

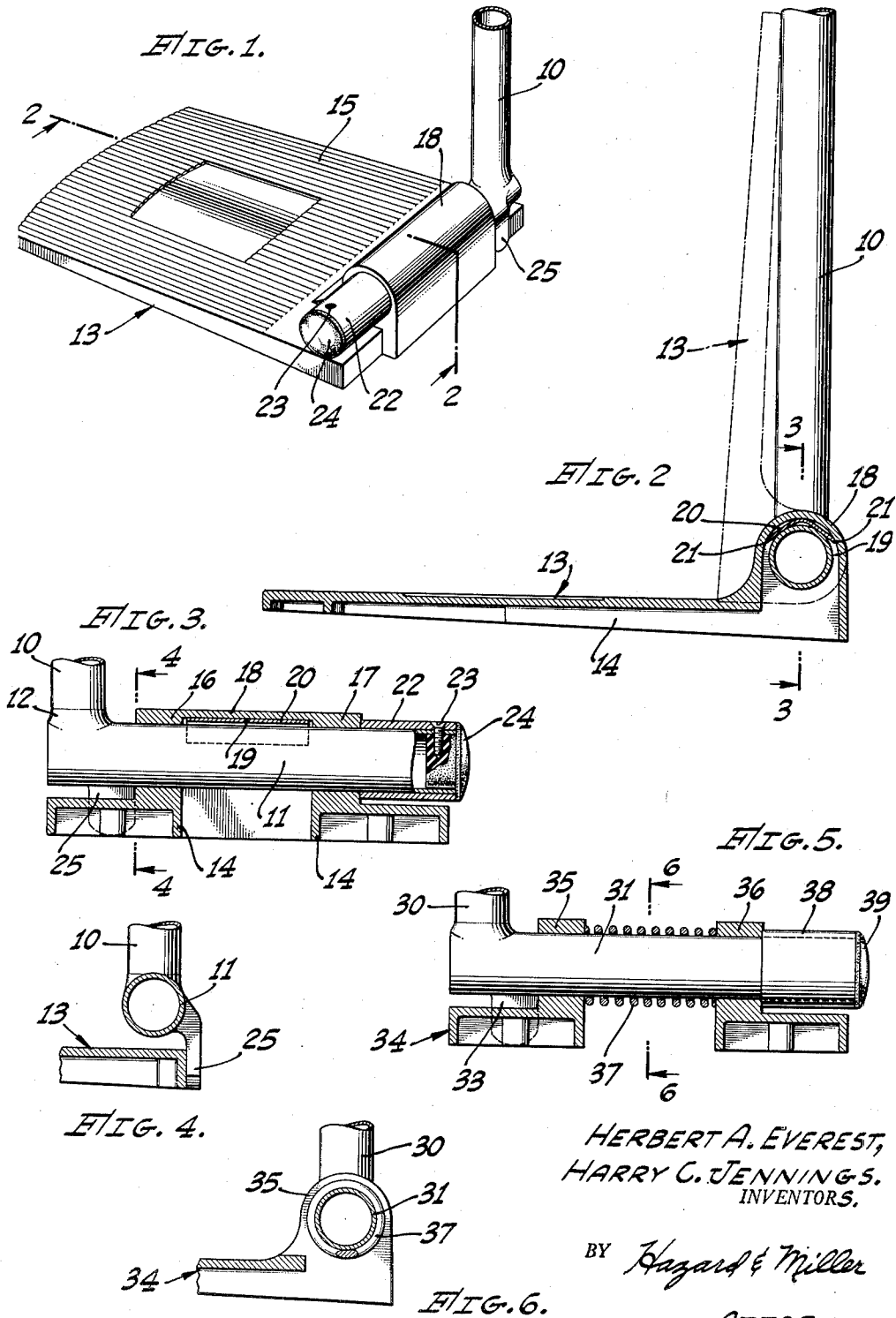
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ADJUSTABLE FOOTREST FOR WHEEL CHAIRS AND THE LIKE

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ADJUSTABLE FOOTREST FOR WHEEL CHAIRS AND THE LIKE

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1

This invention relates to an adjustable footrest for wheel chairs and the like.

