

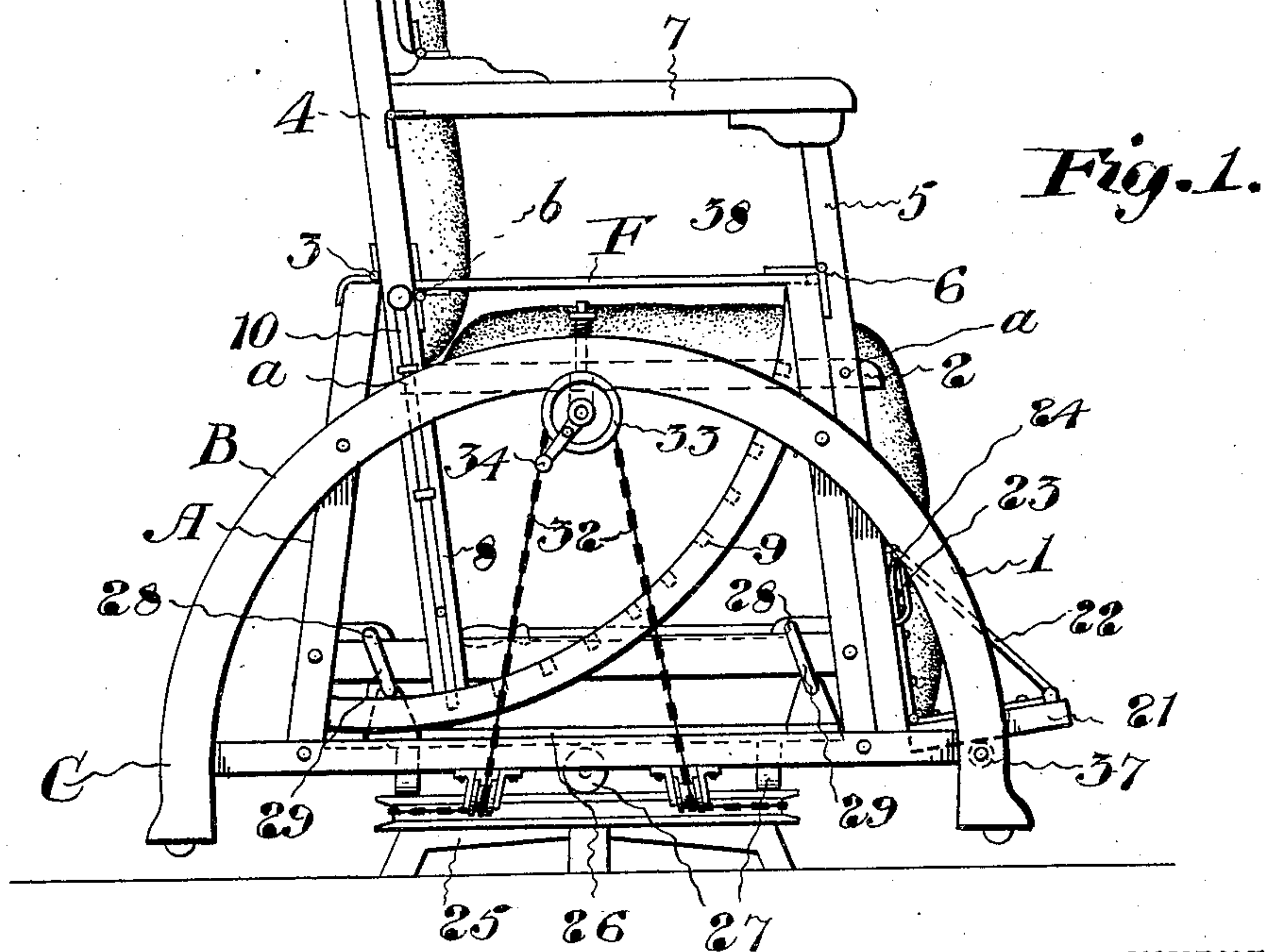
CHAIR,

Patented Sept. 14, 1909.

36<sub>2</sub> SHEETS—SHEET 1.

A perspective view of the machine. It shows a frame with two main vertical supports (14 and 15) and a base (16). A large horizontal roller (20) is mounted on the frame. A smaller roller (18) is positioned below it. A mechanism for adjusting the pressure between the rollers is shown, including a handle (17) and a spring (19). The rollers are shown in a position where they are about to crush a material (13) between them. The material is shown being fed into the machine from the left.

