M. C. NIXON.

BED OR ATTACHMENT THEREFOR.

APPLICATION FILED JULY 25, 1913. RENEWED SEPT. 29, 1917.

1,348,820. **Patented Aug. 3, 1920.**

2 SHEETS—SHEET 1.

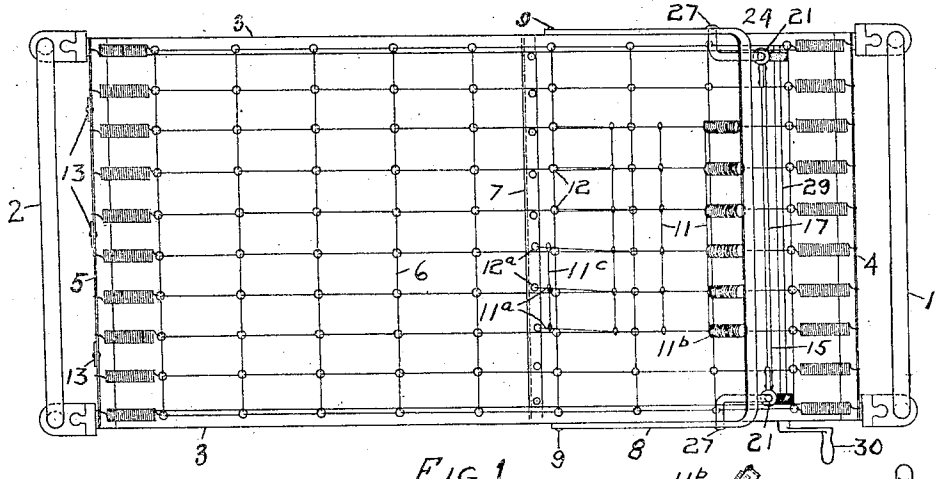


FIG. 1.

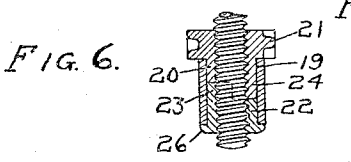


FIG. 6.

FIG. 2.

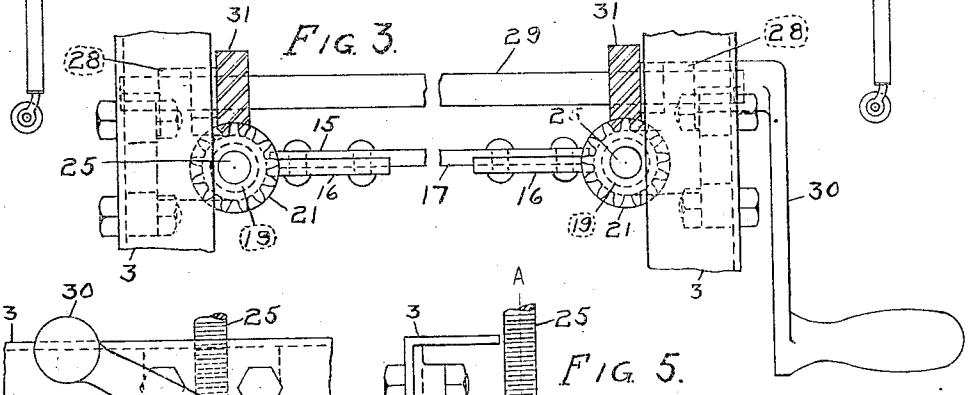


FIG. 3.

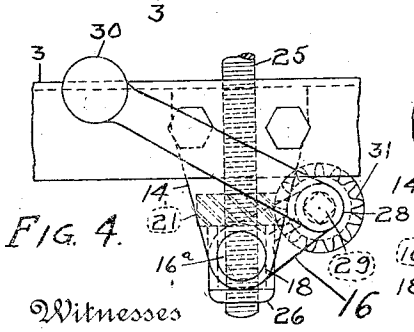


FIG. 4.

