

N. B. DOUGLASS.
WALL BED.
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991,771.

Patented May 9, 1911.

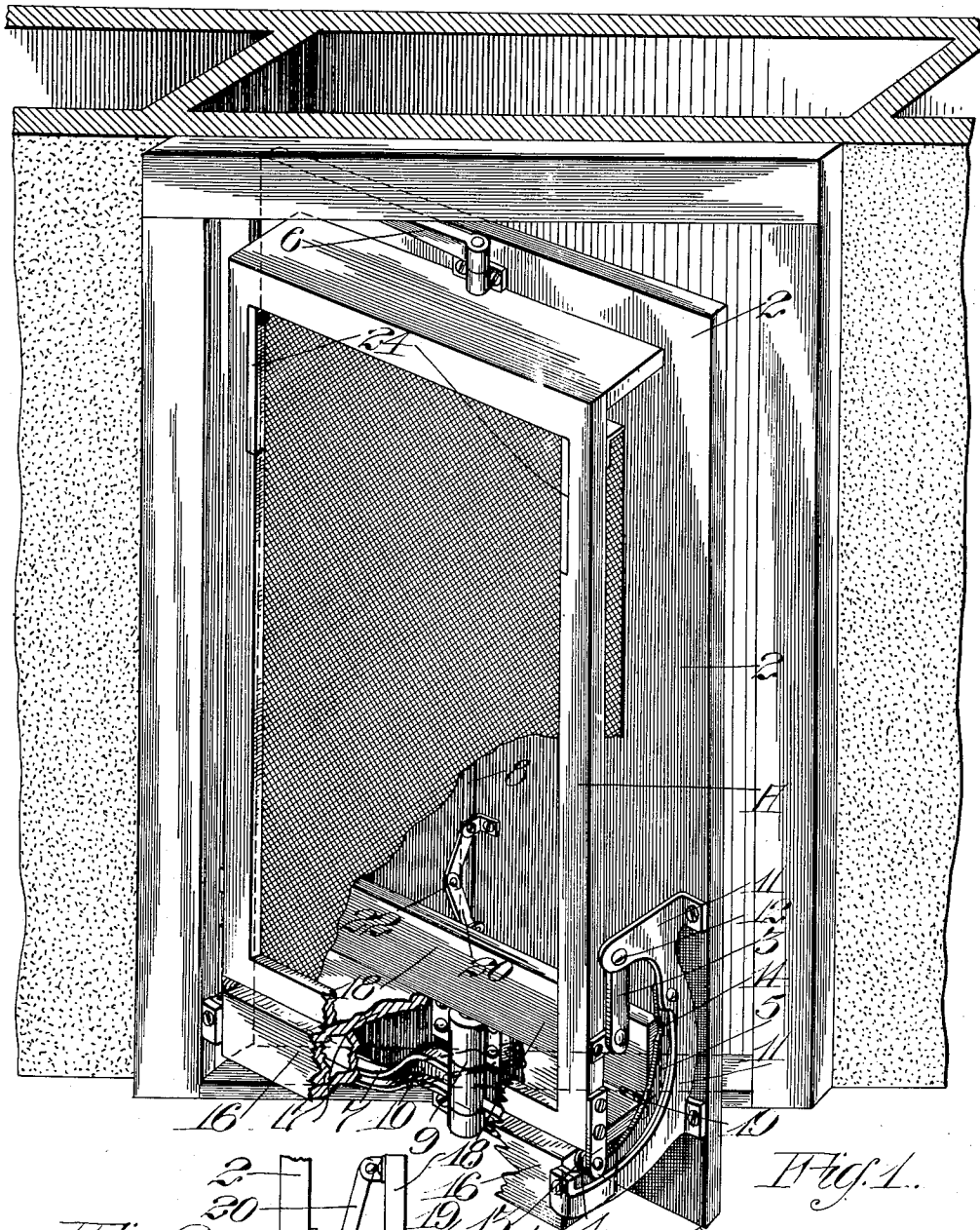
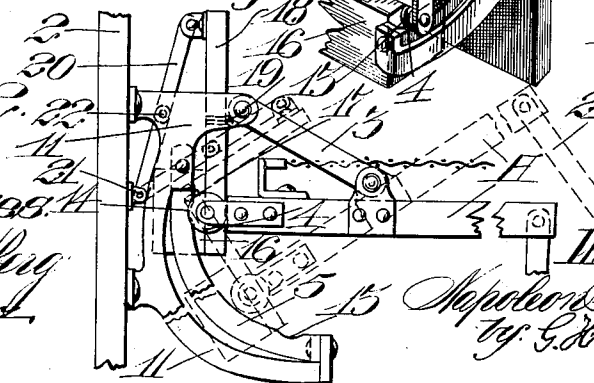


Fig. 1.

Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

NAPOLEON B. DOUGLASS, OF BERKELEY, CALIFORNIA.

WALL-BED.

991,771.

Specification of Letters Patent.

Patented May 9, 1911.