*Fig. 3.*



*Fig. 1.*

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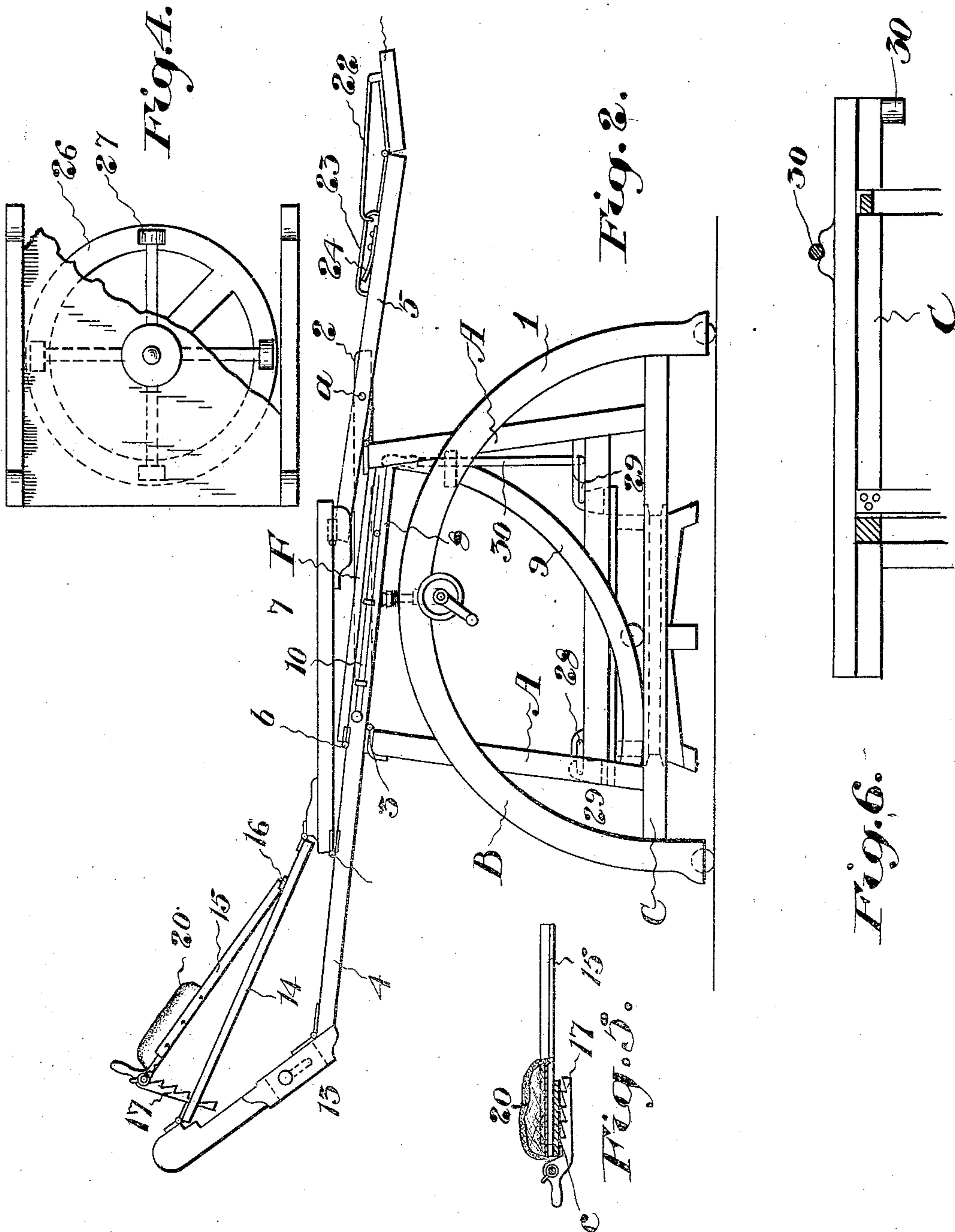
CHAIR.

APPLICATION FILED JAN. 9, 1909.

934,285.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## CHAIR.

934,285.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed January 9, 1909. Serial No. 471,512.

To all whom it may concern:

Be it known that I, WILLIAM M. CLARK, of the city of Toronto, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Chairs, of which the following is a specification.

The object of my invention is to devise a chair which may be adjusted to a variety of positions, may be converted into a couch and may be used as a revolving chair.

My invention consists of the constructions hereinafter specifically described and illustrated in the accompanying drawings, in which,

Figure 1 is a side view of the chair adjusted as an ordinary arm chair. Fig. 2 is a similar view showing the chair arranged as a couch. Fig. 3 is a perspective detail of the head rest. Fig. 4 is a plan view of the circular platform and frame resting thereon. Fig. 5 is a sectional detail of the head rest pad and adjustment. Fig. 6 is a horizontal sectional view of part of the frame forming the chair base.

In the drawings like letters of reference indicate corresponding parts of the different figures.

