

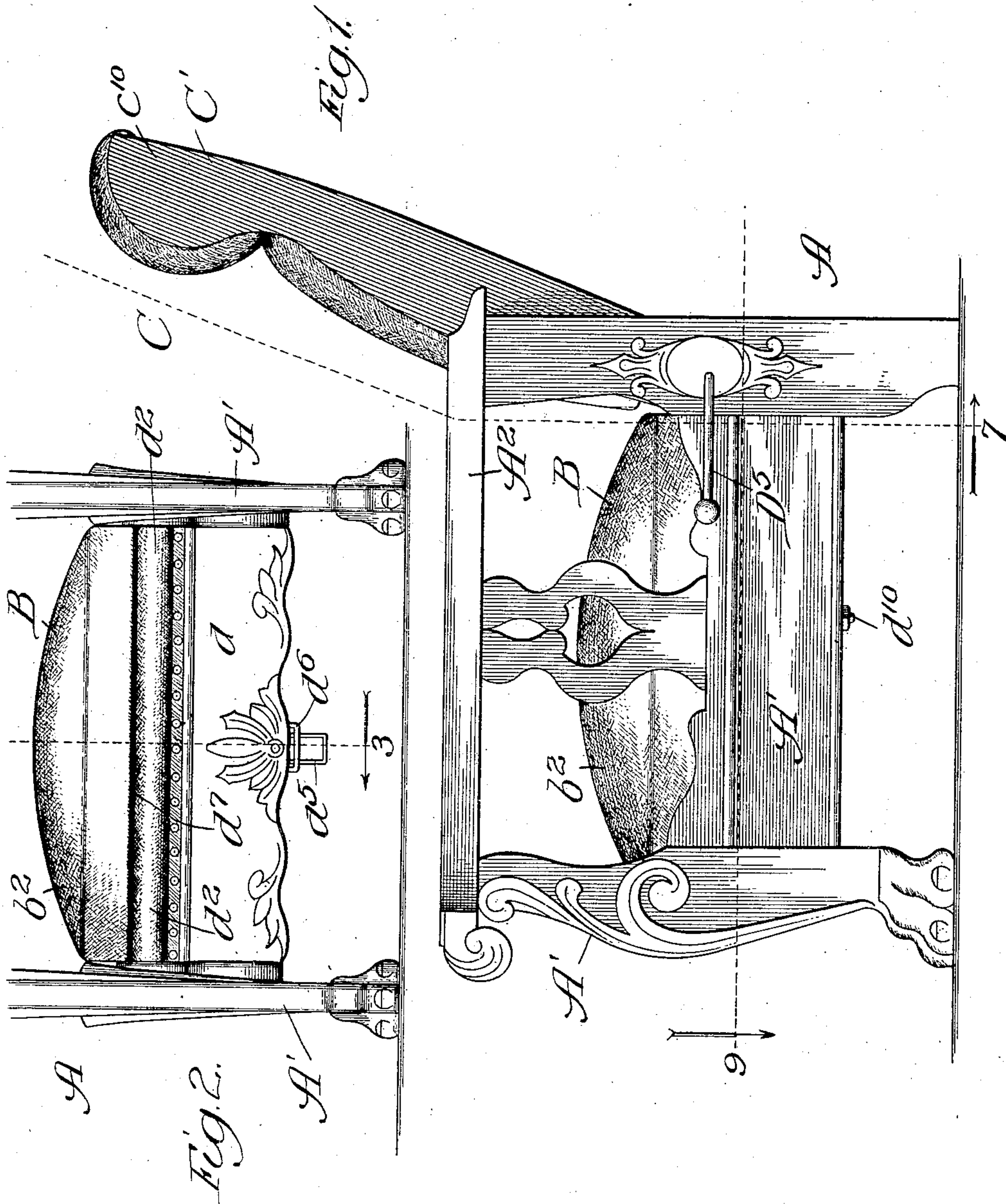
No. 880,206.

PATENTED FEB. 25, 1908.

A. G. EYLES.  
CHAIR.

APPLICATION FILED APR. 5, 1907.

