

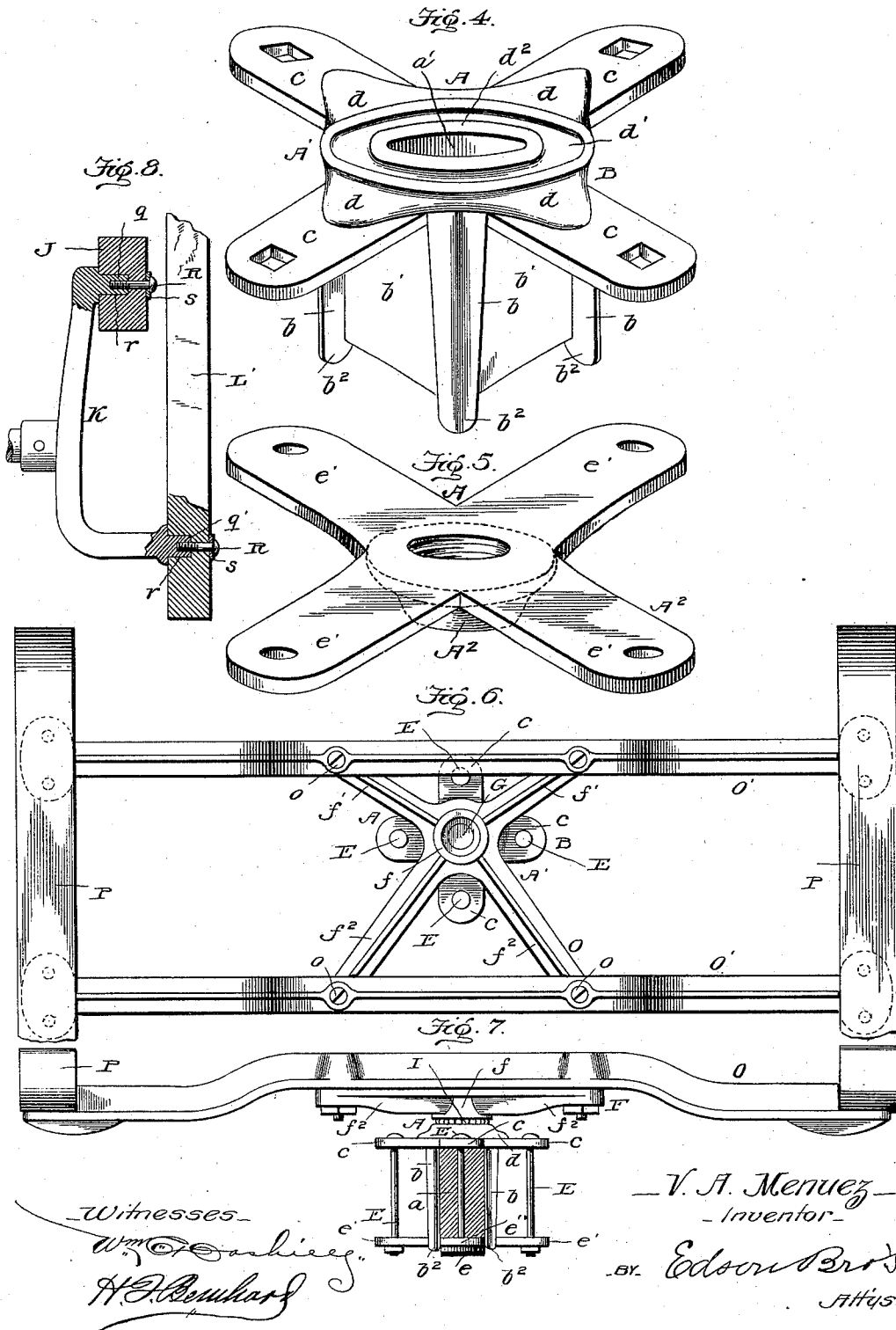
(No Model.)

2 Sheets—Sheet 2.

V. A. MENEZ.
CHAIR.

No. 567,837.

Patented Sept. 15, 1896.



UNITED STATES PATENT OFFICE.

VINCENT A. MENUEZ, OF ELKHART, INDIANA.

CHAIR.

SPECIFICATION forming part of Letters Patent No. 567,837, dated September 15, 1896.

Application filed March 29, 1895. Serial No. 543,715. (No model.)

