No. 812,133. PATENTED FEB. 6, 1906.

T. J. JAMES, R. McALLISTER & W. S. BYRAM.

SURGICAL TABLE.

APPLICATION FILED JUNE 3, 1905.

2 SHEETS—SHEET 1.

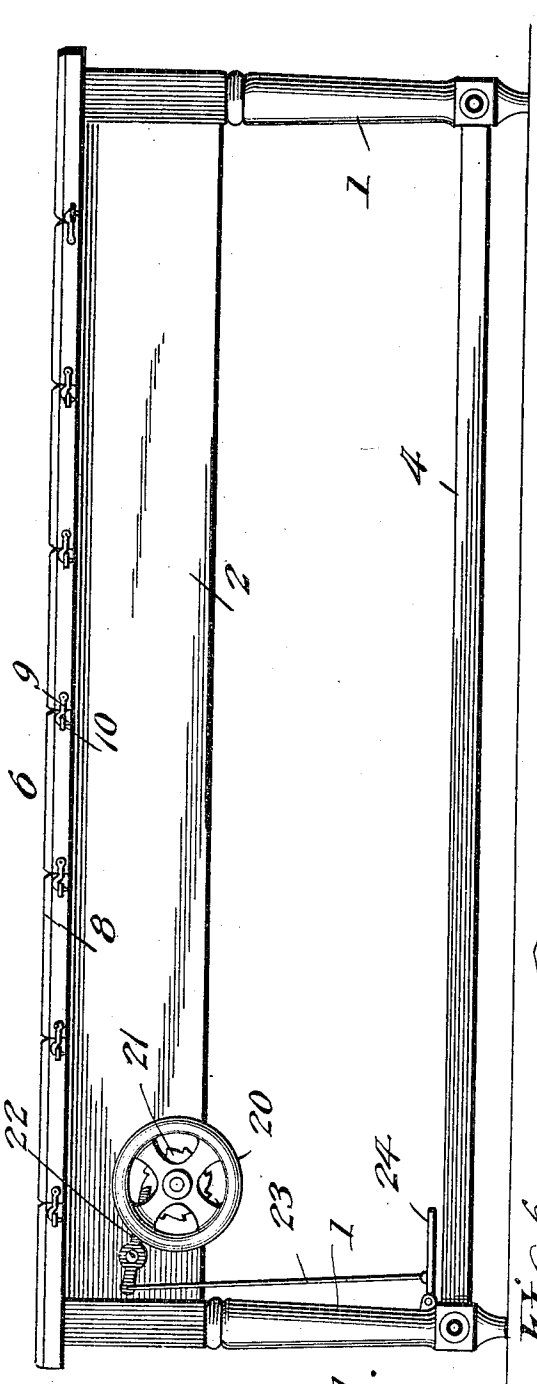


Fig. 1.

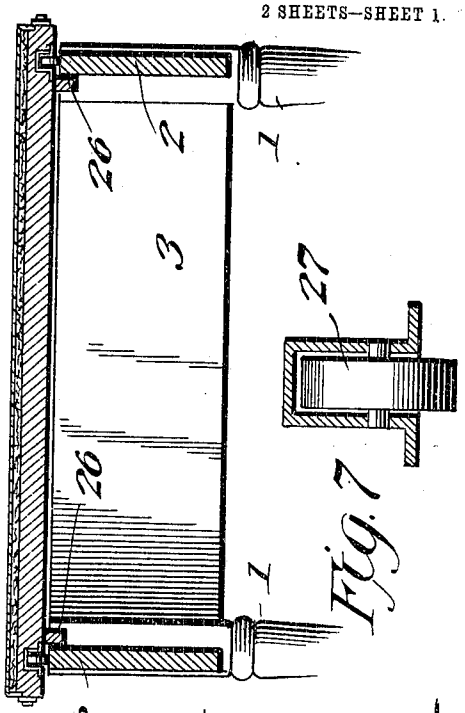


Fig. 7

Fig. 4.

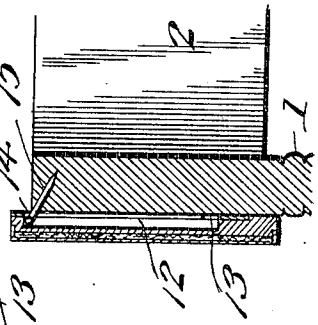


Fig. 5.

