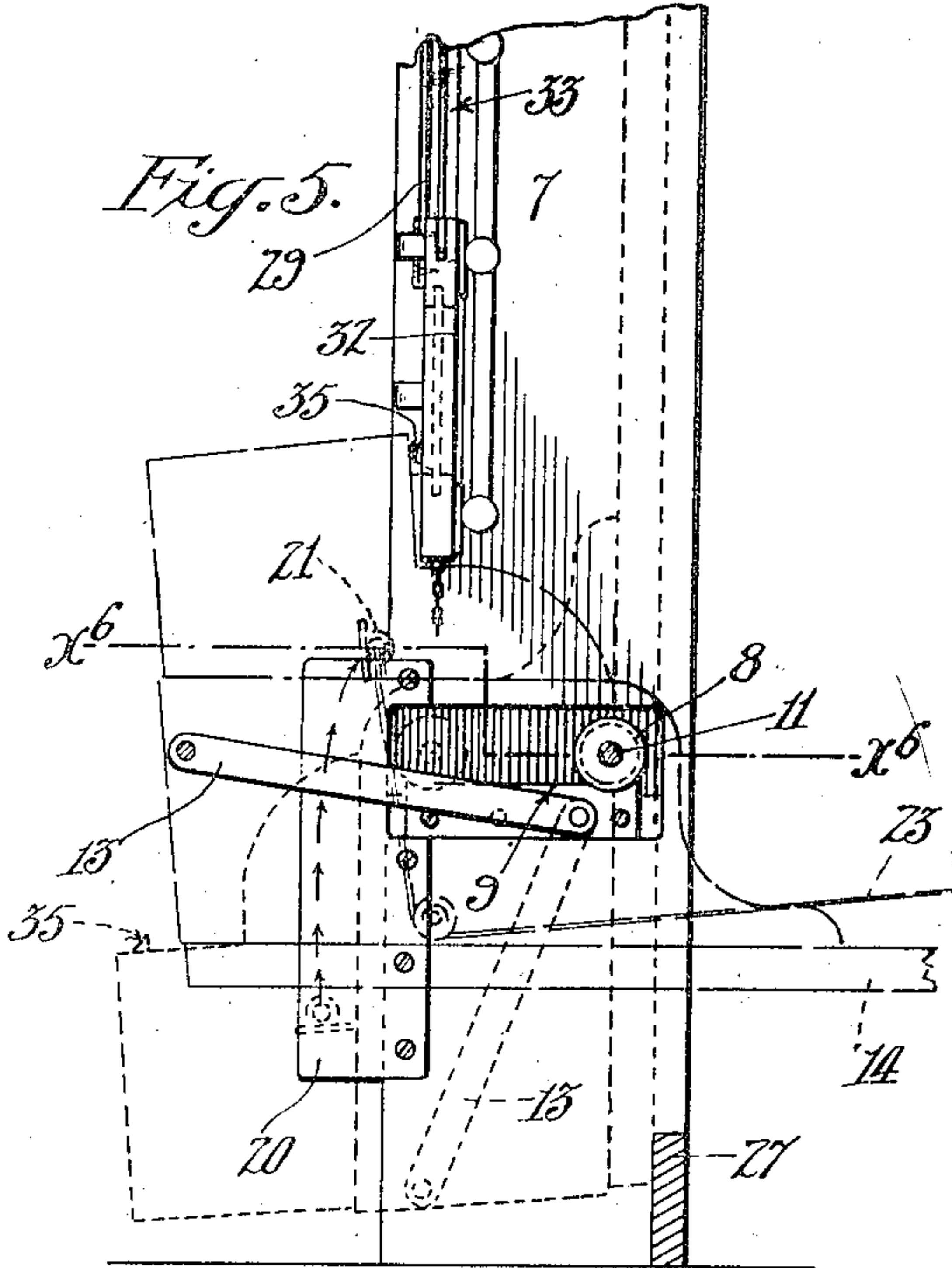


Fig. 6.