In the conventional or usual wheel chair, footrests are mounted on the lower ends of the forward legs of the chair so as to be positioned forwardly thereof. Such footrests are usually mounted for swinging movement so that they may either assume horizontal positions extending towards each other across the front of the chair, or they may be swung upwardly to leave the front of the chair open or unobstructed when their horizontal positions are no longer desired. It is highly desirable to provide a footrest which when adjusted to any inoperative or non-used condition will remain in such adjusted position despite any vibration to which the footrest may be subjected. At the same time it is desirable to have the footrest so mounted that it may be easily shifted from inoperative to operative position, or vice versa.

An object of the present invention is to provide an improved footrest for wheel chairs and the like wherein the footrest has an integral knuckle by which it may be swingably mounted on an arm or pintle that extends forwardly from the lower end of each forward leg of a wheel chair and which has a novel and simple means for frictionally holding the footrest in any position to which it is adjusted so that it will remain in that position despite vibration until such time as it is forcibly displaced therefrom.

Another object of the invention is to provide a footrest having the above mentioned characteristics which is so designed that the parts thereof may be easily and economically manufactured and assembled together with the arm or pintle on the forward leg of a wheel chair.

With the foregoing and other objects in view, which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a perspective view of the lower portion of the forward leg of a wheel chair illustrating the footrest embodying the present invention as having been applied thereto, the footrest being shown in its horizontal or operative position;

Fig. 2 is a vertical section taken substantially upon the line 2—2 upon Fig. 1 and illustrating in dotted lines the position assumed by the footrest when undesired;

Fig. 3 is a sectional view taken substantially upon the line 3—3 upon Fig. 2 in the direction indicated;

2

Fig. 4 is a vertical section taken substantially upon the line 4—4 upon Fig. 3 in the direction indicated;

Fig. 5 is a view similar to Fig. 3 but illustrating an alternative form of construction; and

Fig. 6 is a vertical section taken substantially upon the line 6—6 upon Fig. 5 in the direction indicated.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, 10 indicates the lower portion of one of the forward legs of a wheel chair. Such leg is usually formed of metal tubing for purposes of strength and lightness in weight. An arm or pintle 11 extends forwardly from the lower end thereof and is likewise preferably formed of tubing. This arm is brazed or welded to the leg somewhat as indicated at 12. The footrest 13 is preferably formed of a casting which may have reinforcing ribs 14 formed on the under side thereof. The upper side of the casting is preferably ribbed as at 15 and the two footrests, one of which is shown, that are mounted on the forward legs of the wheel chair extend towards each other from their respective pintles so that when in horizontal or operative position they substantially bridge the space across the bottom of the forward legs.

In accordance with the present invention, knuckles 16 and 17 are cast integral with the body of the footrest and have aligned apertures therein through which the arm or pintle 11 extends so that the footrest may swing about the pintle from the operative position, shown in full lines in Fig. 2, to the inoperative position shown in dotted lines in this figure.

In the form of construction illustrated in Figs. 1 to 4, the knuckles 16 and 17 are connected by an outer covering or sheath 18 and the interior of this sheath is somewhat enlarged to provide a clearance space 19 around the pintle 11. An angular sheet metal spring 20 is positioned in this recess so that its sides are slightly flexed or bowed by the pintle and are consequently maintained in firm frictional engagement with the sides of the pintle 11. The edges 21 of this spring tend to bite against the internal walls of the sheath 18 so that the spring is held against displacement with relation to the footrest. On swinging to footrest from the horizontal position shown in Fig. 2 into the dotted line position, this spring merely slides on the exterior of the pintle 11 in a circumferential manner while retaining its firm frictional engagement therewith. Consequently if the footrest is swung into the

3

upright position it will be retained in that position despite vibration until forcibly returned to the horizontal or operative position. The footrest is retained on the pintle 11 by means of an outer sleeve 22 telescoped over the forward end of the pintle 11 and locked thereon by means of a screw 23 that may extend into the core 24 of a rubber bumper that closes the forward end of the pintle. Downward swinging movement of the footrest is limited by a stop 25 that is preferably formed integral with the pintle adjacent its juncture with the leg 10. This stop is engageable by the outer edge of the footrest and when engaged it limits downward swinging movement of the footrest to approximately a horizontal position.

