No. 770,395. PATENTED SEPT. 20, 1904.

W. P. SENG.

ADJUSTMENT FOR MORRIS CHAIRS, &c.

APPLICATION FILED FEB. 25, 1901.

NO MODEL. 2 SHEETS—SHEET 1.

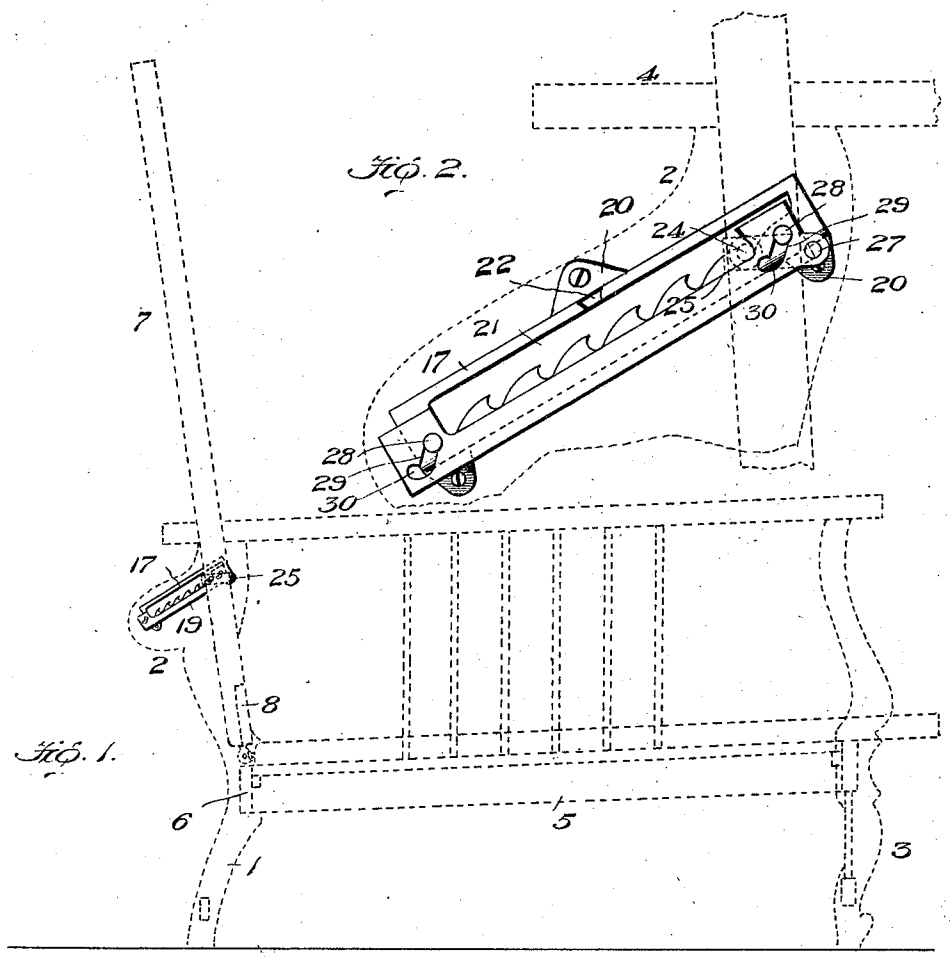


Fig. 1.

Fig. 2.



Fig. 11.

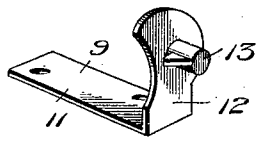


Fig. 3.

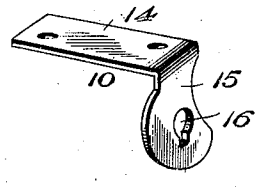


Fig. 4.

Witnesses

Inventor

Wendelin P. Seng

By W. S. Duvall.

Attorney

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 5.

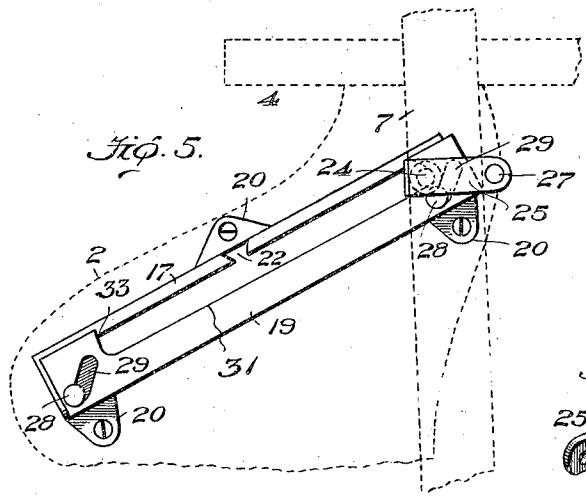


Fig. 9.

