

No. 667,363.

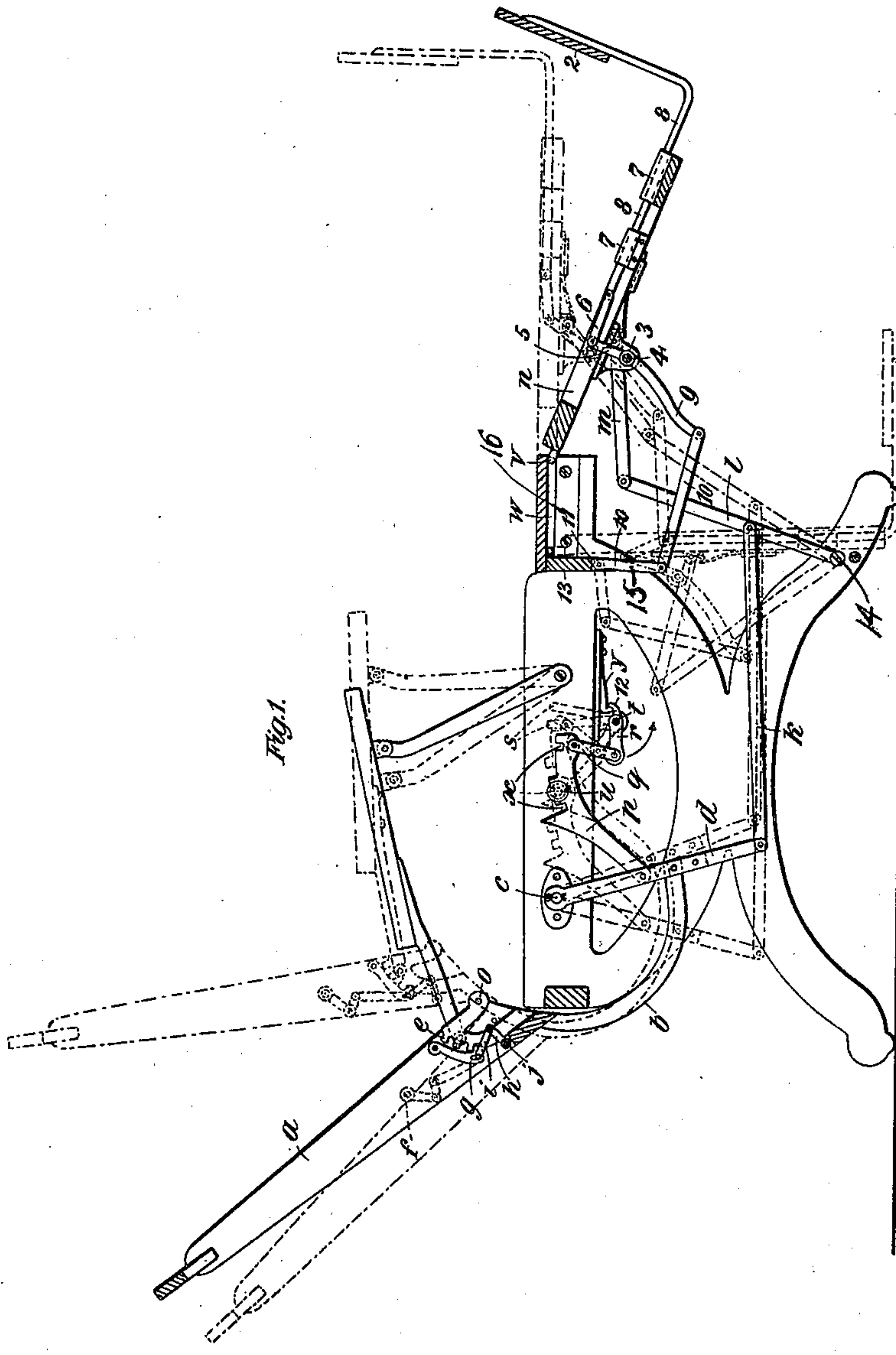
Patented Feb. 5, 1901.

