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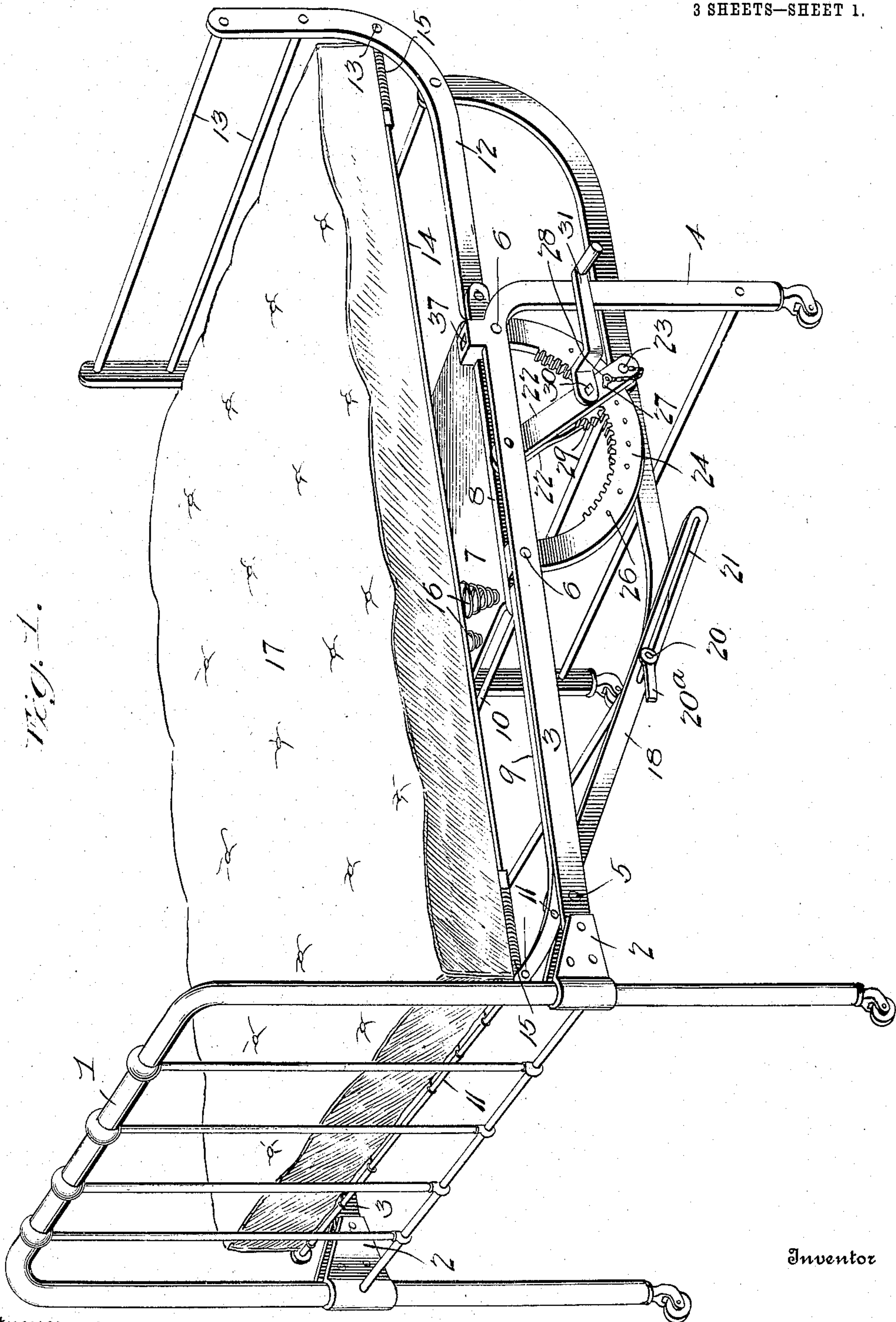
INVALID BED.

