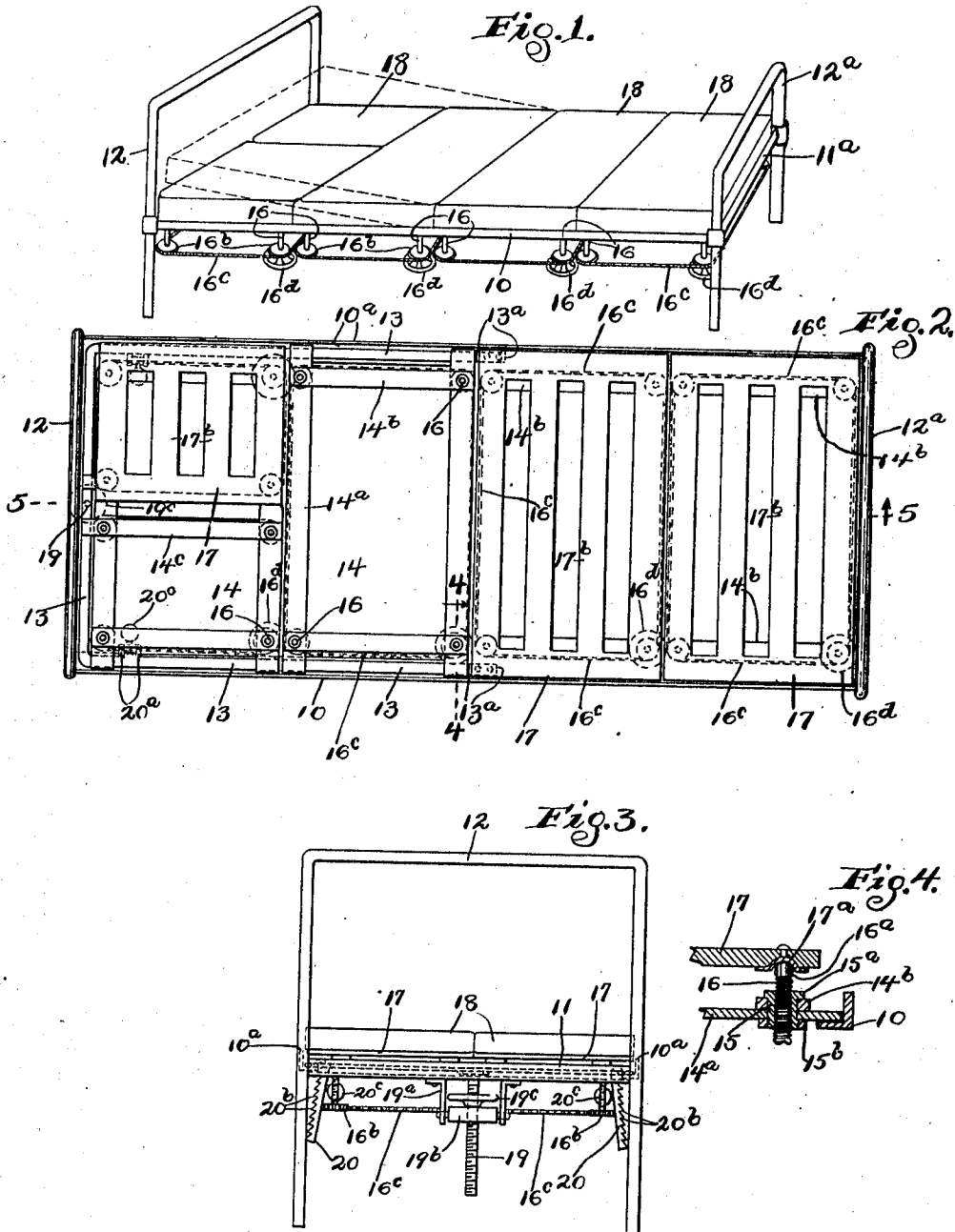


A. M. MAY.
BED.
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974,287.

Patented Nov. 1, 1910.

