

(No Model.)

2 Sheets—Sheet 1.

R. VAN W. WICKS.
INVALID BED OR COUCH.

No. 535,430.

Patented Mar. 12, 1895.

Fig: 1.

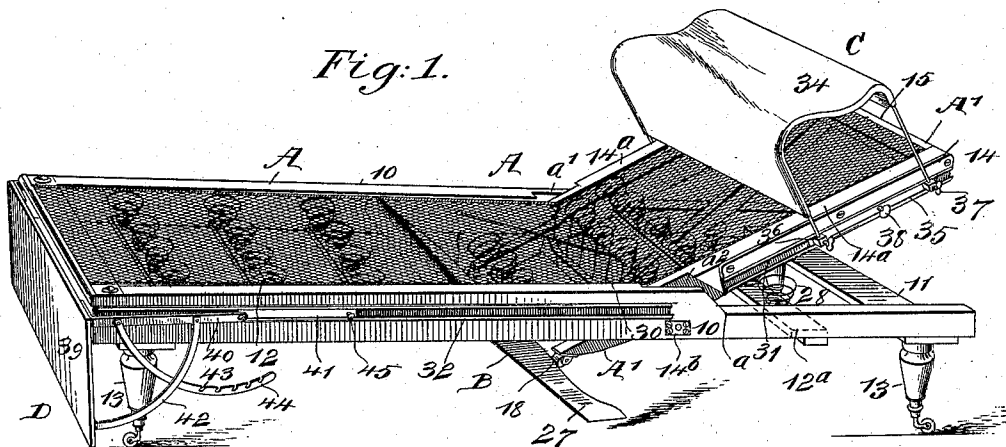


Fig: 2.

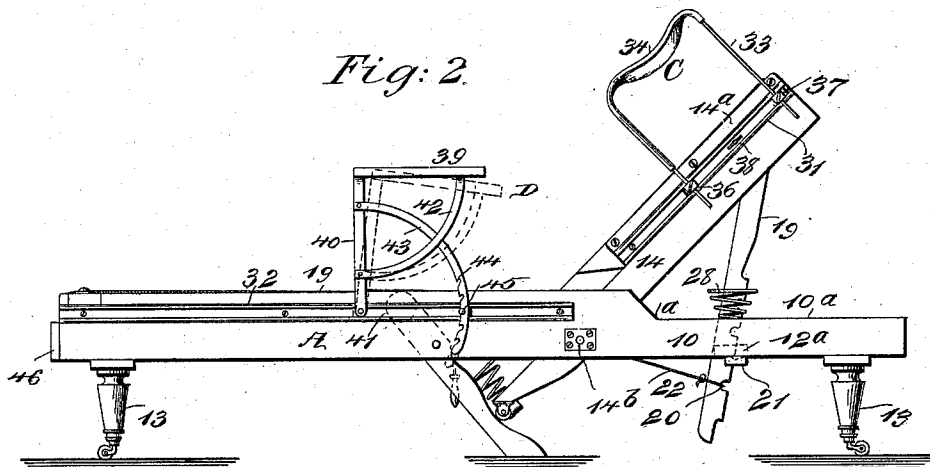
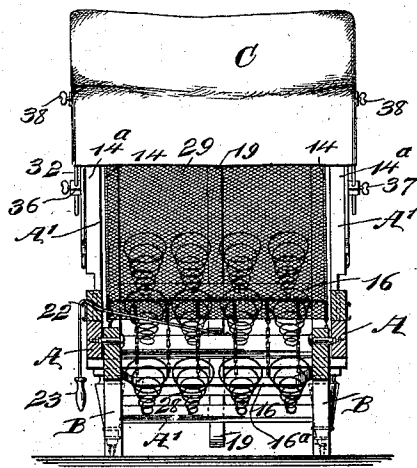


Fig: 3.



