

J. H. EDMONDS.
FOLDING BED.

APPLICATION FILED SEPT. 22, 1908.

941,982.

Patented Nov. 30, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

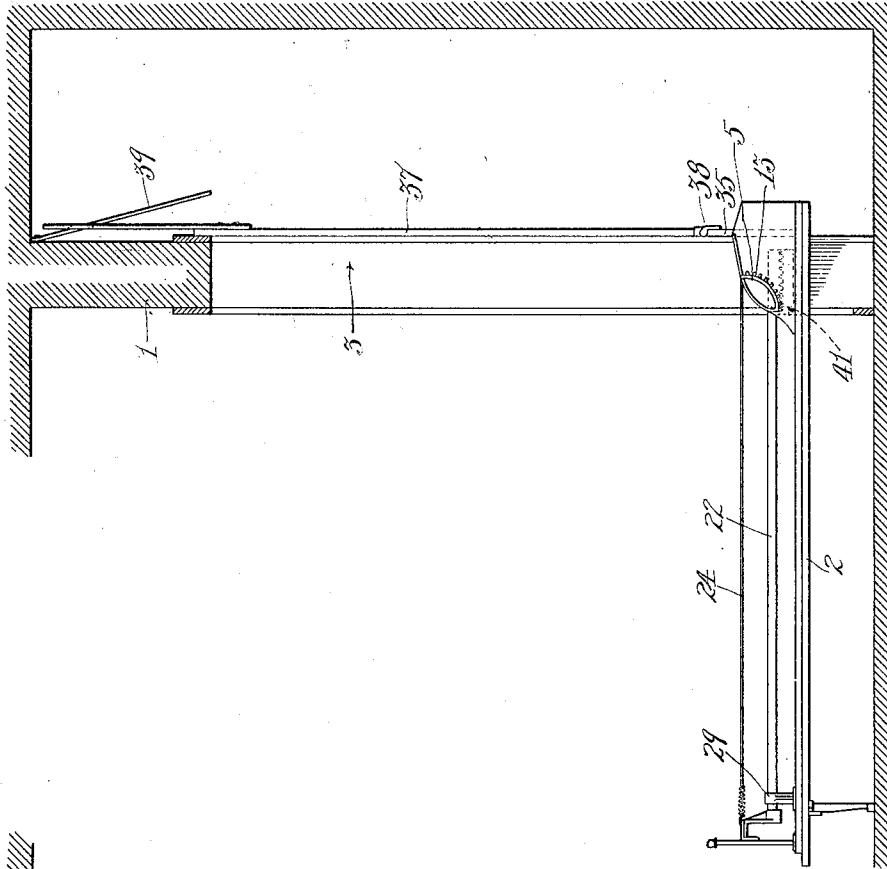
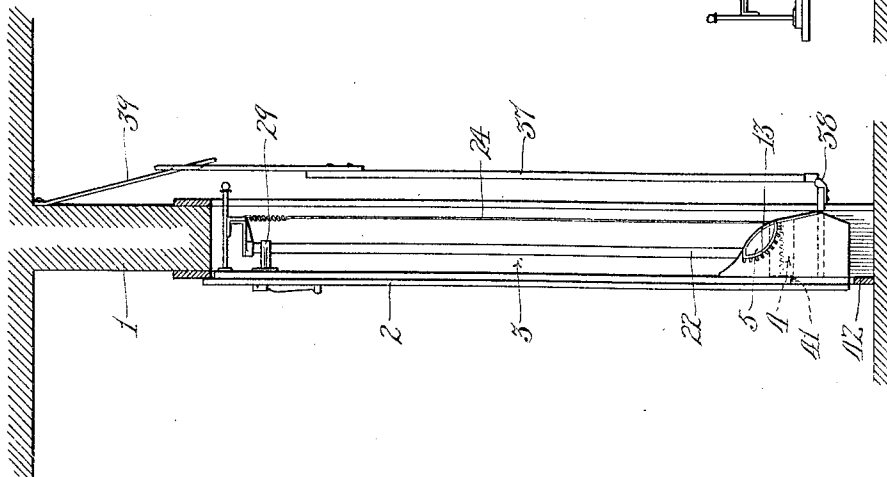


Fig. 2.