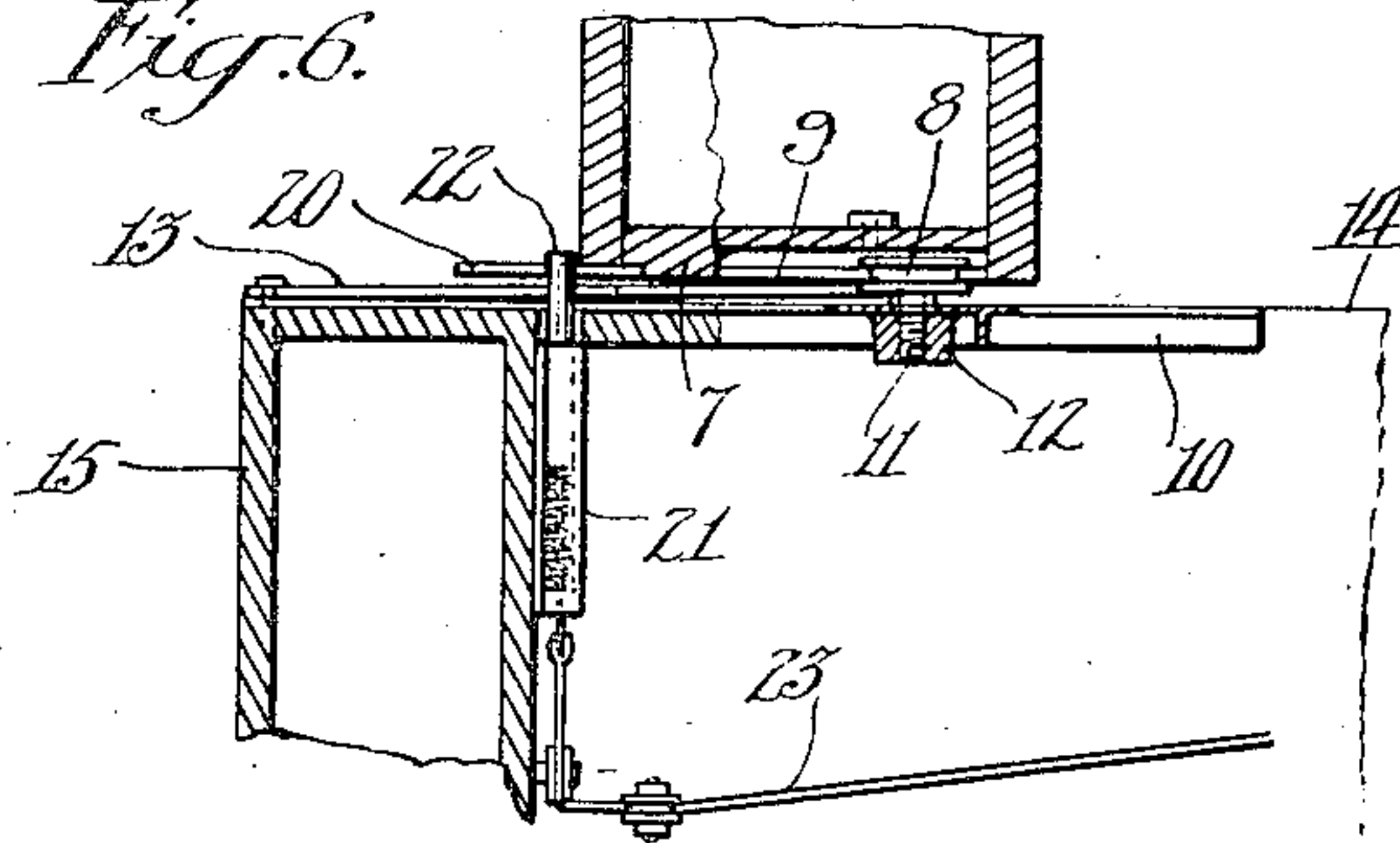
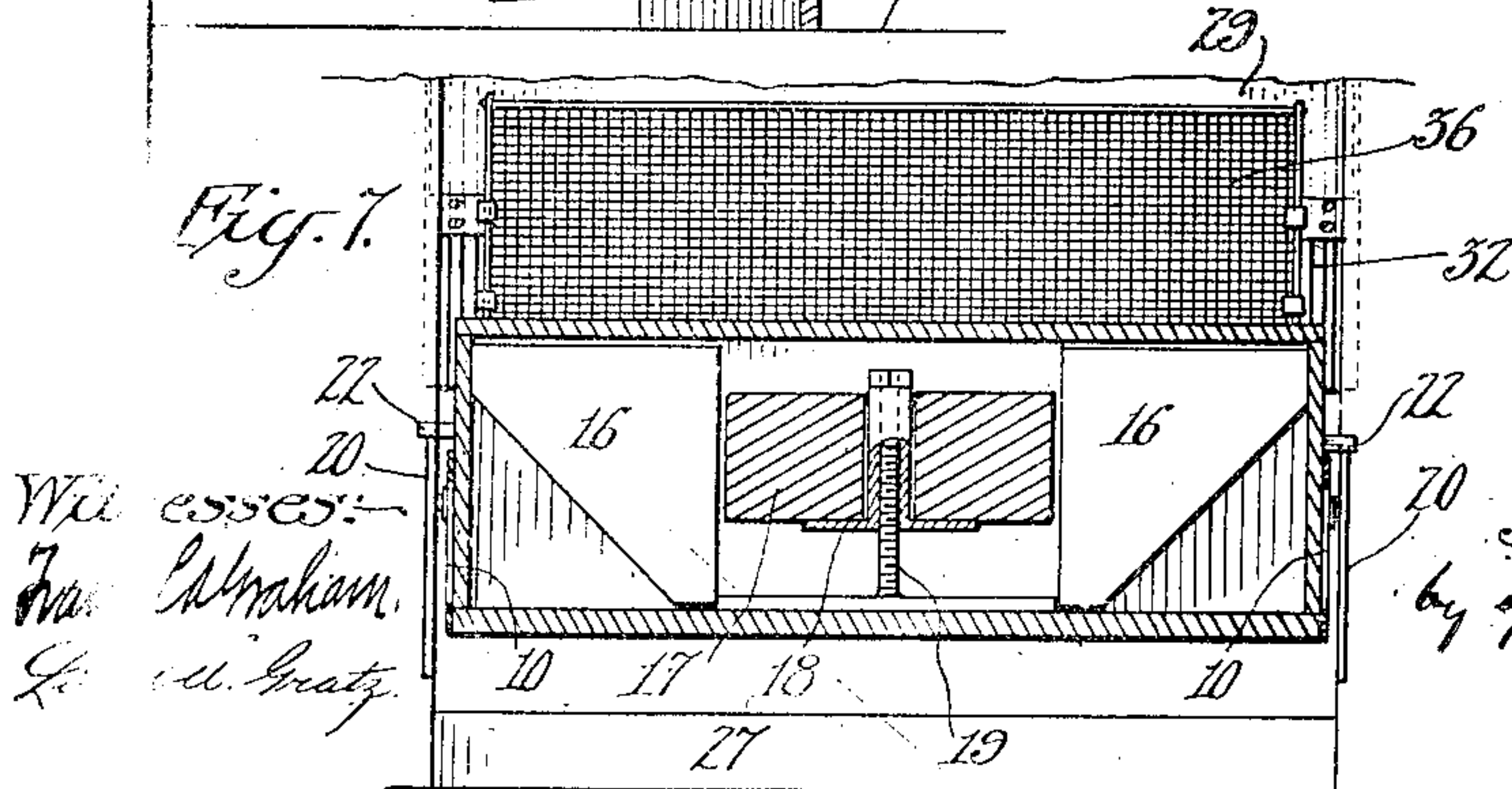


