No. 852,454. PATENTED MAY 7, 1907.

J. G. RYAN.

HEAD REST FOR BEDS.

APPLICATION FILED JUNE 23, 1906.

2 SHEETS—SHEET 1.

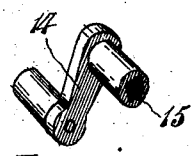


Fig. 3.

Fig. 1.

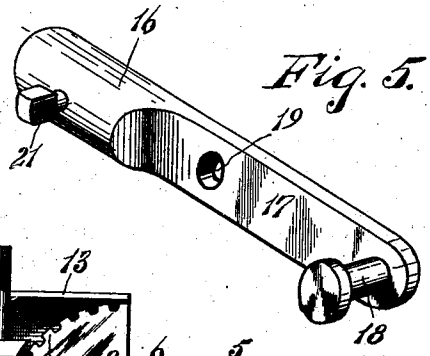


Fig. 5.

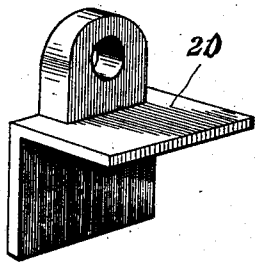


Fig. 4.

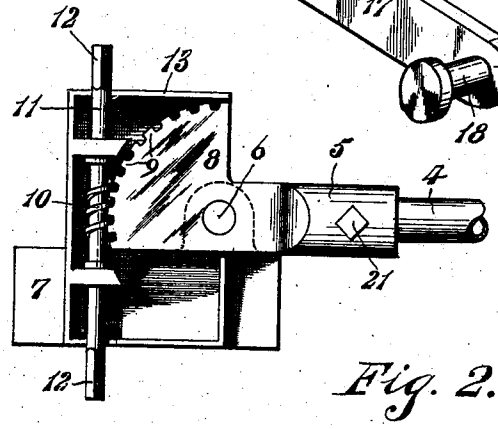


Fig. 2.

Witnesses

Stuart R. Wallace.

William G. Armstrong.

Inventor

John G. Ryan.

By Lucius Tuckerman & Sons

Attys.

THE NORRIS PETERS CO., WASHINGTON, D. C.

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2 SHEETS—SHEET 2.

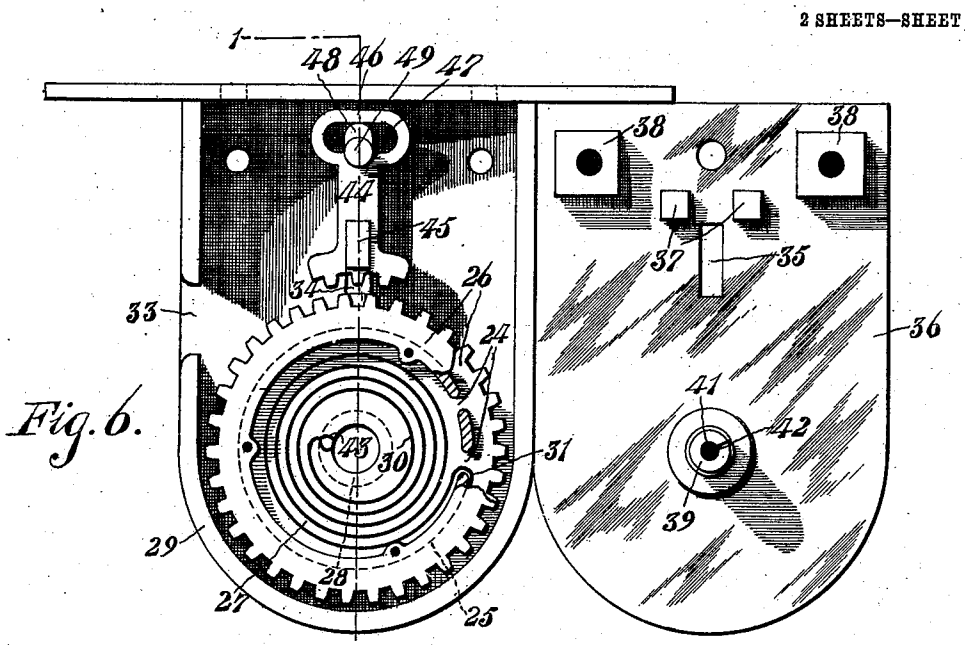


Fig. 6.

