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F. L. MORGAN.
CHAIR OR STOOL IRON.
(Application filed Sept. 25, 1895.)

(No Model.)

WITNESSES

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CHAIR OR STOOL IRON.

SPECIFICATION forming part of Letters Patent No. 627,516, dated June 27, 1899.

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To all whom it may concern:

Be it known that I, FREDERICK L. MORGAN, a citizen of the United States, residing at Port Washington, county of Ozaukee, State of Wisconsin, have invented a certain new and useful Improvement in Chair or Stool Irons; and I 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to new and useful improvements in the construction of supports for revolving chairs, stools, &c.; and it consists in the matters hereinafter described, and pointed out in the appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a vertical sectional view of one form of my improved device, said section being taken on line 1 1 of Fig. 3. Fig. 2 is a similar view taken on line 2 2 of Fig. 3. Fig. 3 is a transverse sectional view taken on line 3 3 of Fig. 1. Fig. 4 is a detail view of one of the parts. Fig. 5 is a view illustrating a modified form of the same. Fig. 6 is a sectional view illustrating a somewhat different form of my improvement. Fig. 7 is a vertical sectional view of the same, taken on line 7 7 of Fig. 6. Fig. 8 is a side elevation of still another form of my improvement. Fig. 9 is a vertical sectional view of the same, taken on line 9 9 of Fig. 8.

The object of my invention is to provide an improved supporting device or iron for revolving chairs, stools, &c., of such construction that the height of the chair or stool may be readily regulated, as may be desired, without the necessity of revolving the chair upon its central support, as is the case in the adjustment of chairs or stools provided with the ordinary screw-threaded spindle engaging with the hub or center piece of the chair-base.

A further object of my invention is to provide an improved chair or stool iron or support of such construction as to enable the chair or stool to be freely rotated upon its support without varying the vertical adjustment thereof.

Referring by letter to the drawings, A designates the hub or center of the chair-base, which is provided with a central bore *a* for

the reception of the rotatable support for the chair or stool.

B designates the spider, secured to the upper end of the supporting-spindle C and to which the chair-body or stool-seat is attached. The spindle C may be made either solid in form or tubular, if desired, and said spindle is devoid of screw-threads.

An exterior sleeve D is fitted to the outside of the spindle C and is of such exterior diameter as to fit within the central bore *a* of the hub A and has a rotatable engagement with the spindle C, as shown. In Figs. 1, 2, 3, 4, 5, 8, and 9 of the drawings I have illustrated the sleeve D as revolubly engaged with the lower end of the spindle C, which end is reduced in size, so as to form a central bearing *c* and an annular shoulder C'. In this form of construction the spindle C is of such exterior diameter as to rotatably engage within the bore *a* of the hub A. The said bore is provided with one or more vertically-extending passages or grooves E E and with notches or recesses E' E', communicating therewith, the dividing portions *e e* being provided with upwardly-extending ledges or shoulders *e' e'*, adjacent to the vertical passages or grooves E E. The sleeve or collar D is provided with one or more laterally-projecting pins or projections D' D', adapted to travel vertically in the passages or grooves E E and adapted for engagement with the notches or recesses E' E' by a partial rotation of the sleeve.

In the form illustrated in Figs. 1 to 4, inclusive, the reduced bearing portion *c* of the spindle C is made somewhat longer than the sleeve or collar D, so as to admit of a slight vertical motion of said bearing-spindle within said sleeve or collar. The lower end of the spindle is screw-threaded, as at *c'*, for engagement with a nut F, which when in position upon the spindle engages with a shoulder at the lower end of the bearing-spindle *c*. The nut F is conveniently secured in position by means of a locking-pin or cotter *f*, which prevents accidental unscrewing of the nut. The lower end of the sleeve is provided with a series of clutch-teeth D² D², as shown, for engagement with clutch-teeth upon said nut. It follows from this construction that when the weight of the chair or stool is on the spindle, the projections or pins D' D' upon

the sleeve being in engagement with certain of the notches or recesses $E' E'$, the spindle C will be pressed downward until the annular shoulder C' rests upon the upper end of the sleeve and the nut F being thereby pressed downward away from said sleeve, so as to carry the clutch-teeth $F' F'$ out of engagement with the clutch-teeth $D^2 D^2$ upon the sleeve. In this condition of the parts the weight of the chair or stool will be securely supported upon the sleeve or collar D by the engagement of the annular shoulder C' therewith, and the clutch being out of engagement the spindle C will be freely revoluble within the hub without in any way affecting the engagement of the sleeve D therewith.

