

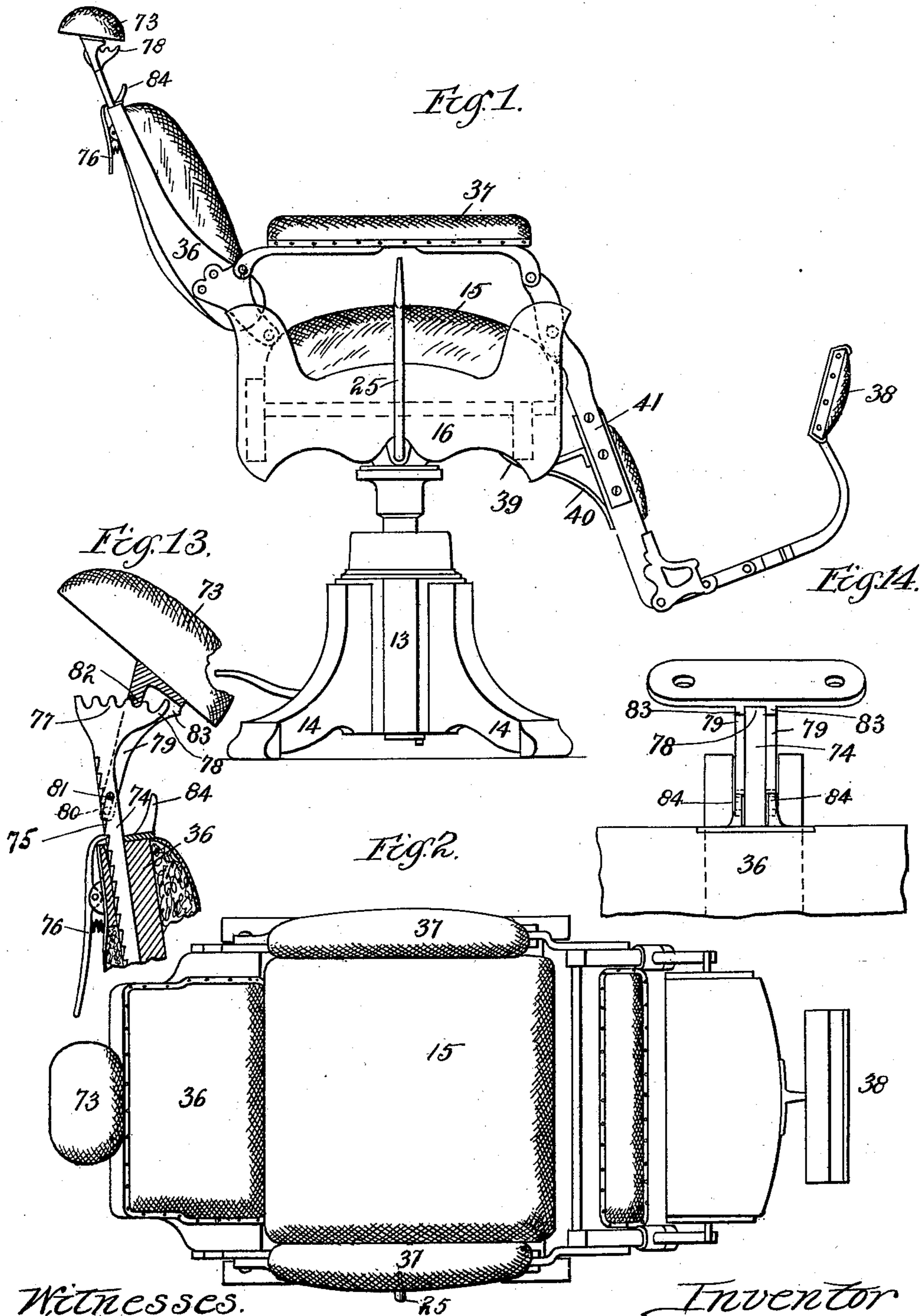
(No Model.)

3 Sheets—Sheet 1.

A. J. ROLLERT.
BARBER'S CHAIR.

No. 598,877.

Patented Feb. 8, 1898.



Witnesses.
Geo. M. Rheem.
Wm. J. Fleming

Inventor
Anton J. Rollert,
by Bond Adams & Johnson
attys.