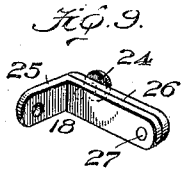


Fig. 6.

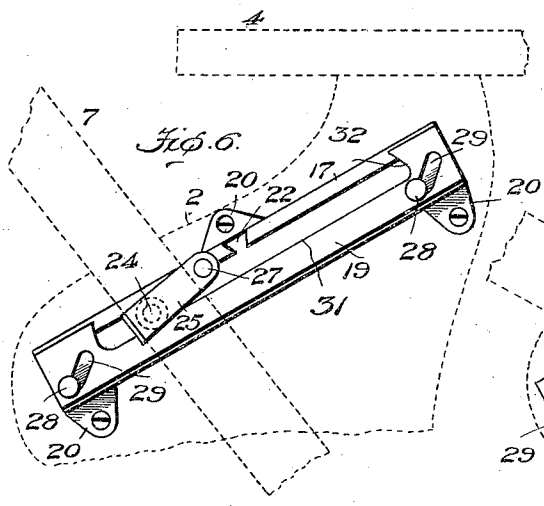


Fig. 10.

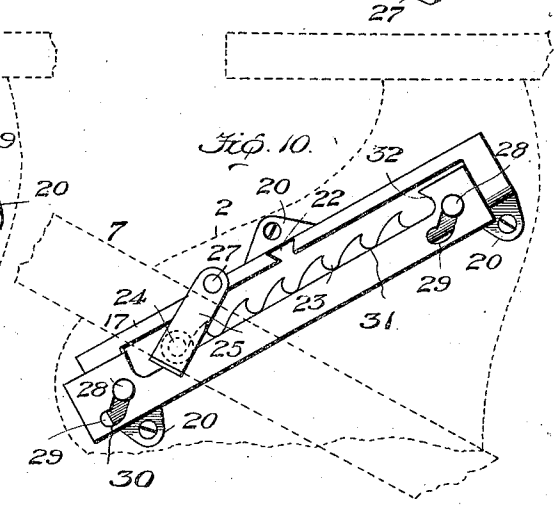


Fig. 7.

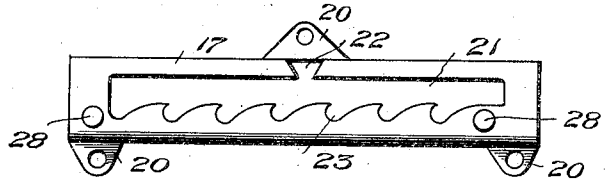
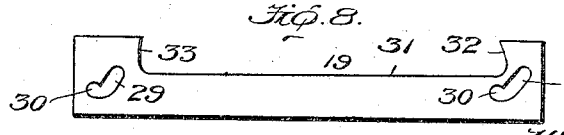


Fig. 8.



Inventor
Wendelin P. Seng.

Witnesses
Howe & Beall.

By W. S. Duvall
Attorney

No. 770,395. Patented September 20, 1904.

UNITED STATES PATENT OFFICE.

WENDELIN P. SENG, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE SENG COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

ADJUSTMENT FOR MORRIS CHAIRS, &c.

SPECIFICATION forming part of Letters Patent No. 770,395, dated September 20, 1904.

Application filed February 25, 1901. Serial No. 48,801. (No model.)

To all whom it may concern:

Be it known that I, WENDELIN P. SENG, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Adjustments for Morris Chairs, &c., of which the following is a specification.

This invention relates to improvements in adjustments for "Morris chairs," head-rests for couches, backs and arms of sofas, &c.

The objects in view are to provide a cheap, simple, efficient, and easily-operated device adapted to be employed as a means of adjustment between two hinged objects—as, for instance, a chair-frame and its back (of the Morris type)—and to be operated—that is, to be adjusted—by a manipulation by one of those objects—namely, in the present illustration the back of the chair.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the appended claims.

