H. BITTEL.

CONVERTIBLE CHAIR AND BED.

APPLICATION FILED MAY 12, 1914.

1,154,685.

Patented Sept. 28, 1915.

2 SHEETS—SHEET 1.

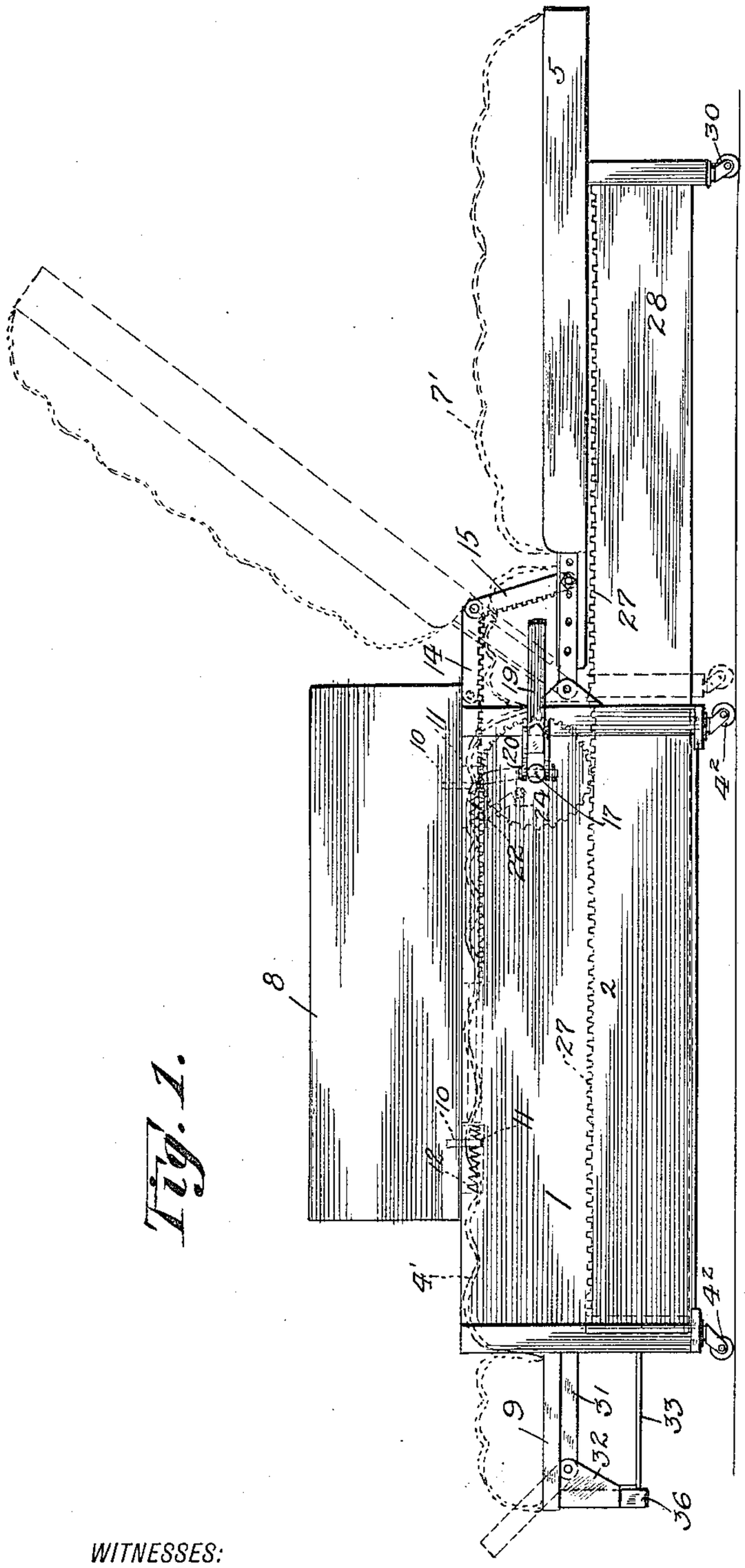


Fig. 1.

