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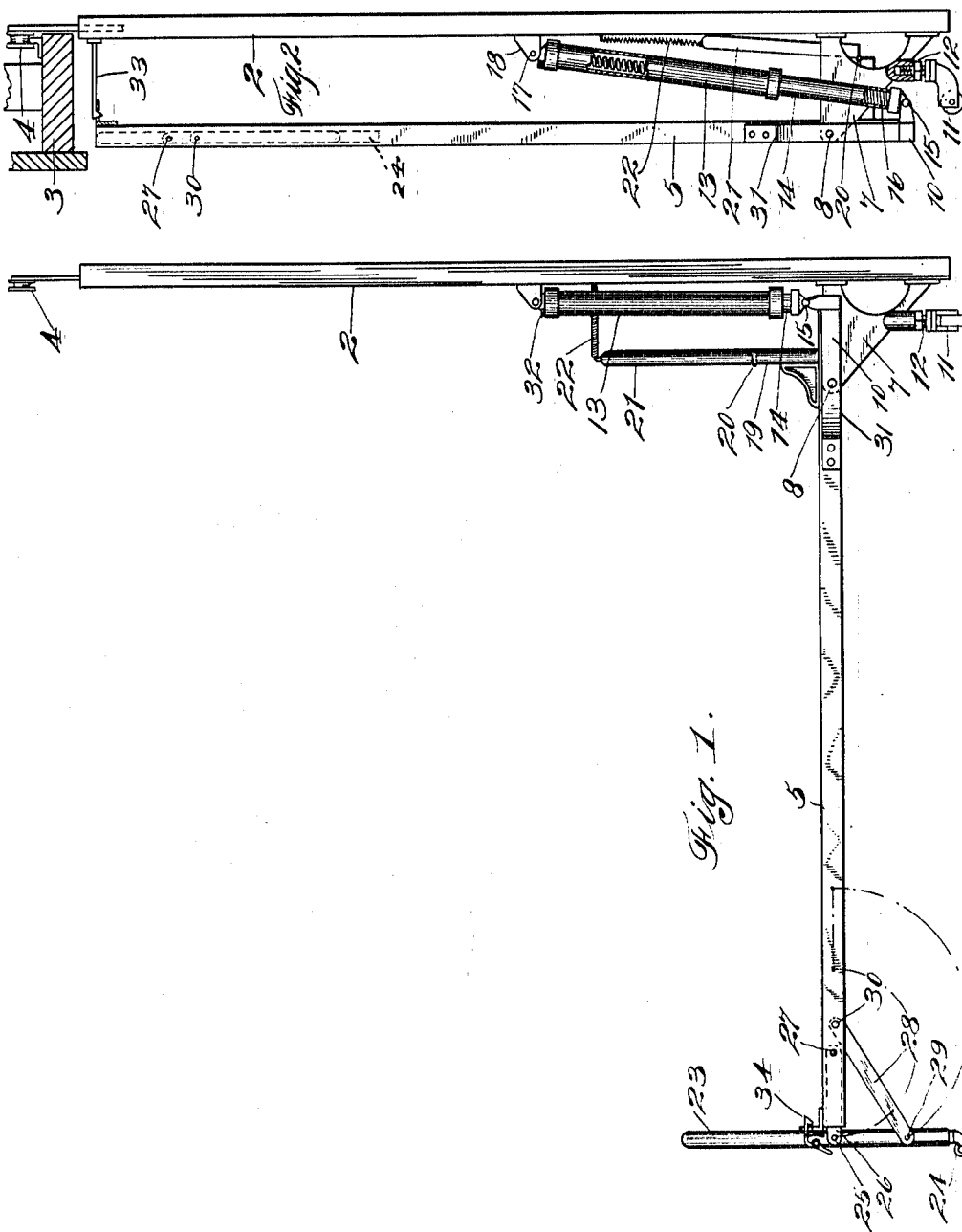
BED.

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2 SHEETS—SHEET 1.

1,059,497.