4 SHEETS—SHEET 1.



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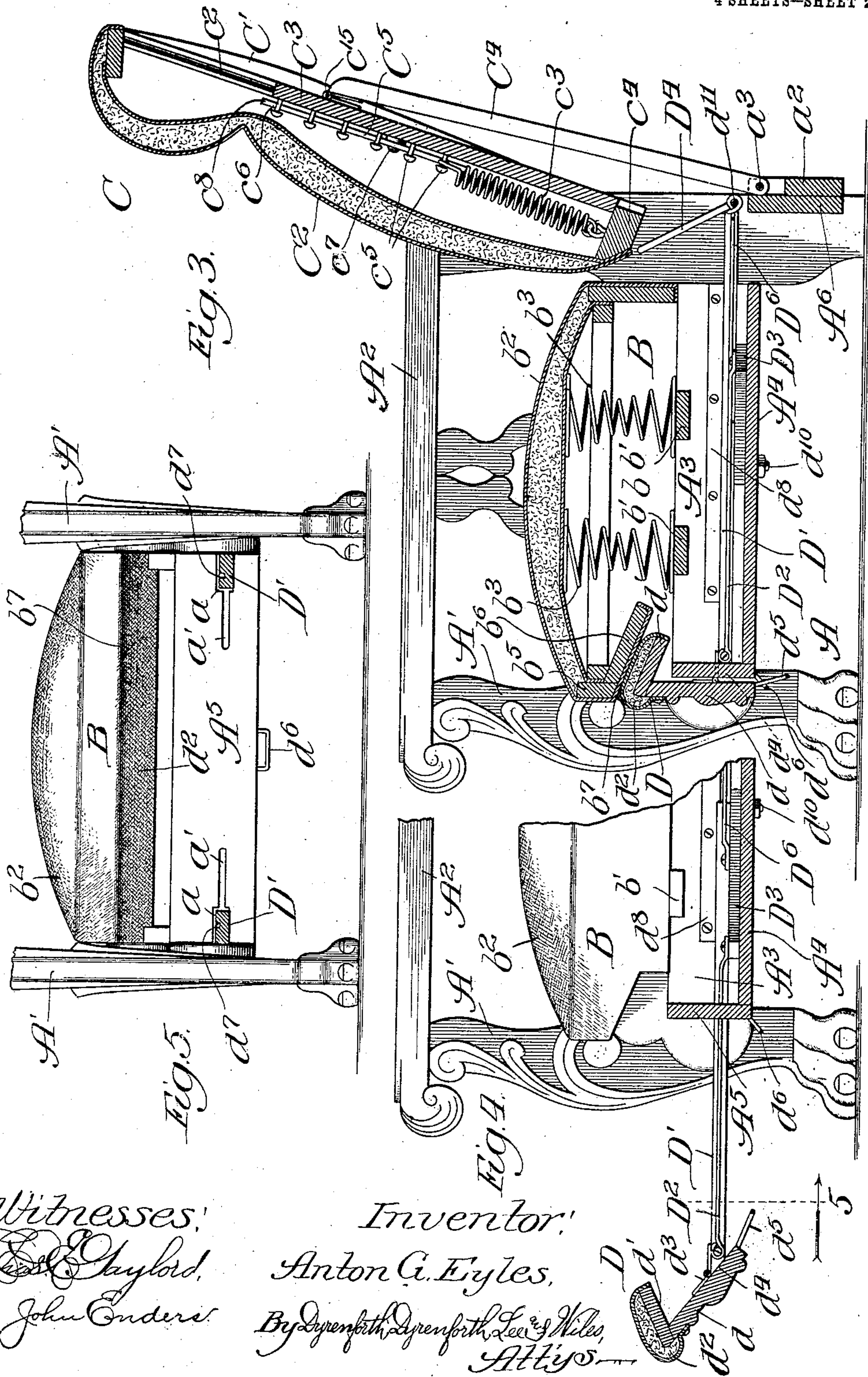
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4 SHEETS—SHEET 2.





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4 SHEETS—SHEET 3.

Fig. 7.