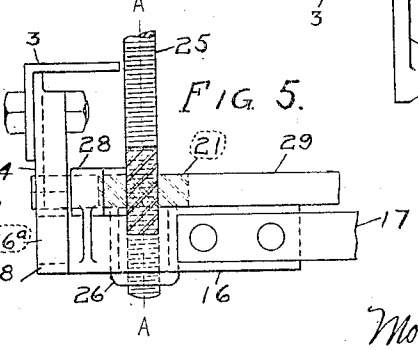


FIG. 5.

Witnesses
J. H. Waite
L. M. Nixon

Inventor
Moses C. Nixon

M. C. NIXON.

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2 SHEETS—SHEET 2.

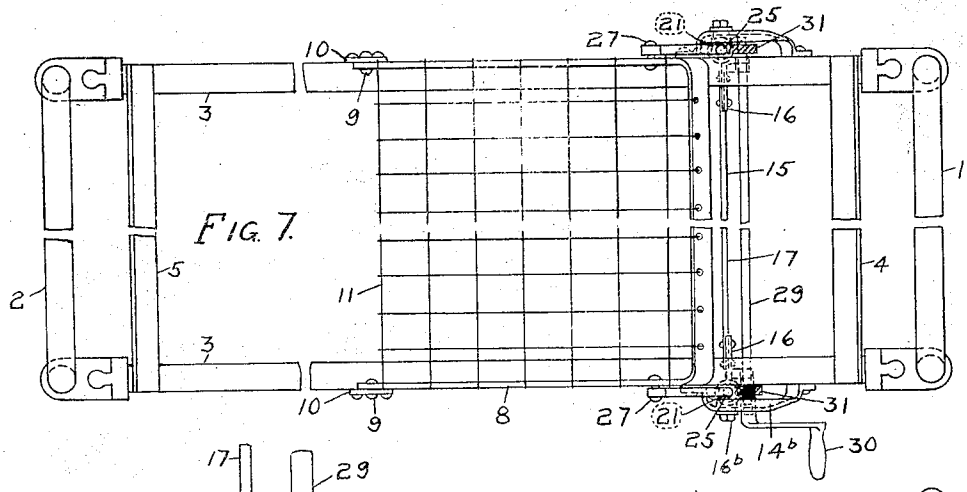


FIG. 7.

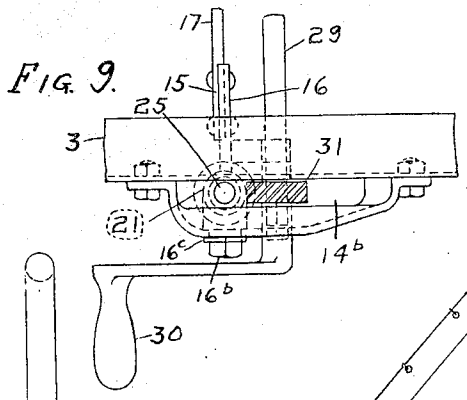


FIG. 9.

FIG. 8.

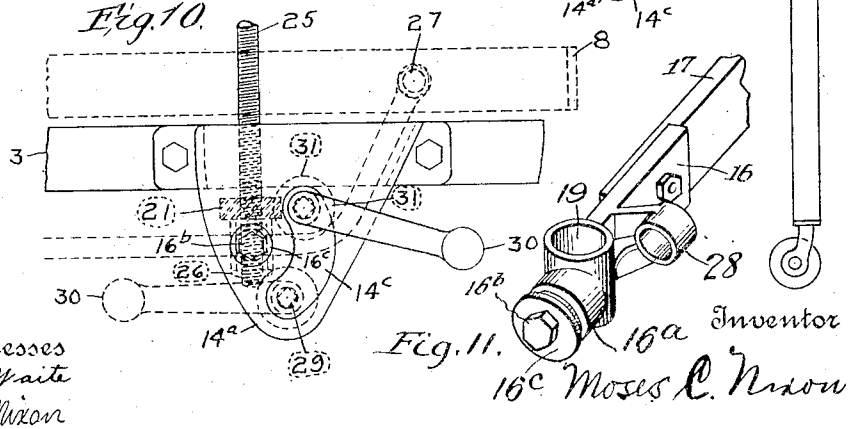


Fig. 10.

