F. RITTER.

HEAD REST FOR CHAIRS.

APPLICATION FILED FEB. 16, 1907.

974,188.

Patented Nov. 1, 1910.

3 SHEETS—SHEET 1.

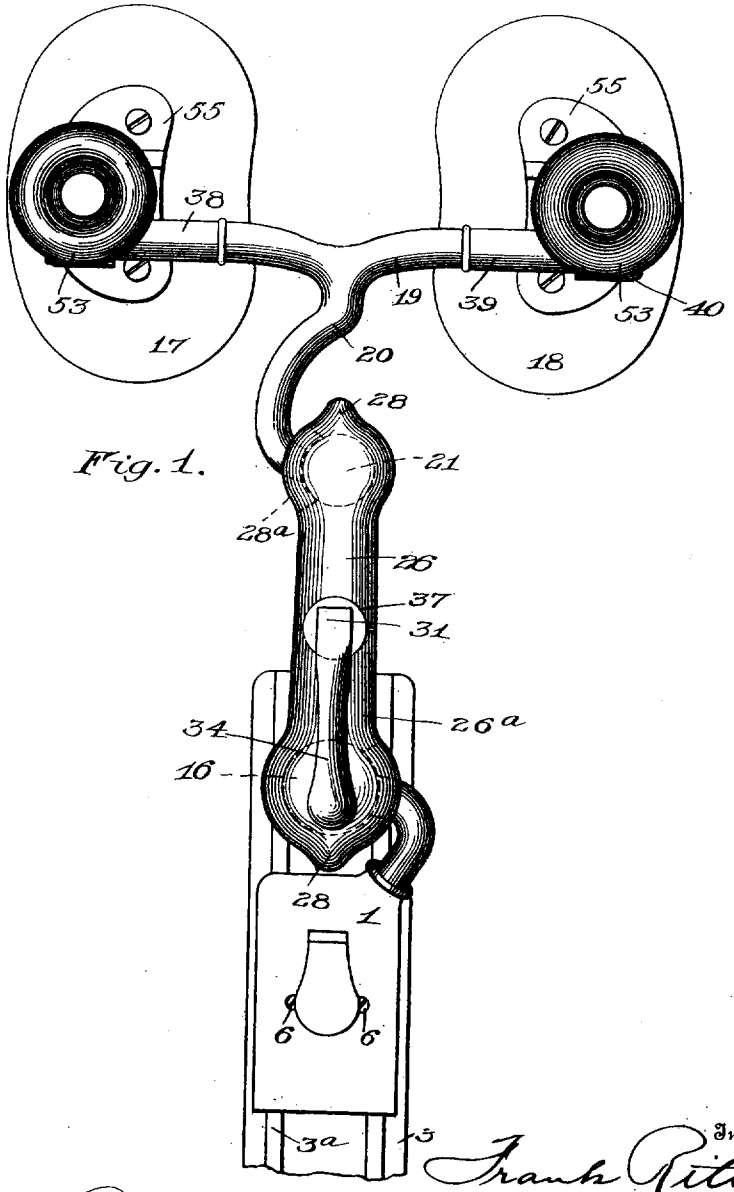


Fig. 1.

Witnesses

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3 SHEETS—SHEET 2.

Fig. 2.

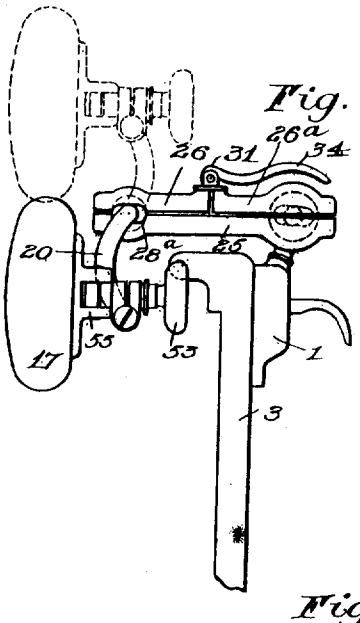



Fig. 3.