To all whom it may concern:

Be it known that I, VINCENT A. MENUEZ, a citizen of the United States, residing at Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in 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 improvements in chairs of that class which employ a rotatable spider between the base and chair-body; and the object that I have in view is to provide a construction of rotatable spider which, while possessing the necessary strength and stability, shall be simple and light in construction and cheap of manufacture.

A further object of my invention is to provide an improved construction of socket and hub which shall inclose or house the vertical spindle or pivot-stem in a manner to exclude dirt therefrom, and which shall afford a strong safe connection for the legs of the base, with provision for taking up slack or loose play in the legs.

My improvements consist in a novel construction of the spider and the pivot for supporting the same in the socket of the cast-metal body of the chair-base. The spider used in connection with this part of my improvement is designed more particularly for sustaining a chair-body of that class known as "oscillating" chairs, in which the body is suspended by pairs of hangers which are connected to the revoluble spider and to the pendent legs on the swinging chair-body. In a prior application filed by me on September 12, 1894, Serial No. 522,822, I have shown the spider provided with downturned cross-bars which extend from side to side of the chair, and on the ends of these downturned cross-bars are secured head-blocks, to which head-blocks are fastened upright pedestals which carry at their upper ends certain side pieces. The swinging chair-body has pendent legs, and on these pendent legs and elevated side pieces are pivotally mounted the hangers by which the chair-body is suspended in a manner to permit it to swing or oscillate. I aim to simplify and cheapen this construction by

dispensing with the cross-bars on the spider and the pedestals and elevated side pieces; and to accomplish these ends I construct the spider with a short hub and with radial arms which are curved or inclined upwardly from the hub to a proper height, to which arms of the spider are secured the side head-blocks that furnish the bearings for the hangers to sustain the swinging chair-body.

The invention further consists in the construction and combination of parts which will be hereinafter fully described and claimed.

I have illustrated the preferred embodiment of my invention in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a side elevation of my improved chair. Fig. 2 is a front elevation of the chair shown by Fig. 1 with the upper part of the chair-body broken away. Fig. 3 is a vertical sectional view on the plane indicated by the dotted line *xx* of Fig. 2. Fig. 4 is a detail perspective view of the body part of the chair-base center. Fig. 5 is a like view of the removable bottom plate. Fig. 6 is a plan view of a spider and hub to accommodate a rocking-chair, and used in connection with my improved center piece for the base. Fig. 7 is an elevation of the spider and center piece shown by Fig. 6. Fig. 8 is a detail view, partly in elevation and partly in section, showing one of the chair-hangers, one of the legs on the chair-body, and a rail of the chair-platform to illustrate the means for connecting the hanger to the body and platform of the chair. Fig. 9 is a detail plan view, on a reduced scale, showing the head-blocks fastened directly to the upper ends of the revoluble spider without the intervention of cross-bars between the head-blocks and spider-arms.

Like letters of reference denote corresponding parts in all the figures, referring to which—

A designates the center pieces for the base B of the chair, which base consists of the series of radial legs *a*, (four or five in number,) the center piece A, and the bolts E, which unite the legs and center piece together. This center piece A is cast in two parts A¹ A². (Shown by Figs. 4 and 5, respectively.) As shown, the main part or body A¹ of the center piece is square or of other form an-

gular externally, according to the number of legs to be used as a part of the base, while the vertical central part of the body A' is cored out or otherwise manipulated to produce the central socket a' , which is cylindrical in form, and in which socket is snugly fitted the steel spindle or pivot on the revoluble spider presently described.

At the angles or corners of the square or polygonal body are produced the vertical longitudinal ribs b b , which are spaced to form the vertical recesses or grooves b' , and the lower ends of these ribs b are prolonged or extended below the body A' to form the lugs b^2 b^2 .

At the upper end of the cast metal body A' are formed integral radial flanges c c , which project over the grooved or recessed parts b' of the exposed faces of the body A' , and said upper extremity of the body is thickened or enlarged at d to enable the grooved seat d' to be produced therein, the inner edge of the seat d' being bounded by the vertical flange d^2 . The other member A^2 of the center A is in the form of a plate-casting with a central annular flange e and the series of radial flanges e e , and this plate-casting A^2 is fitted against the lower end of the body A' , the plate-casting A^2 being adjusted so that the lugs b^2 , formed by prolonging the ribs b' , fit in the angles or corners produced by the radial flanges e' e' , whereby the two cast members A' A^2 of the center may be readily assembled together and be brought in proper relative position to each other very quickly and easily.