Witnesses:

F. E. Maynard.  
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2 SHEETS—SHEET 2.



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# UNITED STATES PATENT OFFICE.

ALBERT W. SMITH, OF OAKLAND, AND STERLING W. SMITH, OF BERKELEY,  
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BED.

1,059,497.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that we, ALBERT W. SMITH, of Oakland, Alameda county, California, and STERLING W. SMITH, of Berkeley, Alameda county, California, both citizens of the United States, have invented new and useful Improvements in Beds, of which the following is a specification.

This invention relates to beds, and particularly to a means for supporting a bed in position upon a panel or other movable support which may be moved in an opening in a wall or partition in buildings.

The object of the present invention is to provide an improved supporting and actuating mechanism for what are known as "disappearing beds"; to provide in combination with a vertically adjustable bed a counterbalancing cushion; to provide a device to permit the door or panel upon which the bed is mounted to be vertically adjusted and which partly carries the load of the structure; and to provide improved head and foot structures for foldable beds.

Among other objects of the invention it is intended to provide a supporting and counterbalancing structure for beds which is substantial, very simply and easily operated.

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 side elevation of the bed in lowered position. Fig. 2 is a side elevation of the bed in vertically adjusted position. Fig. 3 is a plan view of the structure. Fig. 4 is an end view of the head of the bed.

In the illustrated embodiment of our invention 2 represents a door or panel of the door which may be suitably supported for movement with relation to an opening or closet in a wall or partition; the door being shown in Fig. 2 as provided with a traveler or other supporting device 4 by which it is mounted upon a portion of a partition, as 3.

The present invention particularly comprehends a mechanism whereby an article, such, for instance, as an article of furniture, here represented as a bed 5, may be adjust-

ably supported upon the movable panel 2, and which mechanism is designed to assist in accomplishing the movement or adjustment of the article or bed 5 with the greatest ease compatible with safety and durability. To this end there is attached to the door by appropriate means, as screws 6 or other fastening devices, a pair of brackets or stationary supports 7, projecting transversely from a face of the panel 2 and having pivots 8 elevated sufficiently above the plane of the floor to allow a bed, represented at 5, to swing from the horizontal position into the vertical position; the clearance below the pivots 8 by which the bed is supported upon the brackets 7 being sufficient to permit the head portion 10 of the bed to swing below the pivots.

A large portion of the weight of the door or panel 2 and the bed 5 is supported by swivel casters 11 which are mounted in the brackets 7 and which may be adjusted vertically by means of screws 12 fastened in the brackets; the purpose of the adjustment being to compensate for unevenness in the plane above which the door 2 may move and for other causes tending to throw the door out of alinement.

The bed 5 may be constructed of any suitable material and may be of suitable length and width.

To facilitate the operation and lowering of the bed about its pivot 8, there is connected to the end of the bed adjacent to the head, telescopic links comprising external cylinders 13 and cylinders 14 slidable in the former cylinders. Within each of the telescopic links, which are connected by pivots 15 at the opposite sides of the head of the bed, are expansion springs or equivalent devices 16, the normal effect of which is to exert a downward pressure upon the head-portion of the bed between the pivots 8 and the door 2; the result of which pressure is to tend to lift the bed from the horizontal position shown in Fig. 1 to the vertical position shown in Fig. 2. Preferably the force of the springs is not sufficient to automatically swing the bed upwardly and it is necessary for a person to apply some power to

assist the lifting action of the springs when the bed is to be lifted to the vertical position. During the upturning action of the bed the link sections 14 slide outwardly from the external portions 13 which are connected by pivots 17 in brackets 18 to the door 2. When the bed 5 has been turned into the vertical position the pressure of the expansible springs 16 in the telescopic links is sufficient to sustain the bed in its adjusted position. When the bed is to be turned to the horizontal position the power of the operator applied to the portion above the pivots 8 is sufficient to easily pull the bed down to the horizontal position. As the bed is swung downwardly a compression of air occurs in the interior of the link sections 13 and 14 which performs the function of acting as a check to prevent the bed from dropping violently to the floor. This is a very important feature in that it acts as a safety device to prevent a person from being injured by the swinging motion of the bed 5 as it is lowered.