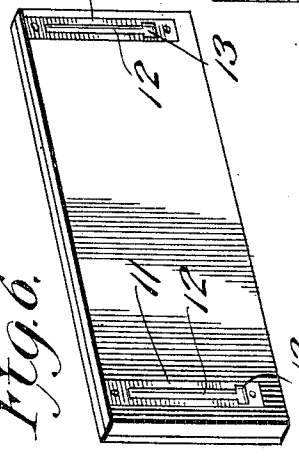


Fig. 6.

Witnesses

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SURGICAL TABLE.

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2 SHEETS—SHEET 2.

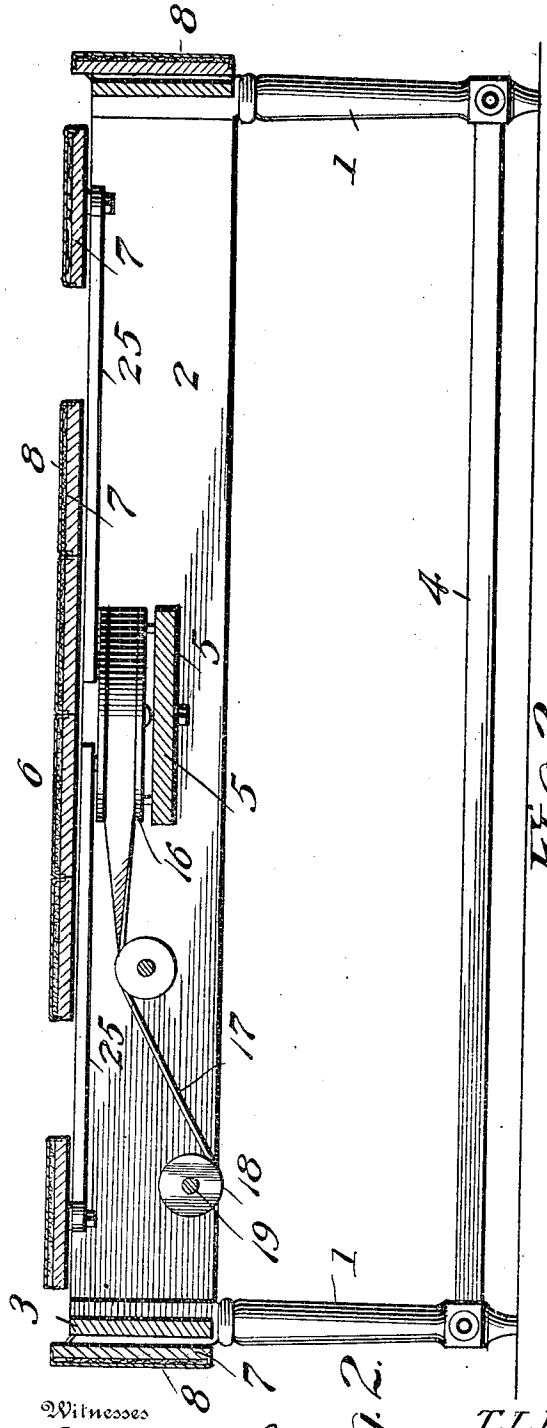


Fig. 2.