APPLICATION FILED SEPT. 22, 1908.

923,729.

Patented June 1, 1909.

3 SHEETS—SHEET 1.



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# UNITED STATES PATENT OFFICE.

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## INVALID-BED.

No. 923,729.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, AIKEN C. TAYLOR, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain Improvements in Invalid-Beds, of which the following is a complete specification.

This invention is an improvement in beds, and relates more especially to that particular class which are commonly known as invalid beds, and in which the mattress support is so constructed as to be adjustable for the purpose of moving the patient so that his body may be disposed in different positions.

The present invention contemplates a peculiar construction of invalid bed apparatus embodying a mattress support composed of three hingedly connected sections, in combination with a particular form of bed frame supporting the sections and means for adjusting said sections relatively to each other, whereby they may be easily and conveniently adjusted by one person so that the body of the patient may assume a number of different positions from a reclining to a sitting position, and when adjusted for the latter purpose the sections are arranged after the manner of an ordinary "easy-chair", in which the lowered foot-section is unobstructed so as to permit the patient to get in and out of the apparatus.

The invention is especially serviceable for hospital purposes, but as will be readily obvious may be used in a private home and in the capacity of a conventional bed when desired.

The invention consists in the novel construction and arrangement of parts constituting the invalid bed apparatus, all as hereinafter fully described and specifically set forth in the appended claims.

In the accompanying drawings, which form a part of this specification: Figure 1 is a perspective view of an invalid bed apparatus constructed in accordance with my invention, the parts being arranged to support the mattress in a horizontal position, similar to an ordinary bed. Fig. 2 is a side elevation, with the foot section of the mattress support elevated so that the lower end of the mattress will be inclined upward. Fig. 3 is a side elevation, with the sections of the mattress support arranged in the form of a chair. Fig. 4 is a vertical sectional view on

the line 4—4 of Fig. 3, looking in the direction of the arrow.

Like numerals of reference indicate like parts in all the figures of the drawings.

In carrying out my invention the principal parts of the apparatus are constructed of metal bars so shaped and connected as to provide an invalid bed that it is not only light in weight but is also strong and durable and therefore serviceable in use.

Referring to the drawings it will be seen that the bed frame consists of a metal head section 1, of conventional design, to the end posts of which are secured by metal brackets 2, the side rails 3, the latter being bent downwardly at their outer ends to form posts 4 which constitute the support for the foot portion of the bed. The side rails are connected near the head section 1 by means of a cross-bar 5, and near the supporting-legs or posts 4 by cross-bars 6 6, the latter serving as braces for the bed-frame and also to support a horizontal cross-piece or board 7, the purpose of which will be hereinafter explained.

Secured to the bed frame by means of the cross-bars 6, and extending parallel with the side rails 3, are bars 8 8, which in connection with the plate or board 7 forms the stationary center section of the adjustable mattress support, to the opposite ends of which the head and foot sections of said support are hingedly connected. The head section of the mattress support is composed of side bars 9 9, hinged at one end to the bars 8 by a connecting-rod 10, and at their other or free end curved slightly upward, as shown, and connected together by cross-bars or connecting-rods 11. The foot section of the mattress support is similar to the head section thereof, with the exception that the side-bars 12 12 are extended upwardly so that in connection with the cross-bars 13 there is formed a suitable foot portion when the parts are arranged as a bed (Fig. 1), and a support for a foot rest when the parts are arranged as a chair (Fig. 3). Connected to the head and foot sections of the mattress support is an ordinary form of wire mattress 14, of woven-wire construction and connected at its ends to said sections by means of coiled springs 15, the springs at one end being connected to the cross-bar or connecting-rod 11 of the head section, while the



springs at the other end are connected to one of the cross-bars or connecting-rods 13 of the foot section, and at an intermediate point, preferably at the inner end of the plate or board 7 said wire-mattress is reinforced by means of spiral springs 16. The hair mattress, or pad, as 17, is placed directly upon this wire mattress, as shown in Fig. 1.