Referring to the drawings, Figure 1 shows in dotted lines a longitudinal sectional view of a Morris chair provided with my improved adjustment, the latter being shown in full lines and the back of the chair being shown in the position for use and also as when disconnected and laid flat upon the chair-seat between the arms, as when packed for shipment. Fig. 2 shows by dotted lines portions of the rear standard or leg, side rail, or arm and back standard, all in their normal positions, in connection with an adjustment in accordance with my invention, the back being shown as raised to its highest position for use, as in Fig. 1. Figs. 3 and 4 are perspective views of the two members composing a preferred form of hinge, the same being of the detachable style and which is employed to secure the lower end of the back to the seat. Fig. 5 is a view similar to Fig. 2, the back being elevated to its highest point. Fig. 6 is a similar view to Fig. 5, with the back lowered and showing the parts in their relative position prior to a depression of the liberating-plate. Fig. 7 is an elevation of the rack-plate in detail. Fig. 8 is a similar view of the liberating-plate. Fig. 9 is a detail in perspective of the gravity-latch and its support. Fig. 10 is a view similar to Figs. 2, 5, and 6, the parts being shown in the relative position they occupy after a depressing of the liberating-plate and an adjusting of the back in the lowest position. Fig. 11 is a plan view of the adjustment, the same being shown in detail.

Similar numerals of reference indicate similar parts in all the figures of the drawings.

In the drawings I have illustrated merely for example of one of the many applications of the invention the conventional Morris chair, with the possible exception that the back standards or legs 1 are somewhat wider near their upper ends, as indicated at 2. 3 indicates the front legs, 4 the side arms, 5 the side rails of the seat-frame, 6 the cross-rails, 7 the back side standards, and 8 the back cross-rail, all of which are of the usual well-known construction.

The back and seat may be hinged together by any desired style of hinges. I prefer, however, that the same be detachable, whereby when disconnected the back may be packed flat upon the seat, as indicated in Fig. 1, and the chair shipped in that condition. One very simple and well-known form of detachable hinge I herein illustrate, reference being had more particularly to Figs. 3 and 4. This hinge comprises two members or leaves 9 and 10, the former being the stationary and the latter the movable member. Two of such hinges are herein employed for connecting the back at points near its lower corners to the back rail 6 of the seat. The stationary member 9 is of L shape or angular, the lower portion or base serving as a securing-plate 11 and being perforated for the reception of screws and the vertical portion serving as a standard 12, from the face of which there projects at a right angle a key-shaped stud 13. The companion or movable member 10 is also angular and comprises a perforated base or securing plate 14 and a standard 15, the latter having formed therein a keyhole-shaped opening 16, the offset of said opening being substantially at a right angle to the web of the stud 13. The stationary members 9 are secured to the cross-

rail 6 of the seat-frame, and the movable member 10 is likewise secured to the cross-rail of the back. By lowering the back 7 to substantially a horizontal position the stud 13 and its web aline with the opening 16 and its offset, so that by a slight lateral movement and a subsequent raising of the back the two members 9 and 10 become securely yet removably hinged together. It will be observed that a ready disconnection of these parts may be effected by lowering the back to a substantially horizontal position and subsequently giving the same a slight lateral movement away from the members 9 of the hinge.

The back adjustments, one of which is located between each of the rear standards 1 and the back side standards 7, each comprise a rack-case 17, an engaging latch 18, and a releasing-plate 19. These parts may for the most part be cheaply manufactured by stamping the same from suitable sheet metal. The rack-case 17 is oblong in shape and provided with conveniently-arranged perforated attaching-lugs 20, whereby the case may be applied and in an inclined position secured to the inner face of the lateral extension 2 of the rear leg 1. The outer wall of the case is within its edges provided with a longitudinal slot 21, access to which by the latch 18 may be had through a flared vertical slot 22, formed in the upper edge of the case at about the longitudinal center thereof. The lower edge of the slot is formed with forwardly and upwardly disposed half-round teeth or notches 23, into any one of which may engage the headed stud 24 of the latch 18. (See Fig. 9.) Each latch—there being two, one for each rack-case employed—may comprise an angular securing-plate 25, perforated for screws, by which it is secured to the back rail 7 and a latch-arm 26, pivoted at its inner end to the front end of the angular securing-plate, as indicated at 27, and at its front end carrying the right-angularly-projecting headed stud 24. It will be obvious that when the back is caused to assume a certain angle the necks of the studs drop through the openings 22, the heads of the studs thus entering the rack-cases, in which position the necks of the studs will drop into engagement with convenient teeth or notches. It will thus be seen that by first disconnecting the latch from engagement with the teeth or notches the chair-back may be lowered to a desired point and also that said back is perfectly free at all times to swing forward and become locked without any such preliminary manipulation of the latches. Of course such disengagement may be secured in various ways and numerous devices may be employed for this purpose, but I prefer one very simple automatic means which I shall now describe.