Fig. 7.



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UNITED STATES PATENT OFFICE.

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WALL-BED.

No. 916,923.

Specification of Letters Patent.

Patented March 30, 1909.

Application filed September 4, 1907. Serial No. 391,397.

To all whom it may concern:

Be it known that I, JAMES H. EDMONDS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Wall-Beds, of which the following is a specification.

This invention relates to that class of beds which are arranged to fold into a recess in the wall of a building and, when in raised position, to be concealed by a decorated panel, door or representation of an article of furniture, and, when lowered, to extend into the room in position for use as a bed.

The object of the invention is to provide a simple wall bed evenly counterbalanced so that it can be raised or lowered by the application of a minimum of power, and so constructed that it will remain in any position, in which it is stopped, whether in a raised, a lowered, or an intermediate position.

A further object is to so construct a wall bed that the bottom of the bed will form the closure of the bed-receiving recess and exactly fit into the opening thereof without the use or provision of any folding or supplemental means on the bed and to provide in connection with the bed-receiving recess a supplemental recess thereabove adapted to receive means for closing the opening of the bed-receiving recess when the bed is in its lowered position. Further to provide such closure means with a portion which forms the head-board or head ornamentation of the bedstead, and arranging this closure means to be automatically drawn up into the closure-receiving recess out of the way of the wall bed when the wall bed is in raised position, thus economizing the room required for the wall bed when in its raised position and enabling the use of the space back of the wall bed as closet room for the reception of garments, etc.

A further object of the invention is to provide an improved arrangement of the counterbalances of the bed-frame, and an improved pivotal connection for the bed with the walls of the bed-receiving recess.