2 SHEETS-SHEET 1.



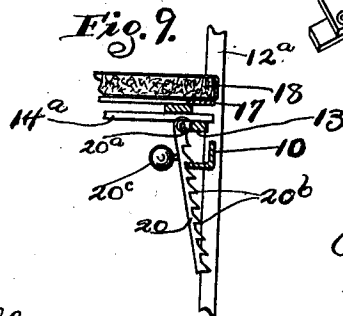
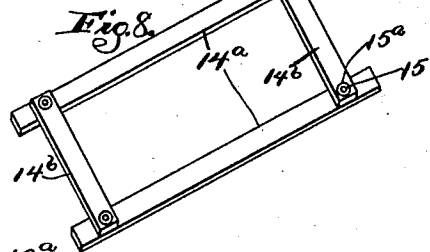
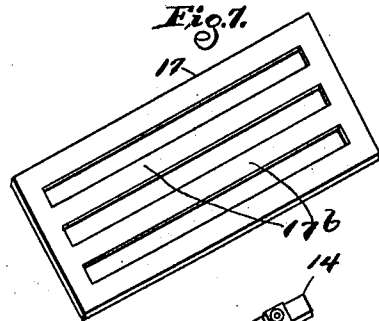
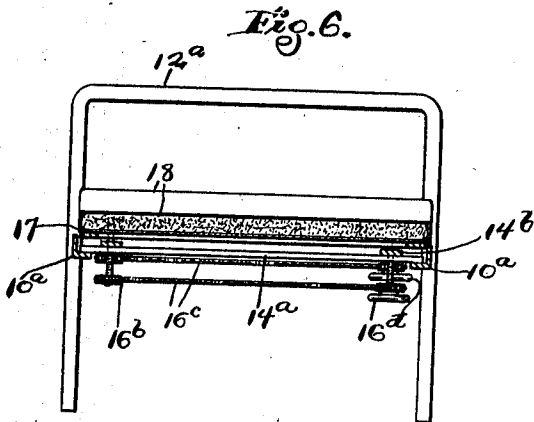
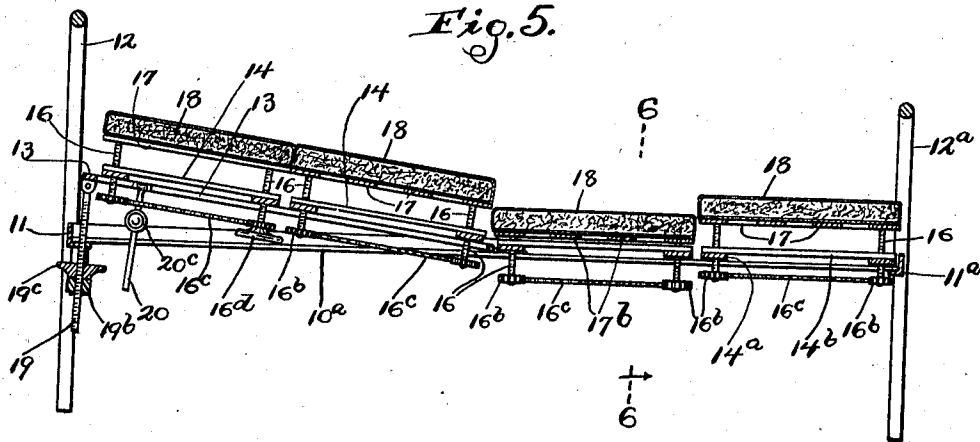
Witnesses:-
Daniel E. Italy.
W. L. McDonald.

Inventor:-
Albert M. May
by Lynch, & Co.
his Attorneys.

974,287.

Patented Nov. 1, 1910.

2 SHEETS—SHEET 2.



Witnesses:
Daniel E. Raly.
W. L. McDonnell.

Inventor:
Albert M. May
by Lynch & Rorer
his Attorneys.

UNITED STATES PATENT OFFICE.

ALBERT M. MAY, OF LAKEWOOD, OHIO.

BED.

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Specification of Letters Patent.

Patented Nov. 1, 1910.

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To all whom it may concern:

Be it known that I, ALBERT M. MAY, a citizen of the United States of America, residing at Lakewood, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Beds; and I 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 pertains to make and use the same.

This invention relates to improvements in beds and particularly invalid beds.

One of the objects of my invention is to provide a bed which can be manipulated or adjusted so that access can be had to any portion of the patient's body without inconveniencing the patient, thereby making it possible to wash, dress or operate upon any portion of the body or change the linen or bedding beneath the patient without rendering necessary a movement of the body or otherwise causing any bodily discomfort.

