A. R. GIBSON & G. H. FERGUSON.

VIBRATORY BED.

APPLICATION FILED MAR. 18, 1912. RENEWED AUG. 8, 1914.

1,110,920.

Patented Sept. 15, 1914.

2 SHEETS—SHEET 1.

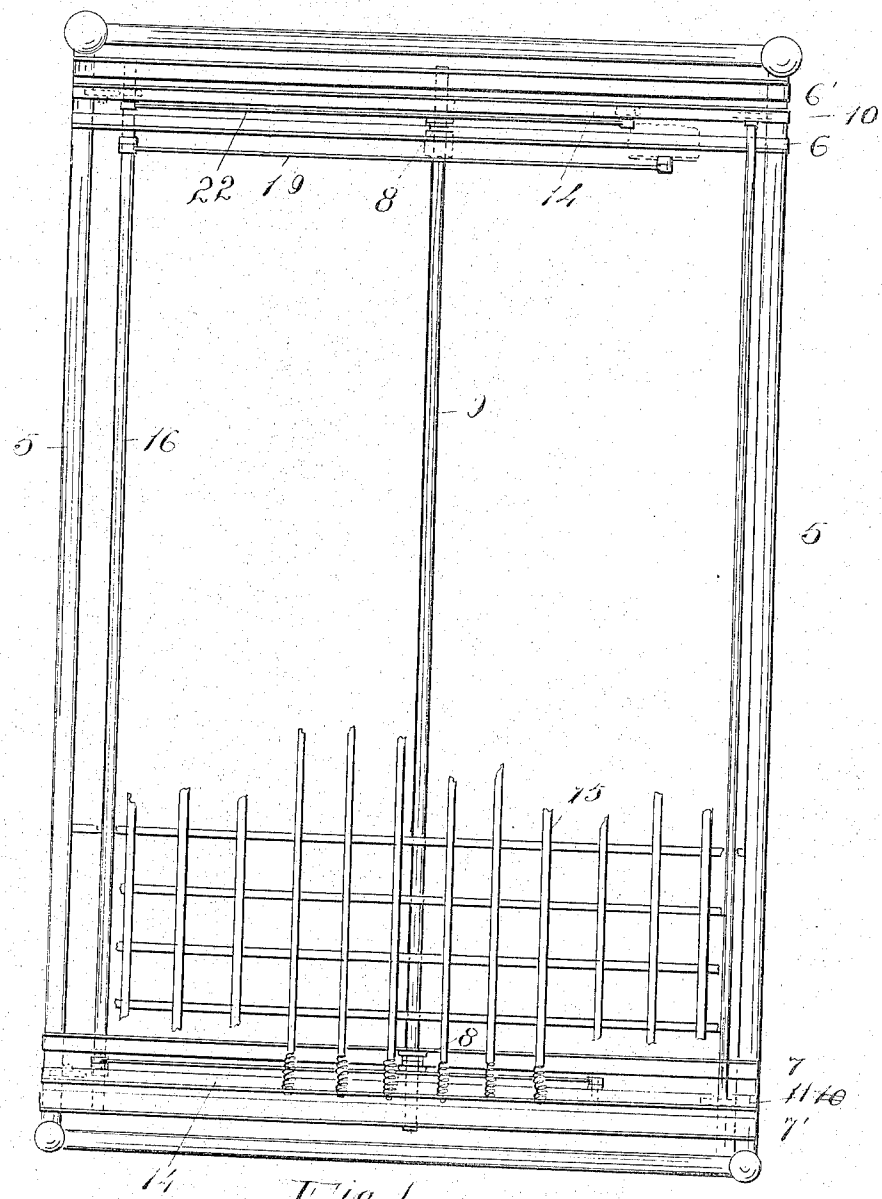


Fig. 1.

