G. L. KNIGHTS.

ADJUSTABLE SUPPORT.

APPLICATION FILED DEC. 26, 1917.

1,348,569. Patented Aug. 3, 1920.

Fig. 1.

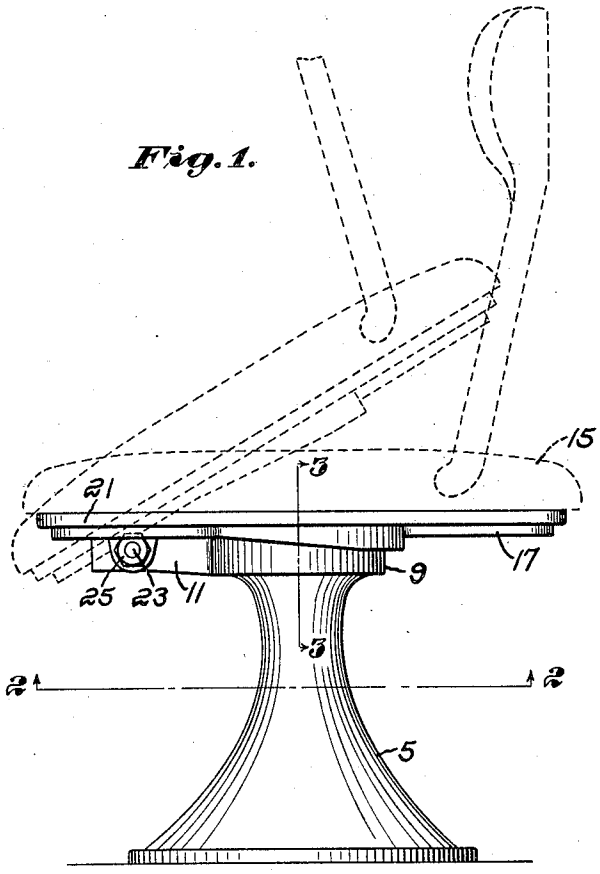


Fig. 2.

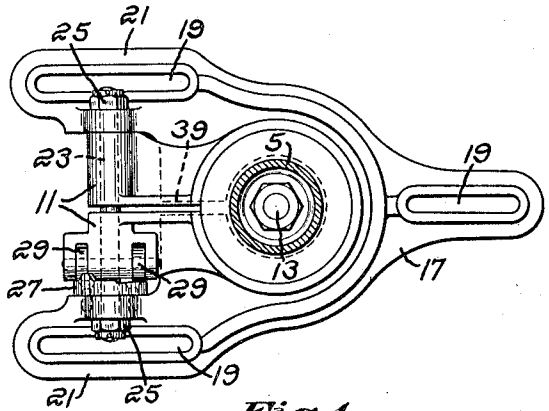


Fig. 3.

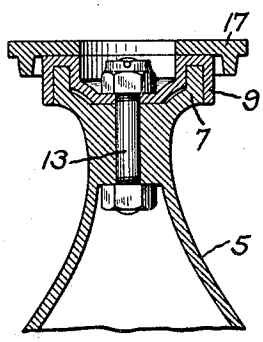
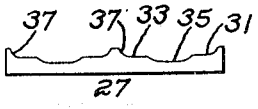


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ADJUSTABLE SUPPORT.

1,348,569. Specification of Letters Patent. Patented Aug. 3, 1920.

Application filed December 26, 1917. Serial No. 208,762.

To all whom it may concern:

Be it known that I, GEORGE L. KNIGHTS, a citizen of the United States, and resident of Amesbury, in the county of Essex and Commonwealth of Massachusetts, have invented an Improvement in Adjustable Supports, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to adjustable supports, and in particular to a device which will support an article in such a manner that its position in a plane may be changed upon proper manipulation but which normally will be securely held fixed. An example of such an article and the particular one which I have chosen for purposes of illustration and description herein as an example of my invention is the so-called "Pullman chair" for use in motor cars. These chairs are individual seats and it is of course desirable to change their position from time to time so that they may face in different directions, but they should not be freely movable since otherwise their position would be shifted by the motion of the car and they would not be comfortable seats.

My invention will best be understood by reference to the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a side elevation of a chair constructed in accordance with my invention, the seat and back being shown in dotted lines;

Figs. 2 and 3 are sections on the lines 2—2 and 3—3 of Fig. 1 respectively; and

Fig. 4 is a development in a plane of a cam which is used in the device.

Referring to Fig. 1, the chair therein shown comprises a suitable base 5, herein in the form of a pedestal adapted to be attached to the floor. In the present instance the upper portion 7 (Fig. 3) of this base is formed as a circular bearing over which fits a support 9 in the form of a split collar provided with arms 11 extended radially at either side of the split. The collar and top 7 interfit and form a swiveling socketed joint, the parts being held together by a king-bolt 13. I have herein referred to the collar 9 with its arms 11 as a support since it is the member which directly sustains the chair body or similar article.

