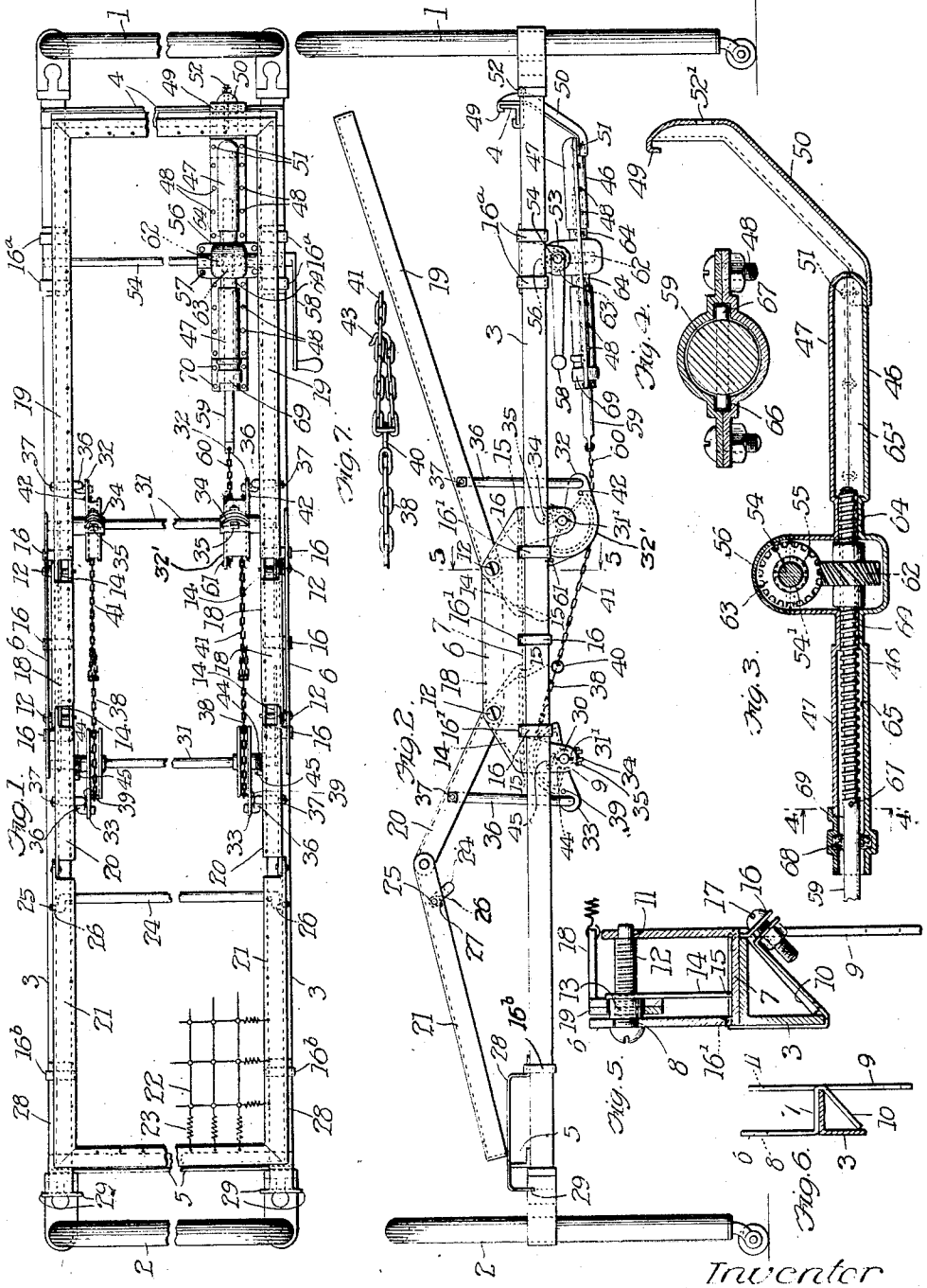
Feb. 7, 1928. 1,658,776

M. C. NIXON

BED OR ATTACHMENT THEREFOR

Filed Sept. 2, 1922 2 Sheets-Sheet 1



Witness
Martin H. Olsen

Inventor
Moses C. Nixon

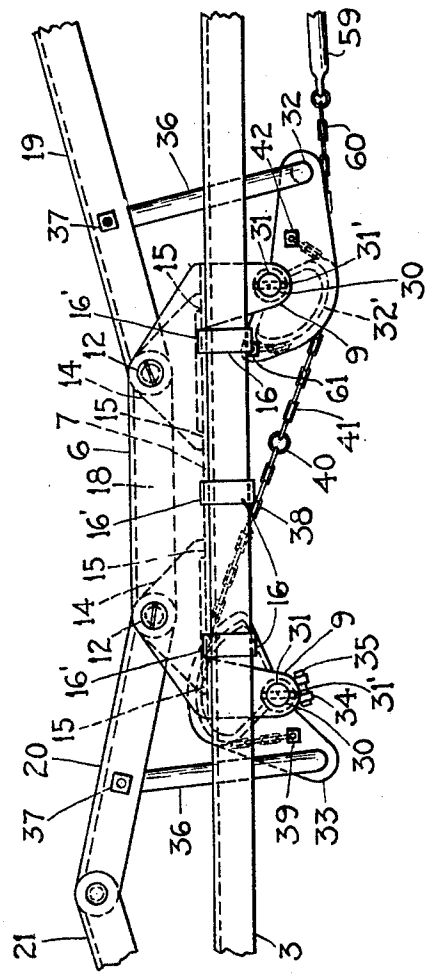
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FIG. 8



INVENTOR.

Moses C. Nixon

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UNITED STATES PATENT OFFICE.

MOSES C. NIXON, OF CHICAGO, ILLINOIS.

BED OR ATTACHMENT THEREFOR.

Application filed September 2, 1922. Serial No. 585,940.

My invention relates to beds, the object being to provide means whereby the posture of the occupant of the bed may 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, with lengthwise central portion broken out to reduce the width of the drawing; Fig. 2 is a side elevational view of Fig. 1; Fig. 3 is an enlarged side view of the incasement and power mechanism, with the front side of the incasement cut away to better illustrate working parts; Fig. 4 is a cross sectional view on line 4—4 of Fig. 3; Fig. 5 is a sectional view on line 5—5 of Fig. 2; Fig. 6 is an end view of the side rail in section with the supporting bracket in place; Fig. 7 is a section of chains for connecting the two sets of levers with provision for adjusting their length, in which the ring is shown in section and Fig. 8 is an enlarged modified central section of Fig. 2.

In 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 the side rails are bars 4 and 5, thus forming a supporting frame for the usual bed fabric, which is not shown as it is not a part of the present invention.

Mounted upon the side rails are supporting brackets 6, formed with a base 7 adapted to rest upon the top of the rails. At the outer-side of these rails the brackets turn upward with holes 8 near their top, from which the top slopes toward each end. At the inner-side of the rails and near the ends of the brackets the latter are turned downward to form supports 9, and the central part is formed to rest against the vertical angle of the rails thereby forming a brace 10 against the tension incident to the weight upon the fabric. At the inner-side of the rails sections of the brackets are turned upward with holes 11 therein positioned to correspond with holes 8. Extending across and supported in these holes are screws 12, and