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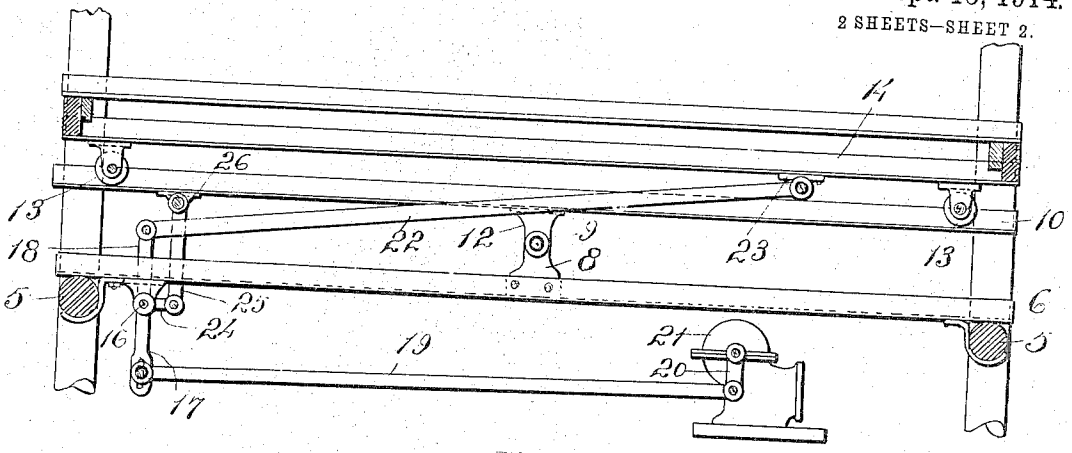


Fig. 2.

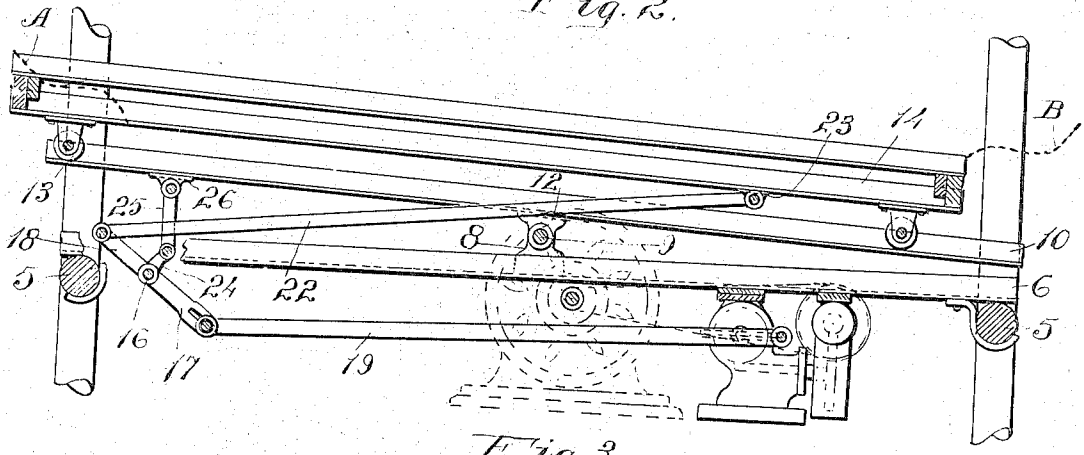


Fig. 3.

