B. P. BURNS.

ADJUSTABLE BACK REST.

APPLICATION FILED DEC. 11, 1920.

1,409,662.

Patented Mar. 14, 1922.

3 SHEETS—SHEET 1.

Fig. 1.

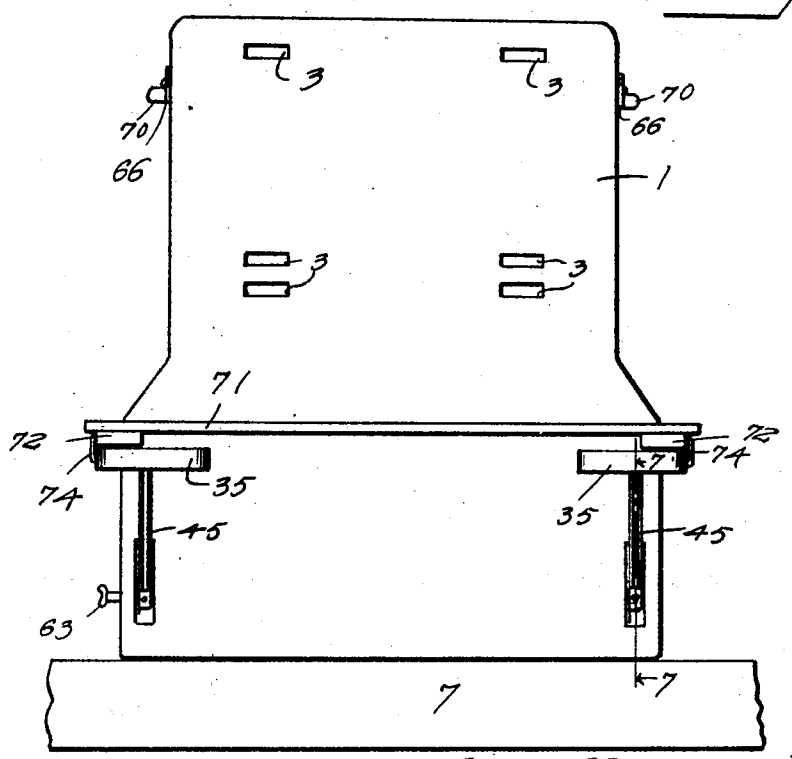


Fig. 7.

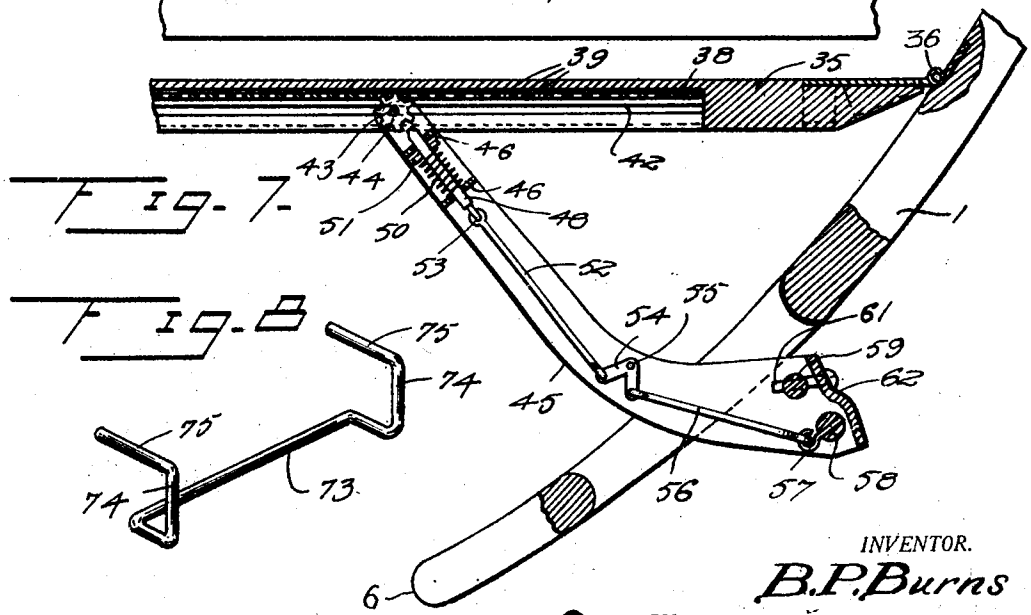


Fig. 8.