threaded thereon are sleeves 13 with flanges 14 extending downward with their ends 15 resting upon the base of the supporting brackets, thereby preventing a revoluble or rocking movement of the sleeves. The object of these screws and sleeves is to form adjustable bearings to conform to the width of the jointed frame as compared with that of the bed on which it is used.

These brackets are firmly, but preferably detachably-secured to the rails, as by clamp-straps 16, formed of flat steel with a hole at each end near which they are bent to right angles, and in securing the brackets the clamp-straps are passed through openings 16′ of the upwardly extending portion of the brackets, bent over the base of the latter, around the side rails and drawn, as by screws or bolts 17, thereby firmly securing the brackets in place. It is obvious that these brackets may be modified and adapted to furnish pivoted support for a single frame member as well as that herein described.

Mounted upon sleeves 13 are angle bars 18 that form a central or seat section, pivoted body or head and thigh or knee supporting members 19 and 20 respectively, and to the latter is pivotally secured a leg or foot supporting section 21, thereby forming a jointed frame to which the fabric 22 that supports the mattress is attached (only small section shown), as by helicals 23. While the brackets shown are formed as stampings it is obvious that they may be built up of parts, and since the jointed frame furnishes support for the fabric, and the pivoted levers are supportably connected with the central or seat section it is apparent that the apparatus is self-contained and may be secured to or supported by other means than bed rails.

As it may be desired to use this jointed frame on old beds, without removing the bed fabric therefrom, a pivoted spreader 24 has been devised, the number of which may be such as will meet requirements. Its ends are offset and pivoted in holes 25 at opposite sides of the frame with shoulders 26 to prevent the ends from slipping too far through. This spreader is held in an angular position, as by pins 27, so that as it contacts with the bed fabric the tendency would be to be carried upward out of the way, and at the same time give with the fabric and avoid a rigid resistance to the weight of the occupant of the bed.

