No. 714,177. Patented Nov. 25, 1902.

F. L. HARRIS.

ADJUSTING DEVICE FOR FURNITURE.

(Application filed Dec. 18, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 2.

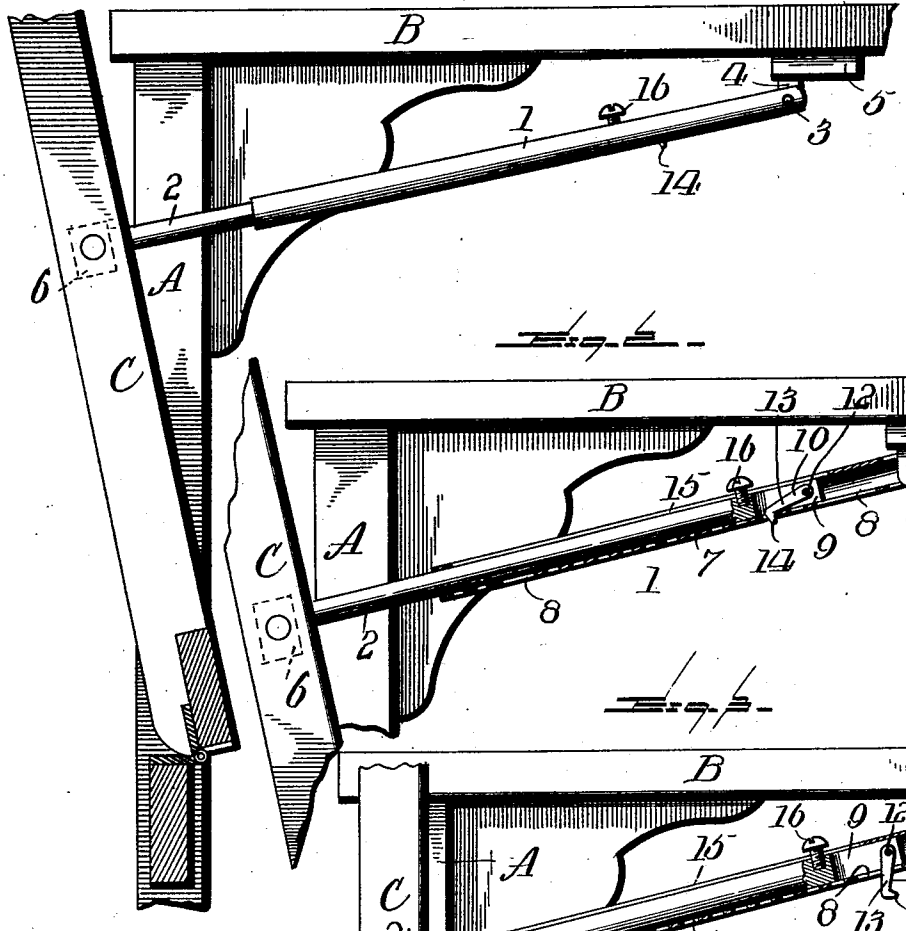


Fig. 4.

Fig. 5.

Fig. 5a.

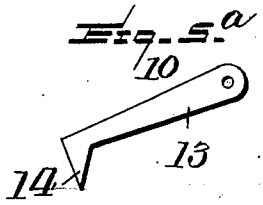
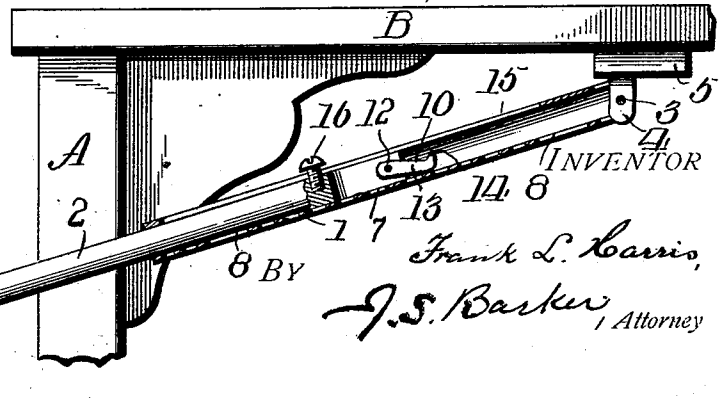


Fig. 6.