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3 SHEETS—SHEET 2.

Fig. 2.

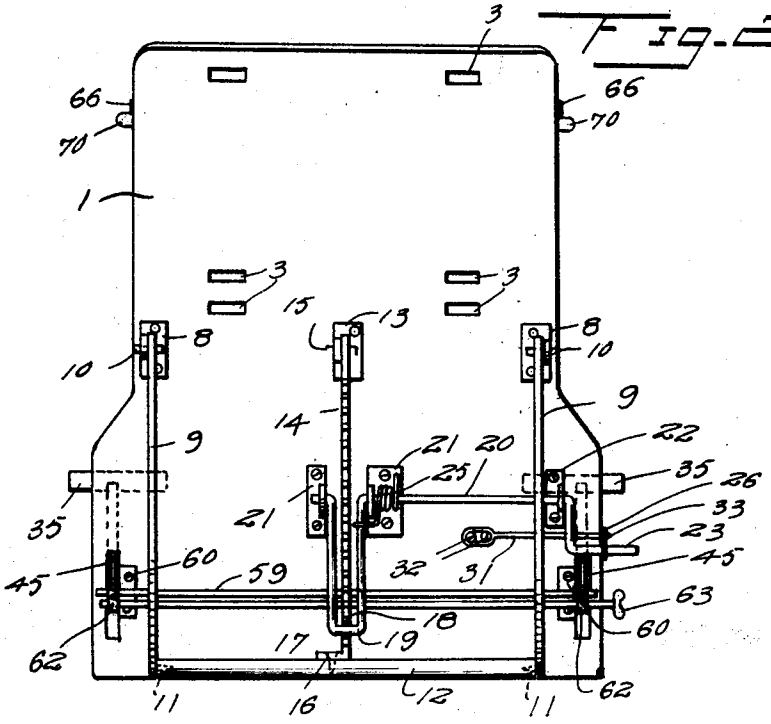


Fig. 4.

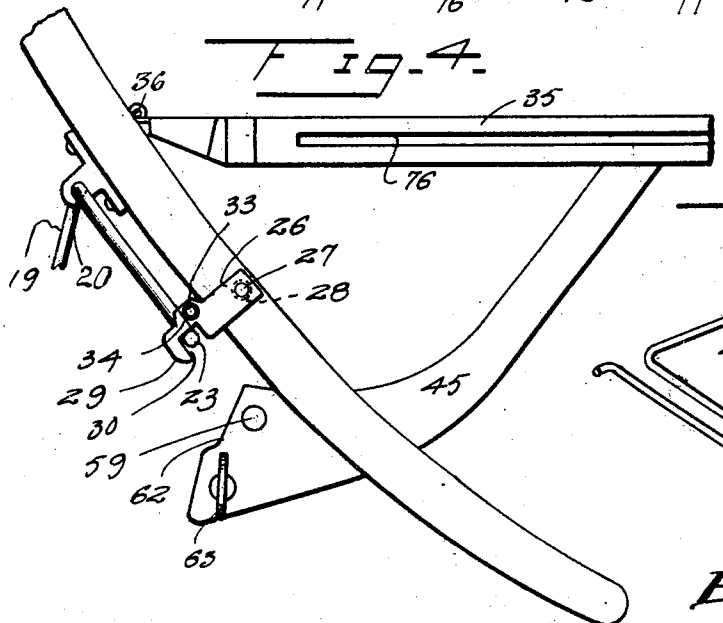
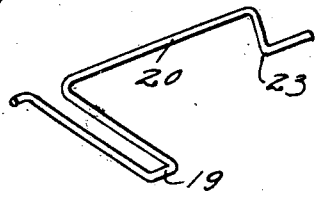


Fig. 5.



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3 SHEETS—SHEET 3.

Fig. 3.

