

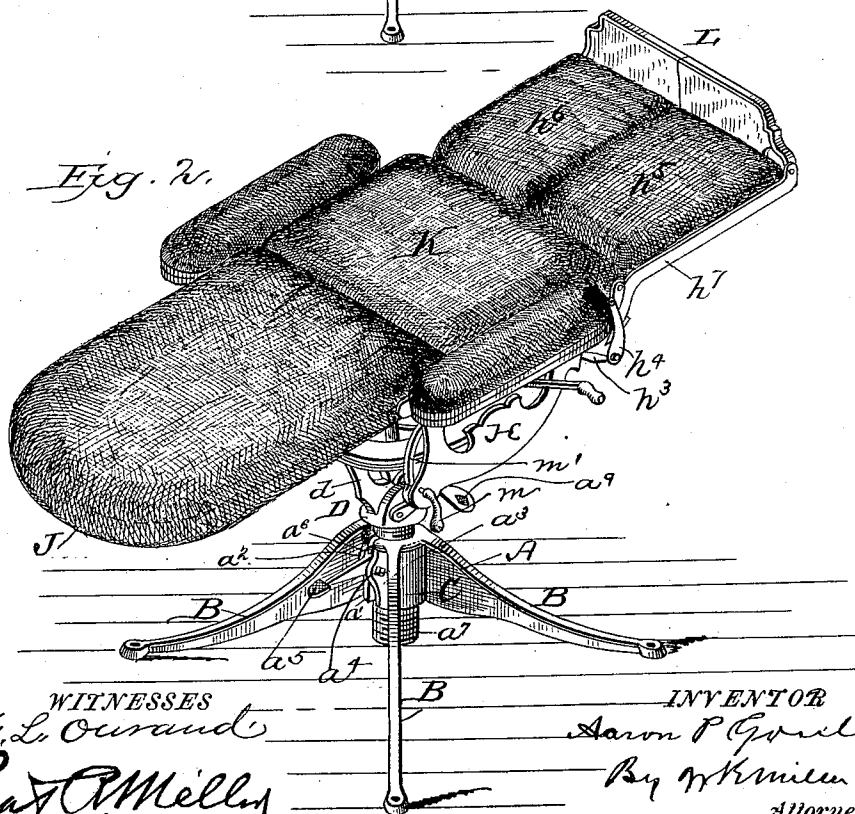
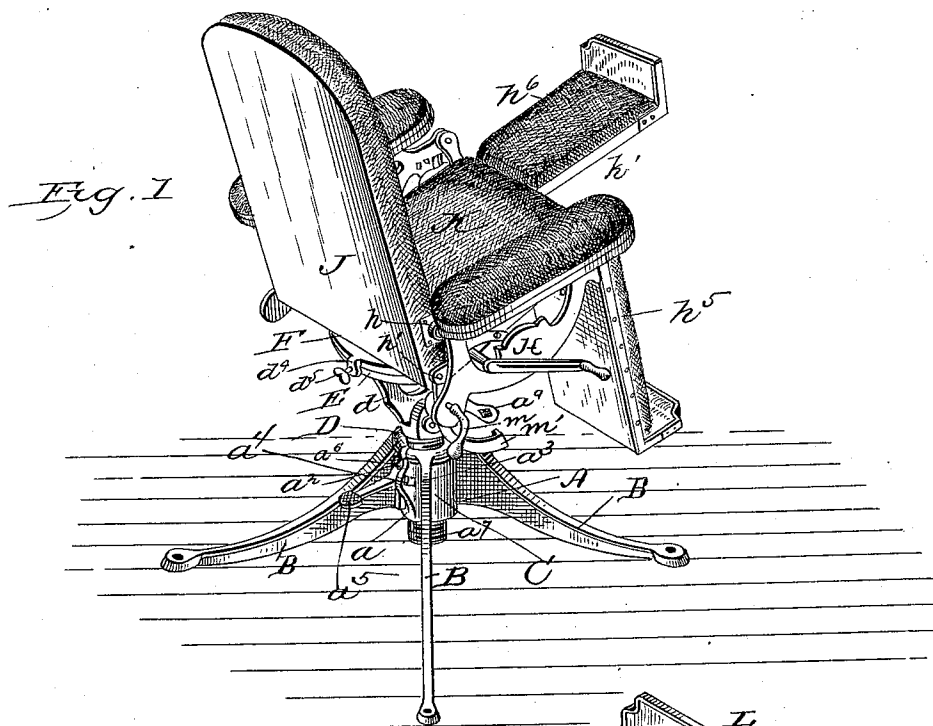
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3 Sheets—Sheet 1.