If desired the bed may be provided with an upwardly projecting head-board 19 which is longitudinally divided and hingedly connected, as at 20, so that the upper portion 21 of the head-board may fold against the front of the panel 2 when the bed 5 is adjusted to the vertical position. A spring 22 connected at one end to the upper edge of the foldable section 21 of the bed and connected also to the panel 2 sustains the foldable section 21 in its several positions against too free a movement.

Another important feature of the present invention is in the means for supporting the outer end of the bed when the latter is adjusted in the horizontal position about the pivots 8. This means in the present instance comprises a foot-frame 23, provided with casters 24 at its lower ends, and brackets. At the central portion of the leg members of the foot there are provided pivots 25 upon which are mounted links 26 adapted to extend in a parallel position beneath and be connected to the rails of the bed by pivots 27. When the bed is folded down to the horizontal position the links 26, of which there is one on each side of the bed adjacent to the foot, lie beneath the rails of the bed. The foot-portion 23 when adjusted at right angles to the bed rails is braced in position by brace links 28 which are pivoted to the leg portions of the foot-frame at 29, and at their opposite ends are pivoted at 30 to the rails of the bed 5. The angular relation of the bracing links 28 and the adjustable fulcrum links 26 is such that when the bed has been adjusted to the horizontal position it is impossible to push the foot-frame inwardly under the bed, but as the bed is lifted on the fulcrums 8 the foot-frame 23

will be left free to swing downwardly about the fulcrums 27 and 30 so that by the time the bed has been adjusted in the vertical position Fig. 2 the foot-frame 23 is swung into parallelism with and against the rails of the bed 5.

There is one of the pneumatic checking devices on each side of the head of the bed and they are here shown as connected to the bed through the instrumentality of lateral braces or arms 31 secured to the sides of the bed, though manifestly the pivots 15 which are at the ends of the arms 31 may be mounted in any suitable manner directly upon the frame of the bed 5.

In operation when the panel or door 2 is moved into position, as desired, the upwardly extending bed 5 may be pulled forwardly and downwardly about its fulcrums 8 and the rapidity of its motion checked by means of the pneumatic cushion devices formed by the telescopic link sections 13 and 14. As the bed is pulled downwardly and forwardly the foot-frame 23 is adjusted so that by the time the bed is parallel with the floor the casters 24 of the foot-frame 23 will contact with the floor and the bracing links 28 adjusted to support the foot-frame 23 against accidental movement as regards the pivots 25.

The dash-pot or air cushions formed by the link sections 13 are provided with valves 32 whereby air may be admitted to the interior of the cylinders as the sections 14 move downwardly; but at the instant a reversal of motion of the links 14 occurs and they move into the sections 13, and compression of air occurs, the downward movement of the bed is checked.

Any suitable form of latching device may be provided whereby the bed may be temporarily restrained in its vertically adjusted position. A simple form of this restraining device is illustrated in Fig. 2, which comprises a spring latch or equivalent device 33, which may be secured either to the foot portion of the bed or to the supporting panel 2, as here indicated. The function of the latching device is to retain the bed in its upper position to prevent it from accidentally falling, or from swinging too freely about its pivots 8.

The adjustable foot-frame 23 of the bed may be temporarily latched to the foot portion of the bed frame by a suitable form of resilient latching or clamping device, as indicated at 34.

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

The combination in a wall bed, of a door slidable on the wall, pivot bearings projecting from the side of the door, a bed structure pivoted on the bearings between

its ends, sleeves pivoted at one end to the door, bushings telescopic in the sleeves and pivoted to the adjacent end of the bed, and counterpoises compressible in the sleeves and  
5 bushings and adapted to sustain the bed in a vertical position relative the slidable door.

In testimony whereof we have hereunto

set our hands in the presence of two subscribing witnesses.

ALBERT W. SMITH.  
STERLING W. SMITH.

Witnesses:

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H. B. DENSON.