With these and other objects and ends in view the invention consists in the constructions and combinations of parts hereinafter described and particularly pointed out in the claims and will be more readily understood by reference to the accompanying drawings in which:—

Figure 1 is a front elevation showing my

improved wall bed in closed position, a portion of the closet door being shown to the right of the wall bed. Fig. 2 is a front elevation with the bed in its lowered position, the arrangement of the supporting and retracting means provided for the recess closure means being shown in dotted lines. Fig. 3 is a vertical sectional view on the line x^3-x^3 of Fig. 2. Fig. 4 is a vertical section on the line x^4-x^4 of Fig. 1 showing the bed in its raised or closed position. Fig. 5 is a side elevation of one side of the frame or casing of the bed-receiving recess, a portion being broken away; the inner end of the bed being shown in dotted lines in its closed position; the cooperating arm or bar and rotating support being shown in full lines in the position such parts assume when the bed is in its open position and being shown in dotted lines in the position such parts assume in the closed position of the bed. Fig. 6 is a partial sectional view on the line x^6-x^6 Fig. 5. Fig. 7 is a partial sectional view on the line x^7-x^7 of Fig. 3, and shows the manner of mounting and adjusting the counterbalance weights, which weights are shown in dotted lines in Fig. 3. Fig. 8 is a partial plan view of the manner of mounting and securing the bed springs or frame on the swinging closure which forms the bottom of the bed frame.

As shown in the accompanying drawings, 2 represents a portion of a wall of a room, 3 the ceiling and 4 the floor thereof. In said wall is provided a closet or recess 5, which may be of any length desired, and is preferably of sufficient depth to not only receive the wall bed but to provide space for the reception of garments and for other ordinary closet use. This wall 2 is preferably provided with two openings into the closet recess 5, one opening being for the reception of a pivoted wall bed and the other being provided with a door 6 (Fig. 1), by which access may be had to the closet for the purpose of storing or removing clothing or other articles therefrom.

The wall bed receiving opening is provided with a frame or casing 7 of any usual preferred construction, and the inner faces of the respective sides of this casing are cut away at a suitable point above the floor to provide a housing for the bed supporting means, as supporting rollers 8, there being one roller for each side of the bed frame. These rollers are mounted to run on a horizontal track 9. This track is preferably

composed of a metal plate inserted into the housing and arranged flush with the face of the casing. Each roller 8 is connected with one of the side pieces 10, of the bed frame, by means of a short shaft 11, the head of which is preferably countersunk into the outer face of the roller 8, and its inner end threaded into a boss 12 on the side piece 10. Each side piece 10 also has connected with it an arm 13, the inner end of which is pivoted on the side of the plate 9, as shown. The weight of the bed in its pivotal movement is supported on the tracks 9 through the rollers 8, and the swinging or pivotal movement of the bed is controlled by the combined action of the rollers 8 and arms 13 as hereinafter set forth.

The bottom 14 of the bed is made of such size as to exactly close the opening into the bed-receiving recess. This closure 14 may have any desired outer appearance when the bed is in folded or raised position. When the bed is in use this closure 14 forms the bottom of the bedstead on which the bed-springs are mounted as hereinafter set forth. To the inner end and upper side of the closure or bottom 14 the side-pieces 10 are attached and the box or counterbalance receptacle 15 is fixed. This box or receptacle 15 may be made integral with the closure 14 or be attached thereto in any preferred manner. A series of weights 16 are placed in this box 15 at each side of the box, leaving room for an adjustable weight 17 in the center of the box. The weights 16 are preferably cut away at their lower and outer sides as shown so as to bring a great portion of their weight at the upper part of the box 15, the outer wall of which is inclined backward so as to form an obtuse angle with relation to the closure or bottom 14 of the bed. The weight 17 is provided with a revoluble sleeve 18 which has a flange on which the bottom of the weight 17 rests. This sleeve 18 is threaded to engage the post 19 mounted on the closure or bottom 14 at an obtuse angle thereto (see dotted lines Fig. 3). The upper end of the sleeve 18 is provided with a head or nut by which the sleeve may be rotated to raise or lower the weight 17.

20 represents a plate attached to the side of the casing 7. Preferably there is a plate 20 on the outer face or side of each casing 7. On the side of the box 15 a casing 21 is attached which carries a spring-actuated bolt 22. This bolt 22 is adapted to lock the bed in its lowered position and to frictionally engage with the face of the plate 20 as the bed is raised or lowered, the friction of the bolt holding the bed steady at any angle to the floor. This bolt 22 is attached to an operated cord 23 which extends to the foot of the bed, a handle 24 being provided by means of which the cord or wire 23 may be pulled to release the bolt. Where a plate 20

is used on each side of the casing 7 I duplicate the locking bolt 22, casing 21 operating cord 23, and connect these with the handle 24.

