G. W. HAAS.

JURY AND JURY FRAME FOR FACILITATING ORTHOPEDIC TREATMENT.

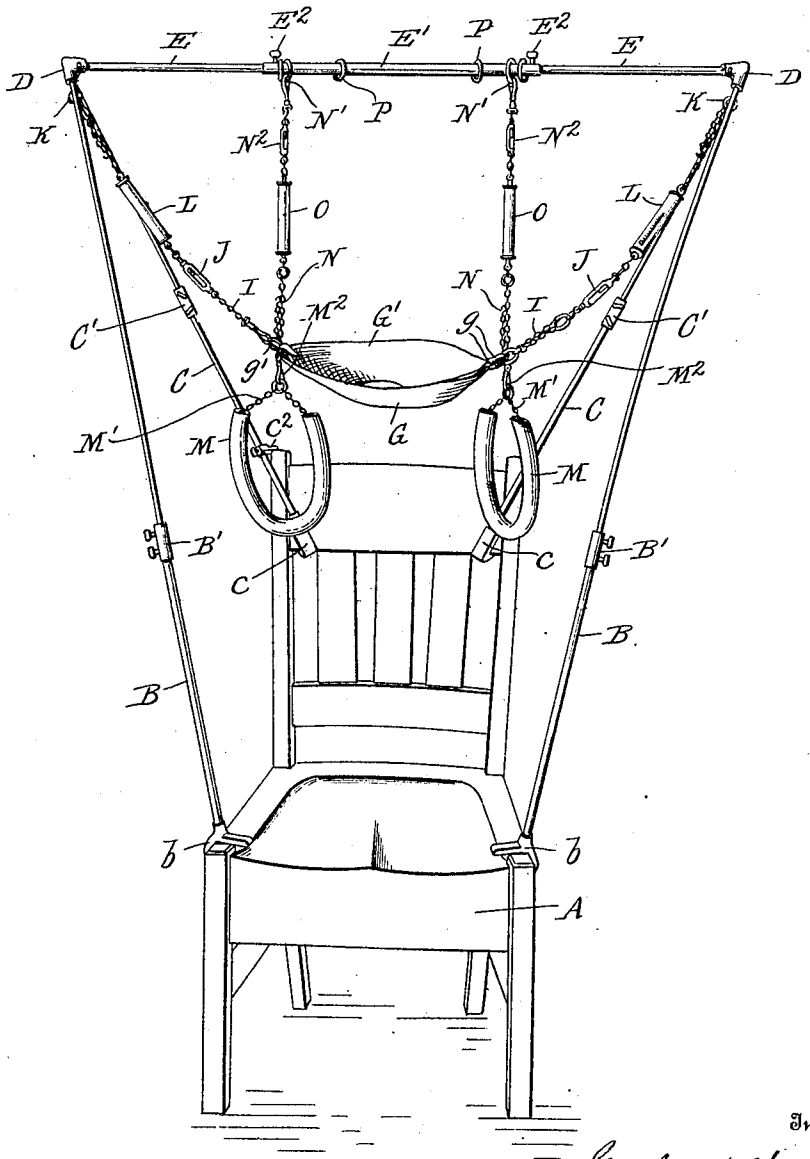
APPLICATION FILED DEC. 27, 1907.

913,127.

Patented Feb. 23, 1909.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

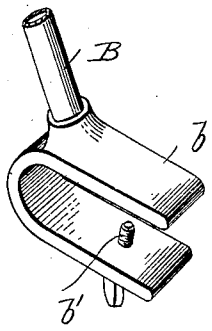


Fig. 3.

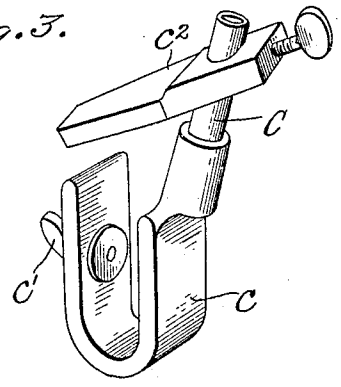


Fig. 4.

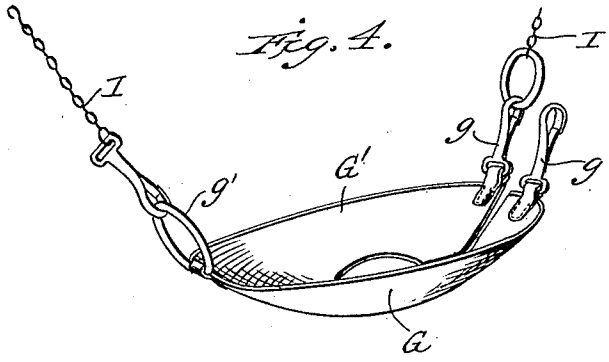
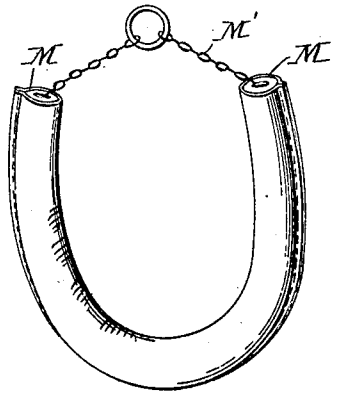


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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JURY AND JURY-FRAME FOR FACILITATING ORTHOPEDIC TREATMENT.