A further object is to provide means whereby the patient can be readily raised and supported in an inclined position.

In carrying out one part of my invention I form the bottom of the bed which supports the bedding, in sections, each one of which may be raised and lowered independently of the others. The bedding beneath the patient is also formed of sections of the same contour as the bottom sections, and will therefore be raised or lowered with the latter. I preferably utilize the ordinary form of bedstead or bed frame proper, and insert in the latter an auxiliary frame or frames which support the bedding sections. As shown in the drawings a plurality of frames are provided which extend across and are supported at their ends on the sides of the bed. Upon these frame sections are vertically movable trays which support the bedding sections, the trays being each supported upon vertically movable members which are carried by the corresponding frame section, and can be moved simultaneously to raise or lower the tray.

In order that the patient may be raised if desired to an inclined position, I support the frame sections toward the head of the bed in a U-shaped member which extends across the head of the bed and for a suitable distance along the sides of the bed, the free ends being hinged to the latter, and I provide means whereby this supporting member may

be readily raised about the hinged ends and firmly supported in any desired position.

My invention still further consists in certain novel details of construction and combination and arrangement of parts which will be described in the specification and set forth in the appended claims.

For a better understanding of my invention reference is had to the accompanying drawings in which—

Figure 1 is a perspective view of a bed equipped with my invention, the dotted lines indicating the manner in which certain sections may be raised or inclined; Fig. 2 is a plan view of the bed, two of the trays being removed for the sake of clearness; Fig. 3 is an end view, looking toward the head of the bed; Fig. 4 is an enlarged detail view substantially along the line 4—4, Fig. 2, showing in section the side of the main frame, and portions of a frame section and tray supported thereby; Fig. 5 is a section corresponding to line 5—5, Fig. 2, showing the sections at the head of the bed tilted up and one section lowered; Fig. 6 is a section on line 6—6, Fig. 5; Fig. 7 is a view of one of the trays; Fig. 8 is a view of one of the frame sections, and Fig. 9 is an enlarged detail sectional view.

In the figures of the drawings I have shown a bed having a metal frame consisting of side pieces 10 and 10^a, ends 11 and 11^a formed of angle iron, a head piece 12 and a foot piece 12^a, the latter being an inverted U-shaped member the arms of which form the supporting legs of the bed. Normally resting on the horizontal inwardly extending flanges of the sides 10 and 10^a and end 11 of the frame, is a U-shaped member 13 (see Fig. 2), the arms of which extend substantially to the center of the side pieces 10 and 10^a and are hinged thereto as shown at 13^a. The purpose of this member will be explained more fully later.

Extending transversely of the main frame and arranged side by side are a number of rectangular frame sections 14. Each of the sections 14 consists of side pieces 14^a extending across the frame and end or cross pieces 14^b, the extremities of the side pieces extending beyond the end pieces and resting on the flanges of the angle irons 10 and 10^a or on the arms of the member 13. The section at the head of the bed is provided in addition to the end pieces 14^b with two cross pieces 14^c near the center of the section.

As is shown in Fig. 4 the cross pieces of each section are secured to the side pieces by hollow internally threaded bushings 15, each of which is provided at one end with a flanged head 15^a which rests on the cross piece and at the opposite end is threaded externally and receives a nut 15^b. As appears from Fig. 2 all the sections are provided with the bushings at the four corners and in addition the section at the head of the bed has four bushings near the center. Extending vertically upward through the hollow threaded bushings are vertically movable threaded supporting bolts or posts 16, each of which is provided with an upper rounded end 16^a above the frame section and below the frame section with a sprocket wheel 16^b fixed thereto. The set of supporting bolts in each frame section and each of the two sets in the frame of the head of the bed are in this case arranged to be raised or lowered simultaneously by means of a sprocket chain 16^c and a hand wheel 16^b on one bolt of the set.

Resting on the upper ends of the bolts 16 are a number of trays 17, which extend across the bed and all have substantially the same length and width as the frame sections except that the section at the head of the bed supports two trays of half the length of the larger trays. All the trays have at the corner on the lower sides rounded or depressed seats 17^a for the ends of the supporting bolts. The trays are preferably formed of sheet metal and are slotted longitudinally of themselves or transversely of the bed so as to form resilient or yielding strips or bars 17^b.