25 represents the ornamental grille work forming the foot of the bed-frame and is shown mounted on the closure or bottom 14. The closure 14 is provided on its outer and under surface with suitable legs 26. These legs may be of any preferred construction. Those shown in the drawings are of the construction illustrated and described in detail in my application for patent filed of even date herewith.

The length of the closure 14 is proportioned to exactly fit in the opening between the base board 27 and the inclined closure 28, so that when the bed is in closed position the opening in the wall 2 is neatly closed, without the use of any supplemental or pivoted or folding part. To enable me to use a single closure 14 for this purpose it is necessary that provision be made for the passage of the foot 25 into the bed-receiving recess. To accomplish this I incline the closure piece or stop 28 upwardly and backwardly. This closure piece 28 separates the bed-receiving recess from the closure-receiving recess 30, the inclination of the closure 28 being of such angle as to allow the foot grilles 25 to pass when the bed is swung into or out of the bed-receiving recess, the end of the bed-frame or closure 14 coming flush with and completely closing the opening when the bed is in its folded position. This closure or stop 28 also serves as a finish or casement when the bed is swung down for use, and the closure 29 drawn down from the closure-receiving recess 30 to close the opening of the bed-receiving recess. I am thus enabled to make the bed-frame or closure 14 completely fill the front of the recess or closet without providing any extension strips or movable closure devices at the foot of the bed to cover any space between the end of the bed bottom and the top of the bed-receiving recess opening when the bed is folded up.

The object of providing the supplemental or closure-receiving recess 30 is to enable the use of a vertically moving bed-receiving recess closure which can be drawn entirely out of the bed-receiving recess when the bed is folded up thus economizing the room taken up by the bed and conserving the space provided for ordinary closet use. In my application Serial No. 348,819, filed December 20, 1906, I have shown such supplemental or closure-receiving recess and one form of vertically moving closure. In the present drawings I have illustrated this closure as consisting of a curtain 29, of leather or other suitable material. This curtain is mounted on a spring-actuated roller 31, the roller being provided with a pawl to hold it in any desired position against the action of the spring. To the lower or free end of the closure 29 I attach an ornamental

grille work or supplemental head-board 32 to give a bed a finished appearance when in extended position. The casing 7 is preferably provided with grooves 33 forming guides in which this head-board slides. As shown in dotted lines in Fig. 2, I balance this supplemental head-board 32 by weights 34 connected to the head-board by chains passing over pulleys as shown, space being provided inside the casing 7 for the operation of these weights. By thus counterbalancing the weight of the head-board 32, the ordinary light spring of a spring roller is amply sufficient to automatically draw the closure 29 and head-board 32 up into the supplemental or closure-receiving recess 30 when it is desired to fold up the bed. I provide a spring detent 35 on the upper edge of the box or receptacle 15. This detent is adapted to seat into a recess provided in the back of the head-board 32 and hold the head-board 32 and closure 20 in lowered position. When the bed is raised slightly this detent is withdrawn from its seat and the closure 29 released, automatically drawing the closure 29 and supplemental head-board 32 up into the closure-receiving recess 30. Preferably I provide upon the rear side of the movable head-board 32 a basket 36 in which the pillows may be deposited when the bed is to be closed or folded up. This basket 36 will be automatically carried up to the top of the closet space when the closure 29 is released by the release of the retainer or pawl 35, thus carrying the basket and its contents out of the way in the closet back of the bed.

37 represent the rails of the bed-spring frame, which may be of the ordinary or any preferred construction. These rails 37 are fastened to and supported upon the surface of the closure 14 as shown best in Fig. 8, where it is seen that the inner ends of these side rails rest in standards arranged to receive and retain the same, the inner ends of the rails being provided with flanges adapted to seat in sockets provided in the standards 38. The foot ends of the rails 37 are mounted in semi-circular seats in standards 39, the seats being open toward the center of the bed, the end bars 40 of the springs (see Figs. 3 and 4) holding the springs from collapsing inward.