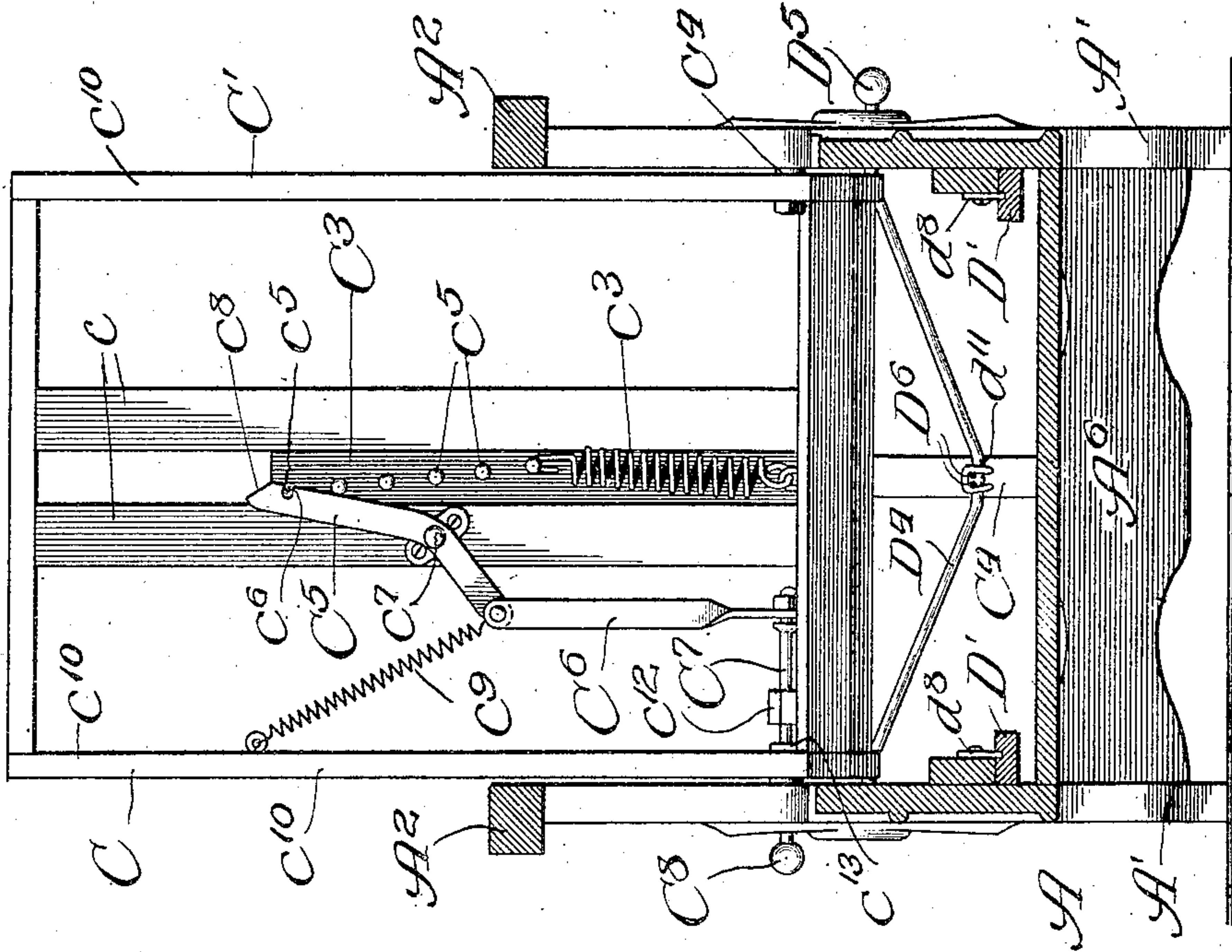
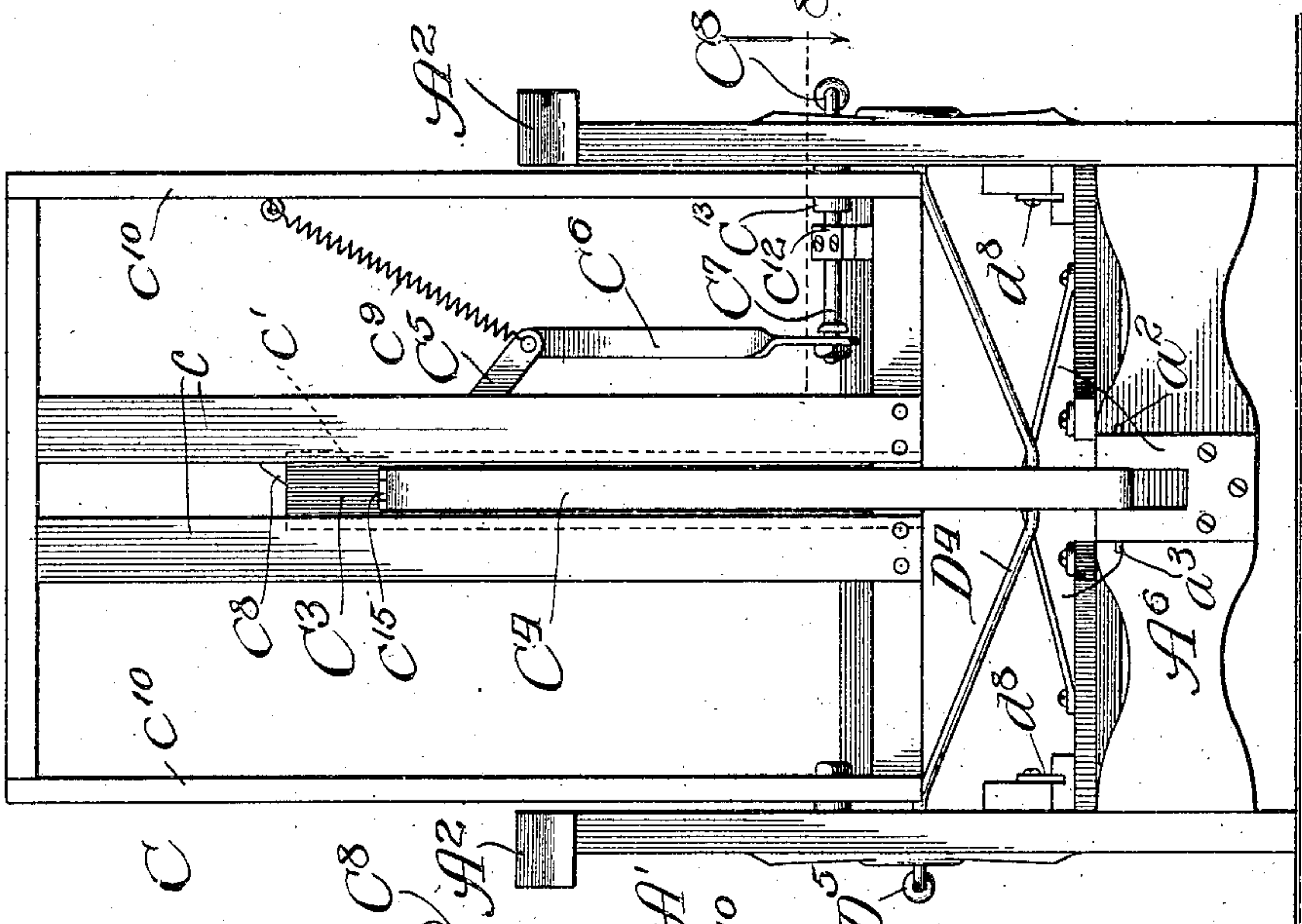