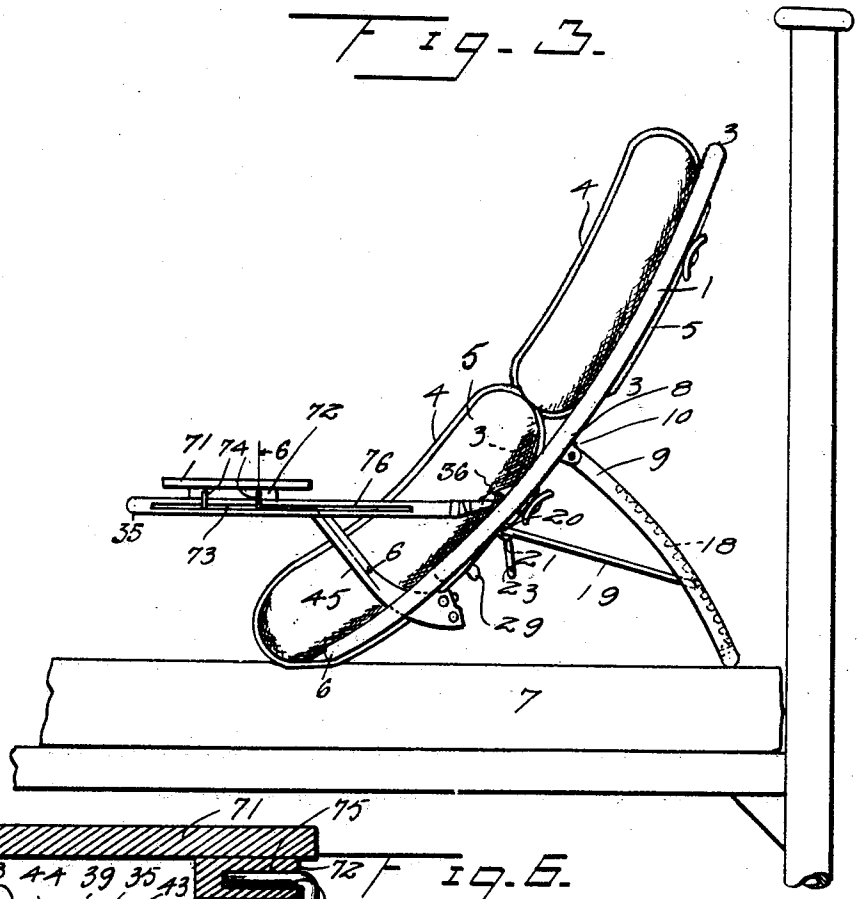


Fig. 6.

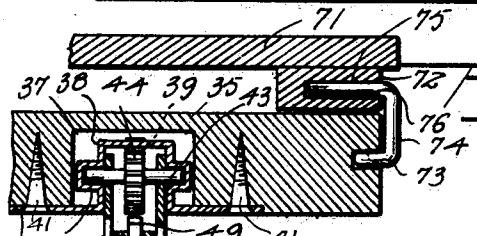


Fig. 10.

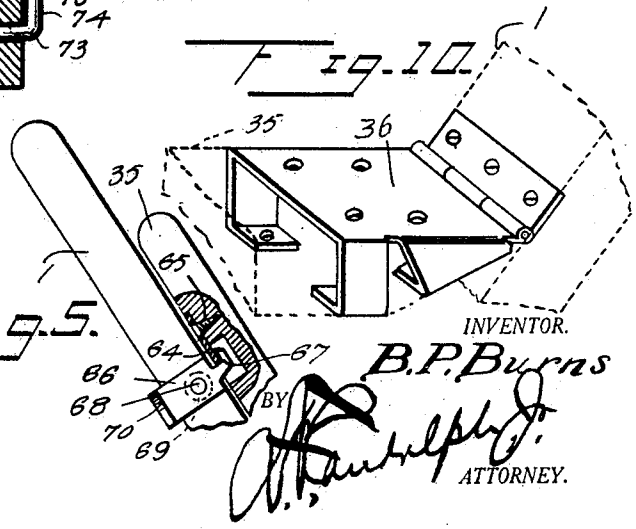
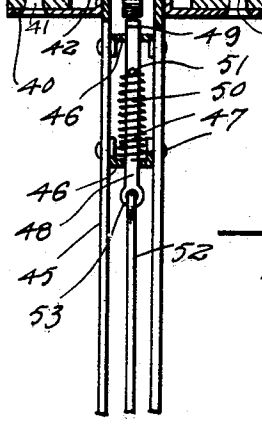


Fig. 5.



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UNITED STATES PATENT OFFICE.