WITNESSES:

Wm. F. Doyle.

V. Simonton.

INVENTOR

Frank L. Harris,

BY J. S. Barker, Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig. 5.

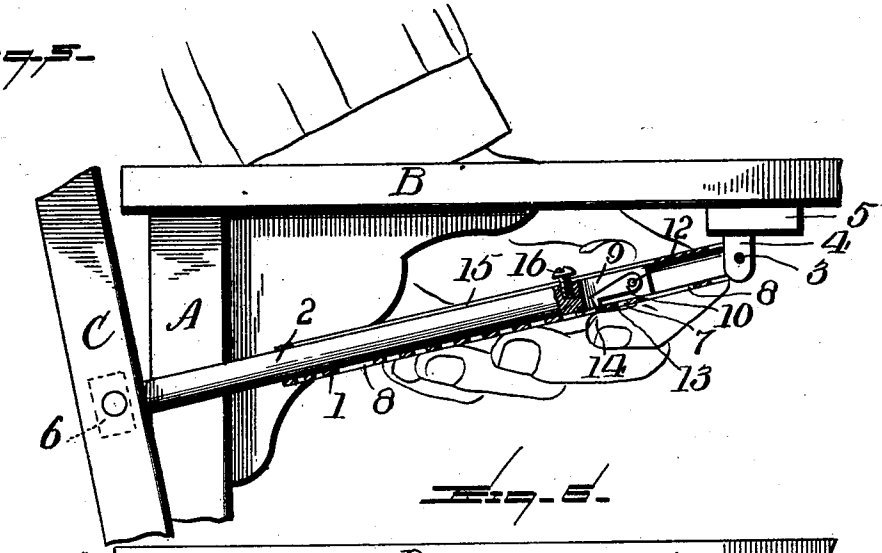


Fig. 6.

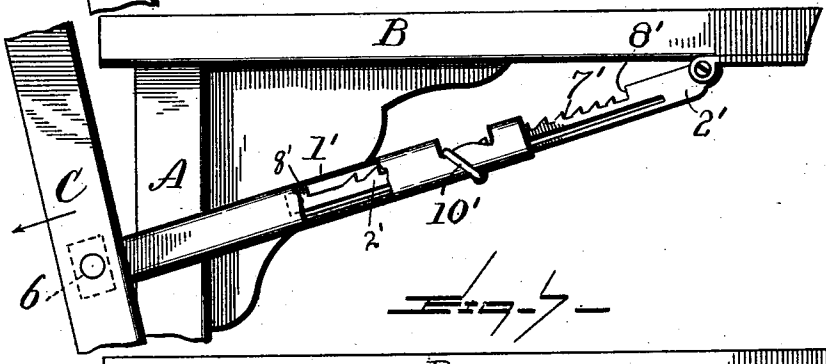


Fig. 7.

