

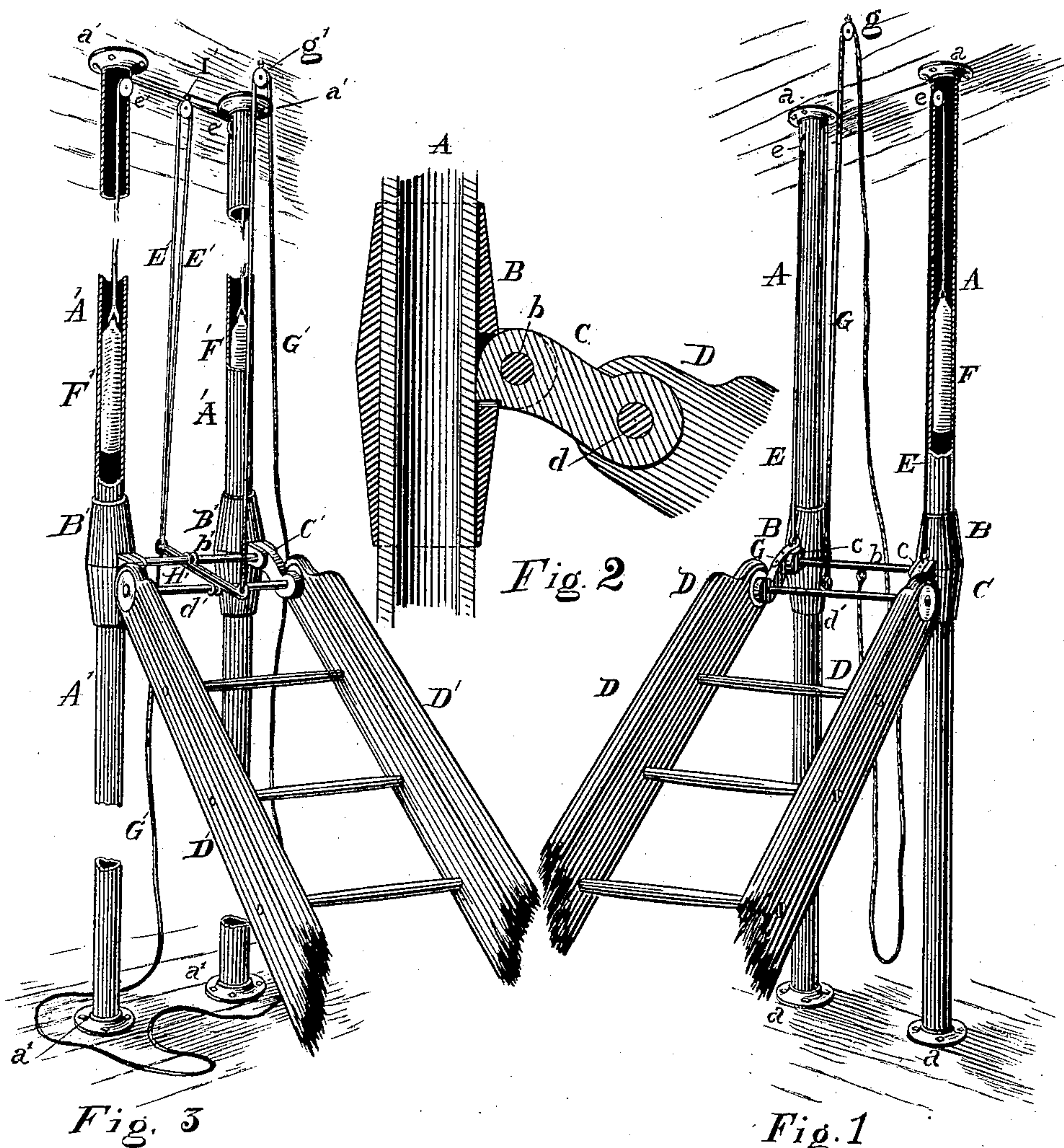
(No Model.)

3 Sheets—Sheet 1.

T. PETERSON.
GYMNASTIC APPARATUS.

No. 451,411.