A. P. GOULD.  
DENTAL AND SURGICAL CHAIR.

No. 529,902.

Patented Nov. 27, 1894.



WITNESSES  
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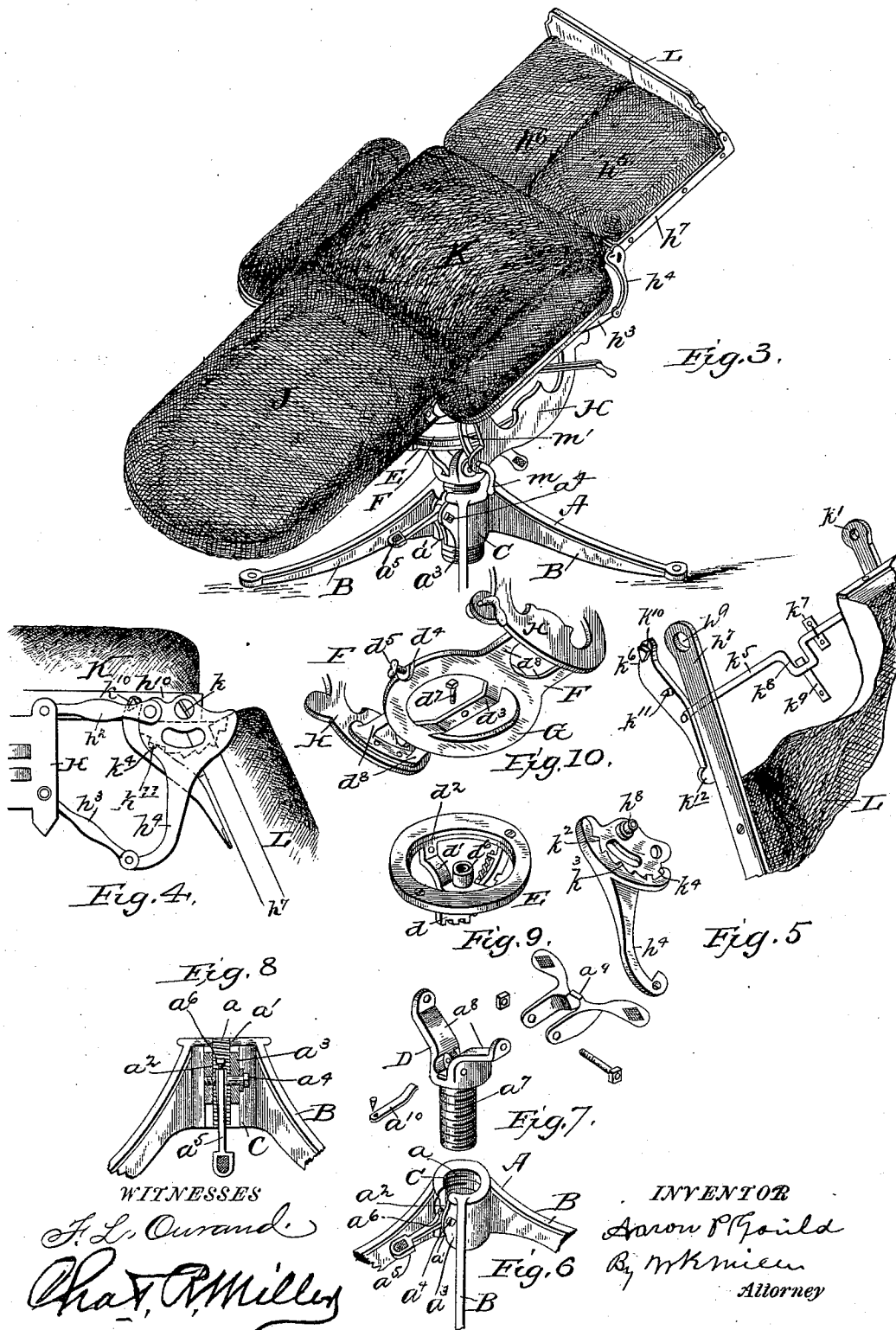
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