Fig. 11.

Witnesses
J. H. Waite
L. M. Nixon

Inventor
Moses C. Nixon

UNITED STATES PATENT OFFICE.

MOSES C. NIXON, OF CHICAGO, ILLINOIS.

BED OR ATTACHMENT THEREFOR.

1,348,820. Specification of Letters Patent. Patented Aug. 3, 1920.

Application filed July 25, 1913, Serial No. 781,148. Renewed September 29, 1917. Serial No. 194,087.

To all whom it may concern:

Be it known that I, MOSES C. NIXON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Beds or Attachments Therefor, of which the following is a specification.

The invention relates to beds, the object being to provide an adjustable bed whereby the posture of the occupant may readily be changed without undue strain or annoyance; and consists, preferably, in the construction hereinafter described, which may be varied without departing from the spirit of my invention.

In the drawings, Figure 1 is a plan view of a bed with my improvements attached; Fig. 2 is a side elevational view of Fig. 1; Fig. 3 is a section of Fig. 1, enlarged to better show the operating mechanism; Fig. 4 is a side view of Fig. 3; Fig. 5 is an end view of Fig. 4; Fig. 6 is a sectional view of a part of the operating mechanism on line A—A of Fig. 5; Fig. 7 is another plan view of a bed with my invention attached, with parts broken out to reduce the size of the drawing; Fig. 8 is a side elevational view of Fig. 7, also with parts broken out; Fig. 9 is a top view of a section of Fig. 7, enlarged to better illustrate certain features; Fig. 10 is a side view of Fig. 9, and Fig. 11 is a perspective view of one of the end castings of pivot frame 15, showing means to prevent the pivots from slipping from bearings as illustrated in Figs. 7, 8, 9 and 10.

Referring to the drawings, similar numerals of reference indicate corresponding parts in the different views, and, referring to the same, 1 and 2 denote the head and foot respectively and 3 the side rails of a bed. Firmly secured to and near the ends of side rails 3 are bars 4 and 5, thus forming a supporting frame for fabric 6, which fabric may be of any suitable type. Secured to the side rails is an intermediate bar 7, or other suitable means, the object of which will hereinafter appear. The rails and bars being, preferably, of angle bars.

Frame or member 8, which may be of any suitable length and form, is shown in Figs. 1 and 2 as pivotally secured to the side rails 3, as by bolts 9, but it could be raised to near the level of fabric 6 and pivotally secured to bracket 10, as shown in Figs. 7 and 8. Fabric 11 is attached at one end either to fabric 6 at 12, through extensions 11^a to intermediate bar 7 at 12^a, or otherwise as desired, the other end of fabric 11 being attached to frame 8 through springs 11^b, said springs being largely intended to meet the variations in length required as frame 8 is raised and lowered. The object of modifications in attaching fabric 11 is, that when my invention is applied to an old bed the fabric thereon may be such that fabric 11 cannot be attached to it, in which case the intermediate bar 7 may be secured to the side rails and extensions 11^a of fabric 11 passed through the old fabric and be secured to said bar, or equivalents substituted, or if preferred fabric 11 could be secured entirely to frame 8, as shown in Fig. 7, thereby utilizing both the old bed and its fabric. To better illustrate the modification in attaching fabric 11 it is shown in Fig. 2 as attached to fabric 6 and extensions 11^a detached, but when the extensions are used fabric 11 would be detached from fabric 6 and attached to said extensions. When intermediate bar 7 and extensions 11^a, or substitutes therefor, are used and frame 8 is lowered there would be a tendency for fabric 11 to drag through fabric 6, and to prevent this, cross wires 11^c are provided so that when lowered they will rest upon fabric 6 and prevent the dragging through as before explained. Frame 8 should be so positioned that when lowered to normal position its free end will extend beyond bar 4, permitting fabric 11 to rest upon fabric 6. In Fig. 1, it will be noticed that the side strands of fabric 11 are omitted to better show the operating mechanism and fabric 6, and part of the strands shown are attached to fabric 6 at 12, and the others to bar 7 at 12^a, to illustrate the modification. When the free end of frame 8 is elevated there would be a tendency for the mattress to slide toward the opposite end of the bed and to prevent this sliding retainers 13 secured to bar 5 are provided.