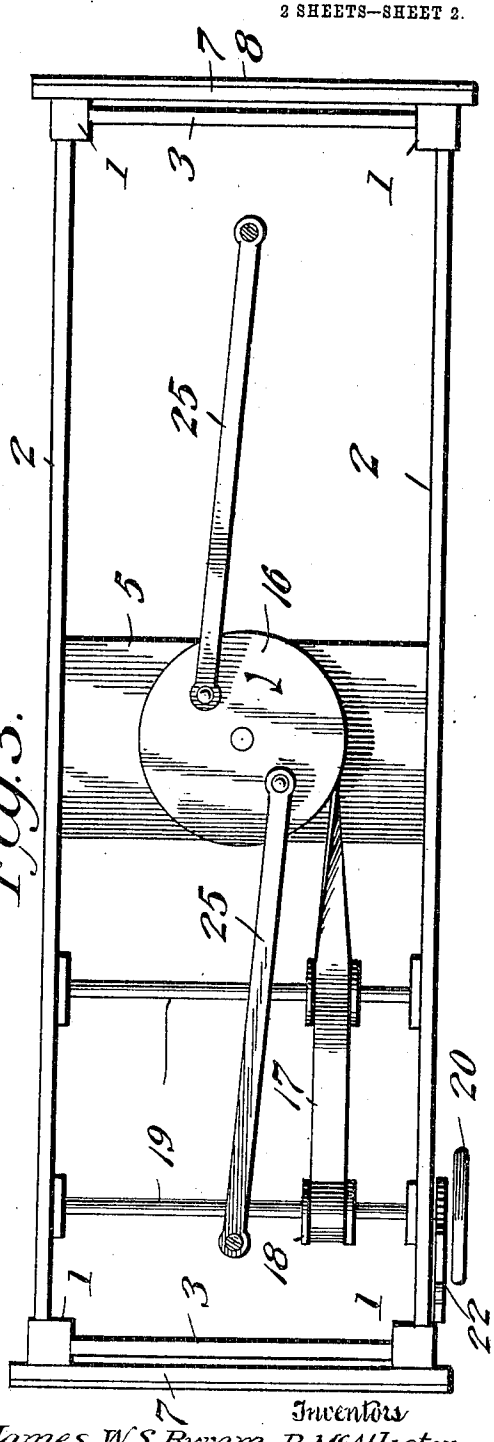


Fig. 3.

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UNITED STATES PATENT OFFICE.

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SURGICAL TABLE.

No. 812,133. Specification of Letters Patent. Patented Feb. 6, 1906.

Application filed June 3, 1905. Serial No. 263,622.

To all whom it may concern:

Be it known that we, THOMAS J. JAMES, ROBERT McALLISTER, and WILLIAM S. BYRAM, citizens of the United States, residing at Missoula, in the county of Missoula and State of Montana, have invented new and useful Improvements in Surgical Tables, of which the following is a specification.

This invention relates to surgical tables, and has for its objects to produce a comparatively simple inexpensive device of this character which in practice may be utilized as an ordinary operating-table or as means for treating curvature and other diseases of the spine, sprains, and the like, wherein the bones or joints of the patient are subjected to a stretching tension, one wherein the stretching force or traction may be readily applied and regulated to accord with the existing conditions, and one in which the tension or traction may be quickly relaxed.

A further object of the invention is to provide a device of this character wherein the sections composing the table-top may be securely connected together when circumstances require, one wherein the end sections may be disposed in folded position at the ends of the table, thus to permit the other sections to move freely during the stretching operation, and one wherein the sections will travel freely and be properly guided in their movements upon the table-frame.

A further object of the invention is to provide a simple efficient form of mechanism for moving the sections during the tension or stretching operation, and one wherein after the desired amount of tension has been applied the parts may be fixed against further movement to maintain such tension for an appropriate interval of time.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation of a table embodying the invention. Fig. 2 is a similar view, partly in vertical longitudinal section. Fig. 3 is a top plan view with the table-top removed. Fig. 4 is a detail vertical transverse section. Fig. 5 is a detail view, partly in vertical longitudinal section, showing one of the end sections in folded position at the end of the table. Fig. 6 is a perspective view of one of the end sections. Fig. 7 is a detail view, partly in section, of one of the antifriction-rollers.

Referring to the drawings, it will be seen that the table-frame, which is supported by legs 1, comprises longitudinal side bars or rails 2 and transverse end bars or rails 3, the ends of the rails 2 and 3 being suitably connected with the legs 1, which latter are connected at a point adjacent their lower ends by brace members or bars 4, there being disposed at a point adjacent the longitudinal center of the table and extended transversely of the latter a horizontal supporting member or plate 5, fixed at its ends to the side rails 2.

The table is equipped with a top 6, composed of a plurality of members or sections 7, having their upper faces suitably padded, as at 8, and provided at their ends with hooks or other connecting members 9, designed for engagement with eyes or keepers 10 on the next adjacent sections, while the end members or sections 7 are provided on their normally lower or inner faces and at points adjacent their ends with retaining-plates 11, each having a longitudinal slot 12 terminating at one end in an enlargement 13, adapted for entrance of the heads 14 of supporting members 15 in the form of nails driven into the upper ends of the legs 1, it being noted that under this construction the end sections 7 may be moved from position upon the frame of the table and suspended in folded position at the ends of the latter, as illustrated more clearly in Figs. 2 and 5, for a purpose which will hereinafter appear.