No. 913,127. Specification of Letters Patent. Patented Feb. 23, 1909.

Application filed December 27, 1907. Serial No. 408,262.

To all whom it may concern:

Be it known that I, GUSTAVE W. HAAS, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Juries and Jury-Frames for Facilitating Orthopedic Treatment; and I do hereby declare the following to be a clear, full, and exact description of the same, reference being had to the drawings forming a part of this specification and to the letters of reference marked thereon.

This invention relates to that class of mechanical appliances used in the treatment of bodily deformities with a view to assisting nature in building up healthy and corrective tissue as well as to assist mechanically in restoring dislocated parts to their normal positions as a progressive process, the objects of the invention being to provide an apparatus, or so-called jury, with which, not only may mechanical traction be secured in practically any desired direction, but with which definite data as to the traction exerted may be secured for the purpose of making a record to show the progress of the cure and for the purpose of comparing the normal with the abnormal positions of the parts.

Further objects of the invention are to provide an apparatus which may be adjusted for use in connection with a chair of ordinary construction or in connection with supporting appliances which are available in the average household, thereby overcoming one of the chief obstacles to the use of apparatus of this character as they have heretofore required an expensive outfit which could only be afforded in institutions equipped for the special treatment of deformities.

Referring to the accompanying drawings—Figure 1 is a perspective view of a jury and jury frame embodying the present improvement. Fig. 2 is a detail of one of the clamps for the front standards. Fig. 3 is a detail of one of the clamps for the rear standards. Fig. 4 is a detail of the sling in which the chin and occiput rest and its flexible supports. Fig. 5 is a detail of one of the shoulder or arm pit tractors.

Like letters of reference in the several figures indicate the same parts.

While the jury of the present invention might be supported from hooks or other suitable appliances fastened in the permanent structure of a building or from any preferred type of frame, the frame which forms a part of the present jury is one especially adapted to it and provides for a variation of adjustment not readily obtainable in connection with fixed supports, or in connection with frames such as have heretofore been used for supporting juries of analogous character. The frame of the present invention is one which is readily applied to chairs of ordinary construction such, for instance, as the chair A illustrated in the accompanying drawing. Said frame consists primarily of front telescoping standards B, the telescoping sections of which are held in adjusted position by double set screw clamps B′ and rear telescoping standards C, the telescoping sections of which are held in relative position by similar double set screw clamps C′. At their upper ends, the front and rear standards unite in an angle or corner piece D, the union with said corner piece being preferably made by screwing the ends of the standards into the corner piece so as to form a relatively rigid detachable connection. The corner pieces on opposite sides are connected together by a horizontal bar preferably formed in three sections; E, indicating the end sections, and E′ a central tubular section into which the end sections telescope, the relative positions of the sections being maintained by clamp screws E^2. The front standards B have at their lower ends horizontally disposed clamp arms *b* with set screws *b′* for clamping the same in position over the side edges of the seat of the chair. The rear standards C have hook shaped clamp arms *c* with set screws *c′* for clamping the lower ends of said standards to the back of the chair, and in addition, said rear standards have adjustable clamp arms c^2 adapted to rest on the upper portion of the back of the chair so as to limit or prevent any downward movement of the standards when weight is applied to the top of the frame. This construction of jury frame permits of a practically universal adjustment of the parts to fit chairs of different dimensions and inasmuch as the standards themselves may be readily bowed to a limited degree, it becomes possible to arrange the frame in a symmetrical form with the front and rear standards converging while at opposite sides of the chair they

diverge at the top so as to form a wide top to permit of lateral traction being exerted to correct lateral deformities and to afford greater comfort to the patient by making the support or jury in hammock form.

