F. N. SOLSEM.

ATTACHMENT FOR PHYSICIANS' OPERATING TABLES.

APPLICATION FILED NOV. 10, 1909.

951,515.

Patented Mar. 8, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

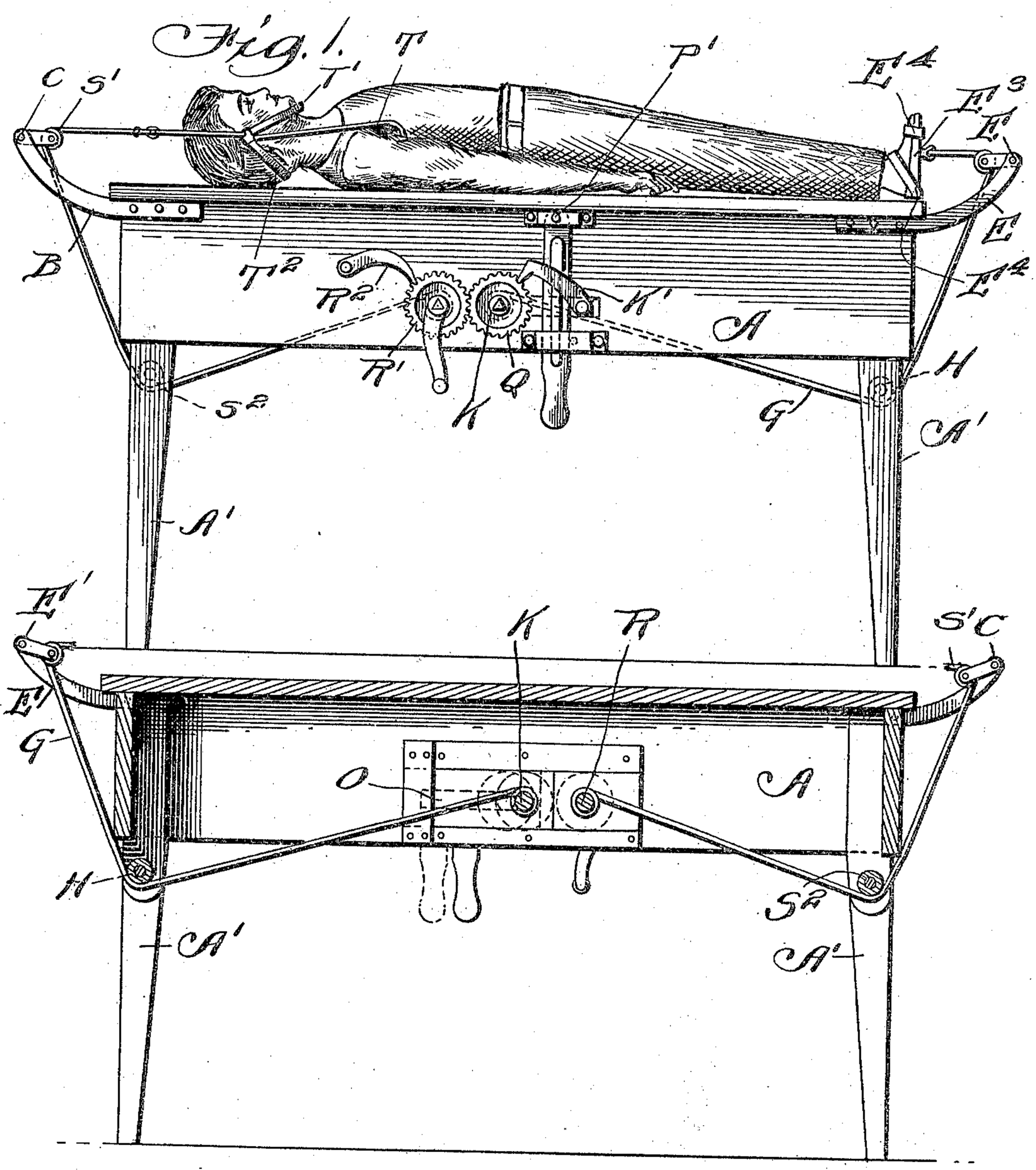

Fig. 2.