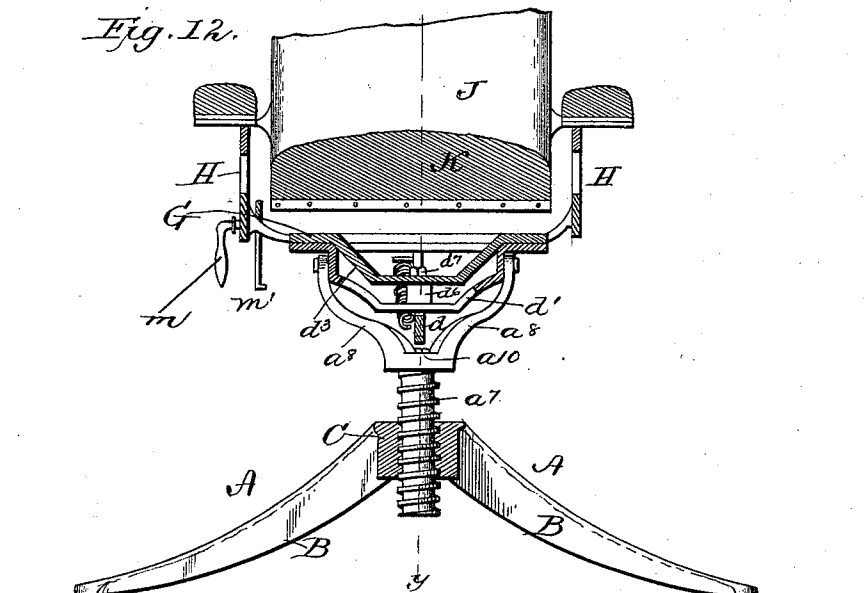
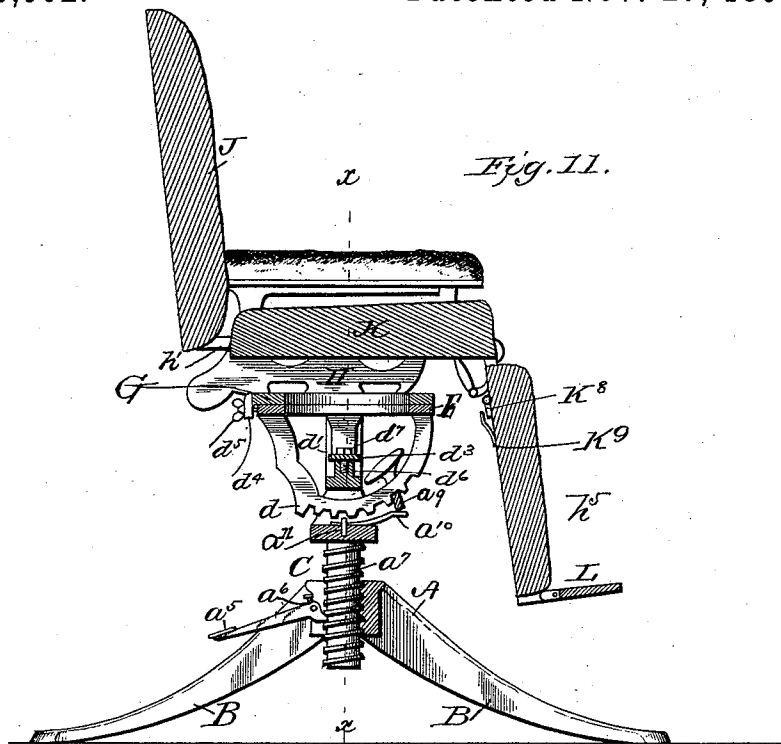
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WITNESSES

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# UNITED STATES PATENT OFFICE.