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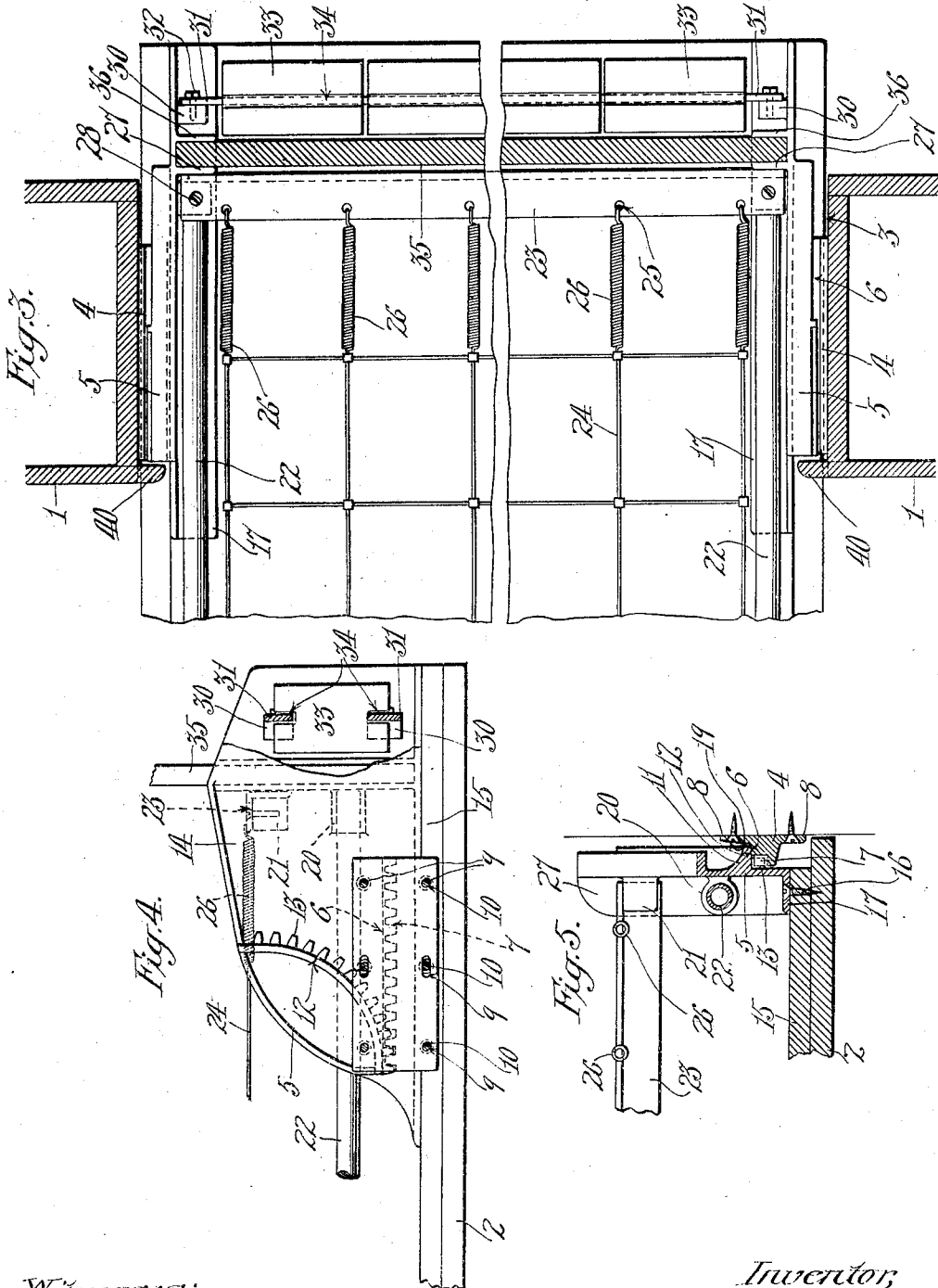
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JAMES H. EDMONDS, OF LOS ANGELES, CALIFORNIA.

FOLDING BED.

941,982.

Specification of Letters Patent.

Patented Nov. 30, 1909.

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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 a new and useful Improvement in Folding Beds, of which the following is a specification.

This invention relates to folding beds and more particularly to the formation of the pivot means at the head of the bed whereby the bed frame or support can be quickly and accurately secured within its casing or in a recess formed in a wall.

Another object is to provide such pivot connections as will have a smooth, even movement, without the possibility of any slippage occurring between the contacting faces of said portions while the bed is being moved in either direction to raise or lower the same.