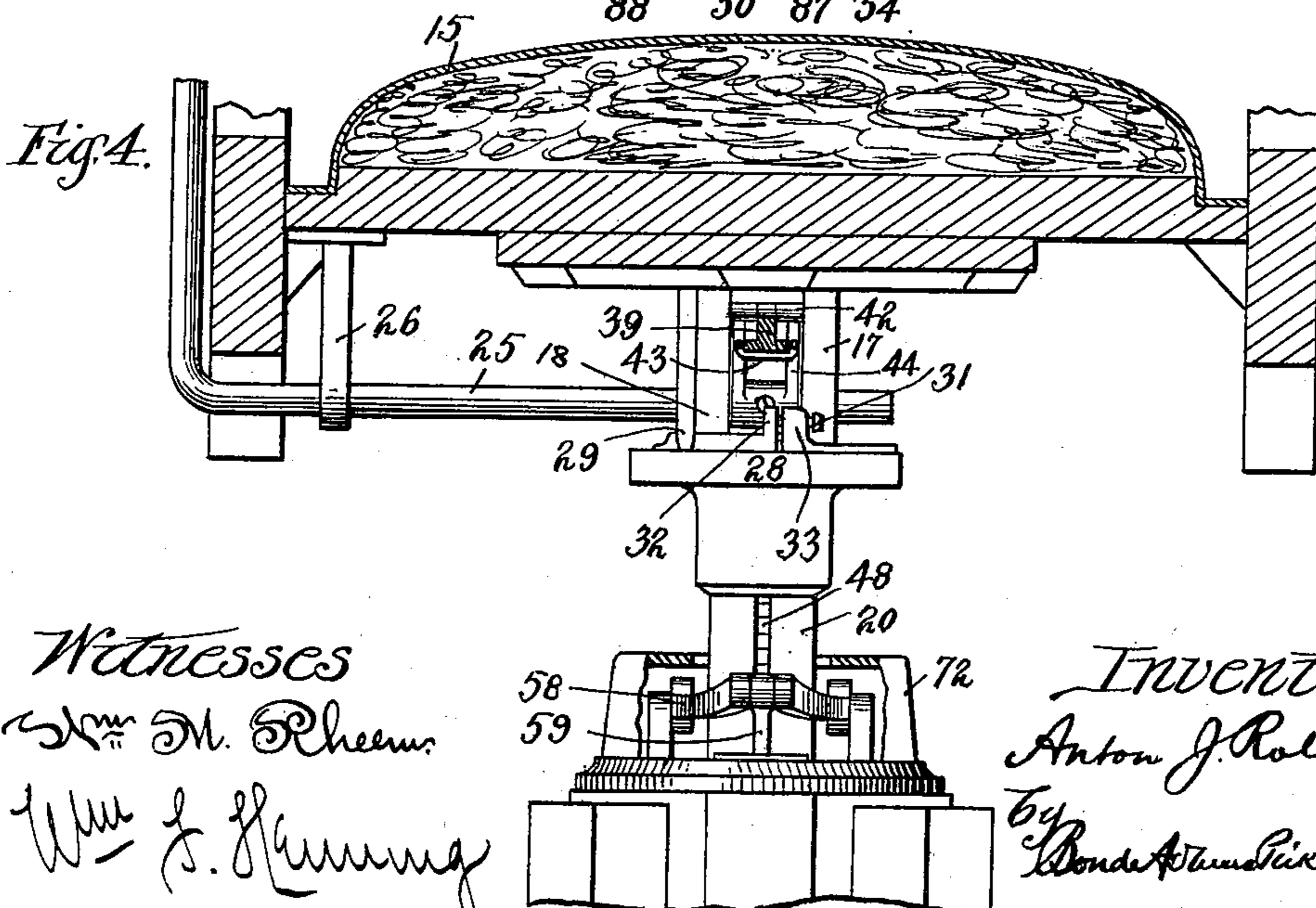
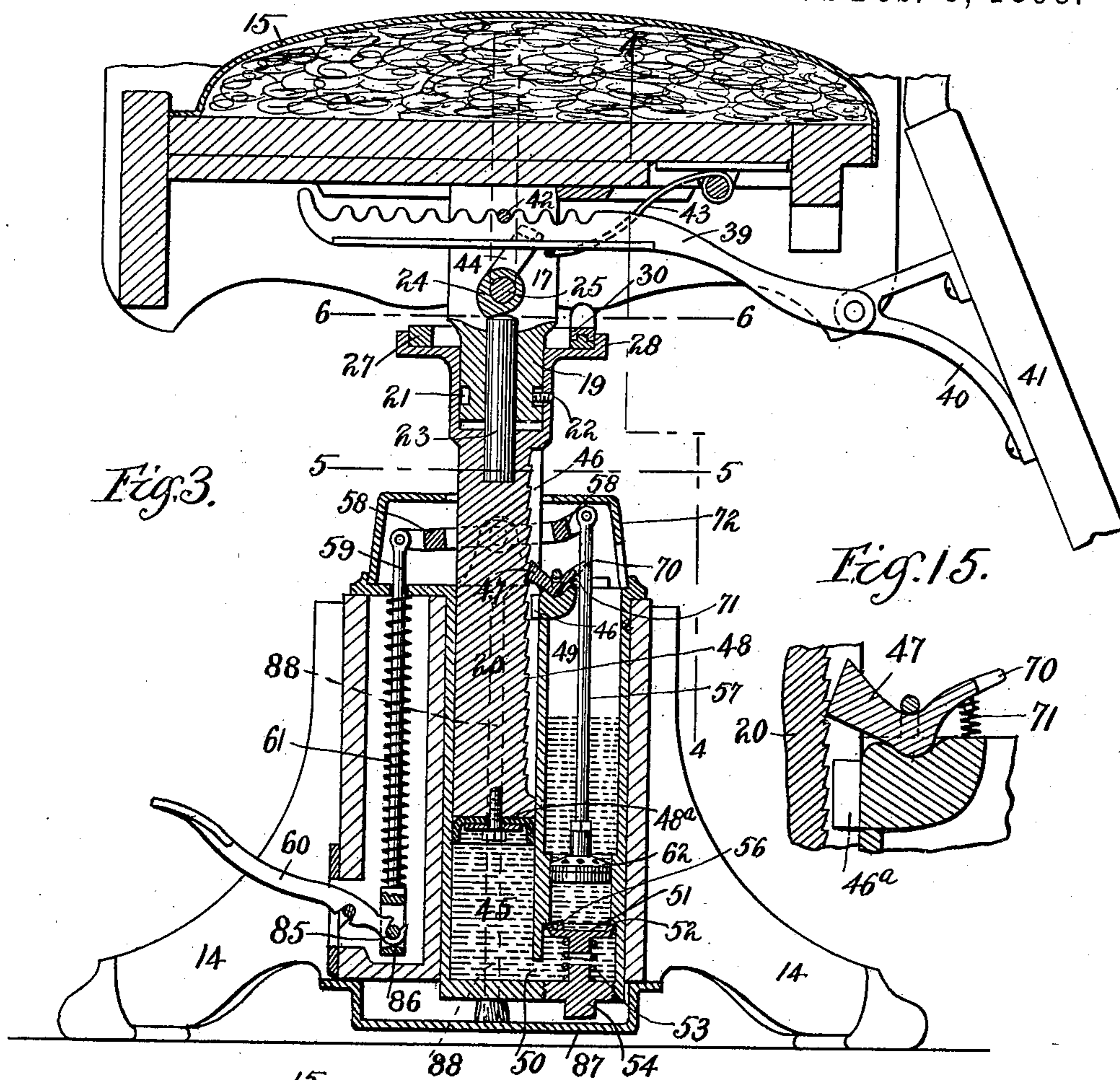
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 Wm M. Rheem
 Wm J. Hanning