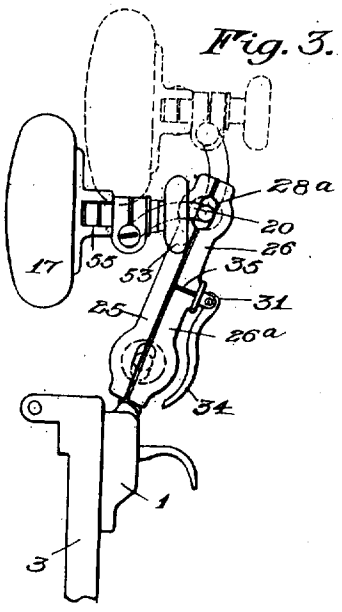



Fig. 4

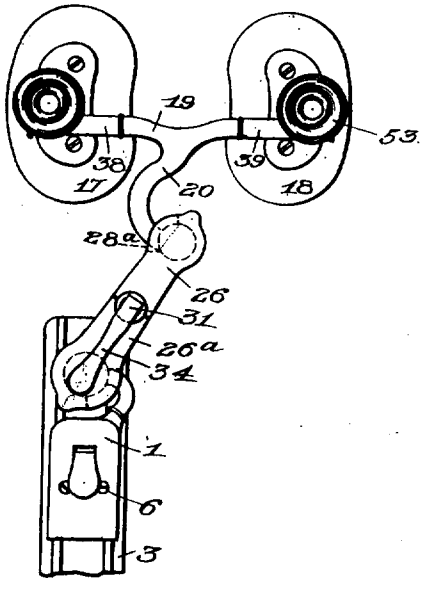
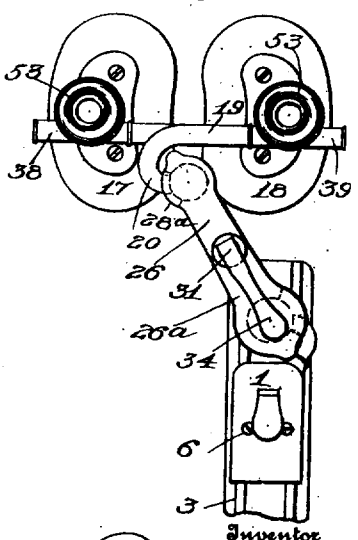



Fig. 5.

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3 SHEETS—SHEET 3.

Fig. 8.

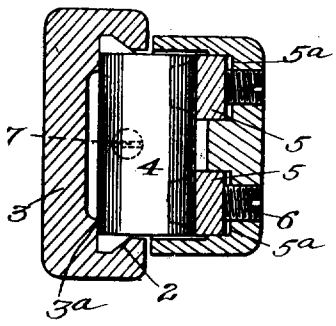



Fig. 6.

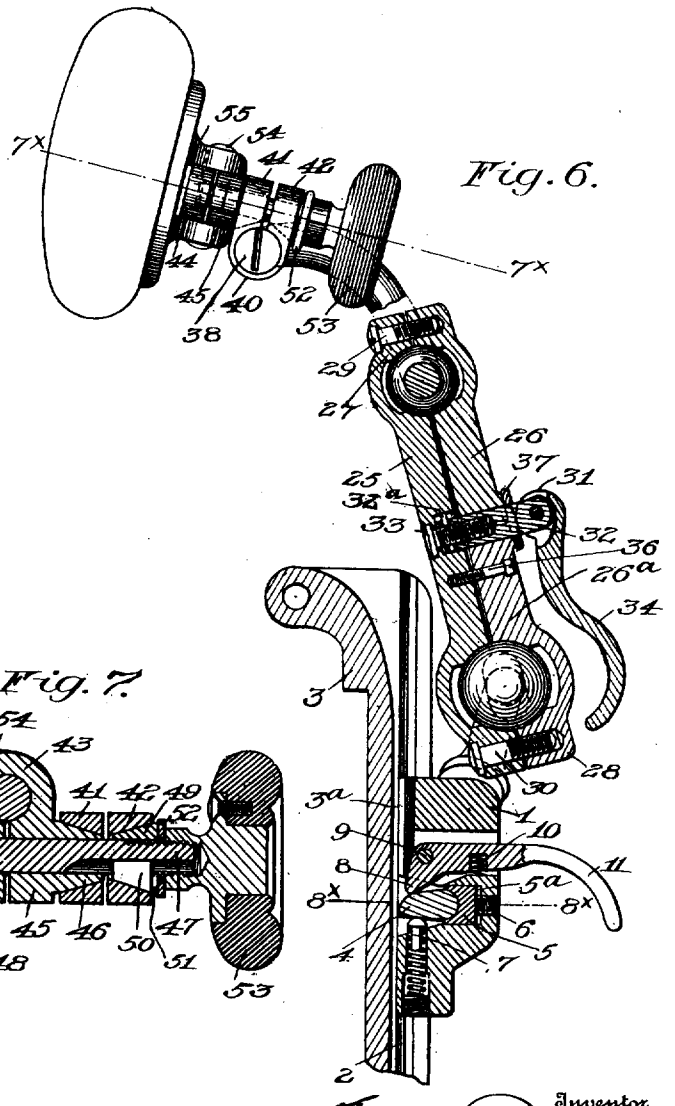
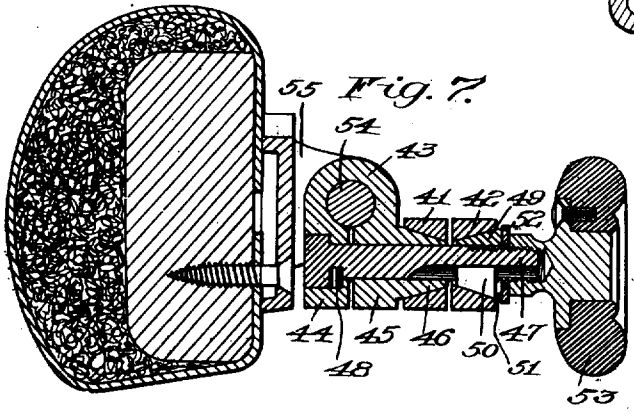