The inner ends of the legs a of the base are fitted between the flanges c e' of the two members A' A^2 and in the grooves or recesses b' in the polygonal body or member A' , and through openings in these legs and the flanges c e' are passed the securing-bolts E , which bolts are headed and nutted, as shown, to draw the plate member A' tightly up against the legs and the body or member A^2 to firmly bind the legs and center A together, and which bolts also provide for readily and easily tightening the legs a to the center piece when the legs become loose in the center owing to weight and strain on the chair when it is in use.

The spider F of my chair is cast in a single piece with a short vertical hub f and two series or pairs of radial arms f' f^2 . The arms f' project from one side of the short hub f , and the other pair of arms project from the other side of the hub f , and the arms f^2 on the front side of the hub are longer than the arms f' , which project from the rear side of the hub, in order that the weight or gravity of the load on the chair seat or body may be properly brought over the center of the chair-base to avoid tilting. The short vertical hub f of the spider has an inwardly-extending flange g , pierced by a vertical opening, which flange g forms a seat for the head of the pivot-stem or spindle G . This spindle, preferably of steel, is passed through the opening in the

flange of the hub, and its upper end is swaged or riveted down within or below the exposed upper end of the hub and upon the seat or flange g therein, in order to rigidly and firmly unite the spindle to the hub in a secure, simple, and inexpensive way. The spindle is of smooth cylindrical form for a portion of its length, and it depends a suitable distance below the hub of the spider, to which it is securely united.

The lower extremity of the spindle is reduced in diameter to produce the prolonged tenon h , which is externally screw-threaded, and this threaded tenon h is of such length as to pass through a central opening in the lower head of the body A' , but it terminates within the annular flange e of the plate-casting A^2 , forming the lower part of the center A . To prevent the spider from being lifted off the chair-base B , I provide the check-nut H and the jam-nut H' , which are screwed on the protruding end of the threaded tenon h , and this protruding end of the tenon and the two nuts are all housed or contained within the annular flange e of the center A , so that said parts are concealed from view and are protected in a measure from dirt and dust. In the lower side of the hub f is produced a channel or groove i , which is concentric with the grooved seat in the upper extremity of the body or member A' of the center A , and in these grooved parts are fitted the ball-bearings I , upon which the hub and spider are free to rotate, and which ball-bearings reduce the friction and wear on the spider and base center to a minimum. If desired, however, the ball-bearings may be dispensed with and the hub f fitted to bear or ride directly upon the upper end of the body or member A' of the center A , as will be readily understood.

In my spider for swinging chair-bodies I extend or incline the arms f' f^2 of the spider in an upward direction, as shown by Figs. 1 and 2, so that the free extremities of the arms, f' f^2 lie in a horizontal plane above the pivot of the spider, and to the arms, long and short, f' f^2 , on one side of the chair is secured the head-block J , while to the other pair of long and short arms f' f^2 on the opposite side of the chair is secured the other head-block, J' , as shown by Fig. 9. These head-blocks lie parallel to each other on opposite sides of a plane which cuts through the spindle or stem G from front to back of the chair, and to these head-blocks are pivotally connected the upper ends of the hangers K K' . As is usual in chairs which employ a swinging body, two hangers are arranged at each side of the chair and the head-blocks, two of the hangers being at the front and the other two at the rear of the chair, and the pair of front hangers are connected together by the cross-bar l . The chair-body has its seat l furnished with the two pairs of pendent legs L L' , and the pendent legs on each side are braced by the horizontal bar l' and the vertical rods l'' , all secured together. The upper ends of the

hangers are pivotally fitted to the head-blocks J J', near the ends thereof, and the lower ends of said hangers are likewise pivotally fitted to pendent legs on the chair-body.