Inventor:
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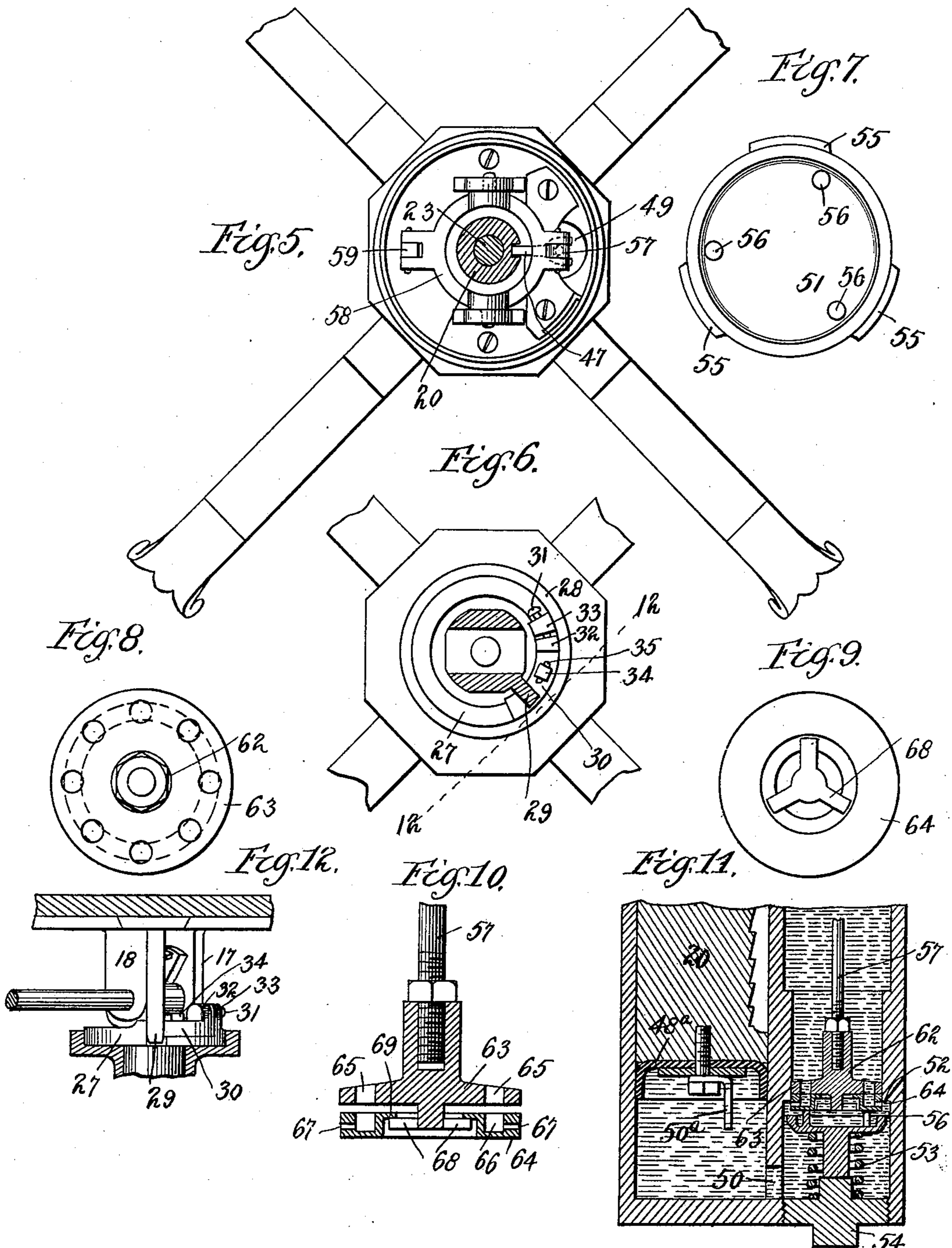
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UNITED STATES PATENT OFFICE.