Witnesses

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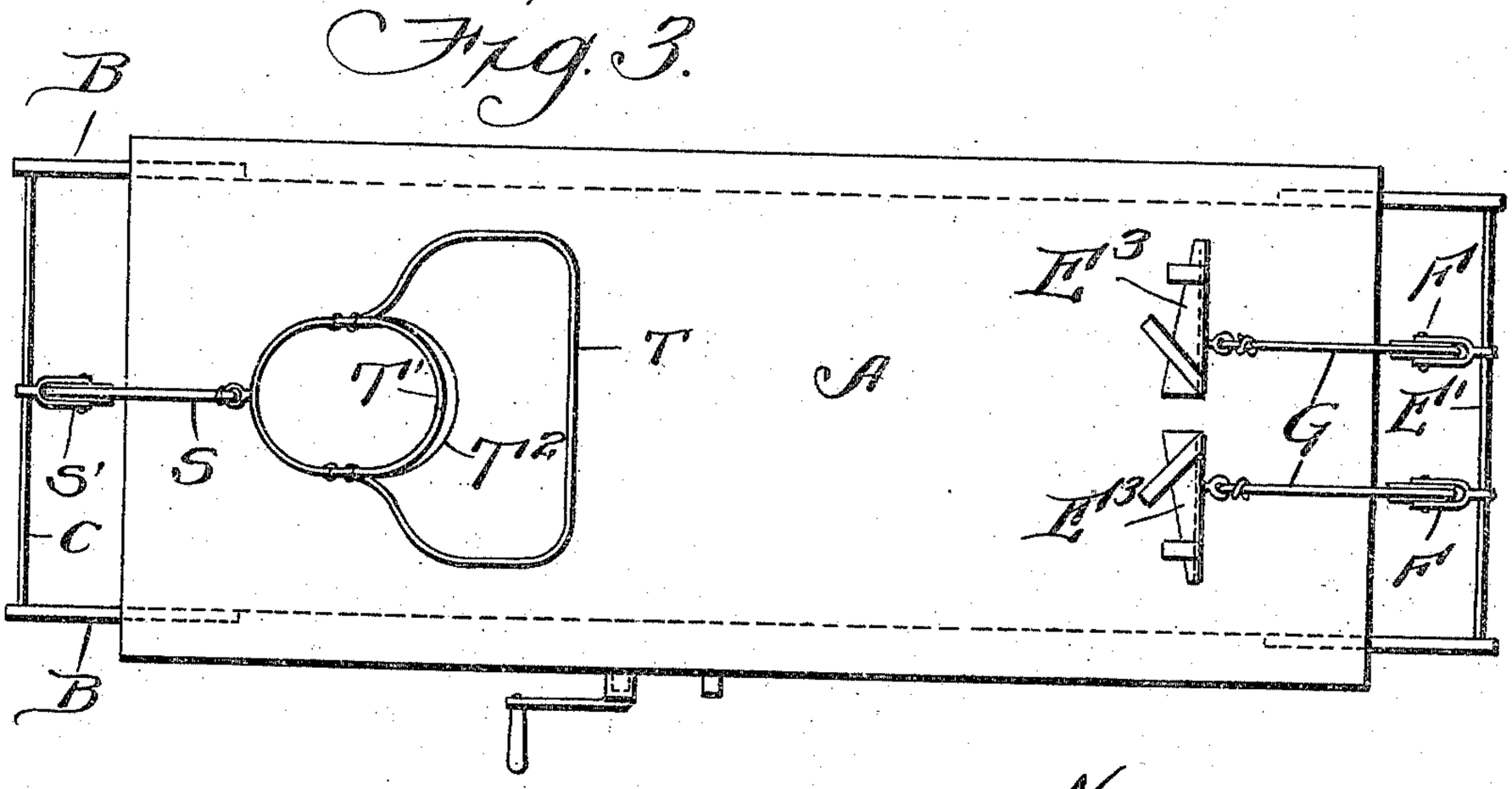
2 SHEETS—SHEET 2.

Fig. 3.