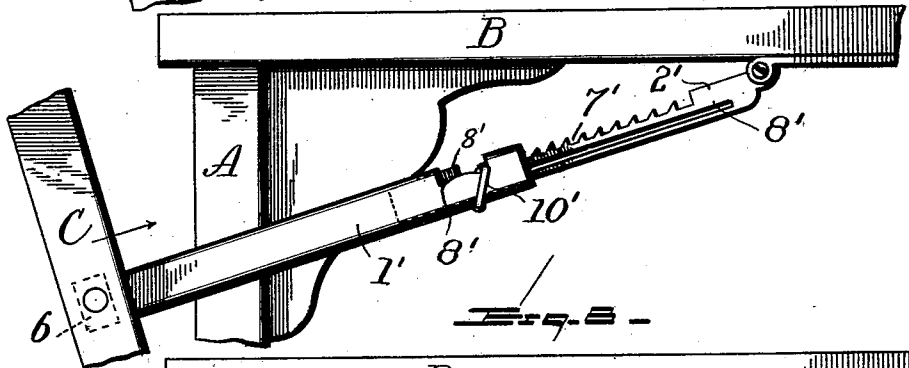
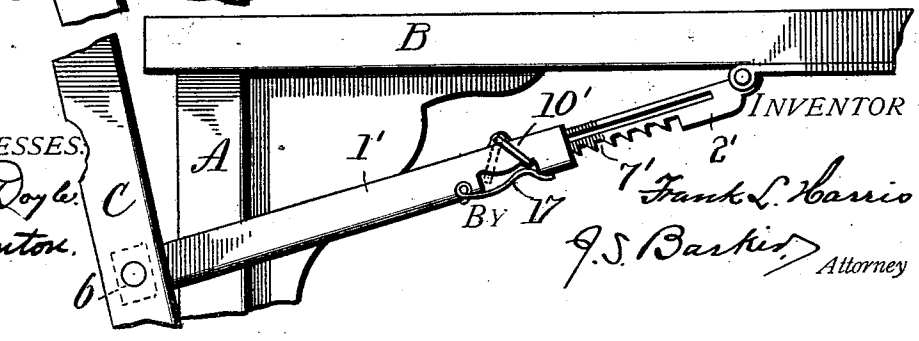


Fig. 8.



WITNESSES:
Wm. F. Doyle.
V. Simonton.

INVENTOR
Frank L. Harris
BY
J. S. Barker
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK L. HARRIS, OF MEDINA, NEW YORK, ASSIGNOR TO S. A. COOK & COMPANY, COPARTNERSHIP OF S. A. COOK, DON J. BIGELOW, GEORGE A. BOWEN, AND MILFORD W. CHILDS, OF MEDINA, NEW YORK.

ADJUSTING DEVICE FOR FURNITURE.

SPECIFICATION forming part of Letters Patent No. 714,177, dated November 25, 1902.

Application filed December 18, 1901. Serial No. 86,362. (No model.)

To all whom it may concern:

Be it known that I, FRANK L. HARRIS, a citizen of the United States, residing at Medina, in the county of Orleans and State of New York, have invented new and useful Improvements in Adjusting Devices for Furniture, of which the following is a specification.

My invention relates to improvements in reclining-chairs and other articles of furniture wherein two parts are arranged in movable relation to each other and are adapted to be held in different positions; and it has for its object to improve the construction of the means employed to effect the adjustments and retain the parts in the desired positions.

In the drawings I have illustrated my invention as applied to a Morris chair; but it is obvious that the same may be employed in connection with any form of chair, couch, or other article wherein ready adjustability of a movable element relative to a main or stationary element is a desideratum.

In the drawings, Figure 1 is a side elevation of a portion of a chair embodying one form of my invention. Fig. 2 is a longitudinal vertical section showing the holding means in the operative position taken during the forward movement of the chair-back. Fig. 3 is a similar view showing the holding means in the position assumed when the limit of forward movement is reached. Fig. 4 is a similar view showing the holding means in the inoperative position taken during the rearward movement of the chair-back; and Fig. 5 is a detail view, partly in section, illustrating the direct manual operation of the holding means of which my device is capable independently of its automatic action. Fig. 6 is a side elevation of another form of adjusting device embodying my invention, part of the outer telescopic section or member being broken away. Fig. 7 is a similar view illustrating parts in another position. Fig. 8 is a side view of a third form of my invention.

I will first confine the description of my invention to that form thereof illustrated in Figs. 1 to 5, as for some purposes that is the form which I prefer to use.