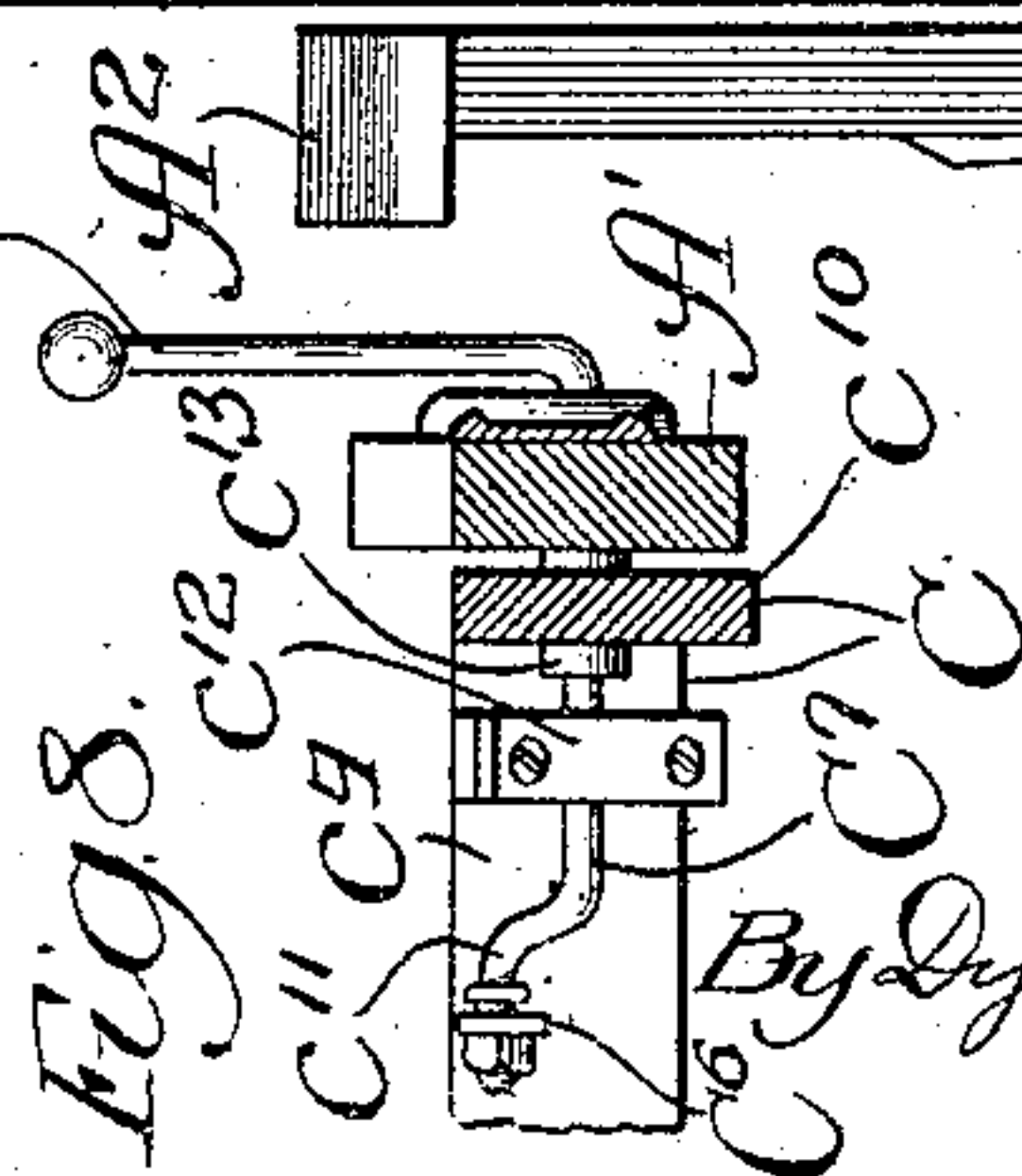