From the face of each rack-case, near the lower corners thereof, there projects a pair of headed studs 28, each pair of which projects through correspondingly-located inclined slots 29, formed in the releasing-plate 19, one of which is applied to the face of each rack-case 17. These slots are inclined forwardly and upwardly, and each is provided at its lower end with a communicating rearwardly-disposed offset 30. Each of the releasing-plates is reduced between its ends upon its upper side, so that there is formed along its upper edge an unbroken smooth track 31, which terminates in abrupt stop-shoulders at the front and rear ends thereof, such shoulders being indicated as 32 and 33, respectively.

Assuming the chair to be in the packed position for shipment, as indicated in Fig. 1, to set the same up for use the back is first connected by the hinges to the cross-rail 6 in the manner heretofore detailed or otherwise if other styles of hinges are employed, after which the back is elevated partially, the heads of the studs of the latches riding up the upper inclined edges of the rack-cases 17 until they reach the flared openings 22, through which they drop by gravity into the openings 21 of the cases, the shanks of said studs readily engaging with corresponding teeth 23, thus locking the back against a retrograde or backward movement. It will be observed, however, that the back is free to move forward to more nearly a vertical position, the studs 24 loosely riding over the inclined teeth and immediately engaging therewith when the back is brought to rest. After bringing the back to its uppermost position for use, (see Fig. 5,) wherein the latches are in engagement with the uppermost teeth 23 of the rack-cases, a still further forward movement of the back causes the studs 24 of the latches to come against the forward stop-shoulders 32 of the liberating-plates 19, thus carrying the latter forward and upward, which movement upon their part is caused by the inclined slots 29 riding up the guide-studs 28. This movement upon the part of the liberating-plates 19 serves to elevate their intermediate track portions 31 above the teeth 23, and in so doing elevate the latch-studs 24 out of engagement with the said teeth. When the liberating-plates are thus elevated to their highest points, they move forward slightly, so that the guide-studs 28 enter the offsets 30, whereby the plates are held in their elevated positions and the latch-studs 24 permitted to ride uninterruptedly backward down the inclined tracks 31 during a lowering of the back. (See Figs. 5 and 6.) When the studs arrive at the lower ends of the tracks 31, they abut against the stop-shoulders 33, causing the plates to move rearwardly and downwardly, so that the tracks 31 are at points below the rack-teeth 23. (See Fig. 10.) The latch-studs will immediately drop into engagement with the lowermost teeth of the rack. The back may be then moved forward to any angle desired, the latch-studs engaging with

convenient teeth immediately upon the back being brought to rest.

The back adjustment, it will be observed, can be operated by simply manipulating the back, moving the same forward to its fullest extent prior to any attempt at lowering the same, and again moving it forward to gain any adjustment below the first or initial adjustment. It will also be obvious that the latches can be readily disconnected by moving the back to the position that will permit of the latches being elevated by hand or otherwise through the openings 22 in the rack-case. The entire adjusting mechanism is out of sight when the usual upholstering or cushions are in position upon the seat and back, so that as a whole the appearance of the chair is greatly improved and its consequent salability increased.

As before indicated, the herein-described adjustment is illustrated in connection with a type of chair known as the "Morris" chair, for which it is primarily intended, merely as an example of one of the many uses to which it may be put. It will be found equally efficient when used in connection with head-rests for couches, arms and backs of sofas, &c, and it is therefore to be understood that its application is in no wise limited to the applications shown or suggested. Accordingly by the use of the terms "chair," "back," "seat," and the like I mean to include thereby all equivalent elements—that is, elements in connection with which this adjustment is capable of use. As is well known in chairs of this class, the backs have usually been supported in their various adjustments by means of transverse rods removably arranged in notches or racks, though of late years patents have been granted for adjustments to be substituted therefor and which improved the looks of such chairs very materially and adapted the backs thereof to be more conveniently operated and adjusted. All such arrangements that have come within my knowledge have been inefficient in so far as strengthening the natural or inherent weakness of all chairs of this style is concerned—namely, the constant tendency of their opposite sides or frames to spread laterally, whereby the said adjustments are caused to become disconnected and, there remaining nothing to support the back, the latter falls and becomes useless; nor am I aware that any such patented devices ever had in view the overcoming of this defect. This inherent tendency upon the part of the frames or arms is greatly increased by a person carelessly sitting upon the chair-arm or throwing one or both legs over the same, which positions are not at all unusual. As regards my invention, it will be noticed that, as before mentioned, when the adjustments are in operative position the headed studs thereof lie within the rack-cases—that is to say, the heads are back of and therefore engage the lower toothed edges of the openings in the rack-cases—and no disconnection between the cases and latches can occur except by passing the headed studs of the latches upwardly through the openings 22, formed for this purpose in said cases. It will at once be obvious that the adjustable connections described will successfully resist any usual lateral disconnection and that they, in connection with the chair-back to which they are connected, will constitute a most efficient brace or tie connection between the two side frames or arms of the chair, whereby the strength and durability of the latter are greatly increased.