In order to adjust the chair or stool up or down, it is only necessary for the user to grasp and slightly raise the same until the clutch members are brought into engagement, when by partially rotating the chair or stool in either direction the sleeve D will be caused to partially rotate with the spindle, and the projections $D' D'$ will thus be carried out of engagement with the notches or recesses $E' E'$ and into the annular grooves or passages $E E$. The chair or stool may now be raised or lowered to a desired position, when by a slight partial rotation of the same in the opposite direction the pins or projections $D' D'$ may be re-engaged with other ones of the notches or recesses $E' E'$, when upon releasing the chair or stool, the weight of the same being again brought to bear upon the spindle C , said spindle will be pressed downward and the nut F will be carried downward and away from the end of the sleeve, so as to again disengage the clutch and permit the chair and the spindle C to be again freely revoluble upon the upper end of the sleeve.

Fig. 5 illustrates a modified form of the sleeve D , in which a series of lateral projections or pins $D' D'$ are provided, the same being adapted to engage with a corresponding number of recesses or notches in an obvious manner.

In Figs. 8 and 9 I have shown a somewhat different form of construction, in which the clutch mechanism is omitted and the sleeve or collar is adapted to be adjusted by hand. In this construction the sleeve or collar G is provided with a laterally-projecting pin G' , conveniently provided with an operating knob or handle g . In this construction the vertical passage E extends through the side wall of the hub, and the notches $E' E'$ likewise extend through said wall, the projecting pin G' being arranged to project outward through said passage or one of the notches, as the case may be, so as to enable the knob or handle g to be grasped by the hand. In this construction the sleeve G may be held in position either by a nut or by a washer pinned onto the extremity of the spindle. In order to adjust a chair or stool provided with this form of my improvement, it is only necessary for the user to slightly raise the chair or stool,

so as to free the pin G' from the shoulder e' , when said pin may be moved out of the notch or recess E' into the vertical passage E and the chair or stool may be raised or lowered to a desired level. The pin G' is then pressed into engagement with the desired notch E' , the collar G turning freely upon the spindle, and the chair or stool is again ready for use and is freely revoluble without affecting its vertical adjustment, it being obvious that the shoulder e' will effectually prevent the sleeve from revolving and will retain the pin G' in engagement with the desired notch and the spindle C being firmly supported upon the sleeve and freely revoluble thereon.

In the particular construction shown in Figs. 6 and 7, however, I have provided the spindle C itself with a projecting pin H and have formed the vertical passage E in the sleeve I , which latter is made substantially of the same vertical length as the hub A and is freely revoluble therein, resting at its lower end upon an annular shoulder A' . In this construction the vertical passage E and the notches $E' E'$, communicating therewith and provided with the shoulders $e' e'$, are substantially of the same construction as shown in Figs. 1 and 2, with the exception that they are formed in the sleeve I instead of in the hub. The pin H is adapted for engagement with said notches and is adapted also to be moved vertically within the passage E . In order to vertically adjust the chair or stool provided with this form of my improvement, it is only necessary for the user to slightly elevate the chair or stool, as before described, to free the pin H from engagement with the shoulder e' , when by a slight partial rotation of the chair or stool said pin will be carried out of the notch E' into the passage E , when the chair is free to be adjusted vertically to the desired level. The pin H may be re-engaged with a desired notch E' by a slight partial rotation of the chair and the spindle in the opposite direction, as before described with respect to the other forms of my improvement.

