(No Model.)

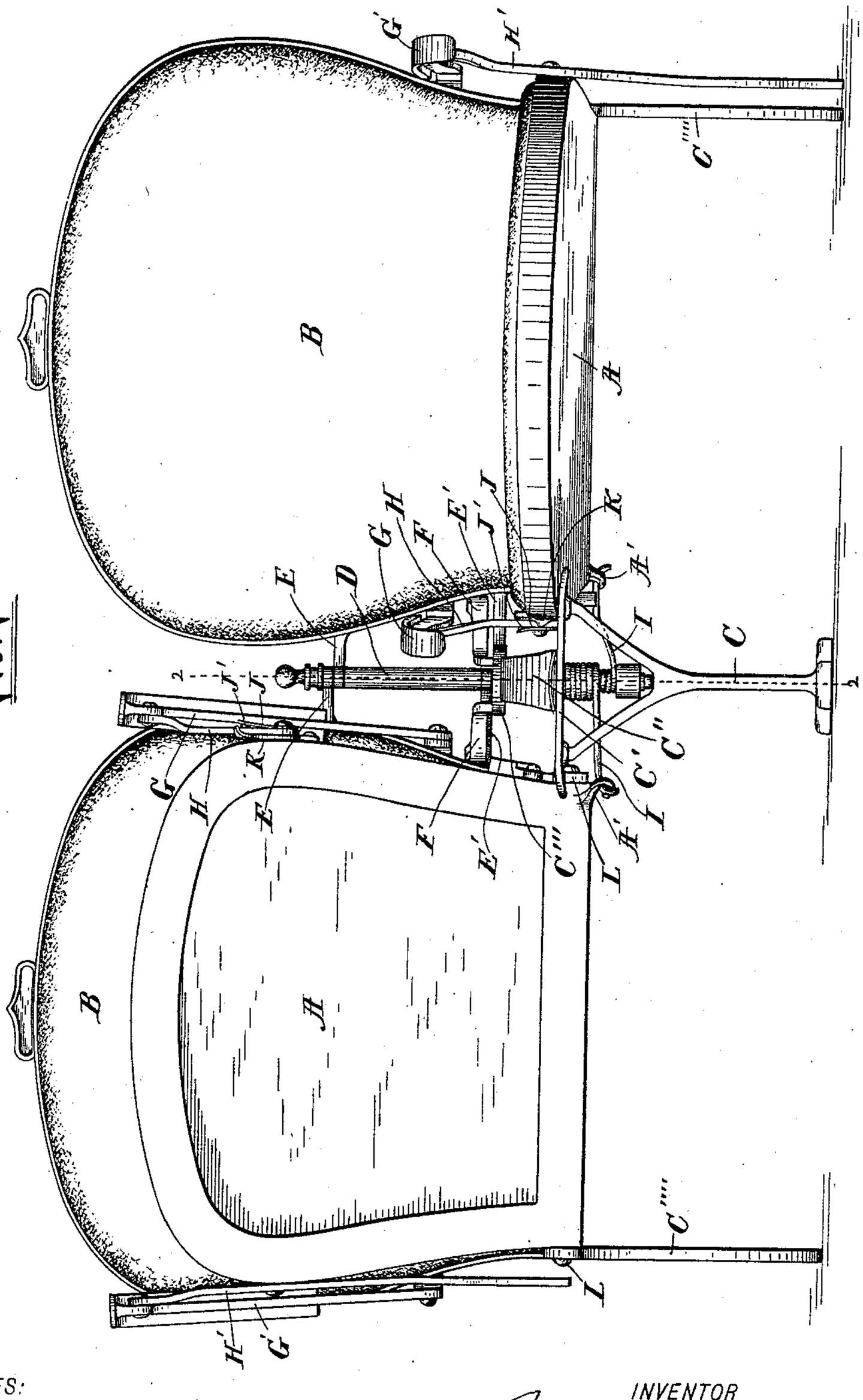
2 Sheets—Sheet 1.

R. SCHUBERT.

AUTOMATICALLY FOLDING OPERA CHAIR.

No. 539,196. Patented May 14, 1895.