ANTON J. ROLLERT, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE THEODORE
A. KOCHS COMPANY, OF SAME PLACE.

BARBER'S CHAIR.

SPECIFICATION forming part of Letters Patent No. 598,877, dated February 8, 1898.

Application filed June 10, 1897. Serial No. 640,168. (No model.)

To all whom it may concern:

Be it known that I, ANTON J. ROLLERT, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Barbers' Chairs, of which the following is a specification.

My invention relates to chairs commonly used by barbers, and has for its objects to provide certain improved hydraulic mechanism for raising and lowering the chair-seat; to provide improved means for retaining the chair-seat in its upper position when raised by the hydraulic mechanism; to provide improved means for controlling the rotation of the chair; to provide means for automatically throwing the head-rest back out of the way when lowered, and to provide certain other improvements which will be hereinafter pointed out.

That which I regard as new will be set forth in the claims.

Referring to the accompanying drawings, Figure 1 is a side elevation. Fig. 2 is a plan view. Fig. 3 is a central vertical sectional view of a portion of the chair. Fig. 4 is a partial vertical section on line 4 4 of Fig. 3. Fig. 5 is a horizontal section on line 5 5 of Fig. 3. Fig. 6 is a horizontal section on line 6 6 of Fig. 3. Fig. 7 is a plan view of the valve. Fig. 8 is a plan view of the piston-head. Fig. 9 is a bottom view of the piston-head. Fig. 10 is a sectional view of the piston. Fig. 11 is a partial vertical section of the base of the chair, showing the arrangement of the piston, valve, and plunger. Fig. 12 is a partial vertical section on line 12 12 of Fig. 6, showing the mechanism which controls the rotation of the chair. Fig. 13 is a partial sectional view of the chair-back and head-rest. Fig. 14 is a rear view of the same, and Fig. 15 is an enlarged detail of the locking-dog.

In the drawings, 13 indicates the base of the chair, which is of suitable shape to receive the hydraulic mechanism and is provided with the usual supporting-legs 14.

15 indicates the chair-seat, which is carried in a suitable frame 16. The seat-frame 16 is supported upon upright arms 17 18, which are secured to a stem 19, as shown in Fig. 3. The stem 19 is in turn fitted into a suitable

socket in the upper end of a plunger 20, as also shown in Fig. 3, and is movable slightly vertically in such socket. The stem 19 is circular in cross-section and is provided with an annular recess 21, which receives a pin 22, said pin passing through the side of the plunger, so that the withdrawal of the stem from said socket is prevented, although, as the recess 21 is slightly wider than the diameter of the pin 22, vertical movement of the stem is permitted.

As shown in Fig. 3, the stem 19 is provided with a central vertical passage, in which is fitted an upright pin 23, said pin being provided with a rounded upper end which projects slightly above the stem 19. The pin 23 serves as a bearing for a cam 24, which is mounted upon a cross-bar 25, which is journaled in the supporting-arms 17 18 and in a bracket 26, secured to the seat-frame 16, the outer end of said cross-bar 25 extending out and being turned up at the side of the seat-frame, as shown in Figs. 1 and 4. By this construction by moving the upper end of the bar 25 backward the cam 24 will strike the pin 23 and consequently will cause the seat-frame to rise slightly. The object of this vertical movement of the chair-seat is to provide for the unlocking and locking of the seat-frame, so that its rotation may be controlled.

The locking devices are best illustrated in Figs. 3, 6, and 12 and consist of the following parts: 27 indicates a split ring which is fitted into a suitable seat formed in the upper end of the plunger 20, the upper end of said plunger being enlarged and provided with an annular flange 28, as illustrated in Fig. 3. The normal external diameter of the ring 27 is very slightly less than the internal diameter of the annular flange 28, and the ring is adapted when expanded to frictionally engage the inner surface of said flange, whereby the rotation of said ring is prevented. When the seat-frame is in its normal or lowermost position with reference to the plunger 20, the ring 27 is expanded by means of a finger 29, which depends from one of the supports, as 18, and enters between the adjacent ends of said ring, as shown in Figs. 6 and 12. The lower end of said finger is some-

what wedge-shaped to adapt it to enter said space more freely. When, however, the seat-frame is lifted by the operation of the cam 24, as above described, the finger 29 is partially withdrawn from between the ends of the split ring 27, thereby permitting said ring to contract under its own elasticity, reducing its diameter to such an extent that it may turn upon its seat.

The mechanism above described for locking the chair-seat against rotation, while very efficient when in proper working order, is apt to work imperfectly after the chair has been in use for some time, owing to the fact that the parts adjacent to the finger 29 wear away, and as the parts must originally be fitted quite accurately, as the expansion and contraction of the split ring 27 is limited, a comparatively slight wearing away is sufficient to impair the operation of the locking mechanism. In order to overcome the objections incident to the wearing away of the parts mentioned, I provide means for compensating for such wear. To this end the ring 27 is provided with an extensible section 30, which is fitted upon said ring near one end and is adjustable thereupon by means of a set-screw 31, passing through lugs 32 33, carried by the section 30 and the ring 27, respectively, as shown in Figs. 6 and 12. A bolt 34 serves to hold the section 30 firmly upon said ring, a suitable slot 35 being provided for its reception.