When the weight of the chair or stool is upon the spindle, the pin H will obviously be held in the lower part of the notch E' and the shoulder e' will obviously prevent lateral motion of said pin, so that a rotation of the chair or stool will cause the sleeve I to rotate within the hub A .

As a further improvement in the construction of my device I may provide suitable projections $e^2 e^2$ along one side of the vertical passage E and opposite the notches $E' E'$, which projections serve to engage with the pin or pins $D' D'$ or H , as the case may be, and direct the same toward the notches, thereby facilitating the engagement of said pin or pins with said notches and rendering the securing of the device in its adjusted position more easy of accomplishment.

My improved device is well adapted for use upon various forms of chairs or stools and

renders the same capable of quick adjustment up or down, so as to regulate the height of the chair or stool seat from the floor, and while locked in its adjusted position effectually prevents any variation of the vertical adjustment of the chair or stool, while permitting the same to be freely rotated when desired. Furthermore, my improved device enables the stool or chair to be adjusted vertically without the necessity of rotating the same upon its support, so as to screw the spindle up or down, as is common in most forms of chair or stool irons.

I would have it understood that I do not desire to limit myself to the exact form or forms of construction shown in the drawings and herein described, as various other modifications might be made in details of construction without departure from my original invention, and that I would regard any device of this nature in which one part is provided with one or more vertical passages and with notches communicating therewith and another part is provided with one or more locking pins or projections for engagement with said notches as coming within the scope of my said original invention. For instance, the position of the parts might be inverted, a clutch member being formed upon the spider and a corresponding clutch member upon the spindle, the spider being normally revoluble upon the spindle. This arrangement of course would admit of precisely the same operation as that hereinbefore described and illustrated in the drawings.

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

1. A support for revolving chairs or stools comprising a hub, a spindle revoluble therein, a sleeve within said hub and upon said spindle, one of said parts being provided with a vertical passage having lateral notches, and another part with one or more rigid pins or projections adapted for adjustable engagement with said passage and notches and capable of a rotary adjustment with respect to the part having said slot and notches, substantially as described.

2. A support for revolving chairs or stools, comprising a hub provided with a vertical passage or channel and with notches communicating therewith, a spindle revoluble within said hub, and a sleeve within said hub and upon said spindle provided with one or more rigid lateral projections or pins adapted for adjustable engagement with said passage and

notches and capable of a rotary adjustment with respect to the part having said slot and notches, substantially as described.

3. A support for revolving chairs or stools, comprising a hub provided with a central bore and with one or more vertical passages communicating therewith, and with lateral notches or recesses communicating with said vertical passage or passages, a spindle revolubly fitted within said bore and provided at its lower end with a reduced bearing and with an annular shoulder, and a sleeve revolubly engaged with said reduced bearing, and provided with one or more lateral pins or projections adapted for adjustable engagement with said passage and notches, substantially as described.

4. A support for revolving chairs or stools, comprising a hub provided with a central bore and with one or more vertical passages communicating therewith, and with lateral notches or recesses communicating with said vertical passage or passages, a spindle revolubly fitted within said bore, and provided at its lower end with a reduced bearing and with an annular shoulder, a sleeve revolubly engaged with said reduced bearing, and provided with one or more lateral pins or projections adapted for adjustable engagement with said passage and notches, and suitable means for imparting partial rotation to said sleeve, substantially as described.

5. A support for revolving chairs or stools, comprising a hub having a central bore and provided with one or more vertical passages communicating with said bore, and with lateral notches communicating with said passage or passages, a spindle revoluble within said bore, and provided at its lower end with a reduced bearing, and with an annular shoulder, a sleeve revolubly and slidingly engaged with said reduced bearing, and provided with one or more lateral projections or pins for engagement with said vertical passage or passages and notches and provided upon its lower end with clutch-teeth, and a clutch member secured to the extremity of said spindle below said sleeve, and adapted to be brought into engagement with the clutch-teeth upon said sleeve by the elevation of said spindle, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

FREDERICK L. MORGAN.

Witnesses:

R. H. ENGLISH,
GEO. L. DOUGLAS.