1 is the frame of the base of the chair, comprising legs A, bows B and bars C, and which is suitably shaped to support the different parts. To the back legs A there is hinged at 3 the back 4. The leg rest 5 is hinged on the legs at 6. The leg rest and the back are connected by the arm rests 7 hinged respectively to the sides of the back and the sides of the leg rest as shown. The seat 2 is pivoted on the back and leg rest at *a a*, below the pivots 3 and 6. From this construction it follows that the back, seat, arms and leg rest may be caused to assume either the position shown in Fig. 1, the position shown in Fig. 2 or any intermediate position.

To lock the chair in any desired position, one or both sides of the back are extended as an arm 8, the end of which moves over the quadrant 9 formed at the side of the base. The bolt 10 in the arm 8 engages the quadrant to hold the chair as adjusted. At each side a side bar F, primarily intended to break the opening between the seat and arm rest, is hinged on to the back at *b* below the hinge 3, its front end being furnished with a tongue which may slide in and out in a mortise in the leg A. The hinges *b* being below the line joining the hinges 3, and the front ends of the bars F, when the chair is in the position

shown in Fig. 1 the front ends of the bars are tight against the front legs just before the back reaches the position shown and tend to hold the back in the initial substantially vertical position. When the chair falls to couch form the bars lie between the back and the leg rest and serve to strengthen the connections, by limiting the upward movement of the lower parts of the sides of the back 4 and the downward movement of the upper parts of the leg rest. Each side bar of the upper part of the back is divided at two places and the parts connected by hinges 11 and 12. A sleeve 13 slides on each side bar by means of which either joint may be locked. The upper ends of the side bars of the back are connected to the arm rests by the bars 14, hinged at each end. The consequence of this is, that when the chair is substantially upright the hinged parts of the back are in line with the main part 4 of the back, but when the chair is tipped back as shown in Fig. 2 the upper part of the back swings up upon one of the hinges 11 or 12 according to the adjustment of the sleeve 13.

The bars 14 carry the head rest 20 in the following manner. The head rest is secured to two arms 15 hinged at 16 upon the arms 35 secured to the cross piece *c*. The head rest may be adjusted to and from the cross piece *c* by means of the hinged rack 17, which is hinged on the head rest and engages the part *c* with its teeth. The rack 17 is shaped to lie close against the back of the part *c* when the head rest is not raised. A coil spring 36 tends to maintain the rack in engagement with the part *c*.

It will be noted that the cross bar C is connected by a thumb screw and slot connection 18 to slide on the bars 14 and is therefore longitudinally adjustable thereon. Lugs 19 engaging the bars 14 guide the lower ends of the arms 35. The head rest may thus be adjusted upon the bars 14 to suit the stature of the user of the chair. It will also be noted that the head rest as a whole is raised by the hinging of the back at 11 or 12 and that the degree of elevation depends on which of the hinges is locked by the sleeve, the elevation being greatest when the upper hinge is locked. The foot rest 21 is hinged upon the leg rest as shown and when the device is in use as a chair is held up as shown by means of rods 22 hinged at one end to the foot rest and at the other sliding on the guides 23.

When the device is in use as a couch, the



parts are in the position shown in Fig. 2. When the foot rest is needed it is hinged up as shown in Fig. 1 and the ends of the rods 22 are retained in the raised position shown by spring catches 24.

To prevent any trouble in the event of the foot rest being left extended when the chair is swung from couch position to the substantially vertical position I provide each front leg A with a projection 37. These projections engage the under side of the foot rest as the chair swings and automatically bring the foot rest to the position shown in Fig. 1. These projections also serve to take some of the strain off the foot rest connections when the chair is in use in that position.

To enable the chair to be revolved I provide the circular platform 25 on which rests the frame 26 carrying a series of anti-friction rollers 27. The frame 26 is vertically movable relative to the frame of the chair base and is also vertically movable relative to the floor. For the purpose of imparting such movements I journal in the frame 1, as in the cross bars connecting the legs A, as shown, shafts 28 which are connected by pivoted cranks 29 with the frame 26. One of these shafts is provided with an operating lever 30. By moving the lever the cranks may be thrown downwardly when it is desired to cause the weight of the chair to rest on the frame 26 (see Fig. 1), and the chair as a whole is then readily rotated. In this position the cranks have passed the dead center and as the frame 26 has contacted at the front with the frame 1 the parts tend to remain in the position shown in Fig. 1. To rest the weight of the chair upon the chair base, the shaft 28 is rocked to raise the crank arms 29 and therefore the frame 26, thus allowing the frame of the base to rest upon the floor (see Fig. 2). To enable the occupant of the chair to turn it without rising from his seat, I preferably pass around a groove in the platform 25 a chain 32 which is led around suitable guide pulleys and passes over the sprocket wheel 33 provided with a suitable crank handle 34. The sprocket wheel is preferably secured to the bow B by a screw 38, which passes through said bow and is engaged by a nut, thus making the sprocket wheel vertically adjustable and enabling it to take up slack in the chain. The chair will be upholstered in any suitable manner.