By the construction above described the split ring 27 may be very accurately adjusted to compensate for wear, and consequently the operation of the locking mechanism may always be maintained at the highest degree of efficiency.

36 37 38 indicate the back, arms, and foot-rest, respectively, as shown in Fig. 1, the back and foot-rest being pivoted upon the seat-frame 16 and the arms being pivoted to the back and foot-rest. By this construction these parts move together. They are locked in their different positions by means of a rack-bar 39, which is connected to a bracket 40 or other suitable device carried by the vertical portion 41 of the foot-rest, said rack being adapted to engage a locking cross-bar 42, secured between the arms 17 18, as shown in Figs. 3 and 4. The rack-bar 39 is held upward in engagement with said locking-bar 42 by a spring 43, secured to the under side of the seat-frame, as also shown in Fig. 3. In order to provide for disengaging the rack-bar 39 from the locking-bar 42 by the operation of the cross-bar 25, said bar 25 is provided with an arm 44, which is adapted to project over and engage the spring 43, as illustrated in Figs. 3 and 4. The arrangement is such that by moving forward the upper end of the bar 25 the arm 44 will press down the spring 43 and permit the rack-bar 39 to move downward out of engagement with the locking-bar 42. In this way the operator is enabled by simply moving the bar 25 forward to adjust

the back, arms, and foot-rest to any desired inclination, and inasmuch as the bar 25 also controls the rotation of the chair any desired adjustment may readily be made.

I have described the apparatus for adjusting the arms, back, and foot-rest, but do not claim them herein, as they form no part of my present invention; and I wish it to be understood that while my improvements are shown as applied to a chair having the construction above described I do not wish to be limited to their use with such a chair, as they may be used with chairs of other suitable construction.

I will now describe the mechanism by which the chair is adjusted vertically upon its base. As has already been stated, the seat-frame is supported upon a plunger 20, and, as illustrated in Fig. 3, said plunger extends into a cylindrical chamber 45, which is arranged within the base 13. The plunger 20 is provided with a longitudinal slot 46, into which projects a lug 46^a, formed on or secured to a suitable part of the chair-base, which lug serves to prevent the plunger from rotating within the base. To provide for holding the chair-seat up when raised by the hydraulic mechanism, it is provided with a dog 47, pivotally mounted at the top of the base 13, as shown in Figs. 3 and 15. The inner face of the slot 46 is constructed with a plurality of upwardly and outwardly inclined teeth. The inclined acting face of the dog is constructed to engage the inclined faces of the said teeth, so that when the inclined acting face of the dog bears against the inclined face of one of the teeth the plunger is prevented from descending and a wedge action is produced by the co-acting inclined faces, while at the same time the dog can be disengaged with facility from the inclined face of the tooth. A spring 71, which acts against an angularly-arranged arm 70 of said dog, serves to hold the dog normally in engagement with the teeth 48. The manner in which the dog is operated to release the plunger 20 to permit the chair-seat to descend will be hereinafter set forth.

The slot 46 does not extend quite to the bottom of the plunger, as otherwise the oil or other liquid in the chamber 45 below said plunger would be permitted to escape.

48^a indicates packing at the lower end of the plunger 20.

49 indicates a second chamber in the base 13, said chamber communicating with the chamber 45 by a passage 50 at its lower end, as shown in Fig. 3.

50^a indicates a stop carried by the plunger 20 to limit its downward movement and thereby prevent it from closing the passage 50.

51 indicates a check-valve which is arranged in the lower portion of the chamber 49 and bears against a seat 52, formed by an offset portion of the chamber-wall, as best shown in Fig. 11. The valve 51 is held upward upon its seat by a spring 53, which is fitted upon the stem of said valve and is sup-

ported by a plug 54, screwed into the bottom of the base 13 opposite the chamber 49. By removing the plug 54 access may be had to the chamber 49 and valve 51. As shown in Fig. 7, the valve 51 is provided with marginal lugs 55, which serve to center it without obstructing the passage of the liquid around it, and it is also provided near its edges with pins 56, which project slightly above the surface of the valve and are adapted to be struck by the descending piston, as will be hereinafter set forth, to move said valve from its seat and afford a free passage for the liquid.

The flow of liquid from either chamber to the other is controlled by a piston 57, which moves in the chamber 49 and is operated by means of a cross-head 58 and rod 59 from a foot-lever 60. The foot-lever 60 is suitably pivoted in the base of the chair and engages a pin 85 in a clip or bracket 86 at the lower end of the rod 59. The clip 86 prevents accidental disengagement of the lever 60 and rod 59. The cross-head 58 encircles the plunger 20 and is pivoted upon the top of the base, as shown.

61 indicates a spring which encircles the rod 59 and serves to hold the piston 57 normally in its uppermost position. As shown in Fig. 3, the piston-head 62 is adjustably secured upon the piston-rod by screwing, and it consists of two disks 63 64, as shown in Fig. 10. The upper disk 63 is provided with vertical passages 65, which open into an annular channel 66 in the upper face of the disk 64, as shown in Fig. 10.

67 indicates small passages which afford communication between the chamber 49 below the piston-head and the channel 66.