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ADJUSTABLE BACK REST.

1,409,662. Specification of Letters Patent. Patented Mar. 14, 1922.

Application filed December 11, 1920. Serial No. 429,959.

To all whom it may concern:

Be it known that I, BARTHOLOMEW P. BURNS, 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 Adjustable Back Rests; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention has relation to certain new and useful improvements in an adjustable back rest and has for its primary object the provision of a device of the character stated which will be of simple and improved construction and in which the arms may be readily raised or lowered in different inclined planes to support a removable tray and the supporting means for the back rest supporter or frame adjusted to support the same in various inclined positions.

The invention has for another object the provision of an adjustable back rest of the character stated which will include an improved and novel mechanism for adjusting and supporting the arms in proper position.

The invention has for a further object the provision of a back rest of the character stated in which the main member or back rest supporter will have its lower edge curved and extended at an angle with respect to the remainder of the same so as to conform to the size of the patient using the back rest.

A still further object of the invention resides in the provision of an adjustable back rest of the character stated in which the supporting members for the arms may be readily locked in adjusted position to retain the side arms in the desired inclined plane or in a horizontal plane, as desired.

Still another object of the invention resides in the provision of an adjustable back rest of the character stated in which the back or main frame will be curved to correspond to the curvature of the back of the patient, so as to afford the maximum comfort to the party employing the back rest.

With the foregoing and other objects in view as will appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of cooperating elements as hereinafter more specifically set forth, claimed and shown in the accompanying drawings forming a part of the present application and in which:

Figure 1 is a front elevation of the complete device with the same positioned on a bed.

Figure 2 is a rear elevation with the supporting frame locked in folded position.

Figure 3 is a side elevation of the device.

Figure 4 is a side elevation showing the opposite side of the device with the locking bar held in its innermost position.

Figure 5 is a view similar to Figure 4 showing the side arms and the supporting frame locked in folded position.

Figure 6 is an enlarged detail section on the plane of line 6—6 of Figure 3.

Figure 7 is a vertical detail section on the plane of line 7—7 of Figure 1.

Figure 8 is a detail view of one of the spring clamping members, removed.

Figure 9 is a detail view of the locking bar for the supporting frame, removed.

Figure 10 is an enlarged detail perspective view showing the hinge support for the arms, the end of one of the arms and the adjacent portion of one of the longitudinal members of the main frame being indicated by dotted lines.

Referring more in detail to the drawings in which similar reference characters designate corresponding parts throughout the several views, 1 indicates the back member, the lower portion of which is of increased width. The back member is curved longitudinally throughout its length so as to conform to the back of the patient and insure the maximum comfort to the party using the back rest. The main part of the member 1 is provided with pairs of transverse slots 3 of elongated form to receive strap members 4 extended over cushions 5, pillows or the like, placed upon the front face of the member 1 as clearly shown in the drawings. It will be understood that the lower edge 6 of the member 1 is rounded so as to prevent injury to the mattress 7 or the like, upon which the device is positioned.

Mounted on the back of the member 1 is a pair of bearing members 8, adjacent the opposite longitudinal edges of the member 1 and to which are pivoted the side members 9 of the supporting frame, as shown at 10. The lower ends of the side members 9 have screws 11 or the like extended therethrough and into the opposite ends of the rounded