FIG. 1.



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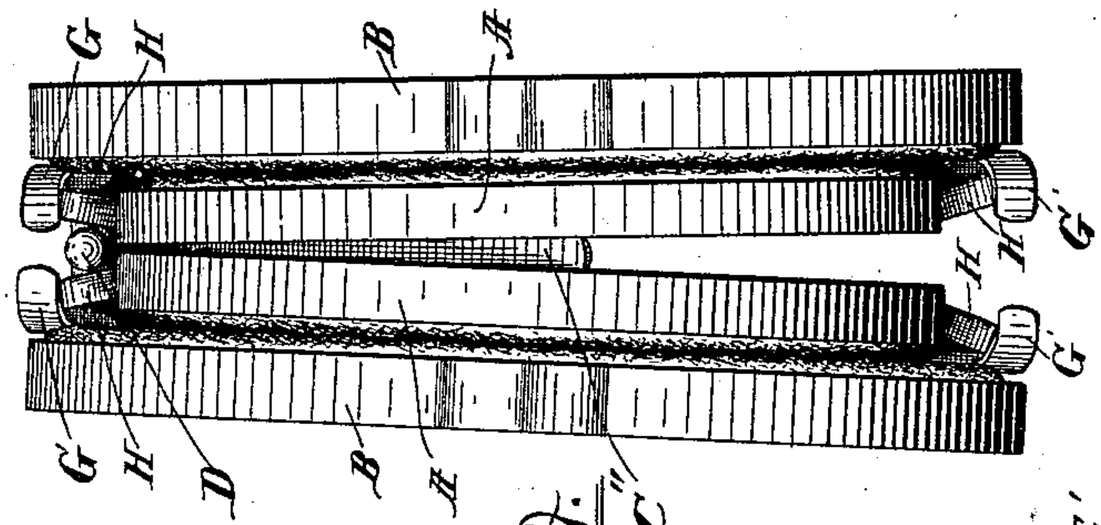

Fig. 2.