J. H. GIESS.  
ADJUSTABLE CHAIR.

(Application filed Apr. 14, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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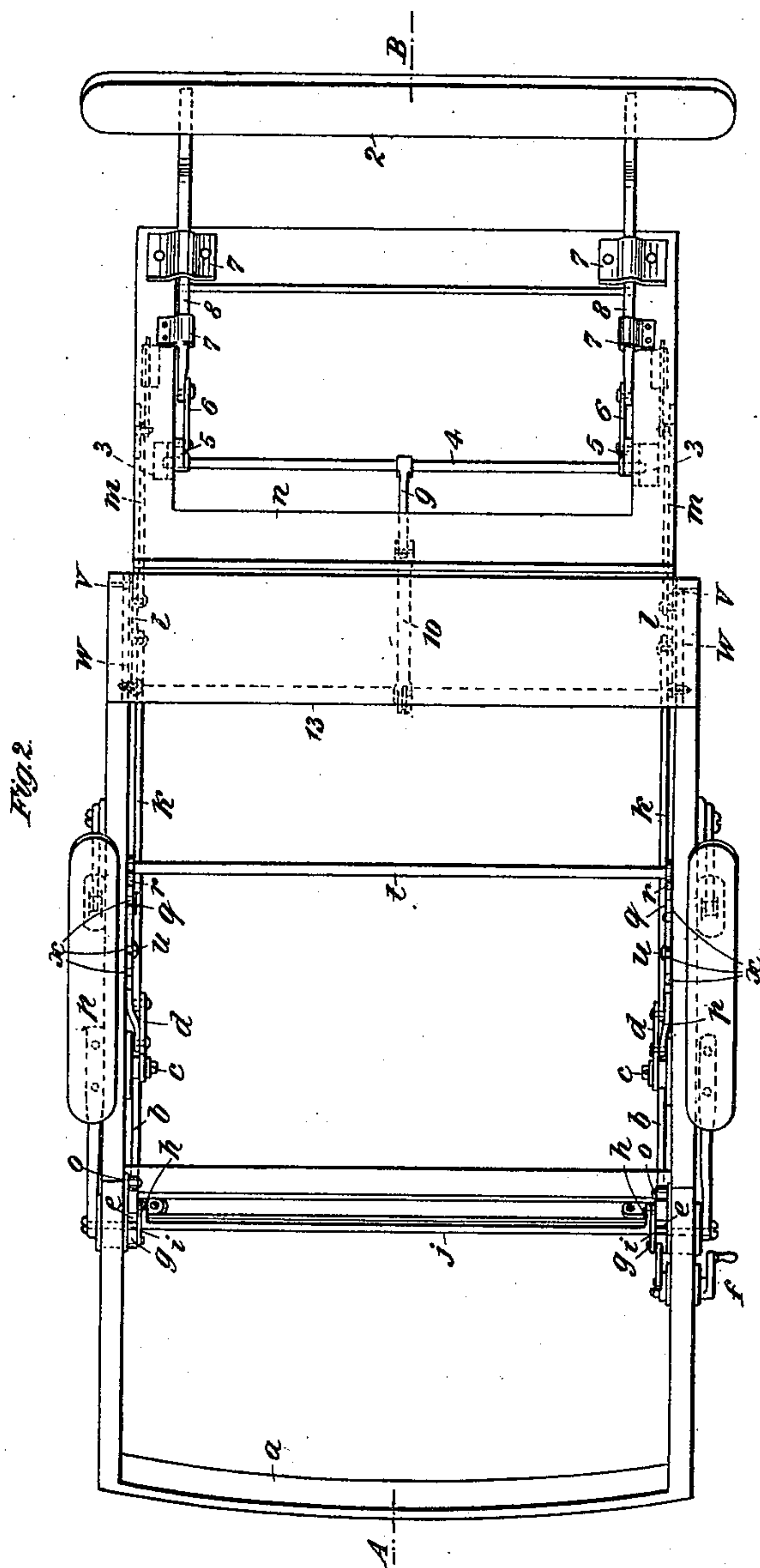
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# UNITED STATES PATENT OFFICE.