Another object of the invention is to provide means for cheaply and quickly securing the mattress support or frame firmly and rigidly in position.

Still another object is to provide simple and efficient means for connecting weights to the inner end of the bed without the use of the usual box or pocket for the same.

Other objects and advantages will appear as the construction and operation of the invention is further disclosed in the specification and by means of the accompanying drawings which form a part thereof, and in which drawings—

Figure 1 is a vertical, sectional view of one form of bed embodying my invention showing the same open or lowered for use. Fig. 2 is a similar view showing the bed closed. Fig. 3 is a broken, transverse, horizontal, sectional view of the inner end of the bed. Fig. 4 is a broken side elevation of the same. Fig. 5 is a broken, vertical, sectional view through the pivot connection upon one side of the bed looking toward the inner or weighted end of the same.

Referring more particularly to the drawings which are for illustrative purposes only and, therefore, are not drawn to any particular scale, 1 indicates a receptacle which may be in the form of an outer shell or casing or a recessed wall, the latter being shown in the drawings. Pivotaly mounted within the same so as to have one end swung up into or moved downwardly out of the same

is a bed frame or support 2, which may be of any desired shape, size and construction, the only requirement being that it be of sufficient width and length to properly fit into the opening 3 in the wall or casing in the usual manner. Secured upon the opposing faces of the walls of the opening 3 near the lower end of the same are two pivot members 4, 4, which are adapted to hold or support the inner end of the bed by means of two other members 5, 5, which are secured upon the sides of the bed in position for movably engaging with the members 4.

In the drawings I have shown the members 4 as being each in the form of a straight rack having a smooth bearing surface 6 and a surface parallel therewith provided with shoulders or serrations, preferably in the form of teeth 7. The racks are each provided with means for securing them in position, as one or more flanges 8, two being shown in the drawings, and each provided with perforations 9 for the reception of fastening screws or bolts 10. If desired, two of the openings or perforations 9 may be elongated in the form of slots, as shown in Fig. 4, to permit of the longitudinal adjustment of the rack to adapt it to hold or support the bed in its proper position relatively to the wall or casing, after which the fasteners 10 may be passed through the other perforations for rigidly securing said member in position. The other pivot member 5 is formed or provided with a segmental portion, preferably in the form of a flange 11 which has a smooth surface 12 adapted to rest upon the surface 6, and also a surface parallel therewith with teeth or serrations 13 for meshing with the teeth 7 of the pivot member 4. The length of the segment preferably corresponds with that of the rack so that when the bed is moved from one position to the other the fulcrum or point of contact or engagement between the teeth and the smooth portion of the segment will shift from one end of the rack to the other. The main portion of the member 5 is preferably in the form of a plate 14 which is adapted to be secured to the bed 15 in any desired manner, as by screws or fasteners 16 through a laterally projecting flange 17. The flange 17 is straight and extends from one edge of the plate on the side opposite the flange 11 having the bearing surface 12 and the teeth

13. By constructing it in this manner the rack engaging side of the member 5 can be secured in position vertically immediately adjacent to the member 4 so as to stand substantially parallel with the inner face of the wall 3. This will afford a very cheap and efficient means of operatively supporting the bed so that it can be moved from one position to the other without the shock or jar generally incident to toothed structures of this kind, and at the same time all possibility of the smooth contacting surfaces slipping upon each other during such movement is entirely prevented by the engagement of the meshing teeth of the two members.

In assembling the parts of a bed embodying the portion of my invention so far disclosed, the segmental members 5 are rigidly secured to the bottom or sides of the bed frame the proper distance from the inner end. The rack members 4 are then located substantially at the points which they are to occupy and are temporarily secured in position by passing the fasteners through the elongated slots only. The inner end of the bed is then inserted into the opening with the segmental portions above or out of engagement with the racks until the proper position of the bed has been reached when the bed is lowered so as to cause the teeth of the segments to properly mesh with the teeth of the rack. The racks are then moved longitudinally, if necessary, to properly position the bed relatively to the opening, after which the other fasteners 10 are passed through the round perforations in the flanges and the racks are thereby rigidly secured in their absolutely correct position, after which the bed can be operated in the ordinary manner. After that the bed can be removed or reinserted into the casing by simply lifting up its inner end and drawing it out or replacing it as above described. To prevent undue friction between the edge of the flange 11 and the upper flange 8 of the rack member 4 as the bed is being raised and lowered, the inner face of said flange 8 is preferably beveled or inclined so as to stand away from the flange 11 as shown at 19, except at the bottom of said flange 8.