The jury used in connection with the frame described consists of traction elements for the head and shoulders although other elements may be added if so desired. As shown, the sling adapted to support the head by passing under the chin and occiput, is preferably formed of leather or like material which will not be disagreeable when brought in contact with the patient's skin and is of circular or oval form with a central opening and a transverse cut from the central opening to the periphery at one side. This construction provides front and rear portions G G′ respectively, and separated ends at one side provided with snap hooks *g;* while the opposite side is provided with a ring *g′*, said snap hooks and ring being adapted to coöperate with corresponding hooks and ring on the lower ends of flexible connections I. The flexible connections are preferably in the form of chains, the length of which may be readily adjusted, first, for rough adjustment by simply doubling the chain or providing suitable open links therein which may be hooked into other links to shorten or lengthen the same, and, secondly, for fine adjustment by turn-buckles J. The upper ends of the flexible connections are secured by snap hooks or equivalent fasteners to the depending screw eyes K in the corner pieces of the frame, and at an intermediate point in each of the flexible connections there is interposed a spring balance weighing scale L, whereby the traction on either or both sides may be readily determined for the purpose of making a record or for indicating the tractive force necessary for restoring the parts to normal position. The loops or slings through which the arms are passed to support the shoulders, are preferably formed of hose pipe covered with leather as at M and with chains M′ passed through the hose pipe. A ring and snap hook attachment M^2 is provided between the chain and the lower end of a flexible, preferably a chain, support N adapted to extend up to the cross bar at the top of the frame. The attachment between the cross bar and the suspension chain or connection is conveniently formed by a ring and snap hook N′ whereby the position of the shoulder supports or slings may be adjusted horizontally, provision for vertical adjustment being provided as in the former instance, by the adjustable chain N and a turn-buckle N^2. In each of the shoulder tractors there is also provided a spring balance scale O which will indicate the tractive pressure exerted on the shoulders, independently.

In the use of the apparatus, the patient's head is supported and the desired tractive pressure exerted thereon without exerting pressure on the sides of the head, thus the patient's ears are left entirely free and inasmuch as the supporting connection extends upwardly and outwardly, the lateral position of the head may be regulated by shortening one or the other of the connections or by offsetting one or both of the shoulder supports in the opposite direction, the tendency to lateral curvature of the spine, for instance, may be corrected; in other words, instead of depending upon the weight of the lower portion of the patient's body to straighten out the deformed parts, positive pressure or traction in the proper direction to accomplish this end may be exerted through the adjustment of the several parts of the apparatus.

It will be particularly noted that the shoulder supports may be adjusted to any position along the top rod of the frame, thus they may be made to converge toward the point of support, or diverge, or both be located nearer one end than the other and so too the supports for the head sling may be connected with the frame either at the corners as shown or one or both of said supporting connections may be secured to rings or other devices such as indicated at P, located on the bars of the frame to secure traction in the desired direction to meet the particular requirements of the case being treated.

By the employment of spring balance scales each having its own indicator an exact determination may be made of the traction exerted at any time during the course of the treatment, and by keeping an accurate record, not only may the apparatus be quickly and uniformly adjusted for each patient in succession, without depending upon the inaccurate and unreliable data furnished by the patients themselves, but the traction to secure progressive results or movement of the parts, may be accurately predetermined and the apparatus adjusted accordingly without consulting the patient and in many instances without the patient's even being aware of the fact that the traction is being increased from time to time or at successive treatments.

The apparatus as a whole is well adapted for being shipped in small compass, inasmuch as the several members constituting the frame and jury may be readily separated from each other and packed for storage or shipment; thus an invalid undergoing a course of treatment, may have the apparatus shipped from place to place should the necessity for traveling arise and thereby continue a course of treatment under practically uniform conditions.

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

1. In an apparatus for orthopedic treatment, the combination with a frame embodying front and rear laterally divergent standards having clamps at their lower ends for coöperation with a chair, a cross bar, corner pieces with which the upper divergent ends of the standards and the cross bar are removably connected, and a head supporting sling connected with said cross bar at widely separated points whereby lateral movement of the sling is controlled.

2. In an apparatus for orthopedic treatment, a jury frame embodying front and rear standards formed of telescoping sections and having clamps at their lower ends for coöperation with a chair, corner pieces connecting the front and rear standards and a telescopic cross rod connecting the corner pieces, whereby the height and width of the top of the frame may be regulated.

3. In an apparatus for orthopedic treatment, the combination with a frame embodying laterally divergent standards, and a cross bar connecting their upper divergent ends, a head sling, separate flexible supporting means connected at each end of the sling and to the cross bar at widely separated points, a spring balance weighing scale interposed in each support intermediate its ends, two shoulder slings, separate flexible supporting means for connecting each of said shoulder slings with the cross bar and a spring balance weighing scale interposed in each of said shoulder sling supports intermediate its ends.

4. In an apparatus for orthopedic treatment, a head sling adapted to support the head from the chin and occiput, formed of pliant material and having a central opening and a radial cut at one side from the central opening to the periphery, and suspension devices secured to the two ends at the sides of the radial cut and to the outer edge opposite said radial cut.

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Witnesses:
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