As will be seen the head and foot sections of the mattress supporting frame are hinged to the stationary center section so that the former may swing vertically and assume different positions, and for the purpose of adjusting these hinged sections I provide certain mechanism which I shall now proceed to describe.

Hinged to the free end of the head-section of the mattress supporting frame, by means of one of the connecting-rods 11 thereof, are links 18 18, and connected to these links and to the foot-section are connecting bars 19 19, whereby said head and foot sections may be moved simultaneously. The connection between the bars 19 and links 18 is by means of a rod 20 the ends of which pass through holes in the bars and through slots 21 in the links, the projecting ends of said rod being threaded to receive clamping-nuts 20<sup>a</sup>. By this arrangement the head section of the mattress supporting frame may be adjusted independently when desired, as hereinafter explained.

22 22 designate levers which are pivotally connected at their upper ends to the side rails of the bed frame, respectively, and at their lower ends to the connecting-bars 19 19 at an intermediate portion thereof, the connection with the bars 19 being by means of a cross-rod 23. In this manner the operating devices for the adjustment of the hinged head and foot sections of the mattress supporting frame are connected so that they may be operated by moving one of the levers 22. These levers are preferably pivoted at their upper ends between the side rails 3 and the side bars 8.

Located at one side of the bed frame, and secured at its ends between the side rail 3 and side bar 8 is a semi-annular plate 24, having rack-teeth 25 at its inner edge, and a series of holes 26 extending transversely through said plate. One of the levers 22 travels over the outer side of the plate and is provided with a hole 27, adapted to register with any one of the holes 26 in the plate, the registering holes 26 and 27 receiving a removable pin 28, by which the lever is held in an adjusted position. This lever carries a pinion or spur-wheel 29, in mesh with the rack-teeth 25, and the gudgeon 30 of said pinion is extended beyond the lever and is squared to receive a removable crank-handle 31. As will be seen the lever 22 is moved in either direction by simply turning the crank-

handle, and being connected to the bars 19 will operate the head and foot sections of the mattress supporting frame.

The head section of the mattress supporting frame when lowered rests upon the cross-bar 5 of the bed-frame, and when in this position the foot section may be raised independently by first releasing the clamping nuts 20<sup>a</sup> so that the rod 20 may slide in the slots of the links 18, and then operating the lever 22 so as to move the connecting-bars 19 to the right, the parts then assuming the position shown in Fig. 2. Conversely, the head section can be raised independent of the foot section by simply loosening the clamping-nuts and raising said head section to the desired extent, after which it can be held in elevated position by simply tightening the nuts; or said head section may be raised by means of the lever by first moving the foot section to the position shown in Fig. 2, and after tightening the clamping-nuts to secure the bars 19 to the links 18, move the lever to the left, which operation will lower the foot section to horizontal position and raise the head section to an upward inclination. The sections may also be arranged in the form of a chair (see Fig. 3), and in this operation the lever 22 is swung to the limit of its movement to the left, and held by the pin 28, the foot section being lowered substantially on a line with the legs 4 of the bed-frame and just beyond the same, while the head-section extends in an upward inclination from the rear end of the stationary center-section; and in this position the woven-wire mattress is held down at the rear end of the center-section by the spiral springs 16, and the plate or board 7 forms a bottom for the seat. When the sections are arranged in this manner the head section may be adjusted independently by loosening the clamping-nuts, the slotted links permitting of such adjustment.