Resting on the trays and of the same contour as the latter are bedding or mattress sections 18 there being three mattress sections for the three lower trays and two sections for the two trays at the head of the bed, the dividing line between the latter being in the center of the bed. Each of the bedding sections will preferably be inclosed in a separate slip or casing, it being intended that the patent lie directly on the latter.

In order that the upper portion of the body of the patient may be inclined or raised from the horizontal position to add to his comfort, the following mechanism is provided for raising the U-shaped member 13, the two frame sections toward the head of the bed, and the trays and bedding sections supported thereby. Secured in any suitable manner to the center of the portion of the member 13 extending along the head of the bed is a downwardly extending threaded bolt or rod 19. Pivotaly secured between a pair of brackets 19^a attached to the lower side of the head piece 11 of the main frame of the bed, is a support 19^b, through which the down-

wardly extending bolt 19 loosely passes. Engaging the threaded portion of the bolt above the pivoted support 19^b is a combined adjusting nut and hand wheel 19^c which is arranged to bear against the upper face of the support 19^b. Thus it will be seen that when the hand wheel is turned, the bolt 19, the U-shaped member 13, and the parts carried thereby, including the two frame sections toward the head of the bed, the trays and bedding carried thereby will be raised or lowered, depending upon the direction in which the hand wheel is turned.

In order that the inclined portion of the bed may be well supported in any desired position I provide a pair of supporting arms 20 on the sides of the member 13 in position to engage the sides 10 and 10^a of the main frame. These arms 20 are pivoted between parallel ears 20^a on the member 13 and are each provided on the side adjacent the frame with teeth 20^b adapted to engage the inwardly extending flanges of the sides 10 and 10^a. In order that the arms will automatically engage the flanges I provide each with a counterweight 20^c which causes it to swing outward against the flange. Consequently when the bed is swung upward to a certain position by turning the hand wheel 19^c, the arms will engage the sides of the frame, so that the raised portion of the bed is well supported and will be held rigidly in position, even though the patient is not in the center of the bed.

The purpose of the construction will now be explained more fully. In case it is desired to wash the patient, the different trays and mattress sections are successively lowered so that the various parts of his body can be washed. For example, if it is desired to wash the patient's feet and lower limbs, the section at the foot of the bed is first lowered. After this portion of his body is washed the section at the foot of the bed is raised and the second section is lowered, so that a different portion of the body can be washed. The same operation can be repeated for the other sections of the bed to wash the remaining portions of the body. It will be seen that as the bed sections are merely lowered and not entirely removed there will be no danger of the patient being exposed to drafts coming from below the bed.

In case it is desired to change the bedding upon which the patient lies, all that is necessary is to lower and remove separately the different mattress sections and change the slips or coverings. This will probably be done by first raising all the sections, then slightly lowering the section to be removed. In case it is desired to insert a bed pan below the patient all that is necessary is to lower the proper section. With the construction at the head of the bed it will be

an easy matter to wash, dress or operate upon the patient's head without raising it. Supposing the patient is lying in the center of the bed one portion of his head can be washed or otherwise cared for by lowering one section, then by raising this section to the normal position and lowering the other section the other side of his head can be cared for. Thus it will be seen that both the patient and the bed can be kept in a sanitary condition and all the necessary duties and operations performed without rendering necessary any movement of the body of the patient.

What I claim is,—

1. In a bed, a main frame, a plurality of auxiliary frame sections extending between the sides of the main frame, a plurality of vertically movable trays carried by said sections the section at the head of the bed having two independent trays, each of which

extends from the side to the center of the bed and means for shifting said trays.

2. In a bed, a frame, and a sectional bottom, a U-shaped member supporting a portion of the latter, said member extending across the head of the bed and having its arms hinged to the sides of the frame, means at the head of the bed for raising or lowering said member, and a pair of counterweighted arms hinged to the arms of said member and having teeth adapted to automatically engage the sides of the frame to rigidly hold the member in any desired position.

In testimony whereof, I sign the foregoing specification, in the presence of two witnesses.

ALBERT M. MAY.

Witnesses:

VICTOR C. LYNCH,
N. L. McDONNELL.