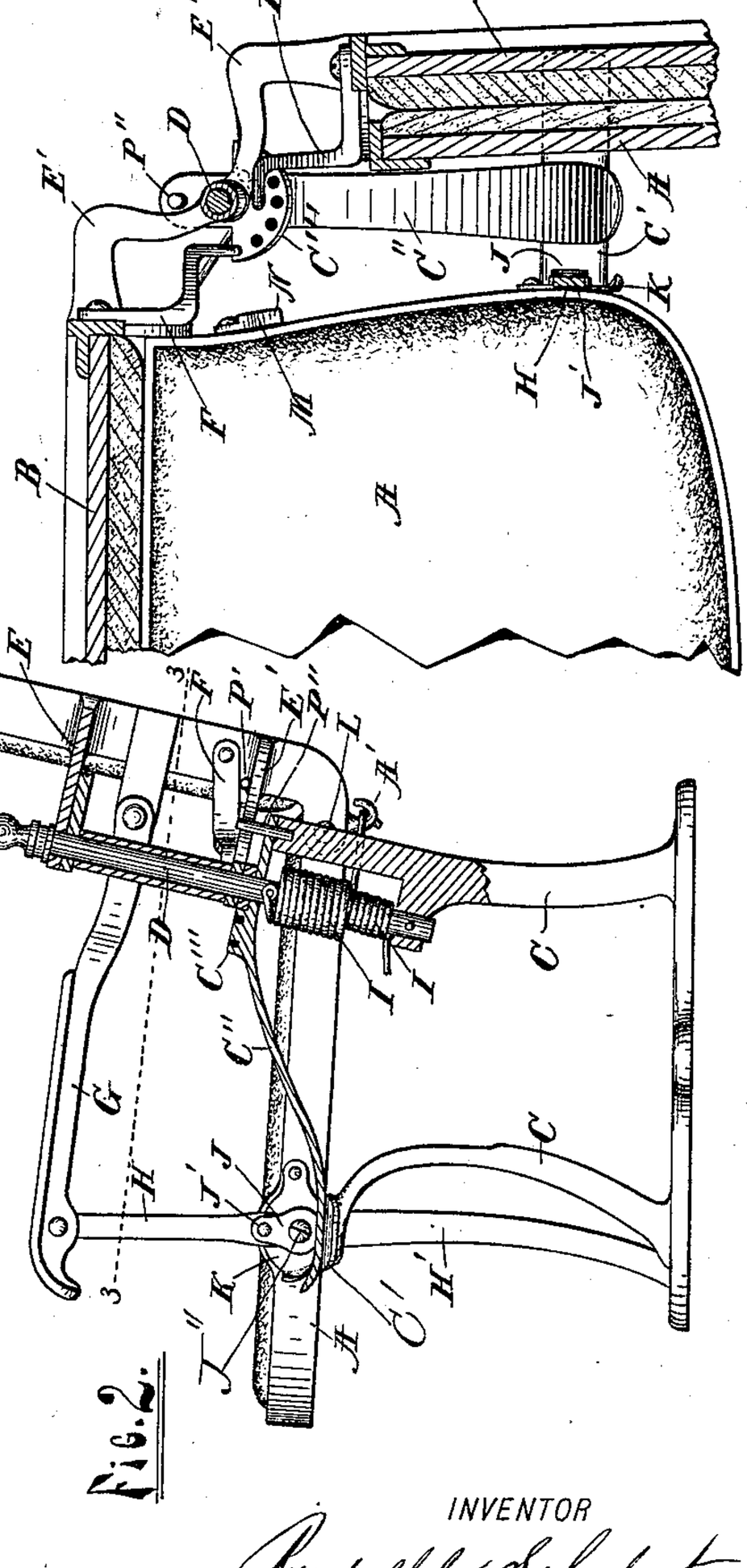

Fig. 3.

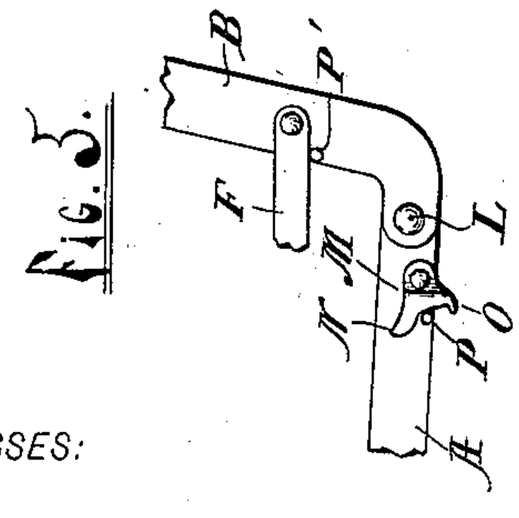

Fig. 4.

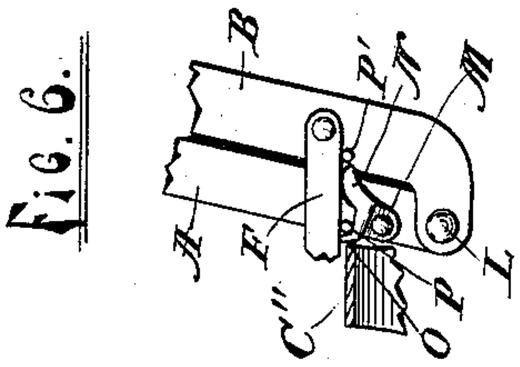

Fig. 5.

Fig. 6.

Fig. 7.

WITNESSES:

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UNITED STATES PATENT OFFICE.

RUDOLPH SCHUBERT, OF GRAND RAPIDS, MICHIGAN.

AUTOMATICALLY-FOLDING OPERA-CHAIR.

SPECIFICATION forming part of Letters Patent No. 539,196, dated May 14, 1895.

Application filed June 7, 1894. Serial No. 513,793. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH SCHUBERT, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Automatically-Folding Opera-Chairs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an automatically folding opera chair.