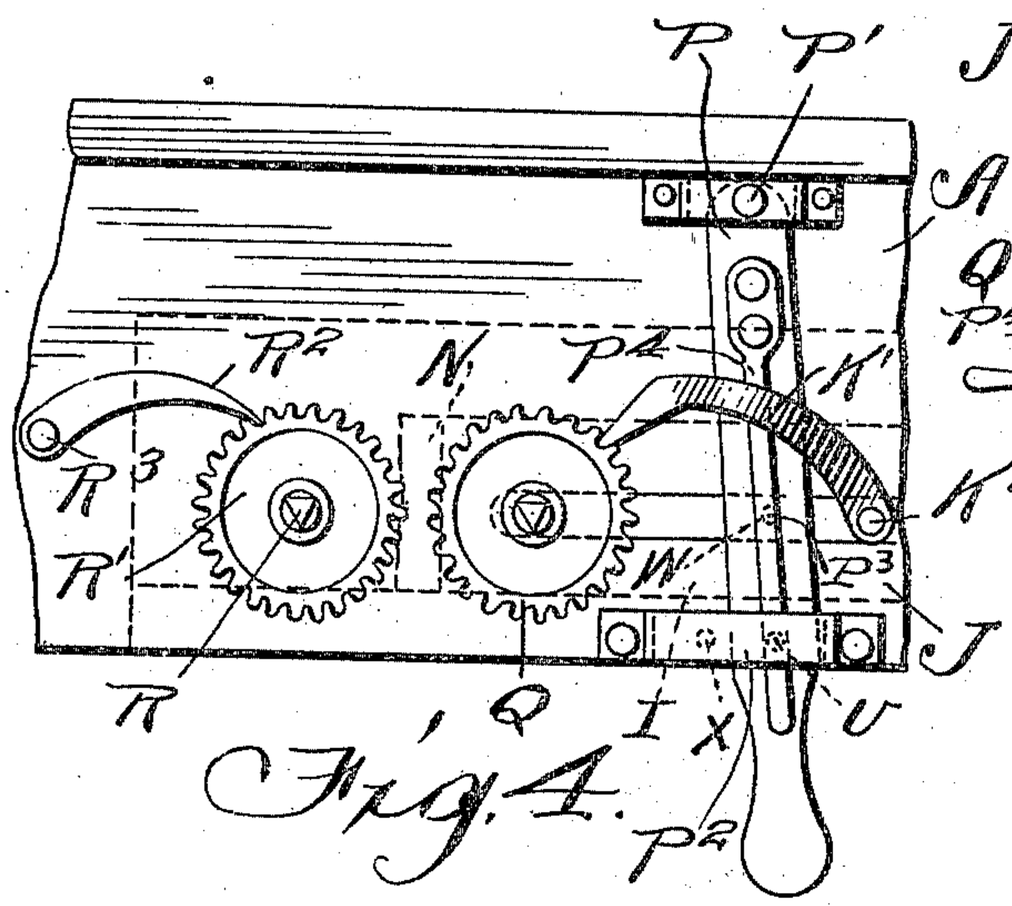


Fig. 4.