Patented Apr. 28, 1891.



WITNESSES

C. E. Humphrey
F. H. Stuart

INVENTOR

THEODORE PETERSON

ATTORNEY

C. E. Humphrey

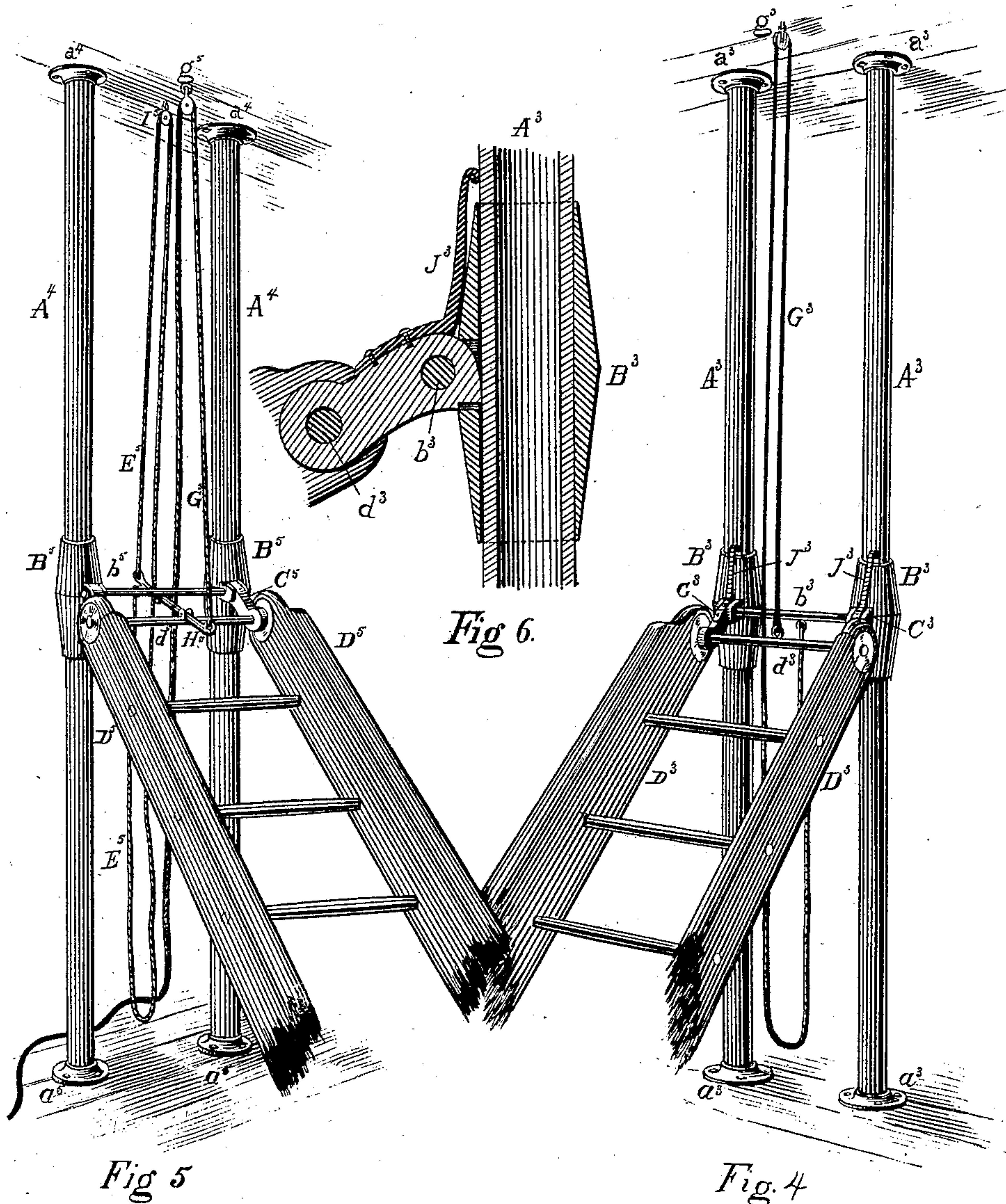
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ATTORNEY

