

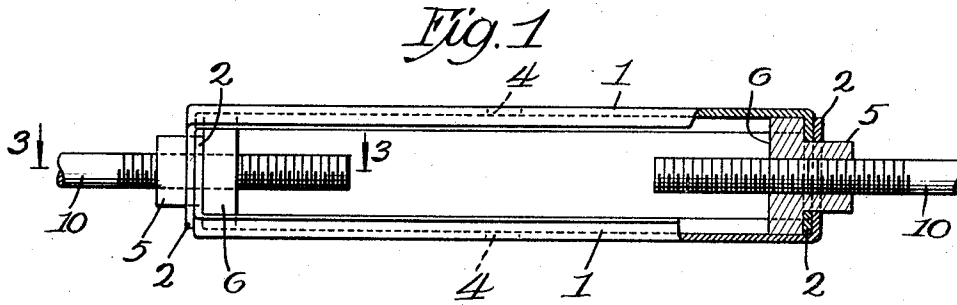
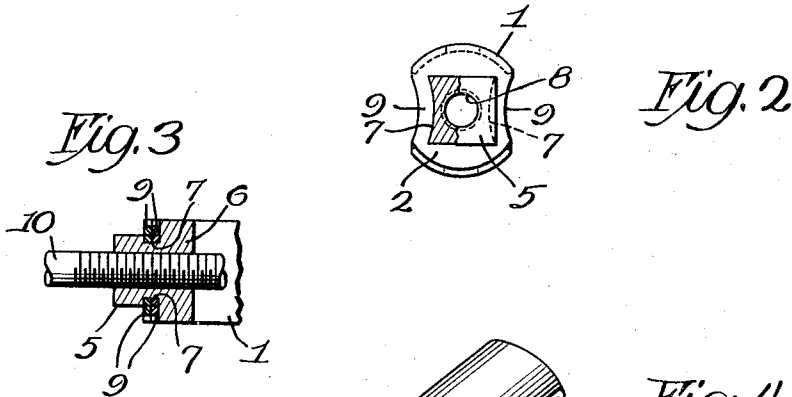
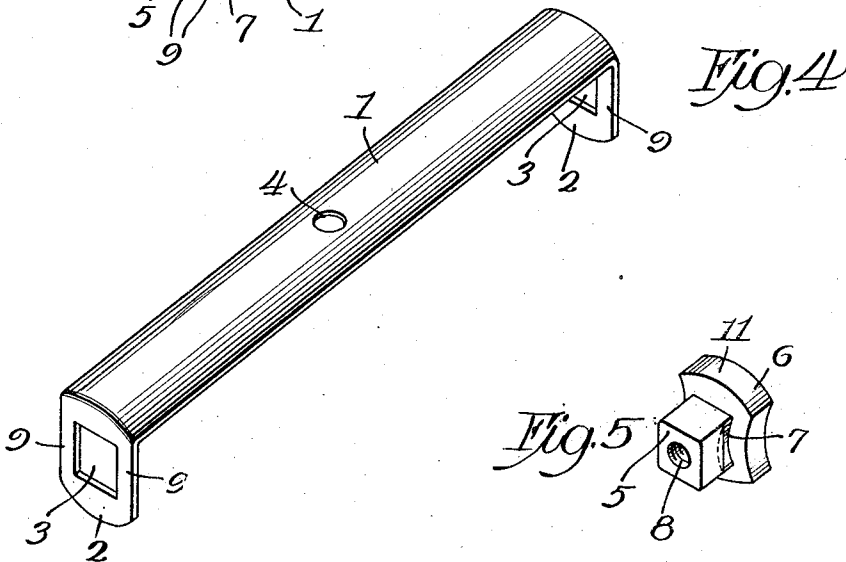
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TURNBUCKLE

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UNITED STATES PATENT OFFICE

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TURNBUCKLE

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This invention relates to turn buckles in general, and more particularly to those designed for use on various kinds of doors and for other purposes. A common form of cheap turn buckle comprises the handle or turn buckle proper, with a threaded nut portion at each end thereof, made of iron or steel, and designed for use in connection with a pair of threaded iron or steel rods. This is inexpensive, but the objection is, especially when the device is made of cast or malleable iron, that the threads rust and corrode and sometimes make it difficult if not impossible to turn the hand buckle when it is necessary or desirable. On the other hand, when the turn buckle proper is made entirely of brass or bronze, then the cost of production is increased and the article becomes too expensive for use for some purposes.