My object is to produce an opera chair which will automatically fold its seat against its back and rotate upon a vertical pivot to a position when folded at right angles to its position when open. I accomplish this object by the device herein described, and my invention consists in the combination and arrangement of the various parts of said device, as hereinafter more fully pointed out, particularly in the subjoined claims, reference being had to the accompanying drawings, wherein—

Figure 1 is a front elevation of a device embodying my invention open, with one of the seats folded; Fig. 2, a vertical section of the same on the line 2 2 of Fig. 1; Fig. 3, a plan view, partly in section, on the line 3 3 of Fig. 2; Fig. 4, a plan view folded; Figs. 5 and 6, details of coacting parts in the locking mechanism; Fig. 7, a detail in section of the coacting unlocking mechanism.

Like letters refer to like parts throughout the drawings.

As many of the parts are arranged in pairs or duplicates, whenever the singular is used, the plural will be understood.

The frames of the seats A, and the backs B, are hinged together by the pins L, so that the seat will fold vertically against the back, as shown in Fig. 1, and attached to the backs are the arms E, E′, having their inner ends pivoted to the post D, forming a hinge on which said backs rotate.

The post D, is secured in a centrally arranged supporting frame, having a floor piece by which it is secured to the floor, front and rear legs C, C, the front leg terminating in a V, at the upper end, the two legs of which support the cross bar C′ and the rear leg supporting the post D, on a suitable offset; and are connected together at their tops by the brace C″, having at its upper end the ratchet plate C‴, provided with a series of sockets for engaging the pawls F. The pin P′, on the frame B, limits the downward movement of the pawl, to prevent its hooked end from sticking in its socket on the ratchet plate.

Each of the seats is provided with a lug A′ in which is arranged an end of the coiled springs J, J, formed in one piece by coiling and recoiling the wire about the lower end of the post D, and having the free ends attached to the lugs A′ on the seats. When open, the inside of the seats A, rests upon the bar C′, and the outsides are supported on the leg C⁗ and H′. The leg C⁗ is rigid and travels in a quarter circle, as the device rotates upon its vertical pivot. The leg H′ is pivoted pendulously to the frame of the seat, midway of its length, and its upper end is pivoted to the outer end of the outside arm G′, which has its inner end pivoted to the back B.

The inside arm G, has its inside end pivoted to the back and its outside end pivoted to the upper end of the bar H, which has its lower end pivoted to the seat frame, and is provided with a locking device, consisting of the spring J, having its lower end secured by the screw J″, which pivots the arm H, to the seat, and its upper end provided with a pin J′ (Fig. 7), which passes through arm H, and enters a hole or socket in the frame of the seat A, barely enough to catch.

Pivoted to the frame A, and arranged between the bar H, and the said frame, is a disk K, having a slot for screw J″, and of such diameter that, when its lower edge is flush with the under side of the seat frame, its upper edge will be interposed between the end of the pin J′ and the socket in the seat frame; and prevents the pin from entering the socket, thereby holding the parts disengaged and permitting the lifting of the seat. M, is a trip for the pawl F, and is adjusted to operate by gravity; is pivoted to the frame of the seat A, just forward of the pin L; has the stop pin P, for limiting its movement, and spurs N, and O. When closed, as in Fig. 4, both sides may be opened at once, or either separately. The resilience of the springs I, holds the device closed, the seat against the back and the back parallel with the brace C″. Opening

the seat is performed by rotating the movable structure on its pivot post D, (which is shown in Fig. 2, to be provided with a sleeve which is not lettered) the movement being limited by stop pin P″, and at the same time turning the seat down. As soon as the seat is turned toward its horizontal position, said trip falls by gravity to its lower position. (Shown in Fig. 5.) The pawl F, engages its plate C‴ and locks the back in a position at right angles to its former position, or open.

