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TIGHTENER FOR FOLDING WHEEL CHAIR

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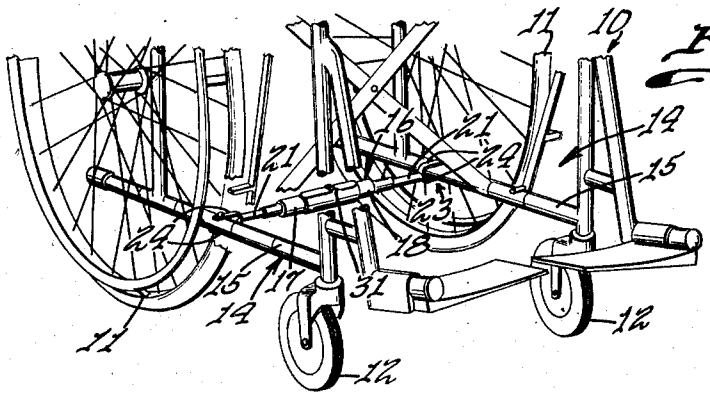


Fig. 1

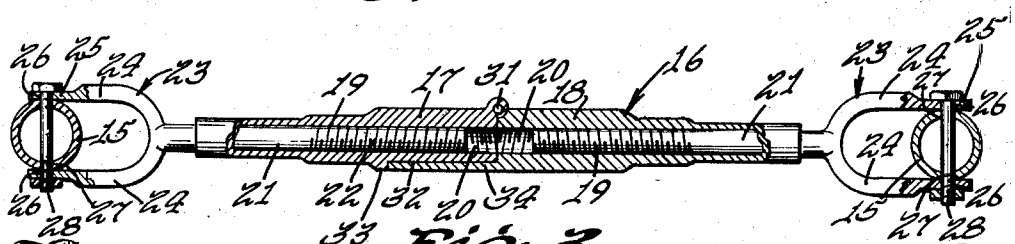


Fig. 2

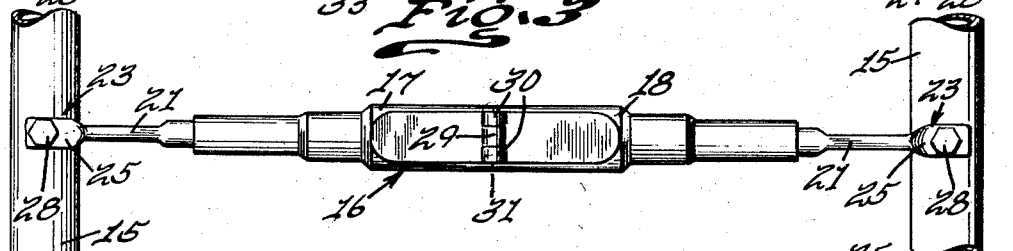


Fig. 3

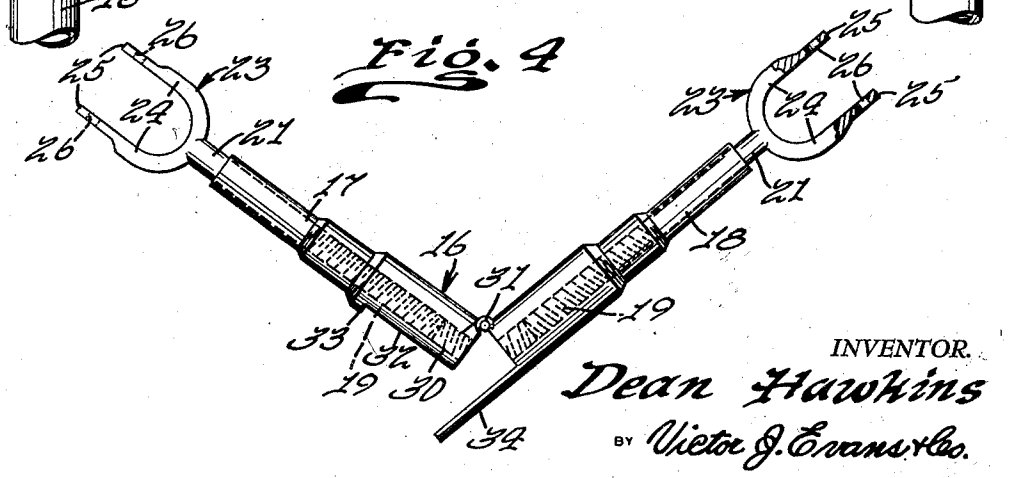


Fig. 4

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TIGHTENER FOR FOLDING WHEEL CHAIR

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1 Claim. (Cl. 155—30)

This invention relates to a wheelchair.

The object of the invention is to provide a tightener for a wheelchair whereby the seat of the chair can be made more comfortable for the user.

Another object of the invention is to provide a device for use with a collapsible wheelchair whereby the side members of the wheelchair will be maintained in their proper spaced apart relation, so that the seat of the wheelchair will be more comfortable to the user of the wheelchair.

A further object of the invention is to provide a tightener for a folding wheelchair which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same:

Figure 1 is a fragmentary perspective view of a wheelchair showing the tightener of the present invention mounted thereon.