lower supporting frame member 12 which is adapted to rest upon the mattress 7. A third or central bearing member 13 is secured upon the member 1, between the members 8 and a central supporting frame member 14 is pivoted to the bearing 13 at its upper end, as shown at 15, while the lower end 16 of the member 14 is turned at a right angle and secured upon the lower supporting frame member 12, as shown at 17. This member 14 has notches 18 formed in its outer longitudinal edge to receive the looped or U-shaped portion 19 of the locking bar 20. The locking bar 20 is pivotally mounted in suitable supporting brackets 21 secured upon the back of the member 1, at opposite sides of the looped portion 19 of the rod 20. The rod 20 is also extended through a bracket or bearing member 22 adjacent the crank end portion 23 of the rod 20 and near one side edge of the main member 1. A spring 25 is coiled around the rod 20 adjacent one of the brackets 21 and has one end bearing upon the latter while its opposite end is engaged around the looped portion 19 of the rod 20, as clearly shown in the drawings. In order to retain the rod 20 in its inoperative position to retain the supporting frame in folded position, I have provided a latch member 26 which is pivoted to the edge of the main member 1 by a suitable pivot screw 27, which also has mounted thereon a spacing washer 28 between the edge of the main member 1 and the latch member 26. This latch member 26 has a beveled free end 29 directed rearwardly and a rod receiving slot 30 in its lower face, slightly inwardly of the free end 29, to accommodate the crank end 23 of the rod 20. A suitable spring bar 31 is secured upon the rear face of the main member 1, as shown at 32 and has its free end extended through the offset portion 33 of the latch member 26, which is provided with the opening 34 to receive the spring bar 31, so that the latch member 26 will be retained in its lowermost or inoperative position, as shown in the drawings. It will therefore be seen that when the rod 20 is swung inwardly toward the main member 1, the crank end 23 of the rod 20 will engage the end 29 of the latch member 26, forcing the latter upwardly until the crank end 23 catches the slot 30 of the latch member 26 when the spring 31 will return the latch member 26 to its lowermost position to retain the same in this position until manually raised to release the crank end 23 of the rod 20.

Hinged to the wide lower portion of the main member 1 adjacent the curved or connecting upper edge thereof which connects with the straight or main portion of the member 1, are the side arms 35 which are hinged to the main member 1 by suitable hinge members 36 connected therewith at their reduced inner edges and in such a manner that the side arms may be folded upwardly toward the main member 1. Each side arm 35 has a longitudinal slot 37 formed in its lower face to accommodate a track member 38 which is in the form of a channel iron having slots or recesses 39 formed in its main wall at spaced distances. This channel iron 38 has oppositely directed longitudinal edges 40 which are engaged against and secured to the under face of the side arm 35, by suitable screws 41 or the like, the flanges 40 being countersunk in the lower face of the side arms 35. Each channel iron 38 is also provided with oppositely offset portions 42, within the recess 39 to form runways or guides for the opposite ends of a shaft 43 which has ratchet wheel 44 mounted thereon for movement in the channel iron 38 and in the slots 39 thereof. The shaft 43 is mounted in the upper end of the forked raising and supporting arm 45. This arm 45 is preferably formed of a pair of spaced plates or strips which are connected adjacent their upper ends by a pair of spaced side channels 46 which have their opposite ends turned at a right angle and secured to the strips by suitable rivets 47 or other securing members. The pin 48 is extended through central openings in the main portions of the channel guides 46 and has its upper end 49 formed for engagement with the ratchet wheel 44 to prevent rotation of the latter and thereby retain the side arms 35 in adjusted position. This pin 48 has an expansion spring 50 engaged therearound between the guide channels 46 and a bearing pin 51 is extended through the pin 48 to form an upper bearing for the spring 50 so that the latter may serve to force the pin 48 upwardly into position to engage the ratchet wheel 44. A wire 52 is connected at one end to the depending head 53 of the pin 48 while its opposite end is pivoted to one arm of a bell crank lever 54 pivoted between the enlarged or widened lower end of the strips forming the adjusting and supporting arm 45, as shown at 55. A second wire 56 is pivoted to the remaining arm of a bell crank lever 54, by one end, and is connected with the hook 57 which has a shank portion engaged through the rod 58 extended through the lower corners of the two adjusting and supporting arms 45 at opposite sides of the device. It will be understood that the wide lower ends of the arms 45 extend rearwardly of the main member 1 and are pivotally mounted on an upper rod 59 which is also extended through the wide lower ends of the adjusting and supporting arms 45, preferably at the rear upper corners thereof. The rod 59 is mounted in suitable bracket 60 on the main frame member 1 and is adapted to be rotated therein. Each adjusting and

supporting arm 45 is rigidly connected with the rod 59 by a suitable fastening pin 61 which is extended through a cross brace 62 mounted on the rear curved and widened end of the arm 25 and through the rod 59, whereby both arms 45 will be swung together when the rod 59 is rotated. A suitable knob or handle 63 is mounted upon one end of the rod 58 so that this knob may be readily rotated to withdraw the locking pin 48 from engagement with the ratchet wheels 44 so as to permit of adjustment of the side arms 35. One of the side arms 35 is also provided with a latch plate 64 projecting from one edge and screwed to the arm 35 by a suitable securing member 65. A pivoted latch member 66 is mounted on the corresponding side or edge of the main member 1 and has a reduced upturned latching finger 67 projecting from its forward end for engagement with the latch plate 64 when the arms 35 are raised so as to support these arms in raised position. The latch plate 64 is secured upon the main member 1 by a suitable pivot member 68 which also has a washer 69 mounted thereon between the latch plate 64 and the main member 1. The rear end of the latch member 66 terminates in a right angularly extended finger grip 70 by means of which the latch members 66 may be grasped and turned upon the pivot member 68.