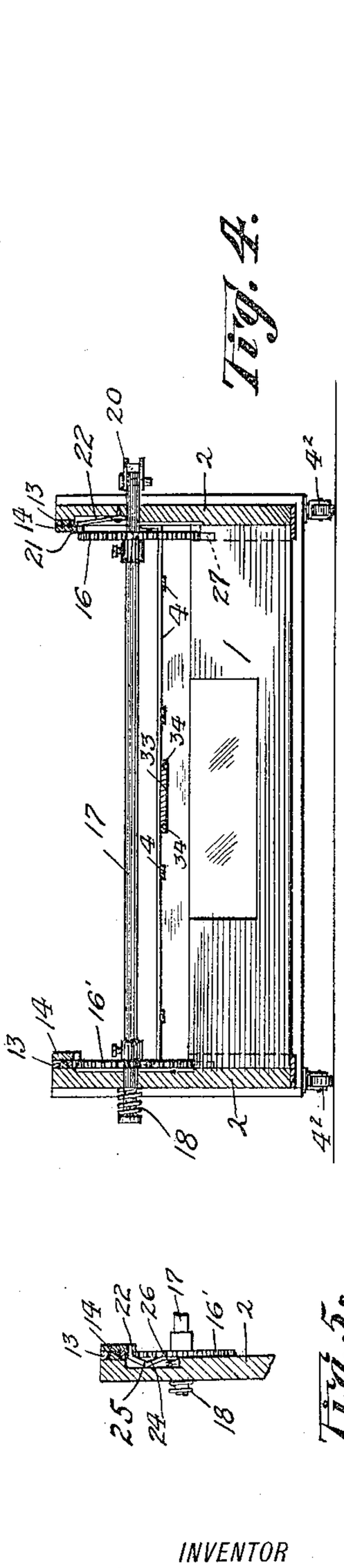


Fig. 4.

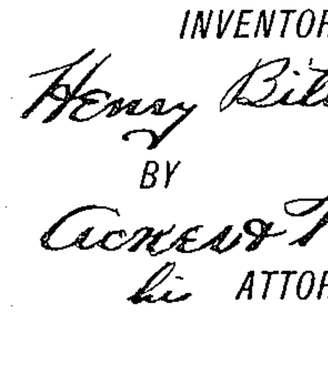


Fig. 5.

WITNESSES:

Albert R. Brownell

S. Constine

INVENTOR

Henry Bittel

BY

Cocker & Potter

ATTORNEYS

H. BITTEL.

CONVERTIBLE CHAIR AND BED.

APPLICATION FILED MAY 12, 1914.

1,154,685.

Patented Sept. 28, 1915.

2 SHEETS—SHEET 2.

Fig. 2.