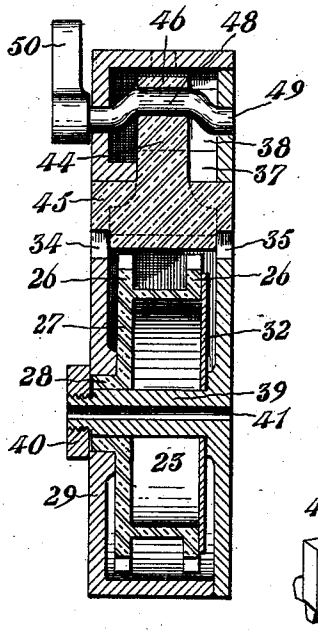


Fig. 8.

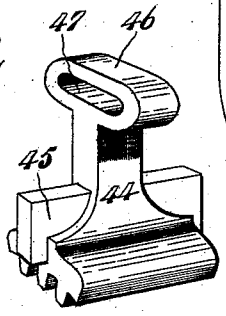


Fig. 9.

Fig. 7.

Witnesses

Stuart R. Allen.

William G. Austin.

Inventor

John G. Ryan.

By Fred B. Fahnestock Atty.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN GILBERT RYAN, OF MONTREAL, QUEBEC, CANADA.

HEAD-REST FOR BEDS.

No. 852,454. Specification of Letters Patent. Patented May 7, 1907.

Application filed June 23, 1906. Serial No. 322,995.

To all whom it may concern:

Be it known that I, JOHN GILBERT RYAN, of the city of Montreal, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Head-Rests for Beds, of which the following is a full, clear, and exact description.

My invention relates to head rests for beds and the object is to provide a simple, inexpensive and easily operated head rest which may be attached to the framework of a bed and easily adjusted in any desired position.

A further object is to provide a head rest having removable actuating means so that the device may be suitable for hospitals and similar places, where it is desired to place the operating means out of the control of the patients.

To accomplish these objects I provide a U-shaped framework adapted to fit over the side rails of the bed and having a plurality of cross pieces adapted to support the end of the mattress. The extremities of the framework are secured to members which are pivotally mounted on brackets attached to the side rails of the bed. One of the pivoted members is provided with a projecting arm which carries a pin, while the other member is provided with an integral quadrant having spiral teeth formed thereon. A worm spindle, inclosed in the casing of the quadrant, meshes with the teeth, and is adapted, when rotated, to move the head rest through an angle or approximately 90 degrees. One end of a chain is fixed to a pin on the other pivoted member while the opposite end is fixed to a spring tensioned drum having toothed flanges adapted to be locked by means of a toothed stop.

In the drawings which illustrate my invention:—Figure 1 is a perspective view showing the preferred manner of attaching the head rest to a bed. Fig. 2 is a side elevation of a quadrant and worm as seen when the casing is removed. Fig. 3 is a perspective view of a wrench or crank which is used to rotate the worm spindle. Fig. 4 is a perspective view of the bracket used on the opposite side of the bed. Fig. 5 is a perspective view of the hinge member adapted for use in connection with the bracket shown in Fig. 4. Fig. 6 is a plan view of the spring drum attachment showing the cover thrown open. Fig. 7 is a plan view similar to Fig. 6 showing the cover in closed position. Fig. 8 is a vertical section on the line 1—2 of Fig. 6. Fig. 9 is a perspective view of the stop used in connection with the drum.

Referring to the drawings, 3 designates the frame of the bed and 4 the frame of the head rest, which is provided with a plurality of cross bars 4^a to support the mattress. One extremity of the frame 4 fits into a member 5 preferably of cast iron, which is pivoted at 6 to a bracket 7 attached to the side frame of the bed. The member 5 terminates in a quadrant 8, which is provided with teeth 9 adapted to mesh with a worm 10 formed on a spindle 11, the extremities 12 of which project beyond the housing 13 and are preferably squared or otherwise adapted to admit being turned by means of a wrench or crank. A detachable wrench or crank 14 having a squared orifice 15 therein is adapted to engage the ends 12 of the spindle. The opposite side of the frame 4 fits into a second pivoted member 16 which is provided with an integral arm 17, the extremity of which carries a headed pin 18, as shown in Fig. 5. The member 16 is pivoted at 19 to a suitable bracket 20, shown in Fig. 4. The extremities of the frame 4 are secured to the members 5 and 16 by means of set screws 21. A chain 22 is attached at one end to the pin 18 and at the opposite end to the drum 23, passing through the apertures 24 in the face 25 of said drum. The drum 23 is provided with a pair of toothed flanges 26. One side of the drum is open, while the closed side 27 is provided with a collar 28 which is journaled in the housing 29. The interior of the drum is occupied by a heavy spiral spring 30, the outer end 31 of which is fixed to the drum. This spring 30 is protected by a plate 32 which closes the open side of the drum. The drum housing 29 which is formed as shown in Figs. 6, 7, and 8, is provided with an opening 33 for the passage of the chain 22, and a second opening 34 having a corresponding opening 35 in the cover 36. The cover 36 is further provided with a pair of lugs 37 and an integral post 39, which carries the drum 23 and is secured by means of a nut 40. The cover also carries a pair of closure lugs 38. The post 39 is provided with a central opening 41 and a radial slot 42 extending through the metal of the post. The inner end of the spring 30 is provided with an enlarged portion 43 which engages the central opening 41 in the post, while that portion of the spring adjacent the end 43 passes through the slot 42. A toothed stop 44 is adapted to engage