INVENTOR

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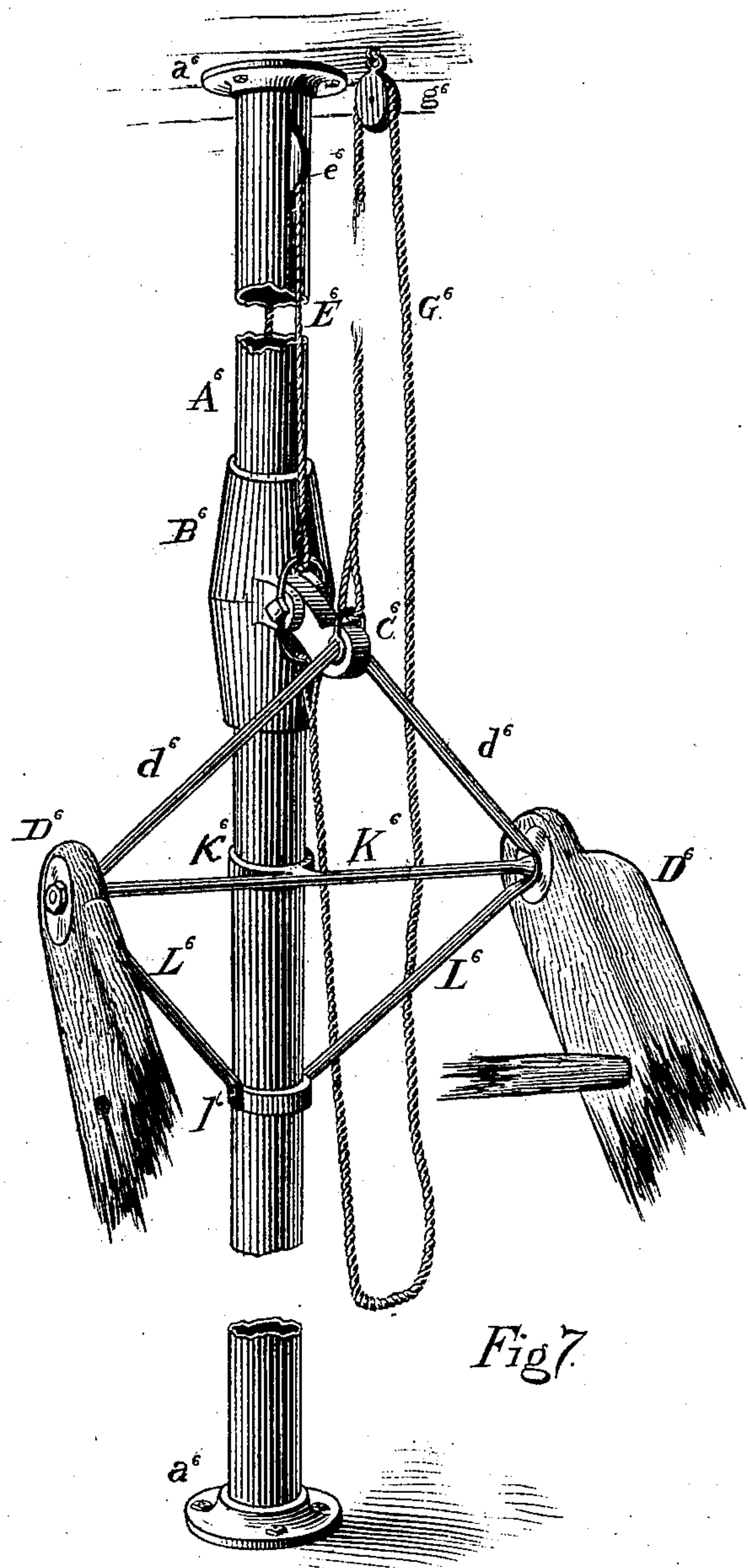


Fig 7.