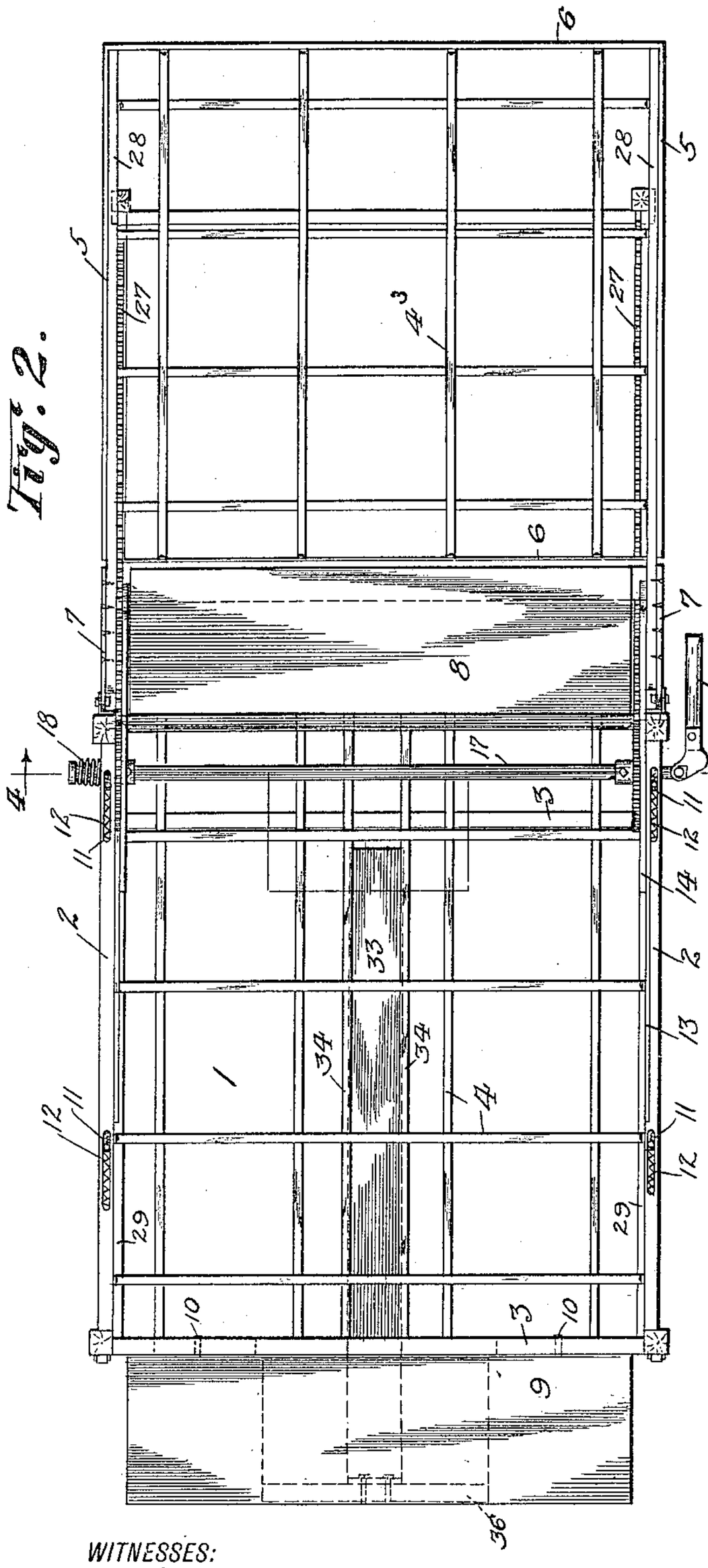
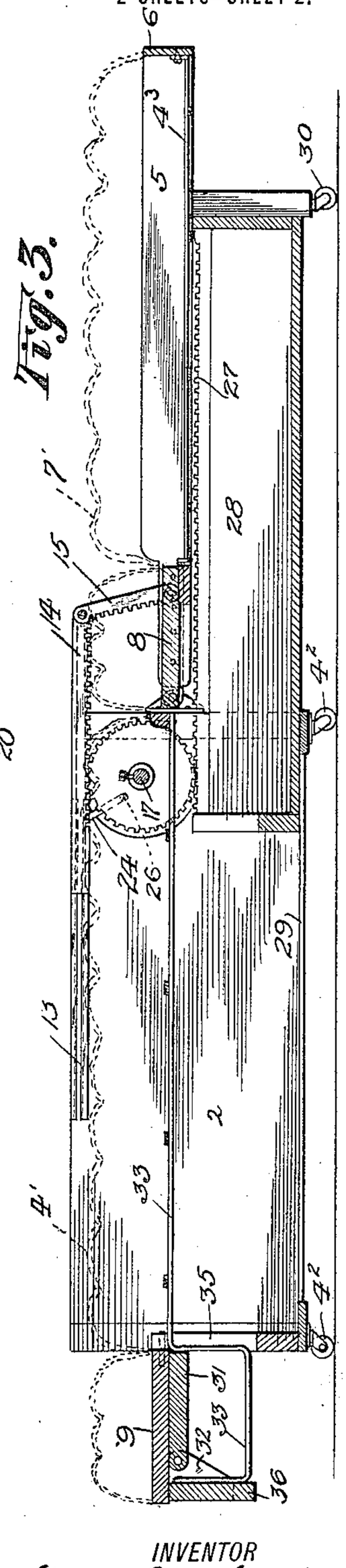


Fig. 3.