A represents a chair-frame having an arm B and provided with a swinging back C, arranged to be moved to various positions, these parts being of any preferred construction. Connecting the swinging back and a stationary part, preferably the arm B, is the adjusting and retaining device, comprising two interfitting alining members—one pivoted to each of the said movable and stationary parts, respectively—and a device arranged at times to lock said members against relative movement in one direction and at times to reverse its position and permit the free relative movement of the parts.

The preferred embodiment of my invention, which I have illustrated in the drawings, comprises as the interfitting members two telescopically-arranged metallic sections, 1 indicating the exterior tubular section, and 2 the interior section, which may be tubular or solid, as preferred. The exterior section 1 is preferably connected at its forward end by a transverse pivot 3 to a short stud 4, projecting downward from a plate 5, attached to the under side of the arm B, while the interior section 2 is preferably pivotally secured to the chair-back C, as by bending the end of said section so that it will pass transversely through the side frame of the back, the side frame being suitably reinforced, as with a bearing 6, to receive the bent end. The precise mode of attachment of these sections, however, is unimportant, the only requisites being that each be severally connected with its controlling chair element in such manner as to give it a certain range of vertical pivotal movement for the preservation of the alinement of the sections. The exterior section 2 is provided on its under surface with a plurality of perforations 7, arranged in a longitudinal line, said line terminating at each end with a longitudinally-elongated opening 8 for a purpose hereinafter described. The forward end of the interior section 2 is slotted, as at 9, for the reception of a pawl 10, secured to a transverse horizontal pivot 12, having bearings in the sides of the recessed section, near the end thereof. The pawl 10 is preferably of the shape shown, having a body portion 13 and a tooth 14. The pawl is gravity-operated, and when the parts are in the position shown in Fig. 2 the tooth rests in one of

the perforations 7 in the exterior tube 2, thereby locking the part 1, and consequently the chair-back, against rearward movement. As can be readily seen, however, when the parts are in the position above described the chair-back can be swung forward to a more upright position at will until the pawl reaches the elongated opening 8 at the forward end of the section 1, when it falls into the hanging position. (Shown in Fig. 3.) The direction of movement of the back can then be reversed, and the pawl will assume the position shown in Fig. 4, so that the sections 1 and 2 are freely movable relative to each other. When the back is moved to its extreme rearward limit, the pawl again reverses itself in the rearward slot 8 and resumes its operative position. It is desirable, however, that the parts should be so arranged that the pawl can be operated to lower the chair-back without putting the occupant to the trouble of raising the back to its utmost limit of forward movement to disengage the pawl and then lowering the back to its extreme rearward limit to bring the pawl again into operative position, and to this end I bevel the bearing-face of the pawl-tooth 14 slightly for a distance a little greater than the thickness of the tubular section 1. Thus should it be desired to lower the back the pawls may be lifted by pressing thereon with the fingers, as shown in Fig. 5, so that the beveled surface of the tooth comes in contact with the edge of the perforations, when rearward pressure on the back causes the pawl to slide out of the hole entirely and into the perforation next in rear thereof. A quick rearward movement imparted to the chair-back where the pawl is so lifted will cause the pawl to slide over several holes before it engages with a perforation, and so a rearward movement may be attained without the usual preliminary forward movement.

I prefer that a positive stop should be employed to limit the range of movement of the parts to that required for successful operation in the manner described, and to that end the tubular section 1 is preferably provided with a slot 15, corresponding in length with the desired range of movement, while the interior section 2 is provided with a set-screw 16, fitting in said slot.

I have in Figs. 6, 7, and 8 illustrated two other forms of my invention for the purpose of showing how differently parts of the adjusting device may be constructed without departing from the spirit and principal of the invention. In the form of invention illustrated in these views the shape of the interfitting parts is polygonal in cross-section. The outer or tubular section is designated 1′ and the interior section 2′. The latter section in the form of invention represented in Figs. 6 and 7 has a portion of its upper edge serrated or toothed, as indicated at 7′, and the pawl 10′, which engages with this toothed portion of the interfitting member 2′, is carried by the outer section 1′ and is in the form of a link or loop. The toothed member 2′ of the device is provided with stops or shoulders 8′ at the ends of the series of serrations or teeth 7′, which stops or shoulders operate to cause a reversal of the pawl 10′ as the sliding member 2′ reaches the limits of its longitudinal movements. The pawl is held in engagement with the toothed or serrated edge of the member 2′ in the construction shown in Figs. 6 and 7 by gravity.