If the jointed frame is used without re-

moving the bed fabric, the leg section would drag upon it, also, be interfered with by bar 5. To prevent this, brackets 28 to bridge said bar and support the leg section are provided. In the present case, they are made of flat strips, bent near both ends, one end being secured by clamp-straps 16^b, described as 16, and misplacement at the other end prevented by lugs 29 extending downward at each side of the rails. These brackets form an elevated base upon which the free end of the leg section rides as its pivoted end is raised and lowered by the movement of the thigh member. It is understood, of course, that if the bed fabric and bar 5 are not present these elevated brackets would not be required, as the leg section in that case could rest and ride upon the rails, and that the connections of the body and thigh members with the supporting brackets could be lowered accordingly, bringing the whole jointed frame closer to the rails.

Pivotally supported in bearings 30 are shafts 31, and levers 32 and 33 which, while in the form of segments may be regarded as bell-crank levers, are firmly secured thereto, as by hubs split between ears 34 and drawn, as by bolts 35. These levers are similarly formed, except that one of the levers 32 is adapted for use of two chains instead of one. The object of clamping these levers on the shafts is to permit adjusting their positions to conform to the width of the bed on which they are used. They are operatively connected with the body and thigh members of the jointed frame, as by links or pitmen 36, the latter being provided with shoulders inside the frame angle and held in place, as by nuts 37, and in the present case the levers as shown are partly in segmental form, which affords a more uniform leverage and power at all positions, but it is apparent that other forms of levers may readily be substituted.

Chains 38 are passed over the segment of levers 33 and secured thereto, as by bolts 39, with a ring 40 at their free end, and chains 41 are secured to levers 32, as by bolts 42, passed beneath the segment with hooks 43 at their free ends, which in making connection is passed through the rings, returned to and hooked into one of the links, (see Fig. 7) thus forming adjustable operating connections between the levers, but it is obvious that other means to form such connections may be substituted. The intention being to provide adjustment so that if desired one member of the jointed frame may be raised higher than the other, or that only one member be raised, or provision may be made so that one member be raised faster than the other, which can be accomplished by lengthening or shortening either of the levers 32 or 33. As the levers are rigidly secured to shafts 31 it is apparent that only one connection between the two sets is necessary, the object of having a connection on each side of the bed is, that if the latter is placed against a wall the connection on that side may be lengthened until inoperative and adjustment afforded through the exposed connection. Also, as it may be desired to retain the knee and foot sections in a raised position without that of the body member, levers 33 are provided with a ratchet or notches 44, and pivotally secured to support 9 are pawls 45, which may be made inoperative by moving them to the opposite side of their pivots, and the one on the exposed side of the bed moved into contact when desired to retain the thigh member in a raised position.

An incasement formed by securing parts 46 and 47 together, as by bolts 48, and an extension 50, channelled to make it more rigid, is secured to one end of the incasement, as by bolts 51, and to the free end of this extension is secured a hook 49 which, in the present case, is hooked onto bar 4 and secured thereto, as by a hook bolt 52 through a bolt hole 52′ in the extension, or it may be attached in any suitable manner at either end of the bed. Brackets 53 are secured to the rails, as by clamp-straps 16^a, described as 16, and revolubly supported by these brackets is an operating shaft 54, which extends across beneath the bed, passes through the upper part of the incasement and bearings 55 that extend therefrom, the caps of which are a part of and extend from the top section 56 of the incasement, and are secured, as by bolts 57. This shaft furnishes part support for the incasement and is operated by crank 58, the latter being detachable and may be applied to either end of the shaft, making it operative from either side of the bed. This crank may also be used to adjust the different sections of the jointed frame by applying it to either end of shafts 31, which are provided with pins 31′ to make the crank operative.