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Fig: 4

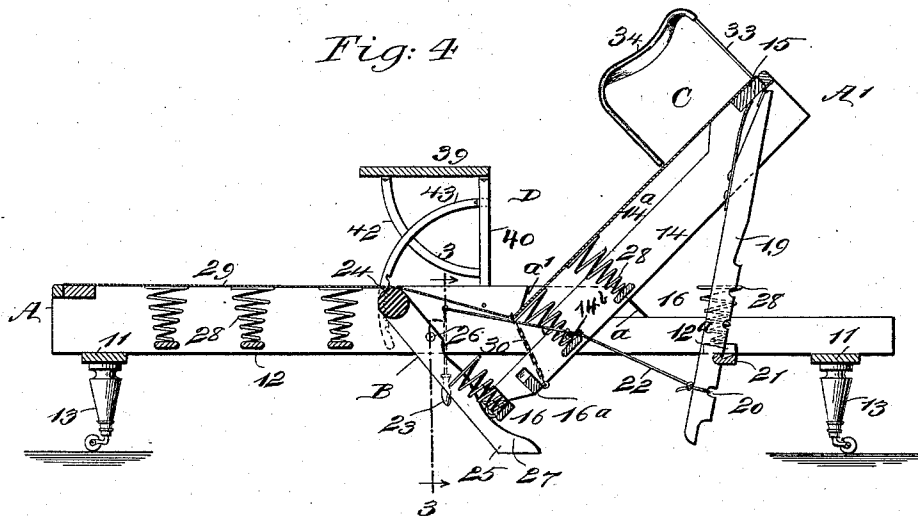


Fig: 5

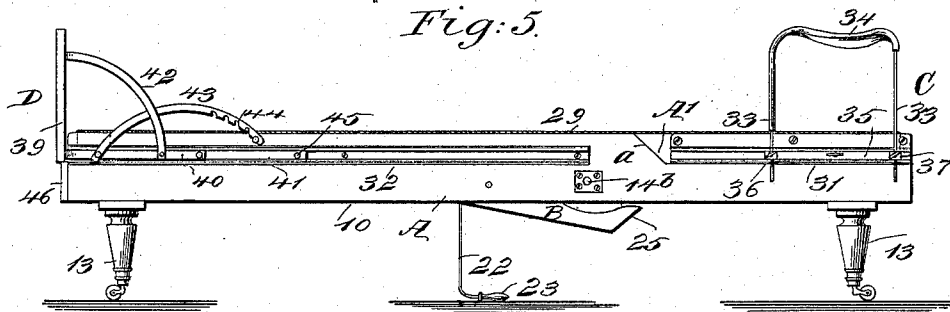
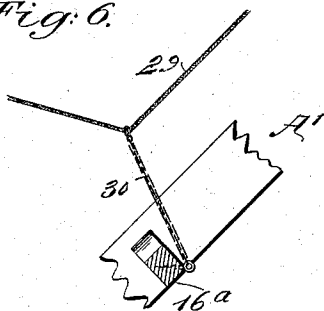


Fig: 6



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UNITED STATES PATENT OFFICE.

RICHARD VAN WYKE WICKS, OF BROOKLYN, NEW YORK.

INVALID BED OR COUCH.

SPECIFICATION forming part of Letters Patent No. 535,430, dated March 12, 1895.

Application filed May 10, 1894. Serial No. 510,773. (No model.)

To all whom it may concern:

Be it known that I, RICHARD VAN WYKE WICKS, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Invalid Bed or Couch, of which the following is a full, clear, and exact description.

My invention relates to an improvement in invalid beds or couches, and it has for its object to so construct the bed or couch that a person lying thereon by a slight movement of the body and with comparatively no exertion, may elevate or depress the head section and maintain said section at any desired point between a horizontal and a vertical position, the entire operation of the couch being under the complete control of the person reclining thereon.

A further object of the invention is to provide for the mattress automatically adjusting itself to the position of the central portion of the body as the latter is carried from a horizontal position, and also to automatically provide a support for the legs of the person at the thigh and knees when the body is moved from a horizontal position.

