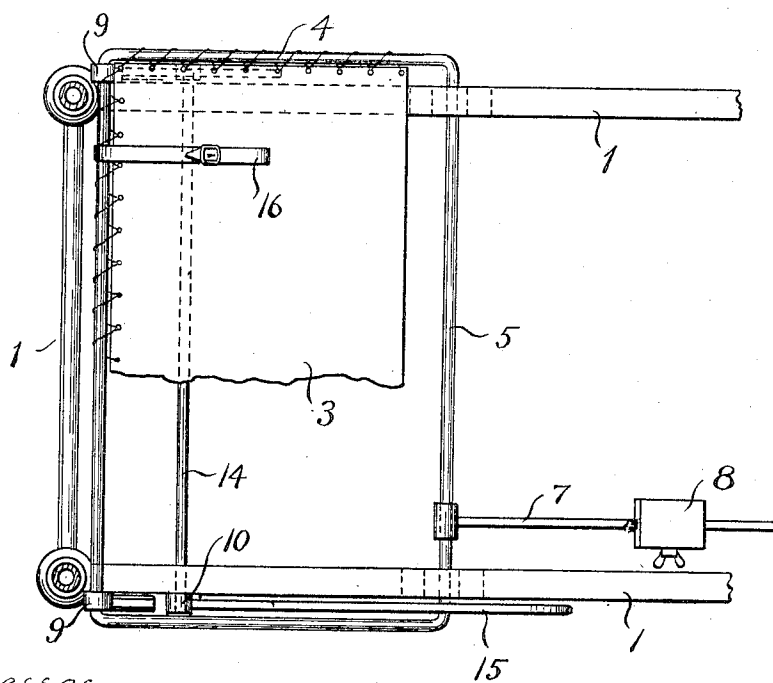
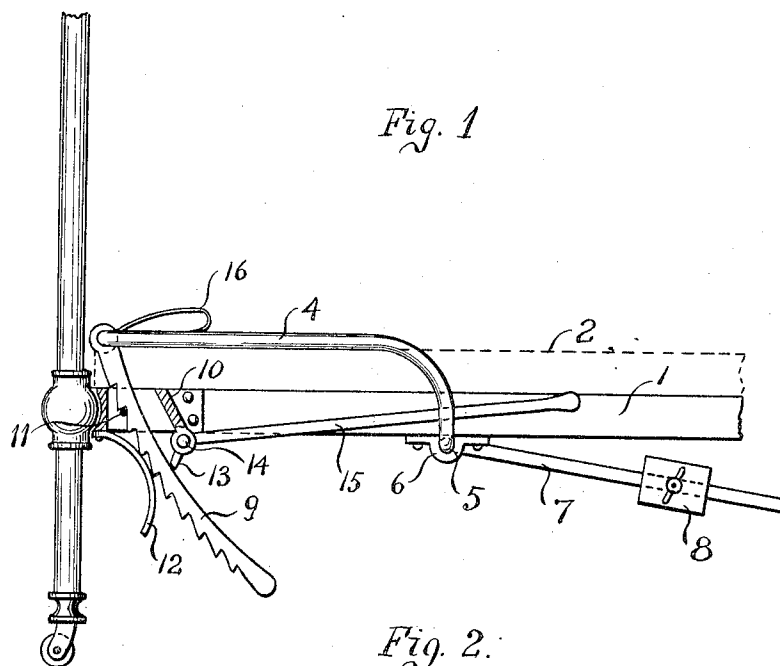


No. 828,720.

PATENTED AUG. 14, 1906.

F. DEUERLING.
TILTING BACK AND HEAD REST FOR BEDS.

APPLICATION FILED AUG. 5, 1905.



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UNITED STATES PATENT OFFICE.

FRED DEUERLING, OF CHICAGO, ILLINOIS.

TILTING BACK AND HEAD REST FOR BEDS.

No. 828,720.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed August 5, 1905. Serial No. 272,856.