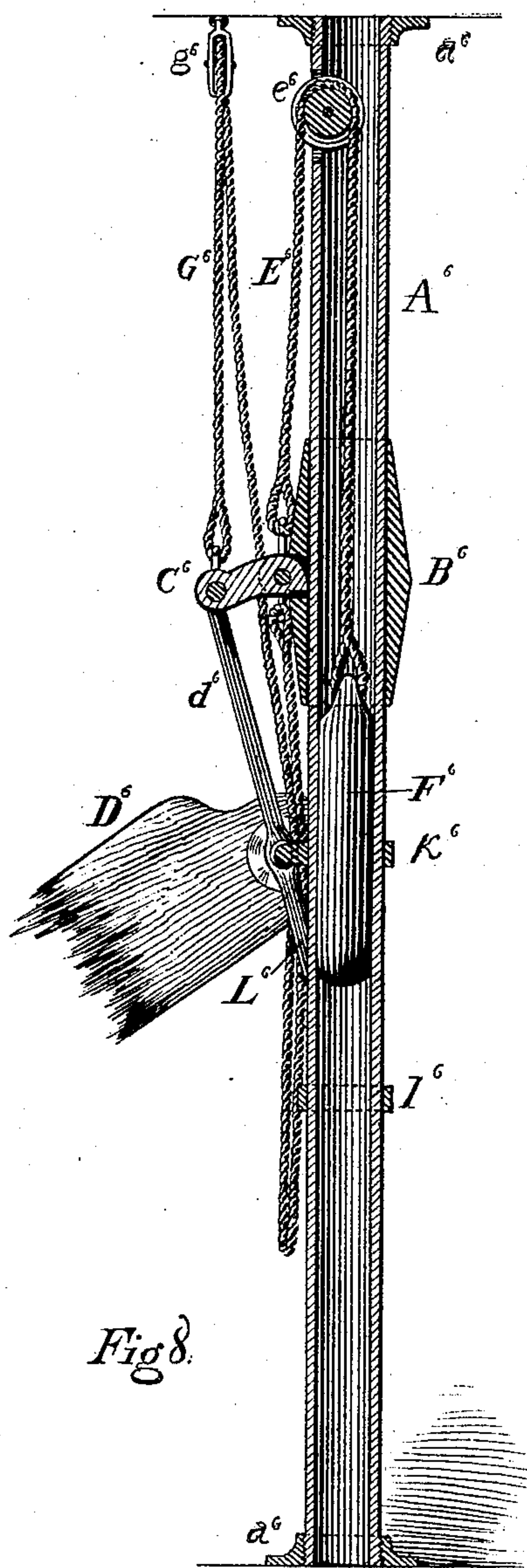


Fig 8.

WITNESSES

C. E. Humphrey
F. H. Stuart

ATTORNEY

INVENTOR,

Theodore Peterson

C. R. Humphrey

UNITED STATES PATENT OFFICE.

THEODORE PETERSON, OF AKRON, OHIO, ASSIGNOR TO THE HOWARD
MANUFACTURING COMPANY, OF SAME PLACE.

GYMNASTIC APPARATUS.

SPECIFICATION forming part of Letters Patent No. 451,411, dated April 28, 1891.

Application filed February 13, 1891. Serial No. 381,296. (No model.)

To all whom it may concern:

Be it known that I, THEODORE PETERSON, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Apparatus for Vertically Adjusting and Supporting Gymnastic Ladders, of which the following is a specification.

My invention has relation to improvements in that class of mechanical devices by which the sloping or horizontal ladders used in gymnastic exercises are raised or lowered to any desired elevation or angle and retained until a different position is required.

The objects of my invention are to provide new and improved devices for raising, retaining, and lowering the ends of said ladders; and to the aforesaid objects my invention consists of the peculiar construction, arrangement, and combination of parts, hereinafter described, and then specifically pointed out in the claims, reference being had to the accompanying drawings, forming a part of this specification.