Another object of the invention is to provide a head rest or pillow which will be cool, simple, and durable in its construction, the said pillow or head rest being capable of adjustment laterally and vertically.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of the improved couch, illustrating the head section as slightly elevated and the foot board as carried out of the way, being entirely below the level of the mattress. Fig. 2 is a side elevation of the couch or bed, the head section being elevated and the foot board being shown as converted into a table facing the occupant of the couch. Fig. 3 is a cross section taken essentially on the line 3—3 of Fig. 4. Fig. 4 is a longitudinal vertical section through the couch, the foot board being illustrated in po-

sition as a table and facing away from the occupant of the couch, this position being the reverse of that shown in Fig. 2. Fig. 5 is a side elevation of the couch or bed, the mattress being in a horizontal position from end to end, and the foot board in position as such; and Fig. 6 is a detail view illustrating the manner in which the mattress is connected with the movable head section, and the means employed for causing the said mattress to accommodate itself to the position of the body.

In carrying out the invention the main or stationary frame A of the bed or couch consists of two side rails 10, a front and a rear end bar 11, and a series of transverse intermediate cross bars 12, which are located at intervals apart between the foot end of the couch frame and the central portion thereof. This main frame is supported by suitable legs 13, and at the head end of the said frame the top portions of the end rails are recessed, rendering the said rails at the head narrower than at any other point in their length, and the recesses terminate at their inner ends in inclined walls *a*; but upon the inner faces of the wide portions of the said side boards a recess *a'*, is produced, as shown best in Figs. 1 and 4.

The head portion of the main frame is provided with an adjustable frame A', capable of being raised and lowered, and this frame consists of side bars 14, which are located within the recessed portions of the main frame, and the said side boards 14 are pivotally connected between their centers and lower ends to the side rails of the main frame adjacent to the recessed faces *a'* thereof, the fulcrum of the adjustable frame being designated in the drawings as 14^b. Above the fulcrum of the side boards of the adjustable frame, or what may be termed the adjustable head frame of the couch, the side bars are widened laterally, the extensions thereof being designated as 14^a, and the said extensions of this frame are of such width that when the frame is carried to a horizontal position, resting upon the front cross bar 11 of the main frame, the said extensions will rest upon the recessed portions of the side boards of the main frame, and the outer faces of both will be flush. The inner ends of the extensions 14^a of the sides of the adjustable head frame are beveled, as shown

at a^2 , the beveled surfaces being adapted to meet the beveled walls a of the aforesaid recesses in the main frame, as is clearly shown in Fig. 5.

5 The side boards of the adjustable head frame are connected at their outer ends by a cross bar 15, and also by intermediate cross bars, and a cross bar located at the extreme inner end of the frame, the said bars being
10 designated by the reference numeral 16; and between the extreme inner cross bar 16 and the adjoining intermediate cross bar an auxiliary cross bar 16^a, is made to extend from side to side of the frame.

15 It may here be remarked that the outer extensions 14^a of the main side bars 14 of the adjustable head frame extend above the upper edges of the said main side bars, as illustrated in Figs. 1, 2 and 4; and the main side
20 bars extend below the lower edge of the auxiliary or extension sides 14^a, so that when the head frame is in a horizontal position the main side bars 14 extend down well between the side boards of the main frame.

25 Rollers 18, are located at the extreme inner end of the side bars of the adjustable head frame, and the said frame is provided with a latch bar 19, spring controlled and having hinged connection with the central portion of
30 its upper cross bar 15, as is best shown in Fig. 4. This latch bar is provided at its outer edge with a series of notches or recesses 20, adapted for engagement with a keeper 21, which is in the nature of a cross bar secured preferably
35 to the side boards of the main frame, usually to their under edges. A cord 22, or the equivalent thereof, is attached to the lower portion of this latch bar 19, and the said cord is usually led over a pulley located upon one of the
40 cross bars 16 of the adjustable head frame, and out through an opening produced in the right-hand side board of the main frame, the said cord being made to terminate in a handle 23.