The disk 64 is movable vertically to a slight extent and is held in place by a spider 68, which engages an internal flange 69, carried by the disk 64.

As shown in Fig. 3, the arm 70 of the dog 47 projects upward at an angle in proximity to the arm of the cross-head 58, to which the piston 57 is connected, and at such a distance below said arm that it will not be struck thereby except when the cross-head is rocked to move said piston downward excessively.

The operation of the hydraulic apparatus is as follows: The chamber 49 having been filled with oil or other suitable liquid through an opening at the top of said chamber, by short quick strokes of the pedal 60 the piston-head is caused to reciprocate in the more contracted portion of the chamber 49, said contracted portion being best shown in Figs. 3 and 11. By such movement of the piston-head on the downward stroke the lower disk 64 will rise and bear against the upper disk 63, thereby closing the passage 65, and as the passages 67 are closed by the walls of the cylinder with which they are in contact the oil will be forced downward past the valve 51 into the chamber 45, thereby forcing upward the plunger 20. The dog 47 does not interfere with this movement of the plunger. Upon

the upstroke of the piston-head the lower disk 64 will fall away from the upper disk, permitting the oil above said piston-head to flow down through the passages 65 around the inside of the flange 69 of the lower disk, filling the space between the valve 51 and the piston-head. This operation may be continued until the plunger has been forced up to the desired point. The chair-seat will be held at the point to which it is raised by the dog 47, so that even should the oil in the chamber 45 escape back into the chamber 49 the chair-seat will still retain its position.

When it is desired to lower the chair-seat, the foot-lever 60 is depressed sufficiently to force the piston-head 62 down until it strikes the valve 51 and forces said valve away from its seat to the position shown in Fig. 11, where it will be stopped by the plug 54, as shown. In this operation the piston-head will first strike the pins 56, moving the valve 51 away from its seat. When the piston-head has been moved down to the position indicated, the passages 67 will lie opposite the offset portion of the chamber 49, and consequently a passage will be provided through which oil may flow upward through the channel 66 and passages 65 to the upper part of the chamber 49. When the foot-lever 60 is depressed, as above indicated, the arm of the cross-head 58 to which the piston 57 is connected will strike the arm 70 of the dog 47, rocking the dog upward and moving it out of engagement with the plunger 20, so that the plunger will then be free to descend. The weight of the chair-seat and plunger does not prevent upward movement of the dog, owing to the fact that (the teeth 48 being inclined upward) the engagement between the dog and teeth is frictional and not positive, as would be the case were the teeth set in a manner the reverse of that shown, and as upward movement of the dog tends to move it away from the teeth the dog may at all times be operated to release the plunger. When the plunger is released, its weight and that of the chair-seat will force the oil back from the chamber 45 to the chamber 49, the oil flowing around the valve and up through the piston-head 62, as above described. Consequently the chair-seat will gradually sink to the desired position. Whenever the foot-lever 60 is released, the spring 61 will cause the piston-head to move upward to the contracted portion of the chamber 49, consequently stopping the return flow of oil and thereby stopping the descent of the chair. The release of the foot-lever will at the same time release the dog 47, which will return to its engagement with the ratchet-teeth 48, locking the chair in its new position.

72 indicates a cover which is fitted over the base and encircles the cross-head 58 and other parts, so that all the parts mounted in the base are protected.

87 indicates a drip-pan placed under the chair-base 13 and secured thereto by bolts 88, extending through the base, as indicated by

dotted lines in Fig. 3. This drip-pan serves to catch any drippings of oil which may drip from the base.

73 indicates the head-rest, which is mounted upon a slide 74, moving in a suitable recess in the back 36, as best shown in Fig. 13. The slide 74 has at its back a series of ratchet-teeth 75, adapted to be engaged by a spring-pawl 76, mounted at the back of the chair, as shown in Fig. 13. The slide 74 has at its upper end a rack-plate 77, which, as herein shown, is formed integral with the slide and is provided with a number of ratchet-teeth. The plate 77 may, however, be formed separate from the slide, if desired, in which case it will be secured thereto in any suitable manner. At its front end the plate 77 is provided with an extended tooth 78, which prevents excessive forward movement of the head-rest. The head-rest 73 is mounted upon the slide 74 by means of a bifurcated bracket 79, which embraces the plate 77 and the upper end of the slide 74, the arms of said bracket 79 being provided with slots 80, which receive pins 81, carried by the slide 74, as shown in Figs. 13 and 14. The bracket 79 also carries a tooth 82, which is adapted to rest in the teeth of the rack-plate 77, as shown in Fig. 13. By this construction the head-rest may be swung forward or backward and will be automatically locked in position when released, the slots 80 being provided to permit the bracket 79 to move vertically sufficiently to permit the tooth 82 to clear the rack-plate 77, so that it may be moved forward and backward, as desired.

83 indicates cams arranged at the forward side of the bracket 79, near the upper portion thereof.