In the accompanying drawings, Figure 1 is a perspective view of one form of my invention; Fig. 2, an enlarged central vertical section of a part of Fig. 1; Figs. 3, 4, and 5, perspective views on the scale of Fig. 1 of modifications of the same; Fig. 6, a central vertical section on the scale of Fig. 2 of a part of Fig. 4; and Figs. 7 and 8, a perspective view and central vertical section on a different scale of a further modification of my invention.

In the different views there are certain general features common to all and peculiar to my invention, and where these occur in the different modifications they are marked with the same letters of reference, but with progressive exponent marks for each successive modification, respectively, the additional parts being marked with separate reference-letters, and hereinafter fully described and pointed out.

Proceeding to describe my invention, and referring to the form shown in Figs. 1 and 2, A A are two hollow metallic posts, as two-inch gas-pipe, fastened by means of flanges a a, parallel with each other and perpendicularly to the floor and ceiling, or other upper

and lower supports in the gymnasium. On each post A is a sliding sleeve B, through one side of which is an opening, on each side of which are outwardly-projecting ears c. Piv-
otally mounted between the ears c of each sleeve, on a rod b, is a link C, the inner face of which, adjacent to the post A, is eccentric to its pivot, and arranged, when the outer end of the link is depressed, to engage the post and retain the sleeve, and when the outer end is rocked upward to release the sleeve and permit its movement along the post. The outer end of each link C is pivotally attached to the end of one of the side rails of the ladder D by a pivot or rod d. Near the upper end of each post A is an opening, in which is journaled a small grooved pulley e, over which runs a cord E, the outer end of which is attached to the inner end of the link C, the other end being attached to a weight F inside of the post. By this arrangement the weight of the ladder is constantly counterbalanced, thereby enabling it to be raised with little power.

Attached to the pivot-bar d is a cord G, which passes over an overhead pulley g, its other end being attached to the pivot b, that unites the links and sleeves to serve as a down-haul. By drawing the cord over the pulley g the end of the ladder is sufficiently raised to rock the outer ends of the links up and release the sleeves, which can be raised by continuing the draft or lowered by maintaining sufficient draft to keep them released, and drawing down on the part of the cord below the pivot b. When the desired elevation in either direction is reached, the end of the ladder is permitted to fall, thereby locking the sleeves against the posts.

In the construction shown in Fig. 3 the weight-cord pulleys e' e' in the upper part of the posts A' A' face each other, and the cords E' E', attached to the weights F' F', running over them pass in opposite directions over a double overhung intermediate pulley I' to one end of a lever H', hinged on the pivots b' d'. This lever extends in each direction beyond these pivots, and to its opposite end is attached the cord G', which, passing over the overhung pulley g' is attached to the same end of the lever H' as the cords E' E',

to serve as a downhaul. The operation of this arrangement is the same with that shown in Fig. 1, the weights $F' F'$ serving through the cords $E' E'$ to counterbalance the ladder and the cord G' to raise it, the office of the pivoted lever II' being to give these parts an additional purchase in their operation, or, in other words, to enable them to perform their respective functions with less power.

10 Figs. 4 and 6 present the same general construction shown in Figs. 1 and 2, except that the counterbalance weights, cords, and pulleys are omitted, and that to each sleeve B^3 is attached a spring J^3 , which constantly bears 15 on the post A^3 , and operates to throw down the end of the ladder D^3 and lock the links C^3 when the cord G^3 is released. This form is particularly adapted to light ladders where the weight is not so great as to require a 20 counter-weight to assist in raising it. The spring J^3 can be applied to any of the other forms of construction shown and described in this specification, but it has not been deemed necessary to show it in connection with the 25 others, as its application thereto will be obvious.

In Fig. 5 is illustrated another slight modification of my invention, which is similar to the construction shown in Fig. 4, except that 30 the springs J^3 shown in that construction are omitted and the lever II^5 is employed. In this case, however, the cord G^5 , attached to the end of the lever II^5 , passing over the pulley g^5 , hangs loose, and the cord E^5 , passing 35 over pulley F^5 , has both ends attached to the opposite end of said lever, the one to assist with the cords G^5 in raising the sleeves and the other to serve as a downhaul.