The side arms 35 are also adapted to support a removable tray 71 which may be placed over the side arms 35 and which is provided with a pair of cleats 72 on its under face and along its opposite side edges. These cleats 72 are adapted to rest on the side arms 35 and carry a plurality of spring clamping members 73 of substantially U-shaped form with the legs 74 thereof bent back upon themselves in parallel relation and secured in suitable slots 75 in the cleats 72 so that the bent portions of the legs 74 extend downwardly and the main portions of the spring clamps 73 are directed inwardly at a right angle from the depending portions of the legs 74 to rest in grooves 76 formed in the outer edges of the side arms 35. The spring clamps 73 have sufficient resiliency to retain the tray 71 in proper position although the tray may be adjusted toward and away from the main member 1 by sliding the same over the side arms 35, the main portion of the spring clamp 73 riding in the longitudinal grooves 76 of the side arms 35. While any suitable number of spring clamps 73 may be employed, I have shown one of these members on either side of the device.

It will readily be seen from the foregoing paragraphs that this adjustable back rest may be placed on any incline desired and the side arms 35 readily adjusted and secured in adjusted position. The device may be employed either with or without the removable tray 71, as desired.

While the preferred embodiment of the invention has been shown and described, it will be understood that minor changes in the details of construction and arrangement of parts may be resorted to within the scope of what is claimed without departing from the spirit of the invention.

What is claimed is:—

1. An adjustable back rest comprising a back rest member, side arms connected to said back rest member and adapted to swing toward and away from the upper portion thereof, a track bar carried by each of said side arms, a wheel for travelling on each track, a supporting member for each wheel, means for retaining said supporting members in various positions, and means carried by the supporting means of each wheel to lock the latter against movement on said track, whereby said side arms will be locked in adjusted position.

2. An adjustable back rest comprising a back rest member, side arms carried by said member, a channel member on each of said side arms, said channel members having slots therein, ratchet wheels for movement in said channel members and engagement in said slots, a pivoted supporting arm for each of said wheels, means carried by each pivoted supporting arm for engagement with the wheel carried thereby to lock the latter against rotation and retain the supporting arm and the side arm in adjusted position, means for releasing the last mentioned means, and means for latching said side arms in raised position.

3. An adjustable back rest comprising a back rest member, side arms for said member, means for hinging said side arms to said member, a supporting frame pivotally mounted on the rear face of said member, a central notched bar for said supporting frame, a rack bar rotatably mounted on said back rest member, said rack bar having a looped portion for engagement with the notched bar of said supporting frame, whereby the supporting frame may be held in various positions to support the back rest member in inclined positions, said rack bar having a crank end, and spring latching mechanism for engagement with said crank end of the rack bar to latch the latter in its innermost position to retain the supporting frame in folded position against the face of said back rest member.

4. A back rest having a back rest member, a side arm to swing vertically relatively thereto, a supporting arm for said arm extending from the back rest member and pivoted to the latter, one of said arms having teeth, the other arm having a toothed wheel to travel on said teeth, and securing means on one of the arms to cooperate with the

teeth of the wheel to prevent movement of the wheel.

5. An adjustable back rest having a back rest member, an arm member to swing vertically relatively thereto, a lever means extending from the back rest member to support the arm member, and separable securing means between the arm member and the lever means, comprising a rack and a toothed wheel movable thereon, and means to secure the wheel against movement.

6. A back rest having a rest member convexly curved intermediate the top and bottom edges thereof to fit the back of a patient, and said member being substantially straight and rigid transversely.

In testimony whereof I affix my signature in presence of two witnesses.

BARTHOLOMEW P. BURNS.

Witnesses:

CORINNE. E. BURNS,

JULIETTE G. KELLY.