Assuming that the wall bed has been closed and it is desired to lower the same: The parts will be in the position shown in Fig. 4. The operator will take hold of one of the legs 26. A gentle pull will cause the bed to swing downward, the rollers 8 moving outward along the track 9 and the bed frame swinging with the arm 13. As the lower end of bed, or out end of the counter balance box or receptacle 15 is inclined downwardly and backwardly (when in this position) it will clear the floor freely. The continued movement of the bed downward also draws or

moves it forward slightly out of the recess. The friction of the bolt 22 aids in holding the bed at any angle at which it is desired to stop the bed. However by arranging the counterbalance weights 16, 17 as shown their leverage is shifting in the same proportion that the leverage of the weight of the front portion of the bed changes, and the bed is thus always exactly counterbalanced. When the closure 14 nears a horizontal position the legs 26 assume a vertical position to support the bed. When the bed has been lowered to a horizontal position the bolt or dog 22 locks over the end of the plate 20 and until released the bed cannot be raised. The operator then draws down the bed-receiving recess closure 29 until the dog or pawl 35 engages in the seat therein, locking the closure against upward movement. When it is desired to raise the bed, the part 24 is turned to draw the bolt 22 from back of the plate 20. The operator then raises the bed slightly. This releases the pawl 35 and the closure 29 is automatically drawn up into the closure-receiving recess 30, carrying with it the ornamental head-board 32 and the basket 36. As the bed is raised the rollers 8 travel backward on the track 9 and the arm 13 guides the bed downward around into position.

Having thus described my invention I claim as new:—

1. In combination, an apartment wall having a bed receiving recess, a counter balanced bed having its weighted end extending within said recess, tracks superposed on the side walls of the recess, rollers carried by the bed and running on said tracks, pivot means connected to the end of the bed within said recess and connected to each wall below its track, and a closure for said recess operable to close the same when the bed is lowered for use.

2. An apartment wall having a bed-receiving recess, a bed provided with a closure of the size of said opening, rollers on said bed, tracks whereon said rollers move, pivot arms connected to the rear portion of said bed and to the walls of said recess and cooperating with said rollers to move said bed pivotally and bodily, counterbalances carried by said bed within said recess, and a vertically moving closure for said recess when the bed is lowered, said closure being released by the commencement of movement of said bed upward.

3. In an apartment wall having a bed-receiving recess, a counterbalanced bed pivotally mounted in said recess and provided with a closure therefor, a closure-receiving recess thereabove, a vertically moving closure for said bed-receiving recess, means for drawing said closure up into said closure-receiving recess, and a counterbalanced head-board carried by said closure and moving therewith.

4. An apartment wall having a bed-receiving recess, a counterbalanced bed pivotally mounted in said recess and provided with a closure therefor, a closure-receiving recess above the bed recess, a vertically moving closure for said bed-receiving recess, means for drawing said closure up in said closure-receiving recess, a counter-balanced head-board carried by said closure, and means carried by the bed for locking and releasing said closure.

5. In combination, a tilting bed, a counterbalance weight for the bed, and a rearwardly inclined screw for adjusting the counterbalance weight with respect to the fulcrum of the bed.

6. In combination, a tilting bed adapted to fold into a recess, a curtain roller at the upper part of the recess, a curtain on the roller, a head-board below the curtain and connected thereto, counterbalance weights connected to the head-board by flexible connections whereby when the bed is down the head-board and curtain may be drawn down to close the recess.

7. In combination, a tilting bed adapted to fold into a recess, a curtain roller at the upper part of the recess, a curtain on the roller, a head-board below the curtain and connected thereto, counterbalance weights connected to the head-board by flexible connections whereby when the bed is down the head-board and curtain may be drawn down to close the recess, and means operated by the bed for detachably engaging the

head-board to hold the head-board and curtain down when the bed is down.

8. In combination, an apartment wall having a bed-receiving recess, a bed having one of its ends extended within said recess, tracks superposed on the side walls of the recess, rollers carried by the bed and running on said tracks, pivot means connected to the end of the bed within said recess and connected to the wall below said track, a closure for said recess operable to close said recess when the bed is lowered for use, and counterbalance means carried on the bed within said recess and adjustable with respect to the fulcrum of the bed in a direction on a line at an angle to the bed embracing an arc of more than 90° .

9. In combination, an apartment wall having a bed receiving recess, a counterbalanced bed having its weighted end extending within said recess, tracks secured to the side walls of the recess, bed supporting means carried by the bed and engaging with said tracks, pivot means connected to the end of the bed within said recess and connected to each wall below its track, and a closure for said recess operable to close the same when the bed is lowered for use.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 29th day of August 1907.

JAMES H. EDMONDS.

In presence of—

F. M. TOWNSEND,
FRANK L. A. GRAHAM.