In operation the cord G^5 is used, as in the 40 other forms, to first raise the end of the ladder D^5 sufficiently to rock and release the links C^5 , when, if it is desired to raise the sleeves D^5 , the cords G^5 and E^5 are drawn in unison until the desired elevation is reached. 45 The reverse operation will be readily understood from the description of the other forms hereinbefore described.

Figs. 7 and 8 illustrate the application of my invention when a single post is used to 50 support the ladders. In this modification the post A^6 , sleeve B^6 , link C^6 , cords $E^6 G^6$, pulleys $e^6 g^6$, and weight F^6 are substantially the same as the same relative parts in Figs. 1 and 2; but in order to insure stability of the sup- 55 port and prevent lateral sway of the ladder, the ends of the pivot d^6 are bent downward from each side of the link C^6 at or near a right angle with each other, where they are united with the ends of the rails D^6 of the 60 ladder, across which is a rod K^6 , which constitutes a pivot for them, and which is rigidly connected with a ring k^6 loosely mounted on said post. From the points of union of the ends of the bent pivotal bar d^6 and the rod 65 K^6 are two rods $L^6 L^6$, which extend inward and unite with a ring l^6 , also loosely mounted

on said post. The rods $L^6 L^6$ may be and are preferably integral with the pivotal bar d^6 . The operation of this modification will be readily understood from the description of 70 the operation of the other forms hereinbefore detailed; but, in addition to the advantages of those forms, the ladder can be swung around the post, so as to stand radially from it at different angles. 75

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

1. An apparatus for vertically adjusting and supporting gymnastic ladders, consisting 80 of a vertical post, a sleeve arranged to slide thereon, and clutch mechanism connected with the sleeve and ladder and arranged to engage the post by the weight of the ladder, substantially as shown and described. 85

2. An apparatus for vertically adjusting and supporting gymnastic ladders, consisting 90 of a vertical hollow post, a sleeve arranged to slide thereon, clutch mechanism connected with the sleeve and ladder and arranged to engage the post by the weight of the ladder, and a counter-weight disposed within the 95 post and connected with the ladder by a cord and pulley, substantially as shown and described.

3. In an apparatus for vertically adjusting and supporting gymnastic ladders, the combination of a vertical post, a sleeve arranged 100 to slide thereon, a link journaled in said sleeve, having an eccentric end arranged to engage said post when its outer end is depressed, and having its outer end pivotally 105 connected with the ladder, and means, as a cord, for simultaneously raising the ends of said ladder and link, substantially as shown and described.

4. In an apparatus for vertically adjusting and supporting gymnastic ladders, the combination, with parallel posts and sleeves 110 mounted and arranged to slide thereon, with links pivotally mounted therein and arranged to clamp said posts as their outer ends are depressed, and having their outer ends 115 pivotally connected with the ladder, of springs attached to said links, arranged to press against said posts and constantly depress the outer ends of said links, substantially as 120 shown and described, and for the purpose specified.

5. In an apparatus for vertically adjusting 120 and supporting gymnastic ladders, the combination, with parallel posts and sleeves mounted and arranged to slide thereon, with links pivotally mounted therein and arranged 125 to clamp said posts as their outer ends are depressed, and having their outer ends pivotally connected with the ladder, of means, as a cord, for simultaneously raising the piv- 130 oted end of the ladder and links and similar means for lowering said sleeves when the ends of the ladder and links are raised, substantially as shown and described.

6. In an apparatus for vertically adjusting
and supporting gymnastic ladders, the com-
bination, with parallel posts and sleeves
mounted and arranged to slide thereon, with
5 links pivotally mounted therein and arranged
to clamp said posts as their outer ends are
depressed, and having their outer ends piv-
otally connected with the ladder, of a lever,
as H, mounted on the pivots of said links
10 and having at one end a cord for raising the

outer ends of said links and at the other a
cord for lowering the same, substantially as
shown and described.

In testimony that I claim the above I here-
unto set my hand.

THEODORE PETERSON.

In presence of—

C. E. HUMPHREY,

C. P. HUMPHREY.