45 The adjustable head frame operates in conjunction with a tension and guide frame B. This frame consists of a cylindrical or roller like head 24, and side bars 25, the latter being connected with the inner faces of the side
50 boards of the main frame, the pivot being passed through the side bars 25 between their centers and upper ends, and into the side boards of the main frame A, usually at a point about centrally between their ends, as is
55 shown in Figs. 2 and 4. The head 24 is of such a weight as to keep the side bars 25 up against the rollers 18 upon the head frame.

The rollers 18 upon the adjustable head frame are adapted to travel upon the forward
60 edges of the side bars 25 of the tension frame B, the said edges being usually curved so as to accommodate the rollers when the said adjustable head frame is in either an upper or a lower position, since the rollers constantly
65 engage with the tension frame B. Therefore, the main side bars of the adjustable head frame are in alignment with the side bars of

the tension frame, both of them being contained within the main frame of the couch.

The curved surface of the tension frame 70 against which the head frame has bearing, is designated in the drawings as 27; and it is evident that when the head frame is carried to an inclined position its inner end will cause the lower portion of the tension frame to drop
75 downward, whereby it will assume an inclined position substantially as shown in Fig. 4, and that when the head frame is carried to a horizontal position, the roller in traveling up the sides of the tension frame will allow the latter
80 to fold horizontally within the main frame, and practically beneath the side bars of the head frame, which position is illustrated in Fig. 5.

Springs 28, are located upon the cross bars 85 12 of the main frame and upon the cross bars 16 of the adjustable head frame, and these springs are adapted to engage with the bottom of a mattress 29, preferably made of woven wire, the said mattress being secured at one
90 end to the foot portion of the main frame A, and at its opposite end to the outer end of the adjustable head frame A'. An attachment is also made between the inner end of the adjustable head frame and the mattress 29, the
95 said attachment being accomplished usually and preferably by attaching a series of chains 30 to the cross bar 16^a of the adjustable head frame and to the mattress, any desired number of chains being employed. Usually they
100 are arranged at predetermined intervals apart, and extend in a row transversely across the mattress.

The mattress passes over the cylindrical head 24 of the tension frame B. Conse- 105 quently when the adjustable head frame is carried to an upper position, the lower end of that frame in dropping will carry downward with it that portion of the mattress which is attached to the bar 16^a; and as this inner end of the head frame is dropped, the springs at
110 the extreme inner end of the frame will be carried out of engagement with the mattress, and at the same time the guide or tension frame B will be carried downward in a manner to bring its head 24 to a bearing against the under side of the mattress, substantially taking the place of the springs removed therefrom. Under this construction the mattress will form a pocket at that portion where the greatest weight of the
115 body is sustained, and the head 24 of the tension frame will serve in a great measure as a rest for the legs of the occupant of the couch at the knees, the thighs resting easily on the inclined surface of the pocket just above referred to. It is also evident that by reason of the attachment of the mattress to the inner end of the adjustable head frame, a slight movement of the body in direction of the foot will serve to raise the head section to the required degree, while a reverse movement will serve to lower it. The movement of the body in accomplishing the adjustment of the head section is comparatively slight, being merely
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the shifting of the weight to one side or the other of the fulcrum of the head section, or to one side or the other of that portion of the mattress which is attached to the inner end of the head frame.

When the upward adjustment of the head section is to be made simultaneously with the required movement of the body, the cord 22 is drawn upon in the manner to carry the latch 19 out of engagement with its keeper 21, and when the required engagement has been obtained the cord is released, and the spring of the latch will return it to an engagement with its keeper, thus maintaining the head section in the position in which it was placed. The same manipulation of the cord is required when the head section is to be lowered.