WITNESSES:

Elbert R Brouwer

S. Constine.

INVENTOR

Henry Bittel.

BY

Acker & Totten

his ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY BITTEL, OF SAN FRANCISCO, CALIFORNIA.

CONVERTIBLE CHAIR AND BED.

1,154,685. Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed May 12, 1914. Serial No. 838,044.

To all whom it may concern:

Be it known that I, HENRY BITTEL, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Convertible Chairs and Beds, of which the following is a specification.

The present invention relates to an improvement in combined easy chair and bed and more particularly to a device wherein the back is adjustable to an inclined position or may lie in a plane parallel to the plane of the seat.

The invention has for its principal objects to provide a structure wherein the chair side arms are employed in forming the bed; one in which the chair back is supported from being overbalanced when in a horizontal position by the weight of the user, and one provided with a simple means for readily adjusting the chair back and for also operating the support for the same when in a horizontal position.

With the above mentioned and other objects in view, the device consists in the novel construction and combination of parts hereinafter described, illustrated in the accompanying drawings and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

To more fully comprehend the invention reference should be had to the accompanying drawings, wherein:—

Figure 1 is a view in side elevation of an embodiment illustrating my invention disclosing the adjustable back in inclined position in dotted lines and in full lines the device in the form of a bed. Fig. 2 is a top plan view of the device in the form of a bed, disclosing the position of the side arms when the device is used as a bed, and in dotted lines, the upholstery. Fig. 3 is a longitudinal sectional view, disclosing more fully the operating means for the adjustable back and the support. Fig. 4 is a sectional view on line 4—4 of Fig. 2, disclosing the structure for operating the adjustable back and support therefor. Fig. 5 is a view in detail of one of the rack locking springs.

Referring more particularly to the drawings, wherein like characters of reference designate corresponding parts throughout the several views, the numeral 1 designates a suitable support forming base consisting of the side members 2 and end members 3 which are connected at their ends and which carry the spring supporting frame consisting of the members 4, the construction forming a suitable seat frame upholstered in any suitable manner, as at 4′, and provided with casters 4^2.

A suitable back frame consisting of the side members 5 and end members 6 is connected at one end by the hinges 7 to the rear of the seat frame at a point approximately in line with members 4 of the spring supporting frame, and said back carries a spring supporting frame consisting of the member 4^3 and is upholstered in any suitable manner, as at 7′.

Suitable side arms 8 and 9 are positioned on the upper edge of the side members 2 of the seat frame and the same carry on their lower edge suitable dowels 10 which project into slots or openings 11 formed in the upper edge of the side members and said arms are forced rearwardly in contact with the back when the same is slightly inclined by springs 12, positioned in the slots 11. The side arms are upholstered to correspond with the upholstering on the seat and back and to bring the surface thereof level with the surface of the seat and back when the arms are employed in connection therewith in the formation of a bed.

Slidably mounted in guides 13 carried by the side members 3 are rack bars 14 pivotally connected at one end by a rack link 15 with the side members of the chair back. The rack bars 14 are operated to raise and lower the chair back by suitable cogs 16 and 16′ mounted to rotate with a shaft 17 extending transversely of the rear portion of the supporting base and slidably mounted in the side members 2 thereof. A spring 18 coiled about the shaft 17 forces the same and the cogs carried thereby in one direction and a handle 19 pivoted to the opposite end of the shaft and formed with a cam surface 20 thereon which is adapted to be forced

into contact with one of the side members of the supporting base assists, when pressure is applied thereto, in drawing the shaft in the opposite direction against the tension of the spring 18.

Suitable spring catches 21 and 22 are adapted to coöperate with the teeth of the rack bars 14 when the cogs 16 are disengaged therefrom and retain the back in its adjusted position. The catch 21 is carried by a spring 23 mounted in a recess in the side 2 of the frame and is adapted to be carried into intermeshing engagement with one of the rack bars 14 by the pressure of said spring when the cog 16 is moved therefrom by the pressure of the spring 18. The catch 22 is carried by a bowed spring member 24 pivoted, as at 25, in a recess in the opposite side 2 of the frame, and the lower end of said member 24 is forced outwardly by a spring 26 so it will be apparent that when the spring 18 operates the shaft 17 and disconnects the cog 16′ from the rack bar 14, the pressure of the side of the cog 16′ on the lower end of the spring 24 will force the catch 22 into engagement with one of the rack bars 14.