the drum 23 to lock it in position. The stop 44 is provided with a pair of lugs 45 which engage the openings 34 and 35, while the neck of the stop is guided between the lugs 37 of the cover 36. The upper extremity of the stop terminates in an enlarged head 46 having a transverse slot 47 therein, through which passes eccentric central portion 48 of a small crank shaft 49. The shaft is revoluble by means of a small lever 50 and is adapted to impart a vertically reciprocating motion to the stop 44. The cover 36 is secured to the housing by means of a pair of screws 51 engaging the lugs 38 and by means of the nut 40 on the post 39.

The operation of the device consists in raising the stop 44 by means of the lever 50 to the position shown in Figs. 6, 7, and 8, thus allowing the spring 30 to exert a tension on the drum 23. If the drum 23 is free to rotate the chain 22 will be wound up and one side of the head rest will be elevated. At the same time the other side of the head rest is elevated by means of the worm 10 and quadrant 8, the worm being rotated by means of the crank 14. The spring 30 acting in tension on the opposite side from the worm, will furnish part of the energy required to raise the head rest and at the same time will prevent the frame 4 from being twisted. When the head rest has been sufficiently elevated, the worm 10 locks the quadrant 8 in position and the crank 14 may be removed if necessary. On the opposite side the stop 44 is depressed by means of the lever 50 until it engages the drum 23, locking it against further rotation in either direction.

The advantages of this device will be obvious. The actuating and locking attachments are positive in operation and simple in construction. The spring members may be used on both sides of the bed if desired, and for use in hospitals, where it is necessary to have the operation of the head rest out of the control of the patient, the actuating device may be easily removed.

Having thus described my invention so that the same may be readily understood by those skilled in the art to which it appertains, what I claim and desire to secure by Letters Patent is—

1. A head rest comprising a U-shaped frame, pivoted members supporting the extremities of said frame, a toothed segment integral with one of said pivoted members, a worm engaging said segment, a lever formed integral with the other of said pivoted members, a spring actuated tension drum, means connecting the extremity of the lever and the drum, and a sliding stop adapted to lock said drum in position.

2. A head rest comprising a pivotally supported frame, a toothed segment mounted at one side of said frame, a worm engaging said segment, a lever mounted on the opposite side of said frame, a pin on the extremity of said lever, a spring actuated drum, means connecting said pin and drum, and means for locking said drum in position.

3. A head rest comprising a U-shaped framework, pivoted members supporting the extremities of said framework, a toothed segment mounted on one of said pivoted members, a worm engaging said segment, a lever mounted on the opposite pivoted member, a pin on the extremity of said lever, a spring actuated drum, a chain connecting said pin and drum and locking said drum in position.

4. In a device of the class described, a U-shaped frame, pivoted members supporting the extremities of said frame, a toothed segment integral with one of said pivoted members, a worm engaging with said segment, a lever integral with the opposite pivoted member, a pin on the extremity of said lever, a drum, a fixed post carrying said drum, a spiral spring carried by said drum a chain connecting said pin and drum, and a sliding stop adapted to lock said drum in position.

5. In a device of the class described, a U-shaped framework, a pivoted member supporting the extremities of said framework, a toothed segment mounted on one of said pivoted members, a worm engaging said segment, a lever mounted on the opposite pivoted member, a spring actuated drum, means connecting the extremity of the lever and the drum, toothed flanges mounted on said drum, and means for locking said drum in position.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JOHN GILBERT RYAN.

Witnesses:
STUART R. W. ALLEN,
WILLIAM G. ARMSTRONG.