84 indicates fingers secured upon the back 36 of the chair and adapted under certain circumstances to strike the cams 83 when the head-rest is lowered to its lowermost position. The object of the cams 83 and fingers 84 is to automatically throw the head-rest back out of the way when it is lowered to its lowermost position, the operation being as follows: Supposing the head-rest to be in the position shown in Fig. 13, should the pawl 76 be operated to release the slide 74 the head-rest will at once drop to its lowermost position, the slide 74 moving down into the back in the usual way. When the head-rest approaches its lowermost position, the fingers 84 will strike the cams 83, consequently raising the head-rest sufficiently to enable the tooth 82 to clear the teeth of the plate 77, and, owing to the curved form of the cams 83, the head-rest will simultaneously be thrown back to the limit of its backward movement. By this construction the head-rest requires no attention whatever, but is automatically thrown out of the way when lowered.

I have shown two cams 83 and two fingers 84, but it is evident that one pair of such cams and fingers may be used. Furthermore, I do not restrict myself to the specific form

and arrangement of the devices shown for throwing the head-rest back, as my invention contemplates the use of equivalents.

The lifting mechanism herein described is in many respects suitable for use in other devices than chairs, and therefore I do not limit myself to my improvements in the lifting mechanism in connection with chairs only.

That which I claim as my invention, and desire to secure by Letters Patent, is—

1. A chair, comprising a base, a seat having a pivotal connection therewith, a split ring located within a socket on said base, means for adjusting said ring to compensate for wear, and a wedge carried by said seat and engaging said split ring, substantially as described.

2. The combination with a chair-base having a socket, and a seat pivotally mounted on the chair-base, of a split ring arranged within the socket and having one end portion adjustable toward the other end to compensate for wear, and a wedge carried by a part of the seat and engaging between the said ends of the split ring, substantially as described.

3. A chair, comprising a base, a seat having a pivotal connection therewith, a split ring located within a socket on said base, an adjustable section carried by said ring and adjustable thereupon to compensate for wear, and a wedge carried by said seat and engaging said split ring, substantially as described.

4. A chair, comprising a base, a seat having a pivotal connection therewith, a split ring located within a socket on said base, an adjustable section 30 carried by said ring and secured thereto, a set-screw 31 carried by said ring for adjusting the position of said section 30, and a wedge carried by said seat and engaging said split ring, substantially as described.

5. The combination with a fluid-chamber having a contracted portion, of a piston reciprocating in said chamber and moving normally in the contracted portion thereof, said piston consisting of two disks arranged one above the other, the upper disk having vertical passages and the lower disk having an annular channel and lateral passages leading from the annular channel to the periphery of the disk and normally closed by the contracted portion of the fluid-chamber, and a check-valve arranged in the lower portion of the fluid-chamber below the contracted portion thereof, substantially as described.

6. The combination with a base having fluid-chambers, one constructed with a contracted portion, a plunger movable in one of said chambers, and a chair-seat carried by the plunger, of a piston reciprocating in the chamber having the contracted portion and consisting of upper and lower disks, the upper one having vertical passages and the lower one an annular channel and lateral passages leading from said channel to the periphery of the disk and normally closed by the contracted portion of the fluid-chamber, a check-valve located in the lower end of the fluid-chamber

having the contracted portion, and a passage connecting the two fluid-chambers below said valve, substantially as described.

7. The combination with a base having a pair of fluid-chambers, one provided with a contracted portion, a plunger movable in one of said chambers, and a chair-seat carried by the plunger, of a piston movable in the chamber having the contracted portion, a passage connecting the two chambers, a valve located in the lower portion of the chamber having the contracted portion, a piston reciprocating in the contracted portion of the chamber and consisting of upper and lower disks, the upper one having vertical passages and the lower one provided with an annular channel and lateral passages leading from said channel to the periphery of the disk and normally closed by the said contracted portion of the chamber, a check-valve located below the piston, and a stop device which limits the descent of the plunger on which the chair-seat is mounted, substantially as described.

8. The combination with a fluid-chamber having a contracted portion, the lower edge of which constitutes a valve-seat, of a piston adapted to be reciprocated in the chamber, moving normally in the contracted portion thereof, and having one or more laterally-opening passages normally closed by the wall of the contracted portion of the fluid-chamber, said passages having communication with the cylinder at one side of the piston, and a check-valve seated against the lower edge of the contracted portion of the fluid-chamber, substantially as described.

9. The combination with a fluid-chamber having a contracted portion, of a piston adapted to be reciprocated in the chamber and composed of two loosely-connected disks, one having a passage or passages 65, and the other a passage or passages 67 leading to the periphery thereof, and an internal passage to communicate with said passage or passages 65, and means for automatically closing said internal passage when the piston moves in one direction, substantially as described.

10. The combination with a base having chambers 45 49, and a plunger adapted to move in said chamber 45, of a piston movable in said chamber 49, a check-valve 51 in said latter chamber, means for holding said valve in operative position, a passage between said chambers, a cross-head 58 connected to said piston-head, a foot-lever, a rod 59 connecting said foot-lever to said cross-head, and a spring 61 for normally holding the free end of said foot-lever in its uppermost position, substantially as described.

11. The combination with two fluid-chambers, one having a contracted portion, a plunger working in one of the chambers, a chair-seat carried by the plunger, and a check-valve in the lower part of the chamber having the contracted portion, of a piston composed of upper and lower disks, the upper

one having vertical passages and the lower one having lateral passages leading to the periphery of the disk and normally closed by the contracted portion of the fluid-chamber in which the piston works, and means for reciprocating the piston, substantially as described.

12. A piston-head comprising disks loosely connected together, one of said disks having one or more passages 65, and the other having one or more peripherally-opening passages communicating with said passages 65, substantially as described.