Fig. 6.



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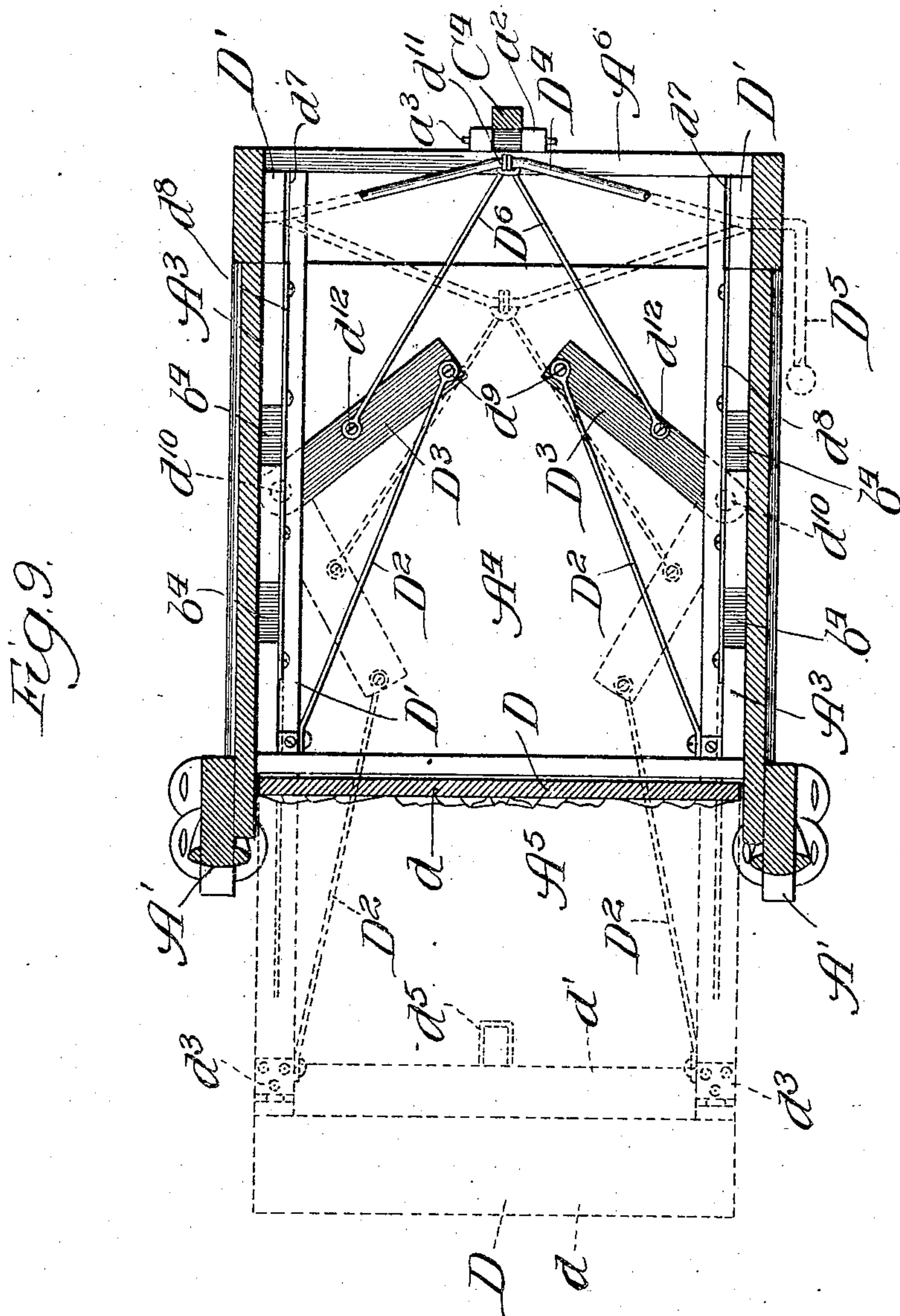
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4 SHEETS—SHEET 4.



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# UNITED STATES PATENT OFFICE.

ANTON G. EYLES, OF PONTIAC, ILLINOIS.