When it is desired to utilize the pivot member 5 as a standard for supporting the bed or mattress portion, it is provided with suitable lugs 20 and 21 which are preferably located to the rear of the toothed portion, as shown more particularly in Fig. 4, and on the side opposite thereto, as shown more particularly in Fig. 5. One of the lugs is preferably hollow for the reception of the inner end of one of the side rails 22 of the bed frame and the other one extends out bodily from the plate 14 in position for being engaged by a cross piece 23 that extends from one side of the bed to the other and is provided with means for connecting

the woven wire mattress 24 thereto, as perforations 25, for the reception of the ends of springs 26, when the latter are used.

It is obvious that the standard portion of the segment member 5 may be segregated and made in one piece in the form of a standard for carrying the lug 21 for supporting the cross piece 23, as well as the hollow lug 20 to receive the side rail 22, and I claim any such construction to be within my invention irrespective of the relative location of such standard with the segment portion. The manner of supporting the cross piece 23 which carries the mattress supporting means and the side rails by means of lugs 20 and 21 as shown provides cheap and simple means of construction as well as strong and durable means in operation. The standard element may also be used to carry the cross piece 23, side rails 22, the weight bars 31, and head board pockets formed by flanges 27 and 36 irrespective of forming such standard in conjunction with the segment. The cross piece 23 is preferably formed from angle iron and is of just sufficient length to engage at its ends with the lugs 21 upon the two members 5 with one flange extending down between said lug and a flange 27, when the latter is used, and the other lug or side of the iron rests flat upon the top of said lugs and is preferably secured in position thereon, as by means of a bolt 28 which is passed down into or through the lug as may be desired. The mattress support or woven wire 24 may be of any desired form and construction and the outer end of the bed rails 22 may be supported at the desired height above the bed bottom or carrier 2 in any desired manner, as by standards 29.

By constructing the parts in this manner a very light, strong and rigid bed is provided, which may be formed entirely from metal, the support 15 being in the nature of a metal strip which can be secured to the bed bottom 2 in any manner. The parts can be assembled or disassembled for cleaning or other purposes with but very little trouble, for by removing the bolts 28 the cross pieces 23 may be lifted off the lugs 21 and the rails 22 drawn out of the sockets 20 and lifted off the supports 29. They can be reassembled almost as quickly by reversing the above described operation and finally inserting the bolts 28 through the cross pieces 23 into the lugs 21.

The pivot members 5 may be further utilized for supporting the weights or counterbalances and thereby dispense with the use or necessity of boxes or receptacles for holding the weights. In the drawings I have shown the plate portions 14 of said members extended beyond the bed frame supporting portion and provided with two lugs 30 which project inwardly or toward

the pivot member 5 upon the opposite side of the bed. The lugs 30 upon each of the extended portions of said member 5 are arranged at a suitable distance apart vertically and two weight supporting bars 31 are secured at their ends to the top and bottom lugs respectively of the two members by means of bolts 32. A sufficient number of weights 33 are then placed between said bars to properly counterbalance the bed and permit of its being moved up or down with the expenditure of but little power or energy. The top and bottom edges of the weights 33 are provided with recesses 34 for the reception of the bars 31, whereby said weights are held in position and can be quickly secured to or removed from the bed by removing or replacing the upper bar 31, as by removing or replacing one or both of the screws 32. The pivot members 5 may be still further utilized for supporting or holding the head board 35, as by providing its inner face with a flange 36 adjacent to and parallel with the flange 27 between which flanges the head board can be removably held, as in a pocket, or the head board may be permanently secured therein by ordinary fastening means. The head board extends entirely across from one of said pivot members 5 to the other and is adapted to have the panel or closure 37 pivotally secured thereto at 38 in any desired manner. The upper end of the panel 37 is adapted to be held or properly guided in its vertical movement by any suitable means, as the downwardly inclined guiding member 39, to cause it to close the opening 3 when the bed is lowered and to move to the rear out of the way of the bed clothing when the bed is closed.