13. A piston-head comprising disks loosely connected together, one of said disks having one or more passages 65 and the other having one or more peripherally-opening passages communicating with said passages 65, an internal passage adapted to communicate with said passages 65, and means for automatically closing said internal passage when the piston-head moves in a certain direction, substantially as described.

14. In a chair, the combination with a base, and a seat vertically movable thereupon, of a lever, a fluid-operating mechanism actuated by said lever for raising the chair-seat, means independent of the fluid-operating mechanism for retaining the seat in position when raised, and means automatically operated by a part of the fluid-operating mechanism for releasing the chair-seat when the lever of the fluid-operating mechanism is actuated, substantially as described.

15. In a chair, the combination with a base, and a seat vertically movable thereupon, of a lever, fluid-operated mechanism actuated by said lever for raising said chair-seat, means independent of said fluid-operated mechanism for retaining said seat in position when raised, and means for automatically releasing said seat when said lever is operated to lower the same, substantially as described.

16. In a chair, the combination with a base, a plunger having teeth, and a seat mounted on the plunger, of a lever, fluid-operating mechanism actuated by said lever for raising the chair-seat, and a dog constructed to engage the teeth of the plunger to retain the chair-seat elevated and having means operated by a part of the fluid-operating mechanism to release the chair-seat and permit it to descend, substantially as described.

17. In a chair, the combination with a base, a plunger having teeth, and a chair-seat mounted on the plunger, of a lever, fluid-operating mechanism actuated by said lever for raising the chair-seat, and a pivoted dog constructed to engage the teeth of the plunger and thrown out of engagement therewith by the action of the lever which actuates the fluid-operating mechanism, substantially as described.

18. In a chair, the combination with a base, and a seat vertically movable thereupon, of a lever, means operated by said lever for rais-

ing and lowering said chair-seat, independent means for retaining the seat in its elevated position, and means for automatically releasing said chair-seat when said lever is operated to lower the seat, substantially as described.

19. In a chair, the combination with a vertically-movable head-rest support, of a movable head-rest carried thereby, and means for automatically throwing the head-rest back when the head-rest support is moved downward substantially to its lowermost position, substantially as described.

20. In a chair, the combination with a base, and a seat vertically movable thereupon, said seat having a plunger, of a lever, fluid-operated mechanism actuated by said lever for raising said seat, a dog adapted to engage said plunger to retain said seat in position when elevated, and means operated by said lever to actuate said dog to release said plunger so that the chair-seat may be lowered, substantially as described.

21. In a chair, the combination with a base, and a seat vertically movable thereupon, said seat having a plunger, of a lever, a piston adapted to be operated to force liquid under said plunger to elevate the chair-seat, means whereby said plunger may be operated by the operation of said lever, a dog adapted to engage said plunger to retain the seat in position when elevated, means operated by the movement of the piston in one direction to permit the liquid to escape from under said plunger, and means for automatically operating said dog to release the plunger when said piston is so moved excessively, substantially as described.

22. In a chair, the combination with a vertically-movable head-rest support, of a rocking head-rest carried thereby, and means for automatically throwing said head-rest back when the head-rest support is moved downward substantially to its lowermost position, substantially as described.

23. In a chair, the combination with the chair-back, and a vertically-movable head-rest support, said support having a rack-plate at its upper end, of a head-rest, a bracket carrying said head-rest, said bracket being adapted to rock upon said head-rest support, and having a tooth adapted to engage said rack-plate, and means for automatically throwing said head-rest back when the head-

rest support moves to its lowermost position, substantially as described.

24. In a chair, the combination with the chair-back, and a vertically-movable head-rest support, said support having a rack-plate at its upper end, of a head-rest, a bracket carrying said head-rest, said bracket being adapted to rock upon said head-rest support, and having a tooth adapted to engage said rack-plate, and a finger mounted upon said back and adapted to strike and deflect said head-rest bracket when the head-rest support moves to its lowermost position, substantially as described.

25. In a chair, the combination with the chair-back, and a vertically-movable head-rest support, said support having a rack-plate at its upper end, of a head-rest, a bracket carrying said head-rest, said bracket being adapted to rock upon said head-rest support, and having a tooth adapted to engage said rack-plate, a cam-plate carried by said head-rest bracket, and a finger mounted on the chair-back and adapted to strike said cam-plate to deflect and throw back said head-rest when the head-rest support moves to its lowermost position, substantially as described.

26. The combination with a base having a pair of chambers, and a plunger movable in one of said chambers, of a piston movable in the other chamber, a passage affording communication between said chambers, a valve between said passage and said piston, means for opening said valve to permit reversed flow of the fluid, a drip-pan under the base, and bolts extending through the base and supporting said drip-pan, substantially as described.

27. The combination with a base having chambers 45 49, and a plunger adapted to move in said chamber 45, of a piston movable in said chamber 49, a check-valve in said latter chamber, a passage between said chambers, a cross-head 58 connected to said piston-head, a foot-lever, a rod 59 connecting said foot-lever to said cross-head, said rod having a pin 85 and a clip 86, and a spring 77 normally holding the free end of said foot-lever in its uppermost position, substantially as described.

ANTON J. ROLLERT.

Witnesses:

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P. A. SELIG.