JOSEF HERMANN GIESS, OF CONSTANCE, GERMANY.

## ADJUSTABLE CHAIR.

SPECIFICATION forming part of Letters Patent No. 667,363, dated February 5, 1901.

Application filed April 14, 1900. Serial No. 12,925. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEF HERMANN GIESS, a subject of the Grand Duke of Baden, residing at Constance, in the Grand Duchy of Baden, Empire of Germany, have invented certain new and useful Improvements in Adjustable Chairs, of which the following is a specification.

My invention includes the features and combinations and arrangement of parts hereinafter fully described, and then particularly pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference denote corresponding parts in both figures.

The drawings show the adjustable chair, without the cushions.

Figure 1 is a sectional elevation of the chair taken on the line A B, Fig. 2. Fig. 2 is a top view of the chair.

The back-section *a* of the chair is carried on each side by a curved arm *b*, which is rigidly connected with a depending lever *d*, being pivoted at *c* to the framework of the chair. By means of a rod *k* each lever *d* is attached to a lever *l*, which is supported by means of a pivot 14 on the front part of the framework. Each lever *l* is connected by means of a rod *m* with the leg-section *n*. The latter is provided with two lateral pivots *v*, by means of which it works in two slots *w* of the front seat-rail 16. Two rods 8, sliding in guide-pieces 7 of the leg-section *n* and being bent off in an angle, carry the footboard 2. To the lower side of the leg-section *n* brackets 3 are affixed, into which a shaft 4 is journaled. To each end of the said shaft an arm 5 is rigidly connected, to which a rod 6 is pivoted, the other end of which is attached to one of the rods 8 of the foot-section. At the middle of the shaft 4 an arm 9 is fixed, to the free end of which a rod 10 is hinged. The other end of the said rod 10 is pivoted to an arm 15, being suspended from a rail 13 of the seat-frame.

In Fig. 1 a middle position of the movable parts of the chair is shown in full lines, while both end positions of the said parts—seat position and stretched or lying position—are represented by dotted lines. Issuing from the seat position and pushing the back-section *a* backward, the leg-section *n*, being in

the vertical position, will be pushed forward parallelly to itself by means of the curved arms *b*, levers *d*, rods *k*, levers *l*, and rods *m* until the pivots *v*, sliding within the slots *w*, arrive at the front end of the slots. If the back-section is further pushed backward, the leg-section *n* will be now raised by the push of the rods *k* and *m*, while it swings on its pivots *v*, and brought into the stretched horizontal position. The footboard being pulled to the leg-section *n* during the seat position remains in this position until the rod 15, about in its vertical position, pushes with its shoulder 11 against the rail 13, thus preventing the said arm 15 from further being swung forward. At the further raising of the leg-section *n* the arm 9, being retained with its free end by the arm 15 and the rod 10, effects a partial rotation of the shaft 4. Consequently the rods 8 of the foot-section will be pushed forward by means of the arms 5 and rods 6, and the footboard 2 is stretched forward on the leg-section *n* for the purpose of enabling the legs to be completely stretched out. On the other hand, at the reverse movements of the mechanism the shaft 4 will be rotated in the reverse direction on account of the connection of the arm 9 with the rod 10 and the arm 15, so that the footboard 2 will be drawn close to the leg-section *n* for the purpose of being entirely out of the way, when the leg-section is folded downward. The leg-section *n* swings first into the vertical position, whereupon it will be pushed backward in the slots *w* beneath the seat. As during the seat position of the chair the leg-section *n* is drawn from the front edge of the seat farther to the rear, a more comfortable sitting than hitherto is effected, as the leg-section was simply hinged to the front edge of the seat, for it appears to be necessary that one is enabled for reasons of comfortableness to put the sural legs and feet a little backward beneath the seat, a fact which has been hitherto not obtained, as the leg-section was generally vertically suspended from the front edge of the seat.