Fig. 7.

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# UNITED STATES PATENT OFFICE.

FRANK RITTER, OF ROCHESTER, NEW YORK.

## HEAD-REST FOR CHAIRS.

974,188. Specification of Letters Patent. Patented Nov. 1, 1910.

Application filed February 16, 1907. Serial No. 357,687.

*To all whom it may concern:*

Be it known that I, FRANK RITTER, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Head-Rests for Chairs; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of the specification, and to the reference-numerals marked thereon.

My present invention has for its object to provide an improved form of head rest adapted to be applied to dental, surgical or other classes of chairs for supporting the head of the patient or occupant of the chair in a desired position of adjustment, the parts being so arranged that they are capable of a wide range of movement to accommodate persons of different stature and for supporting the head in any position selected by the operator.

To these and other ends the invention consists in certain improvements and combination of parts, all as will be hereinafter more fully explained, the novel features being pointed out in the claims at the end of the specification.

In the drawings: Figure 1 is a rear elevation of a head rest constructed in accordance with my present invention. Figs. 2 and 3 are side elevations of the head rest, showing it in the forward and upright positions respectively, the full lines indicating the lower, and the dotted lines the upper position of the head rest, in the respective figures. Figs. 4 and 5 are rear elevations of the head rest, showing the latter offset laterally at either side of the chair. Fig. 6 represents a vertical section through the devices for holding the head rest at the desired elevation, and for clamping it in the desired angular position. Fig. 7 represents a section on the line $7^x$—$7^x$ of Fig. 6, showing the construction of the clamping devices for adjustably securing the head rest pads. Fig. 8 represents a section on the line $8^x$—$8^x$ of Fig. 6, showing the lock for securing the head rest support at the desired elevation relatively to the chair.

Similar reference numerals in the several figures indicate similar parts.

The present invention provides a head rest having a lower supporting section, movable vertically in ways on the chair, and an improved mechanism for retaining it at the desired elevation and angular adjustment. The upper section of the head rest is composed of one or more pads adapted to engage the person's head, which are secured by suitable clamping devices which permit their universal angular adjustment, the locking of each pad being accomplished by the operation of a single member. The supporting arm for the head-engaging pads is connected to the lower section by means of an intermediate or connecting section which permits a relatively forward and rearward adjustment of the upper section of the head rest, and also a relative lateral movement thereof, said section being provided with suitable devices for locking the head rest immovably in any given position.