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To all whom it may concern:

Be it known that I, NAPOLEON B. DOUGLASS, citizen of the United States, residing at Berkeley, in the county of Alameda and State of California, have invented new and useful Improvements in Wall-Beds, of which the following is a specification.

This invention relates to wall beds and folding beds, and pertains more especially to a wall bed combining the feature of a reversible door or closure for a cabinet or wall recess with a vertical folding bed on the door closure turnable into, and out of, the recess.

The particular object of the present invention is to provide a simple, economically manufactured, practical bed of this description which can be easily opened and closed, and when open it will be projected horizontally outward so that the head end of the bed will be thrust to its maximum out into the room; also to provide an automatically operated head-board, so hinged and jointed as to give clearance as the bed rises and falls; this head-board forming an automatic pillow lock when the bed is closed, and when the bed is opened the head-board giving the appearance of an ordinary bed pushed close up to the wall; and this automatic head-board and its jointed arrangement being adapted to check the downward movement of the bed so as to coöperate and form a counterbalance with the back legs of the bed lifted off the floor to permit the bed and its hinged support readily to be swung sidewise so as to give access to the closet.

A further object is to provide a self-locking device for holding the bed up in closed position or down in open position.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a perspective with parts broken away to show the hanging bracket. Fig. 2 is a side elevation of the bed-supporting mechanism.

A is a bed-frame of suitable construction, preferably of the closed bottom type and hung from a door or panel 2 by the links 3; the head end of the bed-frame having rollers 4 traveling on appropriate curved, rigid tracks 5, all as will be more fully described later. The panel A is suitably mounted to turn on vertical pivots, so as to be reversed and carry with it the bed, and moves the bed

into and out of a more or less limited recess in the wall of the room or apartment in which the device is installed.

Since economy of space is of the greatest desirability in these wall bed constructions, I prefer to hang the panel on the upper and lower bracket arms 6—7 and the vertical connecting bar 8; the door being pivoted vertically at the back on the bar 8, and the ends of the arms being pivoted to the door frame or casing between the vertical center of the closet opening and the side of the opening, so that the panel or door 2 on being reversed swings around the bracket provided by the supporting arms 6—7 and rod 8. In order to effect the automatic reversal of the door a link 9 has one end pivoted to the closet threshold about midway of the width of the door opening, and the other end of the link pivoted to the bottom edge of the panel to one side of the central pivot, as shown at 10. Ordinarily the door stands in the plane of the closet opening forming a closure for the same, like an ordinary door with the bed A inside the closet. The front or exposed portion of the panel may be provided with a mirror or any other suitable article of furniture. To bring the bed into the room for use the panel is reversed by turning it on its pivot; the reversal being automatically effected by the combined action of the supporting bracket and link 9, shown in dotted lines, Fig. 1.

The links 3 by which the bed frame is hung from the panel are in practice pivoted to one end of the side rails of the bed adjacent to its head, the other end of the links being pivoted to the brackets 11 fixed on one side of the panel 2. These brackets are of peculiar form and each of them carries a removable, segmental track 5 on which the rollers 4 run. When the bed swings up or down to closed or open position, the rollers 4 travel on the tracks 5 and coöperate with the links 3 to support the bed, and the curvature of these tracks 5 is such that the bed in being turned down to operative position is projected downwardly into the room; the tracks 5 being so positioned in practice that the lower end of the tracks is slightly beyond pivot 12 of links 3 or farthest removed from the panel 2, and the upper end of the tracks is between the panel and the pivot 12. Preferably these tracks are made separate from the cast bracket 11, so that the tracks may be made of malleable or wrought

iron not easily broken. If the tracks were cast integral with the brackets 11, they would be liable to injury, besides the traveling surface of the tracks 5 would show defects in casting and would need machining; all of which difficulties are obviated by making up the tracks and brackets separate and assembling by rivets or otherwise.

In order to hold the bed upright when in closed position, the lower end of each track 5 is provided with a locking notch 13, in which the roller 4 engages, as shown in Fig. 1, and in order to hold the bed horizontally and prevent it from accidentally closing, trapping the occupant of the bed, the upper end of the tracks is provided with a similar notch 14 in which the rollers 4 automatically lock, as shown in Fig. 2. These self-locking notches 13—14 are important for the reasons stated.

The bed is counterbalanced at the head end by means of weights carried in a suitable box or pocket 16. The head or inner end of the bed has a short fixed panel 17, to which the weighted box 16 is attached, and hinged to this fixed panel 17 is a foldable head board 18 which is adapted to be automatically turned on its hinges 19 simultaneously with, and oppositely to, the bed 2, as the latter is raised and lowered, by means of a jointed link 20 having one end hinged to the head board 18 and the other end hinged to the panel 2 at 21; the link 20 being preferably jointed at 22.