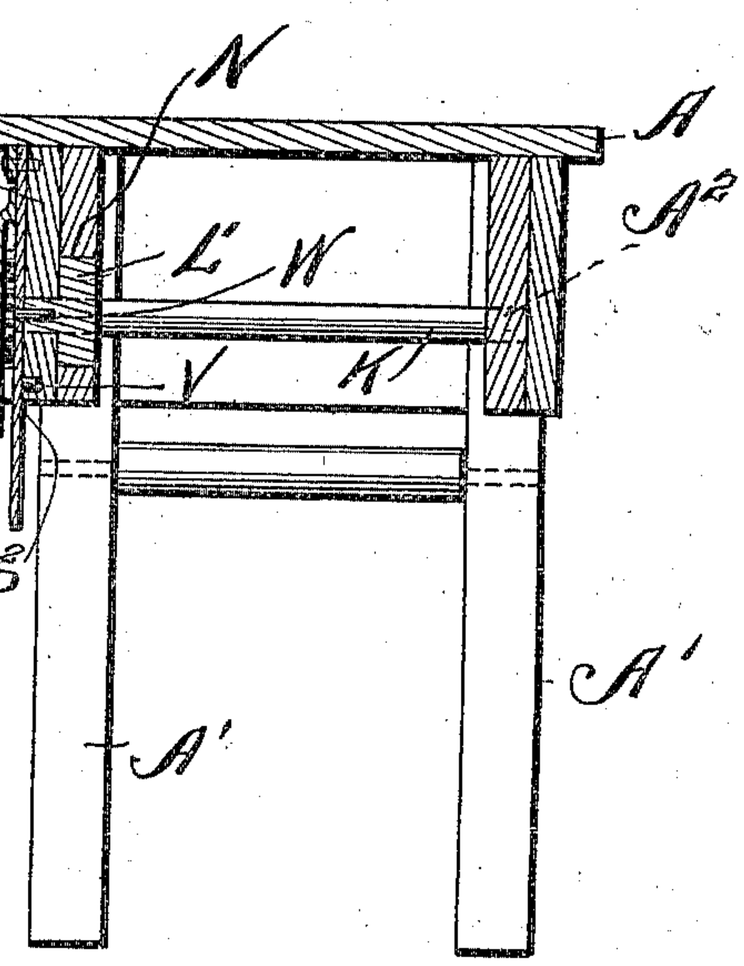


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

FREDERICK N. SOLSEM, OF PETERSON, MINNESOTA.

ATTACHMENT FOR PHYSICIANS' OPERATING-TABLES.

951,515. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed November 10, 1909. Serial No. 527,266.

To all whom it may concern:

Be it known that I, FREDERICK N. SOLSEM, a subject of the King of Norway, residing at Peterson, in the county of Fillmore and State of Minnesota, have invented certain new and useful Improvements in Attachments for Physicians' Operating-Tables; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in surgical apparatus for treating patients having a curvature spine, crooked limbs, etc., and comprises various details of construction, combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claims.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a side elevation showing the apparatus as applied to a patient upon the table. Fig. 2 is a central longitudinal section through the table. Fig. 3 is a top plan view of the apparatus. Fig. 4 is an enlarged detail in elevation, and Fig. 5 is a cross sectional view through the apparatus.

Reference now being had to the details of the drawings by letter, A designates a table supported upon legs A′, and B designates bracket arms projecting from the head of the table, said arms being connected by a rod C. At the foot of the table are similar bracket arms E having a rod E′ connecting the same and two pulleys F are fastened to the rod E′ and about which a rope G passes, which rope also passes over the roller H mounted upon the legs and thence winds about a reel or shaft K, one end of which shaft is mounted in a bearing in the board A^2 extending downward from the table top and its other end is journaled in a sliding block I which is supported in an opening N formed in the table. Said block has an extension L′, shown clearly in Fig. 5 of the drawings, which passes through the slot O formed in the vertically disposed board J of the table. A pinion wheel Q is fixed to the end of the shaft K and a pawl K′ is pivotally mounted upon a pin K^2 carried by said block, the free end of the pawl being adapted to engage the teeth of the pinion Q. A second shaft, designated by letter R, has one end journaled in the board A^2 and its other end in the board J and has a pinion wheel R′ fixed thereto and which is adapted to mesh with the wheel Q when the teeth of the two wheels are brought together. A pawl R^2 is mounted upon a pin R^3 and is adapted to hold the pinion R′ from rotation in one direction. A rope S passes about a pulley S′ which is fastened to the rod C and also the roller S^2 mounted between the legs of the table and thence passes through and winds about the shaft R.

Shoes E^3 are provided having, preferably, iron bottoms and a piece of leather at corresponding ends adapted to fit about the heel of the person, and straps E^4 are passed about the toe and instep of the foot of the patient.

A loop T is fastened to the rope S and is adapted to pass underneath the arms of the patient in the manner shown in Fig. 1 of the drawings across under the back of the latter, and chin and head straps, designated respectively by letters T′ and T^2, are fastened to the strap S and pass one underneath the chin and the other back underneath the head of the patient.

A lever, designated by letter P, is mounted upon a pivot P′ and has a swinging movement guided by the strap P^2 and the adjacent vertical board J of the table. A pin P^3 projects from the contracted portion of the block L and engages an aperture W formed in the lever P. A spring P^4 is fastened at one end to said lever and its other end is adapted to bear against the strap P^2 for the purpose of holding the lever in contact with the outer face of the board J. A pin V is fastened to said lever and is adapted to engage one or another of the apertures X formed in the board J and adapted to hold the lever in an adjusted position.