From the above description it will be seen that I have devised a chair which will take any desired position between a substantially upright seat and a substantially level couch. As the seat is hung below the pivots of the back and leg rests on their supports simple pressure of the users back and feet against the chair back and foot rest will cause the chair to move toward the couch position while the removal of pressure from these will cause the opposite movement. When the de-

sired position is obtained the chair may be locked as above described. The variety of adjustments with which the chair is provided will adapt it for use in hospitals, surgeries, sanatoriums as well as in the home.

What I claim as my invention is:—

1. In a chair the combination of a seat; a back pivoted on the seat; a leg rest pivotally connected to the seat and extending above the same; arm rests pivotally connected to the back and the upper ends of the sides of the leg rest; a supporting frame to which the back and leg rest are pivotally connected above the pivotal connections of the seat; a side bar at each side of the chair hinged at its rear end to the side of the back and having its front end slidable in and out of a mortise formed in the supporting frame.

2. In a chair the combination of a seat; a back pivoted on the seat; a leg rest pivotally connected to the seat and extending above the same; arm rests pivotally connected to the back and the upper ends of the sides of the leg rest; a supporting frame to which the back and leg rest are pivotally connected above the pivotal connections of the seat; a side bar at each side of the chair hinged at its rear end to the side of the back and having its front end slidable in and out of a mortise formed in the supporting frame, the hinged connection at the rear of the bar lying, when the chair is in its substantially vertical position, slightly below a line joining the front and rear hinges connecting the back and leg rest with the frame.

3. In a chair provided with a back and arm rests adapted to assume varying angles with the back; an upper extension of the back hinged thereon; bars hinged on the upper extension of the back and on the arm rests; and a head rest carried by said bars.

4. In a chair provided with a back and arm rests adapted to assume varying angles with the back; an upper extension of the back hinged thereon; bars hinged on the upper extension of the back and on the arm rests; a head rest carried by said bars; and means for adjusting the head rest longitudinally of said bars.

5. In a chair provided with a back and arm rests adapted to assume varying angles with the back; an upper extension of the back hinged thereon; bars hinged on the upper extension of the back and on the arm rests; a head rest carried by said bars; means for adjusting the head rest longitudinally of said bars; and means for adjusting the head rest to and from said bars.

6. In a chair the combination of a back having side bars jointed in two places; adjustable means to hold either joint rigid; arm rests adapted to assume varying angles with the back; bars hinged to the upper ends of the side bars of the back and on the arm rests; and a head rest carried by said bars.



7. In a chair a back in combination with a head rest support comprising a cross bar; arms secured thereto; means for supporting the cross piece and arms in position relative to the back; a head rest; arms secured thereto, and pivoted to the aforesaid arms at their lower ends; and an adjusting device between the head rest and cross bar to vary the distance of the head rest from the cross bar.

8. In a chair a back in combination with a head rest support comprising a cross bar; arms secured thereto; means for supporting the cross piece and arms in position relative to the back; a head rest; arms secured thereto, and pivoted to the aforesaid arms at their lower ends; and an adjusting device between the head rest and cross bar comprising a toothed rack pivoted on one part and adapted to engage the other.

9. In a chair the combination of a seat; a back pivoted on the seat; a leg rest pivotally connected to the seat and extending above the same; arm rests pivotally connected to the back and the upper ends of the sides of the leg rest; an upper extension of the back and on the arm rests; a cross bar adjustable longitudinally of the said bars; arms se-

cured to the cross bar and slidably engaged with the said bars; a head rest; arms secured thereto, and pivoted to the aforesaid arms at their lower ends; and an adjusting device between the head rest and cross bar comprising a toothed rack pivoted on one part and adapted to engage the other.

10. In a chair the combination of a leg rest; a foot rest hinged on the leg rest; brace rods pivotally connected at their lower ends to the foot rest; longitudinal guides on the leg rest engaged by the upper ends of the rods; and spring catches adapted to engage and hold the upper ends of the rods when the foot rest is turned up for use.

11. In a chair the combination of a leg rest hinged to swing on the chair; a foot rest hinged at the lower end of the leg rest and projections on the chair frame adapted to engage the foot rest and turn it up for use as the leg rest is swung to a substantially vertical position.

Toronto December 15th 1908.

WILLIAM M. CLARK.

Witnesses:

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