The form of the invention shown in Fig. 8 differs from that shown in Figs. 6 and 7, principally in that the lower edge of the member 2′ is serrated instead of the upper edge and the pawl is held up in engagement therewith by a spring 17. The spring is arranged so as to hold the pawl either in the active position (represented in full lines) in engagement with the ratchet-teeth 7′ or in the inactive position (represented in dotted lines) and out of engagement with the teeth. The spring yields to allow the pawl to be moved from one position to the other as the shoulders or stops 8′ alternately engage therewith.

A spring similar to that represented at 17 might be combined with the form of invention shown in Figs. 6 and 7 in order to prevent any possible failure of the pawl to engage with the ratchet-teeth.

I do not in this application claim the specific forms of invention shown in Figs. 6, 7, and 8, and it is not, therefore, necessary to describe these forms more in detail.

From a comparison of the several forms of the invention it is apparent that the reversible pawl which is employed may be of various shapes and may be either spring-actuated or actuated by gravity; that the projections with which the pawl engages may be either in the form of serrations or teeth or perforations; that the pawl and the projections with which it engages may be formed upon either of the interfitting sections of the adjusting device, as preferred, and that the pawl may be arranged either above or below the part with which it engages.

I have stated that I prefer the form of invention shown in Figs. 1 to 5, inclusive, and this is partly for the reason that the adjusting devices there shown can be made out of tubes and round metal rods, so that it is not necessary to fabricate specially-shaped material from which to construct the interfitting parts.

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

1. In furniture, the combination with a stationary part and a movable part, of a connecting device comprising two telescopically-arranged sections connected with the movable and stationary parts respectively, means carried by one of the sections for locking the same against movement relative to the other section in one direction, and means for automatically releasing said locking means to permit free movement of the parts in such direction, substantially as set forth.

2. In furniture, the combination with a movable part and a stationary part, of a connecting device comprising two telescopically-interfitting sections, the exterior section being provided with a series of perforations, a pawl carried by the interior section arranged, when in operative position to engage one of the perforations, and means for automatically moving said pawl into inoperative position, substantially as set forth.

3. In furniture, the combination with the stationary part and a movable part, of an adjusting device between said parts comprising telescopically-interfitting sections, one of the sections being provided with an automatically-reversible pawl and the other section having a surface with which the pawl engages when moved into operative position, substantially as set forth.

4. In furniture, the combination with the stationary part and a movable part, of an adjusting device arranged between said parts and comprising telescopically-interfitting sections, one of the sections being provided with a pawl arranged to occupy either an active or an inactive position, and the other part having a face with which the pawl when in active position is arranged to engage, this section being also provided with stops or shoulders which alternately engage with the pawl and reverse its position when the telescopic members are moved to the limits of their relative movements, substantially as set forth.

5. In a chair, the combination with the frame, including an arm and a swinging back, of an adjusting device comprising a tubular section secured to the arm, said section being provided with a series of perforations, 7, and elongated openings, 8, a section secured to the back and telescoping into the tubular section, and a pawl carried by the interior section and arranged to traverse the line of perforations and the openings, 8, substantially as set forth.

6. In a chair, the combination with the frame, including an arm and a movable back, of an adjusting device comprising a tubular section secured to the arm, and provided with a series of perforations in its under side, a section secured to the back and telescoping into the tubular section, and a pawl carried by said interior section for engaging the perforations in the exterior section, the bearing-face of said pawl being slightly beveled, as and for the purposes described.

FRANK L. HARRIS.

Witnesses:
J. W. CHAPMAN,
ROSE M. HASENOHR.