A cross bar 12^a is located over the keeper bar 21, as shown in Figs. 1 and 4, and the two sections of this cross bar terminate at each side of the center of the keeper 21, and serve to prevent the latch 19 from having lateral movement, while the said cross bar 12^a also serves as support for springs 28 for the head section of the mattress when in a horizontal position. A slide-way 31, is longitudinally formed upon the outer face of each extension 14^a of the side bars of the adjustable head section A', and corresponding slide-ways 32, are produced upon the outer faces of the side boards of the main frame, extending from the foot or rear end to a point at or near the pivot of the adjustable head section. The slide-way 31, is adapted to receive a pillow or head rest C, and this pillow or head rest comprises a frame consisting of two essentially inverted U-sections, made ordinarily of wrought iron, and the members of each U-section are passed through sockets 36, located at the ends of the connecting bar 35, the connecting bars of the sections being adapted to slide in the ways 31.

The sockets are provided with set screws 37, whereby the frame sections of the pillow may be adjusted vertically and held in adjusted position; and the sections are longitudinally adjusted by moving the connecting bars or plates 35 in the slide-ways, and securing them in the desired position by means of set screws 38. The inverted U-frames are connected by a strip 34 of a fabric, usually canton flannel, or the equivalent, but canvas may be used if desired. This fabric serves as a support for the head, and is secured to the upper portion of each U-frame, and preferably extends downward along the inner members of the frames in order to preserve the neck and shoulders of the person occupying the couch from draft.

A foot board D is employed in connection with the couch, which is capable of various adjustments, and for use as a reading desk or table as occasion may demand. The foot board consists of a board 39, having standards 40 attached to one face near one side edge; and each standard is pivotally connected with a bar or plate 41, the said bars

or plates being adapted to enter and to slide in the ways 32 on the body frame of the couch. The board 39, is held at a right angle to its bracket bars 40, through the medium of braces 42, preferably of segmental shape, which are connected with the board near its opposite end and with the said bracket bars 40, as shown in the drawings; and a segmental latch bar 43, is pivotally connected with each bracket bar 40, the latch bar being provided at one end with a series of notches or recesses 44; and each sliding bar 41 of the foot board is provided preferably with a stud 45, at what may be termed its inner or free end.

In the operation of the foot board, when it is used as shown in Fig. 5, its sliding bars are made to enter the ways 32, and are carried in said ways until the board, which is in a perpendicular position, is brought to the foot of the main frame and made to rest upon the extension 46 at that portion of the frame. In the event it is needed as a reading table for example, the board is carried to a horizontal position, as shown in Fig. 2, facing the occupant, and is then slid along the main frame until it is brought in proper relation to the occupant. The foot board may now be used as a desk, and may be given any inclination desired in a downward direction toward the occupant, by adjusting the latches 43 with relation to the studs 45, as illustrated in dotted lines in Fig. 2.

As shown in Fig. 1, when the foot board is not needed and it is desired to have it placed out of the way, the board is made to face downward, and is placed in a vertical position facing the foot of the bed. The sliding bars 41, are then made to enter the slide-ways 32, and the sliding bar is moved inwardly in said ways until the ends of the bracket bars 40, rest upon the extension 46 at the foot of the main frame. If the board is in this position and it is needed as a desk or as a table, the board is elevated to a horizontal position, as shown in Fig. 4, facing away from the occupant of the couch, and the table at its free end may be elevated so that it will incline toward the person occupying the couch to any predetermined extent by adjusting the latches 44 with relation to the studs 45, as has heretofore been stated.

A couch of the above description is exceedingly comfortable, and is especially adapted for the use of any one desiring perfect rest, or for an invalid, since if the body can be moved at all, and the occupant has any use of the right arm, the said occupant may adjust the couch to any position that comfort or fancy may dictate, or that may be required to obtain rest for the body.

It will be understood that if occasion may require, friction rollers may be placed in the slideways or upon the parts entering the ways.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. An invalid bed or couch, the same com-

prising a main frame, a head section or frame pivoted in the main frame, a mattress connected to the main frame and likewise to the adjustable frame, and a connection between the adjustable frame at one side of its fulcrum and the mattress intermediate the ends of the latter, whereby the mattress is depressed or drawn downward under tension when the head section is elevated, substantially as shown and described.