Pivoted for rotation upon and sustained by the plate 5 is a circular drum 16, having wound thereon a flexible element or belt 17, one end of which is fixed to the drum and the other end to a winding member or rail 18, fixed upon a shaft 19, provided at its outer end and at one side of the table with a crank-wheel 20 and with a circular toothed rack 21, designed for engagement by a pivotal pawl 22, connected by a rod or other element 23 with a foot-lever 24, there being eccentrically pivoted to the drum 16 the inner ends of a pair of oppositely-extending connecting members or levers 25, pivoted at their outer ends, respectively, to the sections 7, lying adjacent to the end sections of the table-top or, in

other words, to the second sections from the ends of the table for a purpose which will hereinafter appear.

The sections 7 are each equipped with a pair of transversely-disposed bearing members or cleats 26, arranged at appropriate points to bear upon the inner faces of the longitudinal rails 2, thus to prevent endwise displacement of the sections relative to the table-frame, the sections being further provided with wheels or rollers 27, designed for travel upon the upper edges of the rails 2 to insure free movement of the sections upon the frame.

In practice when the table is to be employed for ordinary operations the sections 7 are connected together by engaging the members or hooks 9 with the eyes or keepers 10, as illustrated in Fig. 1. When, however, the table is to be employed for treating such diseases as curvature of the spine or other spinal troubles, sprains, and the like, in which the joints or bones of the patient are to be subjected to a stretching tension, the end sections 7 are moved to the folded position illustrated in Figs. 2 and 5, and the second sections are released to permit their free movement in a direction longitudinal of the table. The patient is then placed upon the table and secured to one or more of the sections by suitable straps and the crank-wheel rotated in the proper direction for winding the belt 17 onto the wheel 18, which action rotates the drum 16 in the direction illustrated by the arrow in Fig. 3, thus causing the levers 25 to move the sections with which they are connected outward toward the ends of the table and subjecting the affected parts of the patient to the proper stretching action or tension. After the requisite degree of tension has been applied, the mechanism will be locked against movement, owing to engagement of the pawl 22 with the rack 21, thus to maintain such tension for an appropriate interval of time. When the tension is to be relaxed, the foot-lever 24 is pushed downward, thus lifting the pawl 22 out of engagement with the rack and permitting the parts to assume their normal positions, as will be readily understood. It is to be observed in this connection that during the tension action any desired number of the intermediate sections may be connected with the second sections 7 for movement therewith through the medium of the hooks and eyes. Furthermore, the table may be equipped with straps of any appropriate form for securing a patient to the table or the limbs or other parts of the patient's body to any of the sections 7.

From the foregoing it is apparent that there is produced a simple device which in practice will be highly efficient for the treatment of diseases or injuries requiring the joints or bones of the patient to be subjected to a stretching action and one which will also subserve the functions of an ordinary operating-table, it being understood that in attaining these ends minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus described our invention, what we claim as new is—

1. In a surgical table, a frame, a top comprising a plurality of sections, a rotary head, operative connections between the head and a pair of sections, a winding-shaft, and a flexible connecting element between the head and shaft, the latter being operable for imparting movement through the head and connections to the sections.

2. In a surgical table, a frame, a top comprising a plurality of sections, a rotary drum, link connections between the drum and a pair of the sections, a belt normally wound on the drum, and means for unwinding the belt to rotate the drum and through the intermediate connections impart movement to the sections.

3. In a surgical table, a frame, a top comprising a plurality of sections, devices engaging and designed to support the end sections in folded position at the ends of the frame, and mechanism connected with a pair of the other sections for moving the latter from each other upon the frame.

4. In a surgical table, a frame, a top comprising a plurality of sections, rollers carried by a pair of said sections and adapted for travel on the frame, and mechanism operatively connected with said pair of sections and operable for moving the latter from each other.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS J. JAMES.
ROBERT McALLISTER.
WILLIAM S. BYRAM.

Witnesses:
ELMER E. HERSHEY,
F. D. PEASE.