When open, ready for use, but not in use, the frame of the seat does not rest directly upon the cross bar C′, but upon the disk K, the lower edge of which rests upon the cross bar, while the upper edge bears upon the inner end of the pin J′, which is rounded in such a manner that the edge of the disk K, operates as a wedge to drive back the pin out of its socket, into which it passes slightly as soon as the seat reaches a certain position in its downward movement. If now a weight be placed upon the seat, as by a person sitting down in it, the upper edge of the disk K, will be driven against the pin J′, driving it back out of its socket and interposed between the end of the pin J′ and its socket, preventing its return. There is nothing now to hold the seat down, except the weight of the person sitting in it. When this weight is removed, as by the person rising, the resilience of the spring I, throws the seat to its vertical position. The spur N, of the trip M, engages the pawl F, disengaging the same from the plate C. The movement of the back on its pivot throws the pawl F out of line of the sockets on plate C‴ so that it does not engage, while the back, frame, seat and all, rotates to its closed position on its pivot D. It will thus be seen that the function of the springs is double; that is, the pressure of the free ends toward the front of the chair on the lugs A′ first folds the seat and then the continued action of the spring on the seat and back as one, rotates both on the pivot post.

I claim—

1. The combination with the frame and pivot post, of a chair, arranged at one side of said post, having its back rotatably attached to said post, its seat hinged to said back and a spring connecting said frame and seat, having its free end attached to said seat, whereby the pressure of the spring first folds the seat and then by continued action on the seat and back as one, rotates both on the pivot post, substantially as set forth.

2. The combination with the frame and pivot post, a pair of chairs arranged on each side of said post, having their backs rotatably attached to said post, seats hinged to said backs, and a coiled spring formed in one piece, by coiling and recoiling the wire about the lower end of said post, one coil over the other, and the free ends attached to said seats respectively, whereby the seats are simultaneously folded against the backs and by the continuous action of the springs the seats and backs as one simultaneously rotated, substantially as set forth.

3. The combination with the frame and pivot post, a ratchet plate on the frame, a chair having its back rotatably attached to said post, at one side thereof, a seat hinged to said back, a pawl on the back engaging the ratchet, a trip on the seat engaging the pawl and a spring connecting the frame and seat, adapted to first fold the seat against the back and, by continuous pressure, rotate both as one, on the post, substantially as set forth.

4. The combination with the frame and pivot post, a ratchet plate on the frame, a pair of chairs having their backs rotatably attached to the post, at the side thereof, seats hinged to the backs, pawls on the backs engaging the plate, trips on the seats engaging the pawls and a coiled spring formed in one piece, by coiling and recoiling the wire around the lower end of said post, one coil over the other, and having the free ends attached to said seats respectively, substantially as and for purposes set forth.

5. The combination with the frame and post, a ratchet plate on the frame, a chair having its back rotatably attached to said post, at one side of said post, a pawl pivoted to the back, engaging the ratchet, a seat hinged to the back, a trip on the seat engaging the pawl and operating by gravity, and a spring coiled about the lower end of the post, having its free end engaging the seat, substantially as and for the purposes set forth.

6. The combination with the frame, having the pivot post, the ratchet plate, and the chair having its back rotatably attached to the post and its seat hinged to said back, the pawl F, pivoted to said back, and the trip M, pivoted to the seat, and having the spurs N, and O, substantially in the form shown, and the stop pins P, P′, arranged substantially as and for the purposes set forth.

7. The combination with the frame, having a vertically arranged pivot post, a chair having its back rotatably attached to said post, a seat hinged to said back, a pawl on the back engaging the frame, and a trip on the seat engaging the pawl, a spring connecting the frame and seat, a horizontal arm G, for the seat, and a vertical post H, pivoted to the arm G, at its upper end and to the seat at its lower end, the disk K, pivoted to the side of the seat and engaging the frame, the spring J, attached to said post H, and having the pin J′, in its upper end, engaging the socket in the side of the seat frame, arranged substantially as described and for the purposes set forth.

8. The combination with the frame, having the legs C, C, and bar C′, a ratchet plate on the frame, and the pivot post attached and arranged as described, a chair arranged at one side of the post, having its back pivoted to said post, by arms engaging the same, a a seat hinged to said back, having a lug at its rear end, a coiled spring on the end of the

pivot post, having its free end engaging said lug, a pawl on the back engaging said ratchet plate, a trip for the pawl on the seat, operated by gravity, pivoted arms G, and H, and a spring catch for locking the arm H., attached to the seat frame, arranged substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

RUDOLPH SCHUBERT.

Witnesses:
ADA M. HARVEY,
DENNIS L. ROGERS.