In Figs. 5 and 6 an alternative form of construction is disclosed wherein 30 indicates the leg of the wheel chair and 31 the pintle that is attached thereto carrying its stop 33 that is engageable by the outer edge of the footrest. In this form of construction the footrest 34 has knuckles 35 and 36 cast integral therewith and through which the pintle 31 extends. In this form of construction the knuckles 35 and 36 are spaced from each other and have a helical compression spring 37 compressed between the knuckles. This spring has an internal diameter that is slightly in excess of the external diameter of the pintle. The compression spring 37 being highly compressed between the spaced knuckles 35 and 36 will tend to bow or buckle in one direction or another so that some of the convolutions of the spring will be urged by the buckling action into firm frictional engagement with the exterior of the pintle. The footrest may be retained on the pintle by an outer sleeve 38 similar to the sleeve 22 and the outer end of the pintle may be closed by rubber bumpers 39 similar to the bumpers 24.

In both of the above described constructions it will be appreciated that as the footrest has the knuckles by which it is swingably mounted cast integral therewith, the footrest can be easily and economically manufactured and when mounted on the pintle it presents a neat and attractive appearance in addition to being quite steady. The springs employed are so designed as to maintain a firm frictional engagement with the pintle at all times so as to frictionally hold the footrest in any adjusted position. At the same time the friction is not so great as to render adjustment of the footrest difficult.

Various changes may be made in the details of construction without departing from the spirit and scope of the invention as defined by the appended claims.

We claim:

1. A footrest for wheel chairs comprising an arm, a footrest having a pair of spaced knuckles integral therewith swingably mounted on the arm between limits, a sheath on the footrest between the knuckles integral with the footrest and knuckles and a spring between the sheath and the arm for frictionally holding the footrest in adjusted position relative to the arm, said spring comprising a length of sheet metal disposed between the knuckles and having integrally con-

4

nected angularly related sides each side being flexed about the arm and bearing at its side edges against the interior of the sheath and against the arm intermediate its side edges thereby frictionally holding the footrest in adjusted position relative to the arm.

2. A footrest for wheel chairs comprising an arm, a footrest mounted for swinging movement relatively thereto, a sheath on the footrest adjacent the arm, and a sheet metal spring within the sheath between the arm and the walls of the sheath, said spring being formed into a plurality of integrally connected angularly related sides arranged about the arm, each side engaging the interior of the sheath at its side edges and being flexed about and pressing against the arm intermediate its side edges to frictionally hold the footrest in adjusted position relative to the arm.

3. A friction hinge between a pintle and a member mounted for swinging movement relative thereto comprising a sheath on the member adjacent the pintle and a spring between the pintle and the sheath, said spring having a plurality of integrally connected angularly related sides each of which is flexed about the pintle and bears against the pintle intermediate its side edges and against the interior of the sheath at its side edges.

4. A footrest for wheel chairs comprising an arm, a footrest having a pair of spaced knuckles integral therewith rotatable on the arm, means limiting rotation of the footrest relative to the arm, an inverted U-shaped sheath integral with and bridging the space between the knuckles and extending only partially around the arm, a spring disposed between the knuckles and between the sheath and the arm, said spring comprising a section of resilient sheet metal bent to provide a plurality of integrally connected angularly related sides each of which is flexed and bears at its edges against the interior of the sheath and intermediate its edges against the arm to frictionally hold the footrest in adjusted position, and means on the arm engageable with a knuckle for holding the footrest against axial movement relative to the arm.

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