## CHAIR.

No. 880,206.

Specification of Letters Patent.

Patented Feb. 25, 1908.

Application filed April 5, 1907. Serial No. 366,531.

*To all whom it may concern:*

Be it known that I, ANTON G. EYLES, a citizen of the United States, residing at Pontiac, in the county of Livingston and State of Illinois, have invented a new and useful Improvement in Chairs, of which the following is a specification.

My invention relates particularly to chairs provided with adjustable backs; and my primary object is to provide improvements pertaining to the adjustment of chair-backs.

The invention is illustrated in its preferred embodiment in the accompanying drawings, in which—

Figure 1 represents a side elevational view of a chair constructed in accordance with my improvements; Fig. 2, a broken front elevational view of the same; Fig. 3, a longitudinal vertical section of the same, the section being taken as indicated at line 3 of Fig. 2; Fig. 4, a broken section similar to Fig. 3, but showing the foot rest in its extended position; Fig. 5, a broken section as indicated at line 5 of Fig. 4; Fig. 6, a rear elevational view of the improved chair; Fig. 7, a vertical section taken as indicated at line 7 of Fig. 1, with the upholstering of the back of the chair removed, however; Fig. 8, a broken section taken as indicated at line 8 of Fig. 6 and showing a detail of one of the pivotal connections of the back of the chair and the relation thereto of a lock-actuating lever employed in connection with the back adjustment; and Fig. 9, a section taken as indicated at line 9 of Fig. 1.

In the construction illustrated, A represents the frame of a chair having side-members  $A^1$  formed with arms  $A^2$ ;  $A^3$ , seat-supporting and guide-forming cleats applied to the inner surfaces of the side-members  $A^1$ ;  $A^4$ , a bottom connecting the side-members  $A^1$ ;  $A^5$ , a front cross-member connected with the front ends of the cleats  $A^3$  and with the front edge of the bottom  $A^4$ ;  $A^6$ , a cross-member connecting the rear legs which form a part of the side-members  $A^1$ ; B, a seat shown as removably supported on the cleats  $A^3$ ; C, a back shown as comprising a frame  $C^1$  and an upholstered portion  $C^2$  supported thereon;  $C^3$ , a slide connected with a guide formed in the frame  $C^1$ ;  $C^4$ , a brace connecting the slide  $C^3$  with the cross-member  $A^6$ ;  $C^5$ , a locking pawl for the slide  $C^3$  which is joined by a link  $C^6$  to a crank shaft  $C^7$  which is equipped at its outer end with an actuating lever  $C^8$ ; D, a foot-rest carried by slide-bars  $D^1$  which are joined by

rods  $D^2$  to levers  $D^3$  pivoted to swing in horizontal plane immediately above the plane of the bottom  $A^4$ ; and  $D^4$  a crank shaft equipped with an actuating arm  $D^5$ , the crank portion of said shaft being connected by rods  $D^6$  with the levers  $D^3$  which serve to actuate the foot-rest.

The frame A of the chair may be of any suitable design and construction. As shown in Fig. 5, the front cross-member  $A^5$  of the frame is provided with slots  $a$  in which the slide-bars  $D^1$  move; and extending inwardly from the slots  $a$  are narrower slots  $a^1$  through which the rods  $D^2$  work when the foot-rest is projected. The cross-member  $A^6$  is equipped with a pivot block  $a^2$  with which the lower end of the brace-member  $C^4$  is joined by a pivot  $a^3$ .

The seat B comprises a frame  $b$  having slats  $b^1$ ; and an upholstered portion  $b^2$  connected with the upper portion of the frame  $b$  and having its intermediate portion supported upon springs  $b^3$  which rest upon the slats  $b^1$ . The slats  $b^1$  are received by recesses  $b^4$  which are formed in the upper edges of the cleats  $A^3$ , as shown in Fig. 9. The upholstering covering is extended over the front edge-piece  $b^5$  of the seat-frame; and connected with the lower edge portion of the relatively narrower front edge-piece  $b^5$  is a rearwardly declining member  $b^6$  beneath which is afforded a space  $b^7$  for the foot-rest in the housed condition thereof.