To side rails 3 are secured brackets 14, which support pivoted frame 15 which carries the operating mechanism, said frame being composed of castings 16 which are secured to bar 17. The length of bar 17 and that of the pivoted frame 15 would depend upon the width of the bed upon which they are used, so that the pivot ends 16^a of castings 16 will rest in bearings 18 of brackets 14. The castings 16 are formed

with round holes 19 (see Figs. 6 and 11), into which hub 20 of gears 21 are placed and revolve therein. Retainers 22 enter holes 19 from below and lug 23 thereon mates with a similar lug 24 on hub 20 thereby forming a clutch connection therewith. These gears and retainers are uniformly threaded so as to receive mating threads on operative connecting rods 25. The retainers are also provided with rims 26 and the object of providing a clutch connection between these gears and retainers is, that when rods 25 are screwed into them the gears and retainers will revolve together and can not be separated, thus preventing them from being displaced or forced upward or downward out of position.

While a single pivoted frame 15, which extends across the width of the bed and supports the operating mechanism at both sides of the bed, is shown, it will be understood, of course, that I do not limit myself to this specific arrangement, as it is quite evident that any other suitable pivoted support that will permit said mechanism to adjust its position to conform to the changing position of the operative connection between said mechanism and the pivoted member 8 will suffice; also that while the hub 20 and retainers 22 are shown any other arrangement whereby the gears 21 may be retained in position will suffice.

The upper end of rods 25 is pivotally attached to frame 8, as by bolt 27, said rods being bent near their upper end and from such bend downward are threaded to mesh with the threads of the gears and retainers, and it is screwed into the same. Castings 16 also furnish supports and bearings 28 for shaft 29 which is journaled therein and is operated by crank 30, which crank is detachable and may be applied to either end of shaft 29, thereby making it operative from either side of the bed. To shaft 29 are secured gears 31, which gears mate with and drive gears 21, causing the latter and retainers 22 to revolve around rods 25, thereby raising and lowering the pivoted frame 8 and adjusting it to desired position.

The bend in rods 25 is not essential to the operation but is intended to raise the lower or free end of the rods to a horizontal position out of the way, as shown in dotted outline in Figs. 2, 8 and 10, leaving a clear space beneath the bed when frame 8 is in lowermost or normal position. It will also be noticed that as the pivoted frame 8 is raised and lowered rods 25 continually change position relative to the vertical and it is important that provision be made to meet such changing which is done by pivoting frame 15 in bearings 18 so that said frame will readily adjust itself to meet the changing position of rods 25.

In Figs. 7, 8, 9 and 10 rods 25 and the operating mechanism are located at the outer side of rails 3 and to do this a specially devised bracket is desirable. If the operating mechanism were placed outside an ordinary supporting bracket it would extend so far out from the side rail as to be objectionable, but bracket 14^a largely overcomes this objection. Also if unprotected there would be a liability of the bedding, and wearing apparel of the attendant coming in contact with the gears and being damaged, but in the present case bracket 14^a also acts as a shield and overcomes this objection. Bracket 14^a is provided at its top with an elongated slot 14^b to accommodate the shifting position of rods 25, and at the side another opening 14^c is provided to permit the shifting movement of shaft 29 and stem of crank 30 as frame 8 is raised and lowered. A variation in the length of frame 15 or in the width of the bed may allow sufficient lateral play to permit the frame's pivot ends to slip from their bearings, with resultant jar to the occupant of the bed: To overcome this contingency bolts 16^b are tapped into pivot ends 16^a and on said bolts are washers 16^c with larger diameter than that of the bearing openings 18 which will prevent said pivot ends from slipping from their bearings.

For convenience, fabrics 6 and 11 are designated as "stationary fabric" and "movable fabric" respectively.