2. In an invalid bed or couch, a main frame, a head frame or section fulcrumed in the main frame and extending inward beyond its fulcrum, a spring mattress connected to the main frame and to the adjustable head section or frame, and a connection, substantially as shown and described, between the spring mattress and the adjustable head frame at the inner side of its fulcrum, as and for the purpose specified.

3. In an invalid bed or couch, a main frame, a head section or frame fulcrumed in the main frame and extending inwardly beyond its fulcrum, a tension frame pivoted in the main frame, the inner end of the head frame being in contact with the opposing edges of the tension frame, a spring mattress connected to the main frame and to the head frame, the said spring mattress being passed over the tension frame, and a connection between the mattress and the head frame between the inner end and fulcrum of the latter, whereby when the head frame is adjusted to an inclined position the tension frame is adjusted in substantially a similar manner, is brought to a bearing against the mattress and the mattress is depressed or drawn downward by the inner end of the head frame, causing a depression to be produced in the mattress between the head frame and tension frame, substantially as shown and described.

4. In an invalid bed or couch, a main frame provided with a keeper bar, a head frame fulcrumed in the main frame, a spring mattress attached at one end to the main frame and at its opposite end to the head frame, a latch carried by the head frame and adapted for engagement with the keeper, a cable connected with the latch near its free end and carried to the outer side of the main frame, whereby the latch may be manipulated without the occupant leaving the couch, and a tension frame adapted to support the mattress in advance of the head frame as and for the purpose set forth.

5. In an invalid bed or couch, a main frame provided with a keeper, a head frame fulcrumed in the main frame and extending inwardly beyond its fulcrum, a spring mattress connected to the main frame and to the adjustable head frame, a tension device operated by the head frame and adapted for engagement with the mattress, and a connection between the mattress and the head frame,

at the inner side of fulcrum, a spring-controlled latch adapted for engagement with the keeper, and means, substantially as described, for operating the latch, as and for the purpose specified.

6. In an invalid bed or couch, a main frame, an adjustable head frame fulcrumed in the main frame and extending inward beyond its fulcrum, a spring mattress connected to the main frame and to the head frame, a connection with the mattress between its ends and the head frame at the inner side of its fulcrum, and a tension device located in front of the inner end of the head frame, operated by said frame, and adapted for engagement with the mattress, as and for the purpose set forth.

7. In an invalid bed or couch, a main frame, an adjustable head frame fulcrumed in the main frame and extending inward beyond its fulcrum, a spring mattress connected to the main frame and to the head frame, a connection of the mattress between its ends with the head frame at the inner side of its fulcrum, a tension device located in front of the inner end of the head frame, operated by said frame and adapted for engagement with the mattress, and means, substantially as shown and described for locking the head frame in a predetermined position, as and for the purpose set forth.

8. In an invalid bed or couch, a frame constructed in two sections, one of which is adjustable, a spring mattress extending over both frames, and connected therewith, the mattress being also connected between its ends with the adjustable frame, to draw the mattress downward at the point where it is connected, between its ends, to the movable frame as and for the purpose specified.

9. An invalid bed or couch constructed in sections one of which is adjustable and adapted as a head section, a spring mattress connected to the stationary section and to the adjustable section, the said mattress being connected between its ends to the adjustable section near its fulcrum, and a tension device operated by the adjustable section adapted for engagement with the mattress, as and for the purpose specified.

10. In a bed or couch, the combination, with the frame thereof, slide-ways carried by the frame, plates having movement in the said slide-ways, and provided with a locking device and with sockets carrying set screws, of a pillow or head rest, the same consisting of yoke standards the members of which are passed through the said sockets, and a fabric, or yielding connection, adapted as a head support and extending from one standard to the other, as and for the purpose specified.

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Witnesses:

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