In illustrating the present embodiment of my invention, I have shown the head rest supporting block 1 mounted in the usual manner for vertical adjustment in dovetail ways or grooves 2 provided in a portion of a chair back, indicated by 3, which is locked by a pawl 4 to secure the head rest at the desired elevation relatively to the chair. This pawl is composed of a plate provided with a segmental journal portion bearing against a pair of bearing blocks 5 in recesses $5^a$ in the support 1, and which are adjustable by means of set screws 6 to position the other edge of the plate or pawl 4 to coöperate with the wall $3^a$ of the chair back in such a position that the weight of the head rest will normally tend to increase the frictional engagement of the pawl. The latter is held against displacement in a longitudinal direction by the end walls of the recess, as shown in Fig. 8, and it is normally moved into operative position by a spring pressed plunger 7 acting in opposition to the nose 8 on the releasing handle which is rotated in one direction on its pivot 9 by a spring 10 and has an outwardly extending curved end 11 also forming a handle for adjusting the supporting block 1 when it is unlocked. The pawl or plate 4 is wedge shape in cross section and its narrow edge being engaged between plunger 7 and nose 8 serves to hold it in the recess in the support when the latter is removed from the ways. The intermediate or connecting portion mounted on the support 1 carries the upper section comprising the head rest pads 17 and 18 and the bar or carrier 19 on which they are mounted, as will be further described, said carrier having a supporting

arm 20 provided with a laterally extending end attached to a ball or clamping head 21 similar to the head 16.

The connecting member is provided with recesses in which the clamping heads 16 and 21 are seated and leading from each recess is an elongated aperture adapted to accommodate the laterally extending ends of the arm of the main support and the supporting arm of the upper section. Suitable clamping mechanism is also carried on the connecting member for securing the heads in adjusted position in their respective seats. By this arrangement of the parts it will be seen that the balls or clamping heads may be rotated in their seats in one plane and may be tilted in planes at right angles thereto within the limits defined by the ends of the apertures. In the preferred construction of the connecting member which I have illustrated, as one embodiment of this feature of my invention, I have shown it as composed of two side pieces 25 and 26 at the ends of which are the recesses forming the seats for the clamping heads and having at their extremities, at the other sides of the respective heads, small bosses or projections 27 and 28 adapted to receive bolts or screws 29 and 30. The latter preferably pass through apertures in the bosses on one side piece and their threaded ends engage the threads in the corresponding aperture in the bosses on the other side piece whereby the ends of the two side pieces may be adjusted relatively into engagement with the clamping heads. In making the connecting member of the two side pieces the apertures through which the supporting arms pass, may be conveniently formed by notching the adjacent edges of the side pieces, as indicated by $28^a$, in Figs. 2 and 3 and by dotted lines in other figures.

The device for locking the clamping head to the clamping member is located intermediate the ends thereof and comprises a cam 31 connected to one of the side pieces and coöperating with the other to compress their central portions, the elasticity of the members permitting their respective ends to act as levers, upon the screws 29 and 30 as fulcrums, enabling them to be drawn tightly into engagement with the clamping heads 16 and 21. An adjustment of the compression member or the cam 31 is permitted by pivotally mounting it on the end of a post 32 which extends through an aperture in the side piece 26 and is rigidly connected to the side piece 25 by a screw 33 which may be adjusted to vary the length of the post, the latter being held against rotation by a pin or key $32^a$. As the releasing of the clamping heads occurs simultaneously when the cam 31 is operated by an outward movement of its operating handle 34 which would permit the connecting member to topple over, unless sustained by the operator, I provide means for retaining sufficient friction between it and the head 16 which will enable the operator to readily adjust the member thereon and will hold it while he is adjusting the upper section and head rest pads. To this end I divide one of the side pieces, preferably the piece 26, at a central point, as indicated by 35, in Fig. 1, forming an independent lever section $26^a$. The opening movement of this section may be regulated by a set screw 36 to accomplish the object above described and as its operating end is adjacent the corresponding end of the other section of said side piece, it will be firmly clamped when the cam 31 is set in operative position, as shown in Fig. 1. Between the cam and the parts of the side piece 26 a wear plate or washer 37 is interposed.

The upper section of the head rest comprises the pads 17 and 18 and the bar or carrier supported on the arm 20, having the alined ends 38 and 39 on which the pads may be adjusted relatively toward and from each other. In order to permit the pads to be rotated on the ends of the carrier and to be tilted to move their upper or lower ends relatively and also to enable their proximate edges to be revolved toward or away from the carrier, I employ two split clamping heads for each pad, which are controlled by a single clamping mechanism, and as these parts are in duplicate, a description of one will suffice for both. The main clamping head 40 is provided with the ears 41 and 42 having conical seats, as shown in Figs. 6 and 7 and the supplemental clamping head 43 is formed with ears 44 and 45, the latter of which is provided with a conical boss 46 fitting the seat in ear 41 of the main clamping head. Both ears of the supplemental clamping head are perforated to receive the bolt 47 which is secured against rotation by a key or pin 48 and is provided with the outer threaded end extending through the ears of the main clamping head and forming a journal connection between the two heads. Surrounding the projecting end of the bolt is a conical collar 49 fitting the seat in the ear 42 which is permitted a longitudinal movement on the bolt, but is prevented from rotation thereon by a key 50 resting in the slot 51. The outer end of the collar projects beyond the face of the ear 42 and resting against it is a washer 52 which receives the thrust of the operating handle 53, or equivalent device, when it is operated to draw the bolt to tighten the two clamping heads. The supplemental clamping head carries the journal pin 54 mounted on the frame piece 55 attached to the rear of the pad. From this arrangement of the parts it will be seen that the single bolt 47 serves to lock the journal pin 54 to the supplemental clamping head, secure the latter to the main