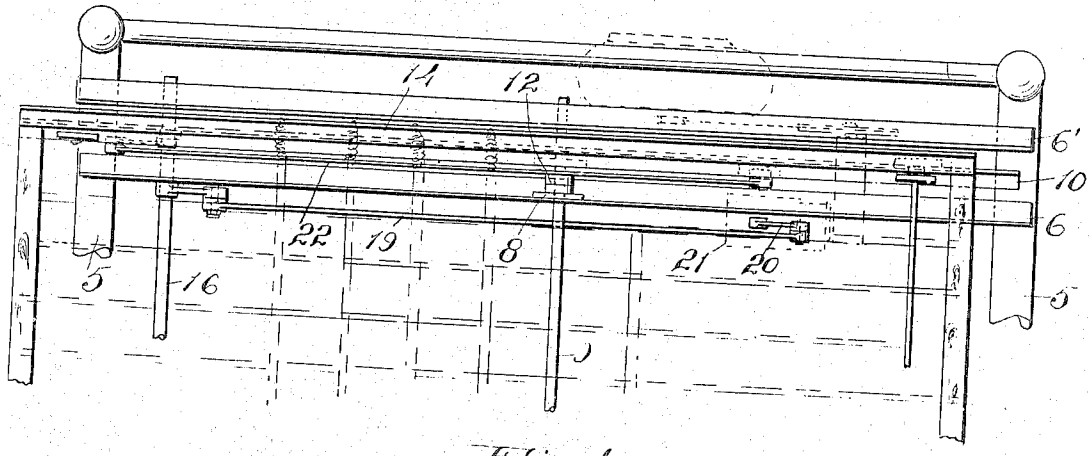


Fig. 1

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UNITED STATES PATENT OFFICE.

ADELBERT R. GIBSON AND GEORGE H. FERGUSON, OF LOS ANGELES, CALIFORNIA.

VIBRATORY BED.

1,110,920. Specification of Letters Patent. Patented Sept. 15, 1914.

Application filed March 18, 1912. Serial No. 684,606. Renewed August 8, 1914. Serial No. 855,907.

To all whom it may concern:

Be it known that we, ADELBERT R. GIBSON and GEORGE H. FERGUSON, citizens of the United States, and residents of Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Vibratory Beds, of which the following is a specification.

Our invention pertains to vibrating and oscillating mechanism, and it has particular reference to means for imparting an undulatory, oscillating and reciprocating motion to a bed or a mattress connected therewith, the object being to utilize such a structure as a means for treating patients and others in the process of treatment.

It is well known that in many diseases or ailments motion is a stimulus, and if said motions are of a well defined and rhythmic character the effect is a soothing one, and will tend to quiet the patient and divert his mind from his ailment. Of such nature are the vibratory treatments usually employed but such processes are usually local, and are not, therefore, available for many cases. To this end, therefore, we have devised mechanism which is attached to and constitutes part of the bed, which has a rhythmic movement laterally, and which has an oscillating and undulatory movement, so that the entire body is thus subjected to the motion, as now will be set forth in detail.

In the accompanying drawing Figure 1, is a top or plan view of a bed equipped with our improved vibratory means. Fig. 2, is a cross section of the mechanism showing the relative positions of the oscillating frame and links. Fig. 3, is a cross section of the mechanism showing position of the frame at one point in its movement, and Fig. 4, is a top view of the head of the bed showing the relative arrangement of the links and rock-shaft for actuating the frame.

In constructing our invention it is to be understood that the mechanism is applicable to any bed-stead, but we prefer to have the bed-stead provided with strong horizontal side bars, 5, to carry the mechanism. The base of the mechanism comprises a pair of cross bars, 6, 6′ at the head of the bed and a similar pair of cross bars 7, 7 at the foot of the bed. Midway between the end of each of the bars 6, 7, is an upwardly-projecting bracket, 8, these brackets being designed to receive a longitudinal rod 9, which serves as the pivoted bearing for the rocking frame. The rocking frame comprises a cross bar 10, alongside the bracket 8, and a similar bar 11, alongside of the bracket on the cross bar 7, and each of these bars has a downwardly-projecting bracket 12, which is pivotally secured to the bracket below, so that the upper bars therefor rock on the bracket pivots. The bars 10, 11, are preferably of channel iron or L-bars, so as to form tracks or ways, on which are mounted wheels or castors 13, secured to the under side of a frame 14, this frame being substantially the same size as the spring bed 15, or the frame is of such size and character that the springs of a mattress may be secured and held thereby. It will be seen that the mattress-carrying frame 14, is capable of moving laterally a limited distance on the channel bars 10, 11. In order to provide a means whereby the frame may thus be laterally moved we secure a bracket to one end of each of the cross bars 6, 7, so that it projects downwardly and these brackets carry a rock-shaft 16, parallel with the side bar 5, of the bed. At one end of the rock-shaft is a T-arm, one limb of which, as at 17, projects below the rock-shaft and the upper limb 18, thereof, projects above the shaft. To the lower limb is hinged to one end of a connecting link 19, the other end of the link connecting with a crank 20, of a motor 21. We prefer to use an electric motor for this purpose located beneath the bed, but this is optional as it may be operated by any well known means, or by a prime source of power entirely removed from the room, as for instance, by a flexible shaft. The upper limb 18, has a link 22, hinged thereto at one end and its other end is hinged to a bracket 23, on the lower side of the cross bar 14. The other end of the rock-shaft 16, has merely an upwardly-projecting arm similar to the link 18, and a link, similar to the link 22, is connected up with the other end of the mattress frame so both ends of the mattress frame will work in unity. By this arrangement the mattress is moved laterally as the crank 20 turns, and with a view of imparting an undulatory motion to the mattress while it is thus moving to and fro laterally, a pair of arms 24 project out from the rock-shaft 16 at right angles to the T-arm 17, 18, and a pair of links 25, is hinged to the arms