Having described my invention, what I claim is—

1. The combination, with a chair, comprising a hinged back, of racks secured to the opposite sides of the chair, liberating-plates mounted for movement upon said racks, guides for the same, and latches loosely connected with the back, adapted to engage the teeth of said racks and to operate said liberating-plates in their guides, when the back is brought to its highest position, to disengage the latches from the racks, and to operate said liberating-plates to permit of a reëngagement between the latches and racks.

2. The combination, in a chair, comprising a hinged back, of racks secured to the opposite sides of the chair, liberating-plates mounted for movement upon the racks and adapted to be elevated above and below the teeth of the racks, and provided with internal stop-shoulders, and intermediate the same with tracks, and latches pivotally connected to the back and adapted to engage the teeth of said racks and to abut against the stop-shoulders of and operate the liberating-plates.

3. The combination, in a chair, comprising a hinged back, of opposite cases secured to the sides thereof and provided with openings, the lower edges of which openings are toothed to form racks, and the upper edges of which are provided with passages leading to said openings, latches loosely pivoted on the back and provided with outwardly-disposed studs adapted to pass through the passages, enter the openings, and engage the said racks, liberating-plates applied to the faces of the cases and provided with inclined guide-slots having rearwardly-disposed offsets at their lower ends, and also provided with opposite internal stop-shoulders and an intermediate track, said shoulders being in the path of and adapted to be struck by the studs, and guide-studs projecting from the faces of the cases and into and through the guide-slots of the liberating-plates.

4. The combination, in a chair, comprising a hinged back, of opposite cases secured to the sides thereof and provided with openings, the lower edges of which are toothed to form racks, latches loosely pivoted on the back and adapted to enter the openings and engage the said racks, liberating-plates mounted

loosely on the cases and provided on their upper sides with tracks, and means for raising said plates above the teeth of the racks for the purpose of disengaging the latches from the racks.

5. The combination, in a chair, of a detachably-hinged back, cases secured to the chair-frame and each provided within its edges with an opening, the lower edge of which is toothed and the upper edge of which is provided with a transverse passage, latches loosely pivoted to said back and provided with outwardly-disposed studs adapted to enter the openings through the said passages and to engage the said racks, and means for preventing lateral separation between the racks and latches, said means being carried by said latches.

6. The combination, with a chair, comprising a swinging back, of opposite racks arranged on the frames of the chair, and latches carried by the chair-back and provided at their free ends with headed studs, the necks of the said studs engaging with the said racks and the heads of the studs engaging with the rear faces of the racks and therefore resisting lateral disconnection therewith.

7. The combination, with a chair, comprising a back, of detachable hinges between the frame and back, opposite sheet-metal cases secured to the opposite side frames of the chair, each of said frames being provided with a surrounding flange having an entrance-opening, the lower flange being toothed to form inclosed rack, and latches pivoted to the chair-back and at their free ends adapted to enter said entrance-openings and removably engage with said racks.

8. The combination, with a chair, comprising a hinged back, of adjustments between the chair-back and opposite side frames, and means, between the side frames and back for preventing a lateral separation thereof.

9. The combination, with a chair, comprising a back, of detachable hinges connecting the back and chair, adjustments between the sides of the chair-back and side frames of the chair, and means for permitting a vertical disengagement of said adjustments and for preventing a lateral disengagement thereof.

10. The combination with two relatively movable parts of a piece of furniture, of an adjusting connection comprising a toothed rack secured to one of said parts, a plate mounted for movement alongside said rack and adapted to be raised and lowered to cover and uncover the teeth thereof, and a locking device carried by the other part of said furniture and adapted to engage said teeth when uncovered and to ride over said plate when covering the teeth, and means operated by the movable part of said piece of furniture for actuating said plate.

11. The herein-described adjustment, the same comprising a rack, a plate mounted for movement thereon, terminating in shoulders, and adapted to operate so as to cover and uncover the teeth of the rack, and a device for engaging the teeth of the rack and adapted to abut against the shoulders of the said plate to operate the same as described and to have movable contact with said plate when the said teeth of the rack are covered thereby.

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

WENDELIN P. SENG.

Witnesses:
F. J. SENG,
G. J. BIEHL.