AARON P. GOULD, OF CANTON, OHIO.

## DENTAL OR SURGICAL CHAIR.

SPECIFICATION forming part of Letters Patent No. 529,902, dated November 27, 1894.

Application filed May 31, 1892. Serial No. 435,335. (No model.)

*To all whom it may concern:*

Be it known that I, AARON P. GOULD, a citizen of the United States, and a resident of Canton, county of Stark, State of Ohio, have  
5 invented a new and useful Improvement in Surgical or Dental Chairs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.  
10 My invention relates to improvements in surgical and dental chairs and consists in certain features of construction and combination of parts as hereinafter described and set forth in the claims.  
15 Figure 1 of the accompanying drawings is a view in perspective from right rear of a chair in normal position, illustrating my invention; Fig. 2, a similar view showing the back seat and leg rest brought to a plane horizontal  
20 with the arm supports; Fig. 3, a similar view showing the back, seat, leg rest and arm supports swung from a horizontal to an inclined plane transversely to the axis of rotation, the head portion of the chair lower than the foot  
25 rest; Fig. 4, a side view of a fragment of seat and leg rest; Fig. 5, a perspective comprising a fragment of leg rest, and a ratchet arm showing the rack and pawl hereinafter explained; Fig. 6, a view in perspective from  
30 rear right above, of a portion of the base. Fig. 7, is a similar view comprising a body supporting stem, a pawl and spring and bolt by which the pawl is secured to the stem; Fig. 8, a rear elevation of the upper portion  
35 of the base. Fig. 9, is a view in perspective from above of a circular frame rack and spring; Fig. 10, a view in perspective from below, of a turntable portion and a fragment of the sides of the body frame; Fig. 11, a vertical section through from front to rear; Fig.  
40 12, a vertical section transversely of the body. Similar letters of reference indicate corresponding parts in all of the figures of the accompanying drawings.  
45 A, represents the base, having downwardly and outwardly projected supporting legs as B, and a tubular body portion C, said tube having an annular screw thread  $a$ , and at one side an open slit  $a'$  extending vertically  
50 through the said body portion. On the sides of said slit are provided outwardly projected

lugs as  $a^2$  and  $a^3$  perforated as shown in Fig. 8. The perforation in lug  $a^2$  is provided with a screw thread as shown in Fig. 8, into which threaded perforation a bolt as  $a^4$  is turned  
55 first having passed through the opposite lug  $a^3$ , and a small foot lever  $a^5$ . Said lever is secured to the bolt by a set screw  $a^6$ . By raising the lever  $a^5$  with the foot or hand of the operator, the threaded portion of the bolt  
60  $a^4$  is turned into a corresponding thread in the perforation in lug  $a^2$ , and the head of the bolt resting against the outside face of the lug  $a^3$ , the two sides of the slit  $a'$  are drawn toward each other, by which movement the  
65 diameter of the tubular portion of the body C, may be reduced, and when the movement of the lever is reversed the bolt will be turned out of the thread referred to, and the energy of the metal in the tubular portion will cause  
70 it to resume its original diameter.

The stem portion  $a^7$  of the body support D, is cylindrical and provided with an annular screw thread corresponding with the thread in the tubular portion C, of the base A, which  
75 may be turned into said body portion or out, to lower or to raise the body portion of the chair, and to secure said threaded stem  $a^7$  of body support D, against rotation, the lever  $a^5$  may be drawn up and the tubular portion  
80 of the base made to grasp the stem.

The upper portion of the support D, is bifurcated as shown in Fig. 7, the prongs  $a^8$  projected outwardly and upwardly, and at the base of said prongs is pivoted a pawl  $a^9$   
85 which is held in engagement with the rack  $d$  by the upwardly extended energy of the spring  $a^{10}$  one end of which is secured to the stem D, between the prongs by a screw passed through the perforation in the spring and  
90 into the aperture  $a^{11}$  in the stem, the free end of the spring passing across the head of the stem between the prongs and out under the middle portion of the pawl.