In operation, the patient to be treated lies upon the table, preferably in the manner shown in Fig. 1 of the drawings, and the strap and ropes are connected in the manner illustrated. In the event of the patient to be treated having a curvature of the spine intermediate his or her shoulders, the greater stretching should be applied to the upper portion of the spinal column above the waist and, to effect this, the crank is placed upon the shaft K and, by winding the rope G upon the shaft or reel K, the feet of the patient are drawn in order to prevent the patient sliding up when pull is applied upon the other rope, after which the crank is applied to the shaft R and the stretching applied to the portion of the body to be particularly treated. In the event of a patient being treated with a crooked leg, a reverse operation of the apparatus is effected, that is the rope attached about the shoulders and head of the person is first drawn taut, after which the other shaft is rotated to cause the stretching to be applied to the legs of the patient. In the event of it being desired to exert an equal pulling or stretching effect at each end of the patient, the gears are brought together and the crank attached to one shaft or the other, thus causing the two ropes to pull equally.

What I claim to be new is:—

1. A surgical stretching apparatus, comprising a table, rotatable shafts mounted in suitable bearings thereon, gear connections between the shafts, one of the latter having a swinging movement in order to throw the shafts out of gear, ropes winding about said shafts, pulleys about which the ropes pass, and means connected to said ropes for attachment to the head, shoulders and feet of the patient.

2. A surgical stretching apparatus, comprising a table, rotatable shafts mounted in suitable bearings thereon, gear connections between the shafts, a sliding block mounted upon the table and in which one end of one of the shafts is journaled, pinion wheels, one upon each of said shafts, means for moving the block to cause the pinions to mesh, ropes winding about said shafts, pulleys about which the ropes pass, and means connected to the ropes for attachment to the head, shoulders and feet of a patient.

3. A surgical stretching apparatus, comprising a table, rotatable shafts mounted in suitable bearings thereon, gear connections between the shafts, a sliding block mounted upon the table and in which one end of one of the shafts is journaled, pinion wheels, one upon each of said shafts, means for moving the block to cause the pinions to mesh, means for holding the block in an adjusted position, ropes winding about said shafts, pulleys and rollers about which the ropes pass, and connections to said ropes for attachment to the head, shoulders and feet of the patient.

4. A surgical stretching apparatus, comprising a table, rotatable shafts mounted in suitable bearings thereon, gear connections between the shafts, a sliding block mounted upon the table and in which one end of one of the shafts is journaled, pinion wheels, one upon each of said shafts, means for moving the block to cause the pinions to mesh, a lever pivoted to the table, a pin projecting from said block and adapted to engage an aperture in said lever and provided for the purpose of moving the block to throw the gear teeth into or out of mesh, ropes winding about said shafts, pulleys about which the ropes pass, and means connected thereto for attachment to the head, shoulders and feet of the patient.

5. A surgical stretching apparatus, comprising a table, rotatable shafts mounted in suitable bearings thereon, gear connections between the shafts, a sliding block mounted upon the table and in which one end of one of the shafts is journaled, pinion wheels, one upon each of said shafts, means for moving the block to cause the pinions to mesh, a lever pivoted to the table, a pin projecting from said block and adapted to engage an aperture in said lever, a spring fastened to said lever, a strap coöperating with said spring and adapted to hold said lever in engagement with said pin, ropes winding about said shafts, pulleys about which the ropes pass, and means connected to the ropes for attachment to the head, shoulders and feet of the patient.

6. A surgical stretching apparatus, comprising a table, rotatable shafts mounted in suitable bearings thereon, gear connections between the shafts, a sliding block mounted upon the table and in which one end of one of the shafts is journaled, pinion wheels, one upon each of said shafts, means for moving the block to cause the pinions to mesh, a lever pivoted to the table, a pin projecting from said block and adapted to engage an aperture in said lever, a pin projecting from the lever and adapted to engage an aperture in the table to hold said lever in adjusted position, ropes winding about the shafts, and connections upon the ropes for attachment to the head, shoulders and feet of a patient.

7. In combination with a table having an opening in one of the side boards thereof, a block having a contracted portion movable within a slot in the board, shafts journaled in suitable bearings in the side boards of the table, one of said shafts journaled in said movable block and the other stationary, a pinion fixed to one of said shafts, pawls for preventing the pinions rotating in one direction, a lever pivoted upon the table, a pin projecting from the contracted portion

of the block and engaging an aperture in said lever, a pin carried by the lever and adapted to engage an aperture in the side board, ropes winding about said shaft, pulleys about which the ropes pass, and connections to said ropes for attachment to the head, shoulders and feet of the patient.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

FREDERICK N. SOLSEM.

Witnesses:
O. S. RETRUM,
C. H. DAYTON.