Figure 2 is an elevational view of the tightener, with parts broken away and in section.

Figure 3 is a plan view illustrating the tightener connected to the rails of the wheelchair.

Figure 4 is a view illustrating the folding of the tightener, and with parts broken away and in section.

Referring in detail to the drawings, the numeral **10** designates a conventional wheelchair of the collapsible or foldable type, and the wheelchair **10** includes the usual traction wheels **11** and caster wheels **12**. The wheelchair **10** further includes a pair of side members **14** which are mounted for movement towards and away from each other, and each side member **14** may include a lower tubular rail **15**, Figure 1.

The present invention is directed to a tightener which is indicated generally by the numeral **16**, and the tightener **16** serves to maintain the side members **14** in their spaced apart relation so that the seat of the wheel chair will not accidentally pinch the occupant of the chair whereby the wheelchair can be used in greater comfort. The tightener **16** includes a pair of body members **17** and **18** of similar construction, and each of the body members is provided with a longitudinally extending bore **19**. Each bore **19** includes a threaded portion **20**, Figure 2.

There is further provided a pair of shafts **21**, and each of the shafts **21** projects into a corresponding bore **19**. Each shaft **21** is provided with a threaded portion **22** which threadedly engages the threaded portion **20** of the bore **19**.

Mounted on the outer end of each of the shafts **21** is a yoke or fork **23**, and each yoke **23** includes a pair of spaced apart fingers or legs **24**. Thus, each yoke **23** has a substantial U-shape. Each of the fingers **24** terminates in flat end portions **25**. The flat end portions **25** are provided with apertures **26** which register with diametrically opposed apertures **27** in the rails **15**, Figure 2. A suitable pin or bolt and nut assembly **28** extends through the registering apertures **26** and **27** for maintaining the yoke **23** connected to the rails **15**.

The body members **17** and **18** are hingedly connected together. Thus, the body member **17** may be provided with an apertured ear **29** which is positioned between a pair of apertured ears **30** which extend from the body member **18**, there being a pivot pin **31** interconnecting the ears **29** and **30** together. The body member **17** is provided with a recess **32** which defines a shoulder **33**, and a lip or stop member **34** extends from the body member **18** and the lip **34** is received in the recess **32**.

From the foregoing, it is apparent that there has been provided a tightening device which is especially suitable for use on wheelchairs of the collapsible or folding type. In use, the yokes **23** may be arranged as shown in the drawings so that the apertures **26** register with the apertures **27** in the rails **15**. Then, the bolts **28** can be extended through these registering apertures so as to connect the yokes to the rails of the side members. Thus, with the device as shown in Figure 1, the side members **14** will be maintained in their proper spaced apart relation so that the side members will not accidentally move together whereby the seat will be more comfortable to use by the occupant. Thus, the seats of the wheelchairs are of flexible material such as leather or canvas and when the side members **14** move together with the person in the wheelchair, the seat will be uncomfortable to sit in. With the present invention, it will be impossible for the side members **14** to move together or towards each other due to the provision of the tightener **16**. As shown in Figure 2, one of the shafts **21** has a left hand thread while the other shaft **21** has a right hand thread for engaging the body members **17** and **18**. The length of the tightener can be adjusted or varied as desired without removing the bolts **28**. Thus, by adjusting the shafts **21** so that they are the same length before the parts are secured together, the members can pivot as shown in Figure 4 about the pin **31**, as when the wheelchair is to be folded or collapsed.

The holes **27** may be drilled in the chair frame. As shown in Figure 2 there is a space between the rails **15** and the yokes **23** so that sufficient clearance is provided when the shafts are being pivoted. If desired the tightener may be made rigid instead of collapsible. The tightener of the present invention is adapted to be used for folding the wheelchairs which use or have leather seats or seats made of other soft material. The tightener could be attached to the wheelchair in other ways besides that shown in Figure 1, as for example the tightener may extend between upper portions instead of lower portions of the chair. Thus, with the tightener the seat will be more rigid and the chair will be more comfortable.

I claim:

A collapsible wheelchair comprising a pair of side members mounted for movement towards and away from each other, said side members each embodying lower tubular rails, means extending between said side members for retaining said side members in their open position away from each other, so that the seat of the wheelchair will not accidentally pinch the occupant of the chair whereby the wheelchair can be used in greater comfort, said means comprising first and second body members of similar construction each provided with a longitudinally extending bore, a section of each of said bores being threaded, a shaft extending into each of said bores and having an exteriorly threaded portion threadedly engaging the threaded portion of said bore, a U-shaped yoke mounted on the outer end of each of said shafts and straddling a rail of the side member, each of said yokes embodying a pair of spaced apart fingers each terminating in a flat end portion having an aperture, there being

apertures in the rails of said side members registering with the apertures in said fingers, securing elements extending through said registering apertures for maintaining the yoke connected to the rail, ears connected to said body members, a pin pivotally connecting the ears of said body members together, there being a recess in one of said body members defining a shoulder, and a lip extending from the other of said body members for engaging said recess and shoulder, there being a space between the rails and the yokes so that sufficient clearance is provided when the shafts are being pivoted.

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