As clearly appears from Figs. 3, 6 and 7, the frame  $C^1$  of the back is provided along its longitudinal center with a guide  $c$  in which the slide  $C^3$  is adapted to move, the lateral edges of the slide  $C^3$  being equipped with tongues  $c^1$  which move in grooves  $c^2$  with which the side-members of the guide  $c$  are provided. The slide  $C^3$  is connected by a spring  $c^3$  with the lower cross-member  $c^4$  of the back-frame  $C^1$ , whereby the tendency of the slide  $C^3$  is to move to the lower end of its guide and thereby elevate the back to its standing position. The slide  $C^3$  is equipped with a series of studs or locking shoulders  $c^5$  which are preferably arranged in an inclined line as indicated in Fig. 7, whereby any one of said studs is adapted to be engaged by a notch or locking shoulder  $c^6$  with which the pawl  $C^5$  is provided. The pawl  $C^5$  is supported on a pivot  $c^7$  carried by one of the side-members of the guide  $c$  of the back-frame, and the upper free end of the pawl is provided with an inclined or beveled surface  $c^8$  adapted



to ride over a stud  $c^5$  during the adjustment of the back. The lower end of the pawl  $C^5$  is joined by a spring  $c^9$  to one of the side-members  $c^{10}$  of the back-frame. The link  $C^6$  is  
 5 pivotally joined to the lower end of the pawl  $C^5$ , and the lower end of said link is connected with a crank  $c^{11}$  on the inner end of the crank shaft  $C^7$ . The crank-shaft  $C^7$ , as shown in Fig. 8, extends through a bearing  $c^{12}$  with  
 10 which the lower cross-member  $c^4$  of the back-frame is equipped, and also extends through a tubular pivot  $c^{13}$  which joins the adjacent side-member  $c^{10}$  of the back frame to the adjacent side-member  $A^1$  of the main frame of  
 15 the chair. The actuating arm  $C^8$  of the crank shaft  $C^7$  lies normally in a substantially horizontal forwardly-projecting position outside of one of the side-members  $A^1$  of the frame. This corresponds with the locking position of  
 20 the pawl  $C^5$ . At the opposite side of the chair the lower portion of the side-member  $c^{10}$  thereat is connected with the corresponding side-member  $A^1$  of the main frame by a pivot  $c^{14}$ . The upper portion of the brace  $C^4$   
 25 is pivotally connected by a hinge  $c^{15}$  with the upper portion of the slide  $C^3$ .

The foot-rest  $D$  comprises a supporting member  $d$  which occupies normally a vertical position, as shown in Fig. 3, and a rearwardly  
 30 declining portion  $d^1$  equipped with upholstering  $d^2$  and adapted to lie normally beneath the member  $b^6$  of the seat. The upholstering  $d^2$  is extended over the upper portion of the front surface of the member  $d$ ; and the front  
 35 surface of the member  $d$  is otherwise ornamented or carved, so that when the foot-rest is in the housed position a finished appearance results and the foot-rest forms to all appearances a part of the upholstering of the  
 40 chair.

The foot-rest is of short enough length to be received between the front legs of the chair as shown in Fig. 2. The member  $d$  extends beneath the slide-bars  $D^1$  and the  
 45 intermediate portion of said member is connected by hinges  $d^3$  which are applied to the inner surface of the member  $d$  and to the upper surfaces of the front portions of the bars  $D^1$ . The front ends of the bars  $D^1$  are beveled or inclined forwardly and upwardly as  
 50 indicated at  $d^4$ , so that the foot-rest may assume the position shown in Fig. 4, in which position the downward extension of the member  $d$  beneath the hinges bears against  
 55 said beveled surfaces. The lower edge of the member  $d$  is equipped with a cam member  $d^5$  which is normally received within a loop-form cam member  $d^6$  with which the front cross-member  $A^5$  of the main frame is  
 60 equipped at its central portion. The cam or loop  $d^6$  inclines downwardly and forwardly somewhat, as illustrated in Fig. 3. The slide-bars  $D^1$ , as has been indicated, project through the slots  $a$  in the front cross-  
 65 member  $A^5$ , and the rear portions of said bars

lie beneath the cleats  $A^3$  and rest upon the upper surfaces of the levers  $D^3$ . Said bars  $D^1$  are provided on their upper surfaces with slots  $d^7$  into which project guide-plates or  
 70 bars  $d^8$  which are applied to the inner surfaces of the cleats  $A^3$  and depend beneath the lower edges of said cleats. The rods  $D^2$  are secured at their front ends to the inner lateral edges of the bars  $D^1$  and have their rear  
 75 ends connected by pivots  $d^9$  with the free ends of the levers  $D^3$ . The opposite ends of the levers  $D^3$  are connected by pivots  $d^{10}$  with the bottom  $A^4$  of the chair-frame. The rods  $D^6$  may be formed of one member having  
 80 its central portion wrapped about an offset  $d^{11}$  in the crank portion of the shaft  $D^4$ . The rods diverge forwardly, as shown in Fig. 9, and their front ends are joined by pivots  $d^{12}$  with the intermediate portions of the levers  $D^3$ . The crank shaft  $D^4$  is jour-  
 85 naled in the rear portions of the side members  $A^1$  of the main frame at some distance above the plane of the slide-bars  $D^1$ , so that the cranked intermediate portion of the shaft normally depends downwardly and rear-  
 90 wardly somewhat from the axis of the shaft, as shown in Fig. 3, the dimensions being such that the crank-shaft will be housed between the rear legs of the chair when the foot-rest is in the folded position, and will swing for-  
 95 wardly over the rear portion of the bottom  $A^4$  of the chair when the foot-rest is extended as indicated by dotted lines in Fig. 9. The actuating arm  $D^5$  lies normally in a substantially horizontal position on the opposite  
 100 side of the chair from that on which the actuating lever  $C^8$  is located. The arm or lever  $B^5$  normally extends forward as indicated in Fig. 1.