To provide a neat and perfect closing means for the front of the opening 3 in the wall or casing 1, the edges of the bed bottom or support 2 are extended laterally so as to overlap the edges of the casing as shown at 40, and the lower portion of each of said casings 40 is cut away at its lower end a sufficient distance, as to the point 41 to permit of the projecting edges of the bed bottom or support 2 passing in under them, as shown in Fig. 1, when the bed is lowered. The inner end of the bed may be supported at such a point relatively to the bottom of the casing that when it is closed the lower ends of the bed bottom 2 will just clear the floor or they may be located at such a distance above said lower ends that it will be necessary to place a base piece 42 across the lower portion of said opening so as to close the same when the bed is in its elevated or closed position, as shown in Fig. 2.

Having described my invention, I claim:

1. In a folding bed, intermeshing pivot members, each member provided with a smooth contacting surface and with intermeshing means, said contacting surfaces en-

gaging with each other for supporting the bed and providing a rolling contact, and the intermeshing means engaging with each other to prevent slipping of the smooth contacting surfaces when the bed is actuated.

2. In a folding bed, two pivot members, each provided with serrations and having a smooth surface parallel with such serrations, said smooth surfaces being arranged to provide a rolling contact to support the bed.

3. In a folding bed, two pivot members, each provided with a smooth faced flange and with intermeshing teeth lying along such smooth surface, one of said members being in the form of a straight rack and the other curved into the form of a segment and adapted to roll upon said rack.

4. In a folding bed, two pivot members provided with smooth engaging surfaces and with intermeshing teeth, one of said members being in the form of a rack and provided with perforated flanges for holding it in position, one of said perforations in each flange being elongated longitudinally of the rack to permit of longitudinal adjustment, and the other perforations being circular to prevent longitudinal movement after the fasteners have been passed therethrough.

5. In a folding bed, pivot members provided with smooth contacting faces and with intermeshing teeth, one of said members being in the form of a rack and the other in the form of a segment, said segmental member being provided on the side opposite its teeth and contacting surface with a straight flange projecting laterally for securing it in position.

6. In a folding bed, two pairs of intermeshing pivot members, one member of each pair being provided with lugs for receiving the side rails and one of the end pieces of the bed respectively.

7. In a folding bed, two pairs of intermeshing pivot members, one member of each pair being in the form of a plate that is extended to the rear of its intermeshing portion and provided with supports for the side rails and the end piece respectively of the bed frame.

8. In a folding bed, two intermeshing pivot members, one of which is in the form of a plate which is extended to the rear of its intermeshing portion and provided with two projections upon the side of the plate opposite said intermeshing portion, one of said members being in the form of a socket and the other one being perforated vertically, side rails of the bed frame fitting in said sockets, and a cross piece, angular in cross section, engaging with said other projections, and bolts through the ends of said cross piece into said other projections.

9. In a folding bed, two pairs of intermeshing pivot members, one end of each pair being in the form of a plate which is

extended to the rear of its intermeshing portion and provided with two projections, one above the other, cross bars secured to the upper and lower projections of the two plate members respectively, and counterbalance weights in engagement with said bars.

10 In a folding bed, two pairs of intermeshing pivot members, one member of each pair being in the form of a plate and provided with parallel flanges to the rear of its intermeshing portion, a head board between said plate members and having its ends fitted between said flanges.

15 In a folding bed, a bed support provided with an opening and having a casing projecting in said opening, said casing terminating at a distance above the bottom of the opening upon each side, a bed in said opening having its bottom or support extended so as to overlap said casing, and a shifting fulcrum for pivotally supporting the bed in said support with the lower end of its bottom adapted to be moved into and out of said opening below the lower
25 ends of said casing.

30 In a folding bed, pivot members provided with smooth contacting faces and with intermeshing teeth parallel to such smooth surfaces, one of said members being in the form of a rack and the other in the form

of a segment, said segmental member being provided with a flange projecting therefrom for securing the same to the bed.

13. In a folding bed, a bed support provided with an opening and having a casing projecting in said opening, said casing terminating at a distance above the bottom of the opening upon each side, a bed pivotally mounted in said opening having its bottom extended to overlap the inwardly projecting casing and adapted to allow the lower end thereof to fold into the opening below the cut away portions of the inwardly extending casing when the bed is in its lowered position.

14. In a folding bed, a frame, standards thereon near the end thereof, a lug upon each standard adapted to engage with and support a side rail, means upon each standard arranged to engage with and support a cross piece and means upon each standard to engage and carry a weight supporting bar.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 14th day of September 1908.

JAMES H. EDMONDS.

In presence of—

W. S. BOYD,

FREDERICK G. LYON.