As a result of this construction of the jointed head board 18 carried by the bed frame and pivotally connected with the support or panel 2 by the jointed link, this head board 18 is adapted to fold inwardly toward the bed, as the latter is raised in a vertical position, until the panel 18 is substantially parallel with the bed A; and when folded into this position gripping the pillow and holding it and the bed-clothes at that end of the bed in proper position. Also when the bed is opened out for use the panel A is gradually straightened out again until it extends in vertical upright position, as shown in Fig. 2 giving, as before stated, the appearance of a bed with the head board and with the bed pushed up against the wall; the link 20 being concealed. The link 20 is preferably jointed, as shown at 22, to accommodate it to the changing movements of the head board and panel as the latter is raised and lowered; and furthermore, it has been found in practice that this link and head board together constitute a bracket and counterbalance for the bed in its up and down movements, for the link and head board where they are at the angle of about forty-five degrees, as illustrated in dotted lines, Fig. 2, will check the downward movement of the bed sufficiently to hold the bed for the time being with the legs 24 lifted

from the floor, so that the bed and panel, and with the bed practically open, can be swung sidewise sufficiently to allow a person to get into the closet behind the door or panel 2. Apparently as the link 20 and head board 18 come substantially into parallelism when the parts assume the dotted inclined lines of Fig. 2, they act as a lock at that point to hold the door from accidentally raising or lowering; thus enabling the door or panel to be turned sidewise as described.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a wall bed, the combination with a bed frame, and a panel mounted to turn about a vertical axis within a wall opening, of brackets secured to and projecting from one side of the panel, curved rigid track-ways on the brackets, a suspending link carried by each bracket, said link having its upper end pivoted to the upper end of the bracket and its lower end pivotally connected to the bed frame at a point between the upper end of the bracket and the lower end of said frame, and rollers on the bed frame traversable in a curved path over said rigid track-way.

2. In a wall bed, the combination with a suitable support, of a pair of brackets secured thereto, each of said brackets provided with a curved, vertical track-way, a suspended link carried by each bracket and above the track, and a bed-frame hung adjacent to one end from said links with rollers running on said track-ways, said track-ways having top and bottom self-locking notches engageable by the rollers for holding the bed-frame in vertical or horizontal position.

3. The combination with a suitable support, of suspended links carried thereby, and a bed-frame hung adjacent to one end from said links, said bed-frame having end rollers and vertical tracks adjacent to the links on which the rollers run, said tracks having top and bottom self-locking notches in the path of the rollers.

4. In a wall bed, the combination with a bed frame and a panel mounted to turn about a vertical axis within a wall opening, of a link connection between the panel and the head-end of the bed frame, a guide-way secured to and extending outward from one side of the panel, and over which guide-way the lower end of the bed frame is traversable, a jointed head board for the bed frame, and a connection between the head board and the panel, said connection comprising two links pivoted together adjacent ends, one of said links having its outer end pivoted to the panel and the other link having its outer end pivoted to a section of the head board.

5. The combination with a suitable support, of links hung therefrom, a bed-frame pivotally hung from the links, rollers on the bed-frame and vertical tracks on which
 5 the rollers run, a jointed head-board on the bed-frame, and connections between the bed-frame and the support for turning the head-board toward and from the bed-frame while the latter is raised and lowered, said tracks
 10 having self-locking notches engageable by the rollers.

6. The combination with a suitable support, of a bed frame hung therefrom, and adapted to turn in a vertical plane from a
 15 closed vertical position to an open horizontal position, a head board formed of sections jointed together so that one may fold relatively to the other, and a connection for automatically operating the head board as a
 20 combined counterbalance and pillow block as the bed is raised and lowered, said connection comprising a pair of links pivoted together and with the outer end of one link pivoted to the panel and the outer end of
 25 the other link pivoted to the movable section of the head board.

7. In a wall bed, the combination with an opening, into and out of which the bed is moved, of a panel turning on vertical pivots
 30 and forming a closure for the opening, a bed-frame on one side of the panel, vertical spaced brackets carried by the panel and having curved, vertical, spaced track-ways, said brackets supporting links, said bed-

frame pivotally hung from the links and
 35 having rollers to run on said tracks, and said tracks having self-locking notches engageable by the tracks.

8. In a wall bed, the combination with an opening, into and out of which the bed is
 40 moved, of a panel turning on vertical pivots and forming a closure for the opening, a bed-frame on one side of the panel, vertical spaced brackets carried by the panel and having curved, vertical, spaced track-ways,
 45 said brackets supporting links, said bed-frame pivotally hung from the links and having rollers to run on said tracks, said tracks having self-locking notches engageable by the tracks, and a jointed head-board
 50 on the bed-frame pivotally connected with the panel.

9. The combination with a suitable support, of a pair of brackets thereon, said brackets supporting removable, vertically
 55 longitudinally curved disposed track-ways, links supported on the brackets and above and intermediate of the track-ways, and a bed-frame hung from the links and having rolling fulcra on the track-ways.
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In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

NAPOLEON B. DOUGLASS.

Witnesses:

CHARLES A. PENFIELD,
 CHARLES EDELMAN.