A circular frame E, is provided as shown  
95 in Fig. 9 having a cross bar  $d'$  and the vertical portion  $d^2$ , to drop between the upper end portion of the prongs  $a^8$  of support D, and to be pivotally secured thereto. A depending segmental rack  $d$  is secured to the frame E,  
100 at the sides diametrically opposite as shown in Fig. 9, the central rack portion projecting

downwardly under the bar  $d'$  between the prongs  $a^8$  of the support D, to engage the pawl  $a^9$ .

A body frame F, is provided consisting of  
 5 a turntable portion G having a cross bar  $d^3$  by which it is centrally and pivotally secured to a central portion  $d^6$  of the circular frame E, by a bolt as  $d^7$  passed through the bar  $d^3$  into the hub  $d^6$ . The said turntable is also  
 10 provided with a downwardly projected portion as  $d^4$  in which is provided a thumb screw  $d^5$  which may be turned against the circular frame E, to lock the turntable G, to the frame E, and against rotation thereon. There are  
 15 also provided and integral with said body frame F, side projections as  $d^8$  to the outer portions of which are secured the side frames H, of the body of the chair. At the top portion of the side frame is provided a flanged  
 20 portion to which the upholstered portion of the arm support is secured, and to the rear upper portions of said frames H, the back section J of the chair is pivotally secured at a distance from its end as shown at  $h$ . The  
 25 rear portion of the seat section K, is pivotally secured to the end portion of the back section J, by the rearwardly projected arms  $h'$  attached to the seat section K as shown in Fig. 1.

30 The front portion of the seat section K, is pivotally secured to the front portion of the side frame H, by means of the arms  $h^2$ ,  $h^3$  and  $h^4$ .

The leg rest L, is preferably made of two  
 35 parts  $h^5$  and  $h^6$ , on the outer edges of which there are provided bars as  $h^7$  the upper end portions of which are pivotally secured to the front portion of the seat section K. A hub portion as  $h^8$  projecting from the side of arm  
 40  $h^4$  is passed through the perforation  $h^9$  in the end portion of bar  $h^7$ , and into the frame portion  $h^{10}$  of the seat section K, and secured therein by the through bolt  $k$  as shown in Fig. 4. On the inner edges of the leg rest sections  
 45  $h^5$  and  $h^6$  there are provided bars  $k'$  similar to the bars  $h^7$  the upper end portions being pivotally secured to the seat section by the bolt  $k$ . On the inner face of the arm  $h^4$  is provided a segmental rack  $k^2$  having rack teeth as  $k^3$  to  
 50 engage the teeth of a spring actuated pawl, and on the inner portion of said rack is provided a notch  $k^4$  in which one of the teeth of the pawl may drop to form a locking engagement.

55 The pawl referred to in the preceding paragraph is pivotally secured to the side portions of the leg rest sections  $h^5$ ,  $h^6$  on the rods  $k^5$  and is designated  $k^6$ . As shown in Fig. 5, the rods  $k^5$  are journaled in boxes as  $k^7$  which are  
 60 secured to the leg rest frame, the cranked portion  $k^8$  resting on the spring  $k^9$  by which the teeth  $k^{10}$  and  $k^{11}$  may be held in engagement with the rack teeth  $k^3$ , and the tooth  $k^{11}$  locked in notch  $k^4$ . To disengage the pawl the free  
 65 end  $k^{12}$  of the pawl is brought into action by the hand of the operator. In normal position, the tooth  $k^{11}$  will rest in the notch  $k^4$  of the

rack  $k^2$  and the leg rest sections will be raised or lowered together as the seat section is moved forward and up by the back portion 70 being moved back and down, to bring back seat and leg rest portion to a horizontal plane, or to any degree of adjustment within the limits of movement of the parts.