5 One of the serious objections to chairs of the class known as "swinging body" chairs, to which my improvements mainly relate, is that the chair is liable to tilt or fall backward when the body is moved toward the rear a certain distance beyond the center of gravity, and to overcome this objection I not only construct the spider with the upwardly-extended long and short arms, but also provide an arresting or brake device adapted to limit the backward movement of the swinging body when it reaches a certain point, and which brake or arresting device also affords a cushioning effect to the chair-body after it passes the limit of safety. In one embodiment of my arresting device I provide a plate-spring buffer M, (one or more,) which is fastened at one end to the under side of the head block or blocks J or J' by screws or rivets *m*, which buffer inclines or extends downward from the head block or blocks, so that the free ends of the buffers will lie in the paths of the front hangers K K' to be struck thereby when the chair-body swings back to the line of safety, so that the buffers arrest the further rearward movement of the hangers and the chair-body. Each spring-buffer has its free end furnished with a soft pad or lining N, which is fastened to the spring in any suitable way, and which pad (of felt or other suitable soft material) prevents the metallic plate-spring from scratching or wearing the finish or japanning from the hanger which is adapted to strike against the spring-buffer.

40 The center piece A and spindle G can be used in chair-platforms of the kind shown and described in my prior application of September 12, 1894, to which reference has been made. In platforms of this kind, as shown in Fig. 6, a spider O is used in connection with the spindle and center A. This spider has a short vertical hub similar to the hub *f*, which is adapted to ride upon the center A, and the long and short arms of the spider extend horizontally from the hub. The long and short arms of the spider O are perforated to permit bolts or screws *o* to pass there-through, and these bolts or screws operate to securely fasten the cross-bars O' O' to the spider. The ends of these cross-bars O' O' are curved downwardly, as shown, and the head-blocks P are fastened to the downturned ends of the cross-bars, said head-blocks being designed to sustain the rockers of an oscillating chair-body such as described in my prior application.

65 The spring-buffer, fastened to the upper side rail at the front thereof to prevent the chair-seat tilting back too far, does not touch the turned cross-rod which connects the metallic hangers, but the hanger itself strikes the spring-buffer, because the hanger is bent

to extend under the rail and the spring-buffer is thus disposed in the path of the hanger.

The operation and advantages of my improved construction will be readily understood from the foregoing description, taken in connection with the drawings.

One of the objections heretofore encountered in this style of swinging-body chairs using rocking hangers is that the hanger-irons have a tendency to pull out of the holes partially, which gives to the chair-body too much side motion. To prevent this objection, I have devised the construction shown by the detail view Fig. 8, in which the head-block J and the pendent legs L' on the body are shown in section, while the hanger is shown partly in section and partly in elevation. The hanger-iron is provided with trunnions *q q'*, which are fitted in recesses *rr*, produced in the block and leg, respectively. The fastening-screw R passes through the inner side of the block and screws into a threaded hole provided in the trunnion of the hanger-iron. (See Fig. 8.) The head of the bolt bears against a washer *s*, which is interposed between the block or leg and the bolt-head, and this washer prevents the bolt-head from sinking into the wood. This construction enables me to keep the hanger securely in place, avoiding side motion to the chair-body, and enables me to dispense with the front and back rails *k*, which connect the front and rear pairs of hangers together. In Fig. 2, however, I have shown the two hangers K K' at the front of the chair as connected by the rail *k*, which construction may be used when the hangers are connected in the usual way to the body and base of the chair.

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

1. The combination of a center piece A provided with a longitudinal passage which is contracted at its lower end to form an annular bearing-shoulder within the center piece, a bottom plate fastened against the lower end of the center piece and provided with a flange *e* on its lower exposed side, a spider, the solid spindle G riveted to the spider and having a reduced tenon *h* and an annular shoulder which rides upon the shoulder within the passage of the center piece, and the nut fitted to the threaded tenon within the flange of the bottom plate, substantially as and for the purposes described.

2. In a revolving and swinging chair, the combination with a base, of a revoluble spider rotatably mounted on said base and provided with the upwardly-curved short rear arms *f'* and the long front arms *f*², the parallel head-blocks J fastened directly to the free upper ends of the arms *f'*, *f*², a chair-body having the pendent legs L, L', arranged outside of the head-blocks, and the hangers K, K' pivotally attached to the chair-legs and to the head-blocks, substantially as described.

3. In a swinging chair, the combination

with a base, a spider carrying head-blocks,
and a body, of the pivoted hangers which sus-
pend the seat on said head-blocks, and the
yielding buffer N rigidly fastened to the head-
5 block and having its free end arranged in
the path of one of said hangers, substantially
as and for the purposes described.

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

VINCENT A. MENUEZ.

Witnesses:

H. H. BEERS,
C. E. RANSFORD.