Within the incasement, lengthwise of and extending from one end thereof is a threaded rod 59, which may be operatively connected to one of the levers 32, as by chain 60 passed beneath segment 32′ and secured thereto, as by bolt 61, or other suitable means. Mounted upon this threaded rod is a gear or nut 62, the hub of which is bored and threaded to mate the threads on the rod, and firmly secured on shaft 54, as by pin 54′ is a gear 63 adapted to drive gear 62, causing the latter to revolve around the threaded rod, thereby imparting to it an endwise reciprocating movement. Adjoining the hubs of gear or nut 62, the chamber of the incasement is of the proper size to furnish suitable bearings or guides 64 for the threaded rod, and extending therefrom toward each end chambers 65, 65′ are large enough to furnish clearance for the free movement of the

rod said bearings or guides being adapted to prevent longitudinal movement of the gear or nut on said rod. At the side of chamber 65 and between the parts 46 and 47 of the incasement, grooves 66 (see Fig. 4) are provided and through the rod 59 is a pin 67 adapted to reciprocate with said rod with its ends riding in the grooves thereby preventing the rod from revolving with the gear 62. Also, at the open end of the chamber 65 is a stuffing box, 68, which may be filled with packing or other suitable material to absorb and prevent surplus lubricant from dripping, and is provided with a cap 69 secured in place, as by bolts 70, so the box may be cleaned out and re-packed when desired.

While the preferred embodiment of my invention has been described herein I do not wish to be limited to the details of construction shown as it is apparent changes may readily be made without departing from the spirit of my invention, and having described one form of construction I claim as new and desire to secure by Letters Patent the following:

1. In a structure of the class described, the combination of supporting brackets, means rotatably supported by said brackets, and bearings adjustably mounted upon said means.

2. In a structure of the class described, the combination of supporting brackets, means rotatably supported by said brackets, bearings adjustably mounted upon said means, a member pivotally mounted upon said bearings, and means to prevent rotation of said bearings.

3. In a structure of the class described, the combination of supporting brackets having upwardly extending parts, means extending across and supported by said parts, sleeves mounted upon said means and adapted to serve as bearings, and means whereby the position of the bearings may be adjusted.

4. In a structure of the class described, the combination of supporting brackets having upwardly extending parts, screws supported by said parts, bearings movably mounted upon the screws thereby permitting adjusting the position of the former.

5. In a structure of the class described, the combination of supporting brackets having upwardly extending parts, means extending across and supported by said parts, bearings mounted upon said means, a member pivotally mounted upon the bearings, and means whereby the position of the bearings may be adjusted.

6. In a structure of the class described, the combination of a jointed frame embodying a seat section, body and thigh supporting members pivotally secured to the respective ends of said section, pivoted levers carried by the seat section and connected with the body and thigh supporting members, means connected with said levers, means rotatable around aforesaid means for operating the same, means adapted to connect and disconnect said levers whereby both members may be moved simultaneously or one member only, and a leg supporting section adjustably connected with said thigh member.

7. In a structure of the class described, the combination of a supporting bracket having spaced extending portions, a member bridging and supported by said portions, and a sleeve mounted upon said member and adapted to serve as a bearing, said bridging member being adapted to adjust the position of said bearing.

8. In a structure of the class described, the combination of a seat section, body and thigh supporting members pivotally secured at the respective ends of said section, a leg supporting section pivotally attached to the free end of the thigh supporting member, pivotally supported levers, means operatively connected with said levers and pivotally secured to said members, and means for operating said levers and adapted to effect movement of said members simultaneously or of one member independently.

9. In a structure of the class described, the combination of a seat section, body and thigh supporting members pivotally secured at the respective ends of said section, pivotally supported levers, means pivotally secured to said members and operatively connected with the levers, and a single driving means for operating all of said levers to move both members or for operating part of said levers to move one member only.

10. In a structure of the class described, the combination of a seat section, body and thigh supporting members pivotally secured at the respective ends of said section, pivotally supported levers, links pivotally secured to said members and operatively connected with said levers, and means for operating said levers whereby the position of said members may be adjusted simultaneously or each independently.

11. In a structure of the class described, the combination of a seat section, body and thigh supporting members having one end of each pivotally secured to the respective ends of said section, pivotally supported levers, elements pivotally secured to said members intermediate their ends and operatively connected with said levers, and a single driving means for operating said levers whereby the free end of one of said members may be raised or lowered.

12. In a structure of the class described, the combination of a central section, supporting members pivotally secured at the respective ends of the central section, elements pivotally attached at one end to each of said members, and means for driving said

member reaches its normal position and then the other member moves independently.

22. In a structure of the class described, the combination of a central section, body and thigh supporting members pivotally secured at the respective ends of the central section, said members lying flat when in normal position, and operating means connected with said members and adapted to raise one of said members at first but upon a predetermined movement of said one member the said operating means becomes effective to raise both members simultaneously, and on the reverse movement of the operating means both members move simultaneously until one member reaches its normal position and then the other member moves independently, and means whereby the predetermined movement may be changed.

MOSES C. NIXON.