The object sought by the introduction of the 75 pawl and rack at the junction of the leg rest L, with the seat K is to provide means by which the leg rest may be adjusted, independently of the movement of the back and seat sections. The chair being in normal position 80 either portion of the leg rest may be raised to a plane horizontal with the seat. The tooth  $k^{10}$  of the pawl dropping into the notch  $k^4$  will secure it in that adjustment, or if desired the leg rest in whole or parts may be allowed a 85 greater range of adjustment by the engagement of the tooth  $k^{10}$ , of the pawl with the teeth  $k^3$  of the rack  $k^2$ , and the back and seat secured in adjustment by turning the set screw  $m$  against the rod  $m'$ . 90

In addition to the movements and adjustments hereinbefore referred to the chair body and turn-table may be oscillated about the pivotal connection of the circular frame E with the prongs  $a^8$  of the supporting stem D, 95 to change the inclination of the body of the chair, and secured in adjustment by the engagement of the pawl  $a^9$  with rack  $d$ .

To raise or lower the body of the chair the threaded portion is adapted to turn in the 100 thread  $a$  in the tubular portion C, of the base A, and by turning or rotating the chair body about this vertical spindle  $a'$  the thread provided thereon will be turned into or out of the tubular portion C, of the base A, thereby 105 raising or lowering the body of the chair and to lock the spindle  $a'$  against rotation the lever  $a^5$  is raised up to draw the walls of the tubular portions of the base against the stem.

To rotate the body of the chair horizontally without change of altitude the set screw 110  $d^5$  is turned out releasing the turn-table G, whereby the body of the chair may be rotated on the circular frame E.

Having thus fully described the nature and 115 object of my invention, what I claim, and desire to secure by Letters Patent, is—

1. The herein described chair consisting of a base A, having split tubular portion C, provided with an annular screw thread  $a$ , a body 120 supporting stem D, having a similar thread, adapted to turn in the thread of the tubular portion, a bolt to lock said stem against rotation by contracting the walls of said tubular portion against the threaded portion of the 125 stem D, said stem having arms  $a^8$  projected outwardly and upwardly to the upper portions of which is pivotally secured a circular body supporting frame E, having a depending rack frame  $d$  a spring actuated pawl  $a^9$  to engage 130 said rack, a chair body frame F having a circular bottom portion G, adapted to rotate and rest upon frame E, a back and a seat section hinged to each other and to the arm por-

tion H, of the frame F, and a leg rest hinged to said seat section connections between the back section and the seat and leg rest sections, which communicate the movements of the back section to the seat and leg rest sections.

2. In a chair the combination of a base having a vertically divided threaded socket piece, a chair body having a threaded stem fitting in said socket piece, an ear carried by the socket piece on each side of the division thereof, said ears being provided respectively with smooth bored and threaded openings, a headed bolt having a smooth and a threaded portion, said smooth and threaded portions fitting in the smooth bored and the threaded openings of the ears, and an operating lever secured to and adapted to rotate the bolt whereby the divided socket piece is clamped to the chair stem and the chair secured in desired position.

3. In a chair, a base a seat section connected thereto, arms having segmental portions each provided with a squared notch and ratchet teeth carried by the seat section, leg-rest sections, connections between the seat, back, and leg rest sections to secure simultaneous adjustment thereof, a cranked bar pivotally

held in bearings in the leg rest sections, a spring bearing on the cranked portion of the bar, a pawl carried by the bar, projections  $k^{10}$   $k^{11}$  formed on the pawl, the latter adapted to engage the squared notch in the segments to move the leg rest sections in unison with the back and the former adapted to ride over and engage the teeth of the segments to permit independent adjustment of the leg rest.

4. In a chair, a base a seat section, an arm having a segmental portion provided with a squared notch and ratchet teeth carried by the seat section, a leg-rest section, connections between the seat, back, and leg-rest section to secure simultaneous adjustment thereof, a pawl supported by the leg-rest and provided with projections  $k^{10}$   $k^{11}$ , the latter adapted to engage the squared notch in the segment to move the leg-rest in unison with the back, and the former adapted to ride over and engage the teeth of the segment to permit independent adjustment of the leg-rest.

In testimony whereof I have hereunto set my hand this 23d day of May, A. D. 1892.

AARON P. GOULD.

Witnesses:

CHAS. R. MILLER,  
BENJ. E. COWL.