24, and project upwardly and are pivotally attached to brackets 26 on the under sides of the cross-rocking-bars 10, 11.

From the aforegoing structure it will be seen that two distinct motions are directly imparted to the mattress supporting frame, one motion being a laterally reciprocating one through the action of the link 22, and the other a laterally rocking motion due to the pivotally hinged support on which the mattress frame rests, and these together produce a compound motion which resolves itself into an undulatory or sinuous line, illustrated by the dotted lines A, B, in Fig. 3.

In practice the motor is so geared to the mechanism that the motion is gentle and constant, and not violent or abrupt in its nature and it is found that such a movement is more conducive to a restful effect in a patient than a sudden or pronounced motion, and it is important that the action should be rhythmic in its character to produce the best results.

What we claim as new, is:

1. In an apparatus of the character described, a frame, a mattress thereon, and means on the frame for imparting an undulatory motion to the mattress.

2. In apparatus of the character described, a frame, a mattress thereon, and means on the frame for imparting a reciprocating and rocking motion to the mattress.

3. In apparatus of the character described, a frame, a mattress thereon, and means on the frame for imparting a reciprocating and undulatory motion to the mattress.

4. In apparatus of the character described, a frame, a mattress thereon, means on the frame for laterally reciprocating and rocking the mattress and for producing a wave motion at its margins during the rocking and reciprocating movements.

5. In apparatus of the character described, a bed-stead, cross bars thereon, a longitudinally disposed pivotal shaft centrally along the cross bars, a rocking frame thereon, a laterally movable mattress-supporting frame on said rocking frame, and means for imparting a reciprocating and rocking motion to said mattress-supporting frame.

6. In apparatus of the character described, the bed-stead, cross bars thereon, a longitudinal pivot shaft centrally through said bed-stead, a frame above said bars pivotally secured to the pivot shaft, a mattress-supporting frame having castors which permit the mattress-supporting frame to move laterally a limited distance, a rock-shaft provided with T-arms at one end, connected up with a motor and with the laterally-movable mattress frame, and means also connected with said rock-shaft imparting a rocking motion to said mattress-supporting frame.

7. In apparatus of the character described, a bed-stead, cross bars secured thereto, a longitudinally disposed pivot-shaft centrally along the cross bars, a rocking frame above said bars pivotally joined to the pivot shaft, a mattress-carrying frame laterally movable on said rocking frame, a rock-shaft along one side of the bed-stead, having at one end, a crank arm connected up with the motor, and at eacn end a crank arm hinged to a link which connects with the laterally movable mattress-carrying frame, and an arm on the rock-shaft at each end disposed at right angles to the crank arms which laterally reciprocates the mattress frame, said arms having upwardly-projecting links which are hinged to the mattress-frame to impart an undulatory and rocking motion while the frame oscillates to and fro.

Signed at the city of Los Angeles county of Los Angeles State of California, this 24th day of February 1912, in the presence of witnesses.

ADELBERT R. GIBSON.
GEORGE H. FERGUSON.

Witnesses:
J. S. ZERBE,
E. V. KASOLD.