clamping head and bind this head in adjusted position on the carrier. By providing the two conical seats in the ears 41 and 42 the area of the frictional bearing surfaces is increased without unduly enlarging these parts, thus enabling the two heads to be clamped together with a comparatively slight movement of the handle 53.

A head rest constructed in accordance with the present invention is capable of a wide range of adjustment in a direction vertically relatively of the chair back in order to accommodate itself to persons of different heights and is capable of considerable angular adjustment in a direction forwardly, rearwardly or laterally of the chair back and in either the forward or rear position, while the mounting for the pads enables them to be adjusted at different distances relatively to each other and to the cooperating parts of the upper section and in various angular relations, thereby providing a firm and comfortable rest for the head in any position that the latter may be placed.

The head rest is especially adapted for use on dental and surgical chairs, as its universal adjustments enable its parts to be so set as to support the patient's head in any position that may be necessary or desirable. As the angular relation of the upper and lower or supporting sections may be accomplished by the operation of a single part, it may be manipulated quickly by the operator. Moreover, by connecting the clamping heads to their respective arms by portions extending through recesses in the sides of the connecting member, a very wide range of relative angular adjustment of the head rest in a direction forwardly and rearwardly of the chair is permitted, so that a patient's head may be supported in elevated or depressed position, as well as various intermediate positions relatively to his body. The laterally extending supporting arms connected to the clamping heads enable the use of screws or other simple connections between the side pieces of the connecting member, which act as fulcrums at the outer sides of the respective heads which may be adjusted to regulate the pressure between the clamping members and the heads when these parts are locked.

I claim as my invention:

1. The combination with a support and a head rest each provided with a laterally projecting clamping end, of a connecting member composed of separable side pieces overlapping said ends, connections between the extremities of said parts forming fulcrum points and means for moving the side pieces relatively to each other on said fulcrum points into engagement with the clamping ends of the support and head rest.

2. The combination with a support and a head rest each provided with a laterally projecting clamping end, of a connecting member composed of separable side pieces the extremities thereof overlapping and projecting beyond said ends, connections between said extremities located at the outer sides of the clamping ends of the support and head rest and means for adjusting the side pieces of the connecting member relatively to each other to secure the clamping ends between them.

3. The combination with a support and a head rest each provided with a laterally projecting clamping end, of a connecting member composed of separable side pieces the extremities thereof overlapping and projecting beyond said ends, screws adjustably connecting said projecting extremities and a compression member engaging the side pieces at an intermediate point.

4. The combination with a member composed of separable side pieces secured together at their ends and a compression member arranged centrally thereof, of two clamping heads located between the opposite ends of the side pieces, a supporting arm on one of the heads projecting laterally from between the side pieces and an arm attached to and projecting laterally from the other head and forming a head rest support.

5. In a head rest, the combination with a member having recesses in its ends and provided with apertures opening at the sides of the recesses, of clamping heads arranged in the latter, a laterally extending arm on each head projecting outwardly through said apertures, one of said arms forming a support for the member and the other forming a support for a head rest and means for adjustably securing the heads in their respective recesses.

6. In a headrest, the combination with a member provided with recesses at its upper and lower ends from one side of each of which lead apertures, said apertures being elongated longitudinally of the member and opening outwardly at opposite sides thereof, and balls journaled in said recesses, of arms attached to the balls and projecting laterally therefrom through the apertures, one of said arms being curved upwardly, the other being curved downwardly, a head rest support mounted on the upwardly extending arm, a main support connected to the downwardly extending arm and means for clamping the balls in their respective recesses.