The locking device for fixing the aforedescribed adjusting mechanism in any desired position consists in the following: To each of the levers *d* a ratchet-bar *p* is jointed, which is provided with a number of notches *x*, by



means of which the said ratchet-bar engages a locking-pin *u*. The free end of each ratchet bar *p* is connected by means of a member *q* with an arm *r*, which is fixed to a horizontal shaft *t*, being journaled into the framework beneath the seat. The said shaft *t* is provided at its one end—for instance, right end—with a handle *s*, by means of which the shaft *t* can be rotated. One of the arms *r* is provided with a finger 12, Fig. 1, which is brought under the action of a spring *y*, being fixed to the framework. By means of the said spring the ratchet-bars *p* are constantly kept in engagement with the locking-pins *u*, thus arresting the adjusting mechanism in any desired position. If one intends to adjust or fold the chair, the handle *s* is pushed downward, whereby the shaft is rotated and the ratchet-bars *p* are put out of engagement with the locking-pins *u*, so that the adjusting mechanism may be operated. If one ceases to press the handle *s* downward, the spring *y* effects the automatical reengagement of the ratchet-bars *p* and locking-pins *u*. Therefore the adjustment of the chair may be effected during one sitting, respectively, lying upon the same—for instance, in such a manner that one operates the handle *s* with the right hand in order to release the ratchet-bar *p* from the locking-pin *u*, whereupon one pushes the left-arm support 17 forward or backward with his left hand, thus simultaneously adjusting all the movable parts of the chairs, as described, and finally one releases or frees the handle for the purpose of locking the mechanism. The arm-supports 17 are pivoted with their one end to the back-section *a*, while their front ends are carried each by a standard 18, being jointed to the framework, respectively to the arm-support.

In the drawings the manner is represented according to which the back-section *a* may be adjusted by itself on its arms *b*, besides its adjustment effected by the adjusting mechanism combining all the parts of the chair. For this purpose the back-section is not rigidly connected to the arms *b*, but by means of pivots *o*. In order to fix, respectively to lock, the back-section *a* in different positions to the arms *b*, a toothed segment *e* is provided on the latter, which can be brought into engagement with a pawl *g*, being pivoted to the back-section *a*. The free ends of the pawls *g* are each connected by a member *i* to arms *h*, which are fixed to a shaft *j*, being journaled into the back-section *a*, and thus both pawls *g* will be simultaneously operated. A spring 19 keeps the pawls in engagement with the

toothed segments *e*. In order to release the pawls, one of the same is connected by means of a member 20 to a crank-piece *f*, being attached to the back-section *a* and formed with a handle, as shown in Fig. 2. By turning the said handle the pawls *g* are released, whereupon the back-section may be adjusted or swung on its arms *b* around the pivots *o*.

An essential improvement of the aforedescribed adjustable chair consists in that by supporting the back-section *a* to the curved arms *b* the back-section moves a certain distance forward across the seat, while when being folded down the back-section moves backward unto the rear edge of the seat. (See the two dotted positions of the back-section, Fig. 1.) Hereby the effect will be obtained that the seat can be made much longer than hitherto. Therefore at the lying position of the chair a larger supporting-surface is created without having as consequence a discomfortable sitting at the seat position on behalf of the seat-surface being too long, as just at the latter position the seat-surface will be correspondingly shortened by the forward movement of the back-section.

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

1. In combination with a chair having a pivoted leg-support and means for tilting the same, a foot-support carried by the leg-support and having sliding movement independent thereof, and a rod with operating connections for giving the foot-rest a positive movement both inwardly and outwardly as the leg-support is raised and lowered, substantially as described.

2. The combination with a chair having a leg-support pivotally connected therewith, of a foot-support having a sliding connection with the leg-support, and means for automatically operating the same as the leg-support is raised, substantially as described.

3. In combination, the seat portion and frame, the pivoted leg-support, depending arms pivoted to the seat-frame, arc-shaped arms rigidly secured to the depending arms, the back adjustably secured to the arc-shaped arm, and means interposed between the depending arm and the leg-support for operating the same, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

JOSEF HERMANN GIESS.

Witnesses:

HANS KOLLER,  
JAKOB ABDERHALDEN.