To all whom it may concern:

Be it known that I, FRED DEUERLING, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Tilting Back and Head Rests for Beds, of which the following is a specification.

This invention relates to beds for invalids, and has particular reference to tilting back and head rests adapted to be operated by the invalid himself for supporting himself in an upright or partly-reclining position.

The main object of this invention is to provide a tilting back and head rest attachment for beds which may be readily adjusted to various angular positions by a person occupying the bed without requiring the expenditure of much strength or the assistance of an attendant and which may be attached to any ordinary bed-frame without requiring alteration of the frame. I accomplish this object by the device shown in the accompanying drawings, in which—

Figure 1 is a side elevation, partly broken away, of a bed-frame provided with a tilting back-rest constructed according to my invention. Fig. 2 is a top plan of the same, also partly broken away.

In the drawings the bed-frame is indicated at 1 and the mattress is indicated by dotted lines at 2 in Fig. 1. The mattress is omitted from Fig. 2 for the sake of clearness. The back-rest consists of a sheet 3, of canvas or the like, which is stretched across and laced to the metal frame 4. The frame 4 extends around the head end of the mattress and is of suitable form, so that the sheet 3, of canvas, will lie flat upon the upper surface of the mattress 2 when the frame 4 is in the position shown in Fig. 1. The frame 4 is mounted on a transverse shaft 5, which is journaled in bearings 6, secured to the side bars of the frame 1.

The side bars of the frame 4 curve upwardly from the shaft 5, so that the portion which is covered with the sheet 3 will lie substantially parallel with the upper surface of the mattress 2. The shaft 5 has a lever-arm 7 secured thereto and extending along the bed near one side. The lever-arm 7 is provided with an adjustable counterweight 8, adapted to be shifted along said lever for counterbalancing the head-rest 4 and the weight supported thereby. The frame 4 has a pair of depending curved racks 9, pivotally

suspended at the head end thereof and passing through guiding-bars 10 at each side of the bed. Each guide member 10 is provided with a transverse pin or stop 11, which engages the teeth of the rack for securing the back-rest in any desired position of adjustment.

The racks 9 are normally urged out of engagement with the stops 11 by springs 12 and are forced into engagement with the stops 11 by means of clamping-arms 13, carried by a transverse shaft 14. The shaft 14 has a lever 15 connected thereto and extending along one of the side bars of the frame into position to be conveniently grasped by a person lying upon the bed. The lever 15 is disposed in a substantially horizontal position, so that its own weight will tend to urge the clamping-arms 13 against the racks 9 and force the same into engagement with the stops 11. The frame 4 is provided at its upper end with a pair of depending looped straps 16, through which the patient may pass his arms when supporting himself in a nearly upright position. These straps permit the patient to partly raise himself from the bed to permit the bedclothes to be changed, &c.

The operation of the device shown is as follows: An attendant adjusts the weight 8 along the arm 7 so that it will counterbalance the weight of the frame 4, together with such bedclothing as is supported thereby, and in addition will tend to urge the frame 4 toward an upright position. When the lever 15 is allowed to hang free, its weight will turn the shaft 14 so as to force the arms 13 against the racks 9 and overcome the action of the springs 12, which tend to push the racks out of contact with the stops 11. In order to adjust the back-rest to a desired angle, it is merely necessary for the patient to lift the lever 15 so as to release the clamping-arms 13. The spring 12 will then force the racks out of engagement with the stops 11 and the back-rest will be free to swing upwardly under the action of the counterweight 8. If the patient exerts an effort to raise himself, the back-rest will then be lifted by the counterweight and may be locked in any desired position by merely letting go of the lever 15. To lower the back-rest, the patient would lift the lever 15 in the same way and would permit a portion of his weight to rest upon the back-rest, and thus overcome the lifting tendency of the counterweight. He would then release the lever 15 upon arrival at the

desired angle of inclination and the weight of the lever would clamp the back-rest in a fixed position.