7. In a head rest, the combination with a supporting member having an upwardly projecting arm provided with a laterally extending end and a head rest pad carrier also comprising an arm provided with a lateral extension, of a connecting member pivotally engaging said lateral extensions of the carrier and support and means for clamping said parts together.

8. In a head rest, the combination with a support having an arm provided with a laterally extending end and a head rest pad carrier comprising an arm also provided with a laterally extending end and a ball arranged on the end of each of said arms, of a connecting member having recesses adapted to receive the balls and provided with elongated apertures leading therefrom and accommodating the ends of the arms and means for clamping the balls in their respective recesses.

9. The combination with two clamping heads, a connecting member comprising side pieces extending over opposite sides of the heads and connections between the extremities of the pieces located at the outer sides of said heads extending transversely of the heads in central alinement therewith, of a stationary post on one of the side pieces and a cam journaled thereon and coöperating with the other side piece, of a main support connected to one head and a head rest attached to the other head.

10. The combination with two clamping heads, a connecting member comprising side pieces extending over opposite sides of the heads and connected at their outer ends, one of said pieces being divided into two parts, of a cam rigidly connected to one of the side pieces and coöperating with the parts of the other piece to clamp the member to the two heads, means for limiting the movement of one of said parts when the cam is released, a main support connected to one of the clamping heads and head rest connected to the other clamping head.

11. The combination with a support and a head rest pad carrier, each comprising an arm having a laterally extending end and a ball mounted on each of said ends, of a connecting member composed of separable side pieces, each provided with concave recesses adapted to receive opposite sides of the balls and provided with notches in their adjacent edges adapted to accommodate the ends of the arms, connections between the ends of the side pieces and a clamping device for moving the latter relatively to each other.

12. In a head rest, the combination with a support, a main split clamping head mounted thereon having ears and a supplemental split clamping head extending laterally of the first head and also having ears, of a bolt passing through the ears of both heads and forming a journal support for the supplemental head, means for drawing the bolt to close both heads and a head rest pad having a journal carried by the supplemental head.

13. In a head rest, the combination with a support, a main split clamping head mounted thereon having ears provided with conical sockets, a supplemental split clamping head also having ears, one of which is provided with a conical projection fitting one of the ears of the main head, of a bolt passing through the latter and also coöperating with the ears of the other head, a conical collar keyed to the bolt and fitting the other ear of the main head, means operating to actuate the collar and bolt in opposite directions and a head rest pad having a journal carried by the supplemental head.

14. The combination with a chair, a guide thereon having a clamping surface and a head rest, of a head rest support mounted in the guide and provided with a recess, adjustable bearing blocks seated in the recess, a clamping member engaging therewith and coöperating with the clamping surface and a releasing device adapted to adjust the member into an inoperative position.

15. The combination with a chair, a guide thereon having a clamping surface and a head rest, of a head rest support mounted in the guide and provided with a recess, of a pivoted member adapted to coöperate with the clamping surface and the opposing wall of the recess to lock the support against movement in a downward direction in the guide and a releasing lever coöperating with the member to disengage it from the clamping surface by movement in a downward direction and having a projecting operating end also serving as a handle by means of which the support may be adjusted on the guide.

16. The combination with a chair, a guide thereon having a clamping surface and a head rest, of a head rest support mounted in the guide and provided with a recess, of a pivoted member having a narrow edge adapted to coöperate with the clamping surface and a broader end pivotally engaging the opposing wall of the recess, a spring actuated device normally engaging one side of the narrow edge of the member to move it into operative position and a releasing device coöperating with the opposite side of said edge, said actuating and releasing devices serving to hold the member in the recess.

17. In a clamping device, the combination with a way having a clamping surface, a block guided thereon and provided with a recess at its inner side, of a pawl plate located in the recess having an edge adapted to coöperate with the clamping surface, a bearing block seated in the opposing wall of the recess, means for adjusting it and a releasing device pivoted in the block having one end coöperating with the pawl and an operating end extending exteriorly of the block.

18. In a clamping device, the combination with a way having a clamping surface, a block guided thereon and provided with a recess at its inner side, of a pawl plate located in the recess having an edge adapted

to coöperate with the clamping surface, its longitudinal movement being limited by the end walls of the recess, bearing blocks situated in the bottom of the recess and engaging the pawl and means accessible from the exterior of the block for adjusting them relatively to the clamping surface, a spring normally moving the pawl into operative position and a releasing lever coöperating with the pawl.

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