When the cogs 16 and 16′ are disengaged by the spring 18 from engagement with the rack bars 14, the same are in intermeshed relation with suitable racks 27 carried on the upper side edges of a suitable open topped receptacle forming a support 28, mounted to slide on guides 29 into the rear wall of the supporting base beneath the spring frame 4. One end of the receptacle is provided with suitable casters 30 and the same when in its extended position provides a support for the back when in its lowered position and also prevents the bed from becoming overbalanced by its occupant. If desirable, the bed clothing, when not in use, may be deposited in the receptacle 28.

A foot rest 31 is pivotally mounted on a bracket 32 carried by the forward end of a support 33 which is slidably mounted between guides 34 which extend to a point adjacent an opening 35 in the front end wall 3 of the supporting base, and through which said support operates. A closure 36 carried by said support beneath the foot rest is adapted to close the opening 35 when the rest is not in use.

When the chair is employed as a bed, the handle 19 is positioned, as in Fig. 2, and is operated in a counter-clock-wise direction, which will cause the cogs 16 and 16′ to engage with the racks 27 on the receptacle and move the same outwardly in a position to assist in supporting the chair back when lowered. The handle is now swung to the opposite direction with the cam portion 20 resting on the outer surface of the side member 2 and pressure being applied to the end of the handle will cause the cogs to disengage from the racks 27 and engage the racks 14 at the same time releasing the catches 21 and 22 therefrom, and the rotation of the handle in a clock-wise direction will cause the back to be gradually lowered over the receptacle. The arms 8 and 9 are removed from their respective places and the arm 8 is positioned with its upholstered side up between the rear of the supporting base and the forward end of the back and the arm 9 is positioned with its upholstered side up on the foot rest with the dowels 10 inserted in openings 37 in the front end member 3.

It will be apparent that I have provided a chair which is capable of being rapidly and easily converted into a bed; one which when converted into a bed is prevented from becoming overbalanced, and one in which the operating of the back and the moving of the receptacle is accomplished by a single mechanism.

Having thus described my invention what I claim as new and desire to protect by Letters Patent is:—

1. In a device of the class described, a supporting base forming a seat frame, a cushion for said frame, a back hinged at its lower end to said supporting base and capable of being adjusted to a plane parallel therewith, a cushion for said back, said back cushion adapted when said back is in a substantially vertical position to overlie the rear edge of said seat cushion, a pair of cushion members detachably carried by said supporting base and forming chair arms, said arms adapted when said back is adjusted to a position approximately parallel with the seat for positioning one between the seat cushion and the back cushion and one at the forward edge of the seat cushion for providing a continuous cushion bed surface.

2. In a device of the class described, a supporting base forming a chair seat, a chair back hinged at its lower end to said supporting base and capable of being adjusted to a plane parallel thereto, a support for telescoping beneath said chair seat and capable of movement beneath said back when the same is in its last mentioned position, a rack carried by said chair back, a rack carried by said support, said racks being arranged one above the other in different vertical planes and with their teeth disposed toward each other, and a suitable rotatably mounted gear for engaging either of said racks for operating respectively said hinged back and said support independently of each other.

3. In a device of the class described, a supporting base forming a chair seat, a chair back hinged at its lower end to said supporting base and capable of being adjusted to a plane parallel thereto, a support for telescoping beneath said chair seat

and capable of movement beneath said back when the same is in its last mentioned position, a rack carried by said chair back, a rack carried by said support, said racks being arranged one above the other in different vertical planes and with their teeth disposed toward each other, a suitable rotatably mounted gear for engaging either of said racks for operating respectively said hinged back and said support independently of each other, and a spring locking member releasable on the movement of said shiftable gear into engagement with the rack on said support for engaging the rack associated with said chair back to lock the same in its adjusted position.

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

HENRY BITTEL.

Witnesses:
HARRY A. TOTTEN,
D. B. RICHARDS.