In case a patient is very weak the counter-weight 8 may be adjusted by an attendant so as to nearly counterbalance the weight of the head and shoulders of the patient in addition to the weight of the back-rest and its attachment, so that it will require but little 10 lifting exertion on the part of the patient to raise himself to an upright position.

I claim—

1. The combination of a horizontal frame for supporting a mattress, a tilting back-rest 15 pivotally mounted on said frame and adapted to lie substantially in the plane of the surface of the mattress and to be tilted at an angle thereto, a weight for counterbalancing the weight of said back-rest, a depending 20 brace hinged to said back-rest, clamping means on said frame adapted to engage said brace for securing the back-rest in a fixed position of angular adjustment, said clamping means being adapted to be operated by a 25 person reclining upon the mattress.

2. The combination of a horizontal frame for supporting a mattress, a tilting back-rest pivotally mounted on said frame and adapted to lie substantially in the plane of the surface of the mattress and to be tilted at an angle thereto, a weight for counterbalancing the weight of said back-rest, a depending 30 brace hinged to said back-rest, clamping means on said frame normally urged into engagement with said brace for securing the back-rest in a fixed position of angular adjustment and adapted to be held out of such engagement by a person reclining on the bed to permit of changing the inclination of the 40 back-rest.

3. The combination of a horizontal frame for supporting a mattress, a tilting back-rest pivotally mounted on said frame and adapted to lie substantially in the plane of the surface of the mattress and to be tilted at an angle thereto, a weight for counterbalancing the weight of said back-rest, a toothed rack for supporting said back-rest in various positions of angular adjustment, a stop on the 45 frame for engaging said rack, and means for controlling the engagement between said rack and stop and adapted to be operated by a person reclining upon the mattress.

4. In a bed, the combination of a frame 55 for supporting the mattress, a back-rest pivotally mounted on said frame and angularly adjustable thereon, a depending rack mounted on said back-rest, a stop on said frame adapted to be engaged by said rack for se-

curing said back-rest in a desired angular position, means normally urging said back-rest 60 toward an upright position, means normally urging said rack out of engagement with said stop, and a clamping device adapted to force said rack into engagement with said stop for 65 locking the back-rest against movement.

5. In a bed, the combination of a frame for supporting the mattress, a back-rest pivotally mounted on said frame and angularly adjustable thereon, a depending rack mounted on said back-rest, a stop on said frame adapted to be engaged by said rack for securing said back-rest in a desired angular position, means normally urging said back-rest 70 toward an upright position, means normally urging said rack out of engagement with said stop, and clamping means adapted to be operated from the bed for forcing the rack into engagement with said stop. 75

6. In a bed, the combination of a frame 80 for supporting a mattress, a back-rest hinged to tilt on a horizontal axis on said frame, a counterweight adapted to normally urge said back-rest toward an upright position, a rack pivotally mounted on said back-rest, a 85 stop on said frame adapted to be engaged by said rack, a spring normally urging said rack out of engagement with said stop, clamping means for forcing said rack into engagement with said stop, and a lever extending along 90 one side of the bed, being connected with said clamping means and adapted through its own weight to normally urge said clamping means into position engaging said rack.

7. In a bed, the combination of a frame 95 for supporting a mattress, a back-rest hinged to said frame and adapted to be tilted at an angle to the mattress, a counterweight adapted to normally urge the back-rest toward an upright position, a pair of depending racks pivoted near the upper end of said back-rest, stops on the frame for engaging 100 said racks, springs normally urging said racks out of engagement with said stops, a shaft journaled on the frame and having 105 thereon transversely-extending arms adapted to force said racks into engagement with said stops, a lever secured to said shaft and extending horizontally along one side of the frame and adapted through gravity to turn 110 said shaft and force said racks toward the stops, substantially as described.

Signed at Chicago this 2d day of August, 1905.

FRED DEUERLING.

Witnesses:

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