When the apparatus is arranged in the form of a chair I provide the same with a removable foot-rest 32, consisting of a board 32<sup>a</sup> having spring-metal legs 32<sup>b</sup> bent at their ends so as to spring into engagement with two of the cross-bars 13 of the foot-section. I also provide the bed-frame with a removable or sliding drawer 33, and with a small table or support 34 in connection with a larger table or board 35. These tables or supports are separable, so that the smaller one may be used alone as a holder for a glass of water, or other small article, and so that said smaller table or support may be swung out of the way when not in use the standard 34<sup>a</sup> is round at its lower end and fits in a corresponding socket 36 in the bed frame. On the other hand, in order that the larger table or board may be securely held in its position transversely across the apparatus the standard 35<sup>a</sup> is squared at its lower



end and fits in a corresponding socket 37 at the other side of the bed-frame from the socket 36; and when in position the larger table or board rests upon the smaller table or support, as shown in Fig. 4.

It will be noted that when the parts of the apparatus are arranged in the form of a bed the foot section of the mattress support extends beyond the posts or legs 4 at the foot of the bed-frame and forms the foot portion of the bed; so that when said foot-section of the mattress supporting frame is lowered in arranging the apparatus in the form of a chair, thus forming the foot-rest of the chair, there will be an unobstructed passage or way around said foot-portion so that the patient may easily and conveniently get into and out of the chair.

Having thus described my invention, I claim:—

1. In an invalid bed, the combination, of a bed-frame comprising a metal head section, metal side rails secured to the head section at one end and bent downwardly at the other end to form the legs or posts at the foot of the bed-frame, a section forming part of the mattress supporting frame secured between and connecting the side rails at the upper ends of the aforesaid legs or posts, and mattress supporting sections hinged to said center section at opposite ends thereof; together with means for adjusting said hinged sections, substantially as shown and described.

2. In an invalid-bed, the combination, of a bed-frame, a mattress supporting frame comprising a center section secured in the bed-frame and having a series of holes therethrough, a lever pivoted to the bed-frame and one of the aforesaid connecting-bars and having a hole adapted to register with the holes in the semi-annular plate, and a removable pin adapted to engage the registering holes, substantially as shown and for the purpose set forth.

3. In an invalid-bed, the combination, of a bed-frame, a mattress supporting frame comprising a center section secured in the bed-frame and sections hinged to said center section at opposite ends thereof, bars pivotally connected to each other and to the hinged sections of the mattress supporting frame, a semi-annular plate secured to the

bed-frame and having teeth at one edge, a lever pivoted to the bed-frame and to one of the aforesaid connecting-bars, a pinion rotatably mounted on the lever and in mesh with the teeth of the semi-annular plate, a handle for turning the pinion, and means for holding the lever in an adjusted position.

4. In an invalid-bed, the combination, of a bed-frame, a mattress supporting frame comprising a center section secured in the bed-frame, and sections hinged to said center section at opposite ends thereof, bars pivotally connected to each other and to the hinged sections of the mattress supporting frame, a semi-annular plate secured to the bed-frame and having teeth at one edge and a series of holes therethrough, a lever pivoted to the bed-frame and to one of the aforesaid connecting-bars and having a hole adapted to register with the holes in the semi-annular plate, a pinion rotatably mounted on the lever and in mesh with the teeth on said plate, a handle for turning the pinion, and a removable pin adapted to engage the registering holes in the lever and plate, substantially as herein shown and described.

5. In an invalid-bed, the combination, of a bed-frame, a mattress supporting frame comprising a center section secured in the bed-frame, and hinged sections at opposite ends of said center section, links pivoted to one of the hinged sections and having slots therein, bars pivoted at one end to the other hinged section and at the opposite end to the links by a rod which extends through the slots in the latter, and clamping-nuts threaded on the rod to secure the parts in adjusted position; together with a semi-annular plate secured to the bed-frame and having teeth at one edge and a series of holes therethrough, a lever pivoted to the bed-frame and to one of the connecting-bars, a pinion rotatably mounted on the lever and meshing with the teeth on the semi-annular plate, a handle for turning the pinion, and a removable pin adapted to pass through the lever and into any one of the holes in the plate, substantially as shown and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

AIKEN C. TAYLOR.

Witnesses:

WILLIAM D. HILL,  
WILLIAM TAYLOR.