In the present embodiment of the invention the chair seat 15 is mediately secured to the support 9 by means of a bottom member 17 fastened thereto. Preferably as shown in Fig. 2, the bottom member is provided with slots 19 to receive bolts so that the chair seat 15 may be shifted thereon, this adjustment providing a proper amount of knee room for the occupant of the chair. In the device illustrated the member 17 takes the form of a yoke having arms 21 embracing the arms 11 and hinged thereto by a pintle or rod 23 secured by nuts 25. The bottom plate 17, together with the chair body, may be swung about the horizontal axis provided by the pintle 23 in a manner indicated in dotted lines in Fig. 1. Herein this hinging movement is utilized for securing the support and the parts upheld thereby in fixed position or for adjusting them so that they may be swung about the king-bolt and the chair made to face in different directions. For this purpose means are provided which will tension the collar 9 about the coöperating portion of the pivot joint provided by the top 7 when the seat is closed down upon the base and which will permit this tension to relax when the seat is tipped upwardly in the manner shown in Fig. 1. Herein (Fig. 2) means are provided for pressing together the arms 11 which may, as in the example illustrated, take the form of a cam 27 secured to one of the arms 21 and adapted to coöperate with rolls 29 on the arms 11, the cam being concentric with the pintle rod 23.

In Fig. 4 a development of this cam in a plane is shown, and as there appears each half thereof has rise portions 31 and 33 separated by a depressed portion 35. When the parts are in the position shown in Fig. 2 with the bottom member or yoke 17 closed down on the support 9 in the full line position of Fig. 1, the rise 31 is in contact with the righthand roll 29 of Fig. 2 and the corresponding rise on the other half of the cam in contact with the lefthand roll, the two arms 11 are thrust toward each other and the collar 9 is constricted about the base 7 to clamp the same and thus effectually pre-

vent any pivoting movement of the joint. If it is desired to shift the position of the chair the seat may be tilted upwardly to the dotted line position in Fig. 1. The rolls then ride off the rises 31 and enter the depressed portions 35, the tension on the arms is removed, the collar is no longer clamped and the whole upper portion of the chair may be swung about the king-bolt to permit the chair to face in another direction. If the seat is again pressed down to a horizontal position, the rolls will again ride on the rises 31 and the seat will be firmly clamped in its new position.

In devices of this character it is frequently desired to have the seat fold up out of the way, and for this purpose the rises 33 are provided so that if the seat is swung beyond the dotted line position of Fig. 1 through a right-angle to a perpendicular position, the rises 33 will act to clamp the parts fixed in this relation. Stop shoulders 37 are provided which fit the sides of the rolls and prevent swinging the seat beyond the perpendicular.

Referring to Fig. 2 it will be noted that in the present embodiment of the invention the bottom member 17 is split at 39 to provide the arms 19. This permits the nuts 25 to be set up to exert any desired initial tension on the parts and so to regulate the action of the cam 27.

I have described my invention in considerable detail as it is applied to an adjustable seat which I have chosen as an illustrative embodiment thereof. It will be understood, however, that my improved support is applicable to many purposes and that the mechanical details illustrated are not essential.

What I do claim and desire to secure by Letters Patent is:

1. In a device of the class described, a base, a support swiveled thereon and comprising a split collar having arms, a bottom member hinged to said arms and having associated therewith a cam to press said arms and clamp the collar to the base.

2. In a device of the class described, a base, a support swiveled thereon and comprising a split collar, a bottom movably secured to said support and having provision to tension the collar when moved.

3. In a device of the class described, a base, a support pivoted thereon and comprising a split collar having arms, a bottom member comprising a yoke having arms, hinge means connecting the sets of arms having provision for pressing the same together and a cam interposed between an arm of the yoke and an arm of the collar and turning with one of the same whereby to vary the tension of the collar as the yoke is moved on its hinge.

4. In a device of the class described, a base and a support having a connection comprising male and female portions on said base and support respectively, one such portion being divided, a member shiftably secured on said support and having means operable on shifting thereof to tension said divided portion to grip the other portion.

5. In a device of the class described, a base and a support having a connection comprising male and female portions on said base and support respectively, one such portion being divided and a bottom member hinged to said support having means operable when the member is closed down on the support to press said divided portion into gripping relation to the other portion.

6. In a device of the class described, a base and a support comprising a split collar rotatably fitting the same and having arms, a rod connecting the arms, a cam on said rod adapted to press said arms to tension said collar into clamping relation to said base and a shiftable member carrying said cam whereby to operate the same.

In testimony whereof I have signed my name to this specification.

GEORGE L. KNIGHTS.