From the foregoing detailed description  
 105 the operation will be readily understood. When a person, seated in the chair, desires to give to the back a greater inclination than it normally possesses in a standing position,  
 110 he may do so by swinging the lever  $C^8$  downwardly and releasing the pawl  $C^5$  from its engagement with the uppermost one of the studs  $c^5$ , and, thereupon, by leaning back in the chair, the chair-back will be depressed,  
 115 the slide  $C^3$  moving up in its guide; and when the lever  $C^8$  is released, the pawl  $C^5$  will engage another one of the studs  $c^5$ , thereby locking the chair-back in a new position. In the reverse operation, the spring  $c^3$  serves to  
 120 depress the slide  $C^3$ , thereby swinging the back to its normal standing position. When it is desired to extend the foot-rest this may be accomplished by swinging the lever  $D^5$  upwardly, and thereby moving the levers  $D^3$  to  
 125 the dotted position shown in Fig. 9 and projecting the foot-rest. During the initial movement of the foot-rest in the projecting operation, the cams  $d^5$ ,  $d^6$  operate to tilt the  
 130 foot-rest from its standing position to the inclined position shown in Fig. 4, in which po-



sition the foot-board  $d^1$  inclines rearwardly and upwardly in position to comfortably support the feet of the occupant of the chair.

During the final portion of the return movement of the foot-rest, which is accomplished by actuating the lever  $D^5$  in the opposite direction, the cams  $d^5$   $d^6$  serve to restore the foot-rest to its original standing position. It will be observed that in this movement, the cam  $d^5$  enters the loop-form cam  $d^6$  and impinges against the lower edge of the cross-member  $A^5$  of the main frame, which therefore serves as a cam-member. Experience has demonstrated that in a chair constructed in accordance with my improvements the back and foot-rest may be adjusted by a person occupying the chair with very slight effort, and an exceedingly comfortable chair is provided by the construction.

The foregoing detailed description has been given for clearness of understanding only, and no undue limitation is to be understood therefrom.

What I regard as new and desire to secure by Letters Patent, is—

1. In a chair, the combination of a main frame, a swinging back, a movable member serving to actuate said back, a spring connected with and serving to actuate said member, and a brace pivotally connected with said member and with the main frame.

2. In a chair, the combination of a main frame, a swinging back provided with a longitudinal guide, a slide connected with said guide, a spring connected with the back and with said slide and tending normally to depress the slide, and a brace connected with said slide and said main frame, whereby depression of the slide under the action of its spring serves to elevate the back.

3. In a chair, the combination of a main frame, a swinging chair-back, a pivot connecting said back and frame, a slide connected with said back, a brace connecting said slide and main frame, and a slide-locking device having a pivoted actuating lever with

the pivot thereof co-axial with the pivot of the chair-back.

4. In a chair, the combination of a main frame, a swinging back, a spring-actuated back-actuating member, a brace connecting said member with the main frame, a locking pawl for said member, and a pawl-actuating shaft connected with the main frame.

5. In a chair, the combination of a main frame, a back, pivots connecting the back with the main frame, one of said pivots being tubular, a crank-shaft extending through said tubular pivot and equipped with an actuating arm, a locking pawl actuated by said crank-shaft, a slide connected with said back and equipped with locking shoulders coacting with said locking pawl, and a brace connecting said slide with said main frame.

6. In a chair, the combination of a main frame, a pivoted back, a spring-held slide connected therewith and equipped with a series of locking shoulders, a spring-held pawl connected to said back and equipped with a locking shoulder normally engaging a locking shoulder of said slide, means for actuating said pawl to release the slide, and a brace connecting the slide with the main frame.

7. In a chair, the combination of a main frame, a pivoted back equipped with a central longitudinal guide, a slide movable in said guide and equipped with a series of locking shoulders, a spring connected with said slide and with the lower portion of said back, a locking pawl, actuating means for the locking pawl, and a brace pivotally connected at its upper end with said slide and pivotally connected at its lower end with the main frame.

In witness whereof I have signed the above application at Chicago, in the county of Cook and State of Illinois.

ANTON G. EYLES.

In presence of—

RALPH A. SCHAEFER,  
J. H. LANDES.