What I claim is:

1. A bed having a stationary fabric, a pivoted member, a movable fabric attached to the pivoted member, said movable fabric having a portion adapted to pass through the stationary fabric and attached beneath the latter, means to prevent the movable fabric from dragging through the stationary fabric, and means whereby the position of the pivoted member and movable fabric may be adjusted.

2. A bed having a pivoted member, a pivoted support with a hole therein, a gear having a hub extending into said hole, a retainer extending into said hole from the side opposite the gear and having a clutch connection with the latter, a rod connected with the pivoted member and having a threaded connection with said gear and retainer, and means adapted to rotate the gear and retainer whereby the position of the pivoted member may be adjusted.

3. A bed having a pivoted member, a support with a hole therein, a gear having a hub extending into said hole, a retainer adapted to be rotated with the gear and retain the latter in position with the hub in the hole, and means connecting the gear and pivoted member whereby the position of the latter may be adjusted.

4. A bed having a pivoted member, an operating mechanism, a connection between

said mechanism and pivoted member, said connection being at the outerside of the bed structure, and a support for the operating mechanism adapted to form a protecting housing for the latter, said housing having an elongated opening through which the connection passes to allow for the changing position of said connection.

5. A bed having a pivoted member, an operating mechanism, a connection between said mechanism and pivoted member, said connection being at the outerside of the bed structure, and a support for the operating mechanism adapted to form a protecting housing for the latter, said housing having an opening in the side thereof through which said mechanism may be operated.

6. A bed having a pivoted member, an operating mechanism, a pivoted support for said mechanism, a connection between said mechanism and member, said connection being at the outerside of the bed structure, bearings for the pivoted support adapted to form a protecting housing for said mechanism, a washer on the outerside of the protecting housing, and means connecting said washer with the pivoted support whereby the latter may be prevented from slipping from said bearings.

7. A bed having a pivoted member, an operating mechanism, a pivoted support for said mechanism and a connection between said mechanism and member, said connection being shaped so that in coöperation with the operating mechanism and pivoted support the free end of the connection is raised to substantially a horizontal position as the pivoted member is lowered to normal position.

8. A bed having a pivoted member, an operating mechanism, means adapted to form an operative connection between the operating mechanism and pivoted member, and a pivoted support for the operating mechanism, thereby permitting the latter to be rocked to conform to the changing position of the operative connection, said pivoted support extending transversely approximately the width of the bed.

9. A bed having a pivoted member, a gear at each side of the bed, pivoted support for said gears extending transversely approximately the width of the bed, means adapted to form operative connections between the pivoted member and gears, and means to simultaneously rotate the gears around said means whereby the position of the pivoted member may be adjusted.

10. A bed having a pivoted member, a gear, an operative connection between the pivoted member and gear, a pivoted support for said gear and operative connection and extending approximately the width of the bed, and means adapted to rotate said gear around said connection whereby the position of the pivoted member may be adjusted.

11. A bed having a pivoted member, a gear, a pivoted support for the gear extending transversely approximately the width of the bed and having a hole therein, means forming an operative connection between the pivoted member and gear, means in said hole whereby the position of the gear relative to the support is maintained, and means to rotate the gear around said connection whereby the position of the pivoted member may be adjusted.

12. A bed having a pivoted member, gears at each side of the bed, means forming an operative connection between the pivoted member and said gears, a shaft extending across beneath the bed and adapted to operate said gears, and a pivoted support for said shaft, gear and operative connection.

13. A bed having a pivoted member, operating mechanism having a shaft in combination therewith, said shaft extending across beneath the bed, pivoted support for said mechanism, and means connecting said mechanism and the pivoted member whereby the position of the latter may be adjusted.

14. A bed having a pivoted member, operating mechanism at each side of the bed, a shaft extending across approximately the width of and beneath the bed and adapted to operate in combination with the other parts of said operating mechanism, pivoted support for said mechanism, and means connecting said operative mechanism and the pivoted member whereby the position of the latter may be adjusted.

MOSES C. NIXON.

Witnesses:
J. H. WAITE,
S. M. NIXON.