Generally stated, therefore, the object of the invention is to provide a novel and improved construction whereby the advantages of cheap or inexpensive construction are combined with freedom or immunity from rust or corrosion, thereby to provide an inexpensive form of turn buckle which will always be freely rotatable.

It is also an object to provide certain details and features of construction tending to increase the general efficiency and the desirability of a turn buckle of this particular character.

To these and other useful ends, the invention consists in matters hereinafter set forth and claimed and shown in the accompanying drawings in which—

Fig. 1 is a plan view of a turn buckle embodying the principles of the invention, showing one end portion of the turn buckle proper in longitudinal section.

Fig. 2 is an end view of said turn buckle, with a portion thereof shown in section.

Fig. 3 is a detail section on line 3—3 in Fig. 1.

Fig. 4 is a perspective view of one of the steel plates forming the handle or body of the turn buckle proper.

Fig. 5 is a perspective view of one of the brass or bronze nuts provided at the ends of the turn buckle proper.

As thus illustrated, the invention comprises a pair of steel plates 1 provided with right angle end portions 2 having rectangular openings 3 therein, when the plates are first formed. The steel plates are provided at their middles with the opening 4 to permit insertion of a rod or other instrument by which to turn the hand buckle.

At each end of the turn buckle proper there is a brass or bronze nut having an outer rectangular portion 5, and an inner larger portion 6, the latter having its ends curved to fit the cross sectional curvature of the steel plates 1, when the plates and nuts are assembled together. Each nut has on two sides thereof the recesses 7, in two sides of the portion 5, close to the adjacent surface of the portion 6, and the entire nut has a threaded bore 8 as shown.

When the steel plates 1 and the nuts are assembled together, the portions 5 are inserted outwardly through the rectangular openings 3 previously mentioned, and the side portions 9 of the portions 2 are then forced inward until they are firmly seated in the curved recesses 7 previously mentioned. This is shown more clearly in Figs. 2 and 3 of the drawings, from which it will be seen that the portions 9 when thus forced inward become curved as shown. In this way the brass or bronze nuts are anchored in the right angle end portions 2 of the steel plates, and the elements are thus solidly and permanently secured together.

In use, threaded rods 10 are held in alignment and engaged by the threaded bores 8 of the brass or bronze nuts, and the turn buckle proper can be rotated one way or the other to in effect either lengthen or shorten the connection between two points provided by the rods 10, in the well known manner. For example, these rods can be fastened to any kind of a door, in the ordinary way, to prevent sagging, and should the door sag the turn buckle can be rotated to tighten the connection and take up the sag. The steel plates 1 are comparatively inexpensive to manufacture, and while the brass or bronze nuts are of more expensive material, the quantity thereof is comparatively small, and

hence the use of brass or bronze to this extent does not materially increase the cost of production, and the result is that with this construction turn buckles can be produced almost if not substantially at the same cost at which ordinary turn buckles made entirely of steel or iron are produced. The advantage, however, of the construction shown and described, which is illustrative of the invention, is that the construction is not only comparatively inexpensive, but that it also has the advantage of providing threaded parts which will not rust or corrode, and which will always be freely rotatable when necessary, even with the rods 10 made of steel. Also, the construction is light and yet strong, as compared with a turn buckle proper composed of one integral piece of cast metal.

The plates 1, it will be seen, can be made of sheet steel pressed or bent into the desired shape. On the other hand, the nuts may be cast and finished in any desired manner. The right angle end portions of the steel plates overlap each other, at opposite ends of the turn buckle proper, and each portion 5 extends through the said double thickness. Thus the right angle end portions 9 of the plates are very strongly anchored in the nuts or threaded end portions of the turn buckle proper, and the latter will withstand considerable pull or tensile strain without breaking or giving way under the strain, as the pull or tensile strain of the plates 1 is straight from the corners 11 of the brass or bronze nuts.

It will be understood, of course, that by brass or bronze is meant any form of commercial brass or bronze ordinarily employed for articles of this kind, or any other metal of equivalent character and suitable for this purpose. It will also be understood that while it is stated that the plates 1 are made of sheet steel, they can also be made of any other metal of equivalent character, or which may be found suitable for the purpose.

Without disclaiming anything and without prejudice to any novelty disclosed, what I claim as my invention is:

1. A turn buckle constructed to combine the advantages of inexpensive construction with freedom or immunity from rusting or corrosion of the screw threads thereof, comprising means forming the handle or body of the turn buckle proper, formed of metal subject to rust, and separately formed one-piece rigid end portions each provided with a threaded bore and formed of a different material adapted to prevent or minimize rusting or corrosion of the screw threads, each end portion being non-removable and serving to hold said means in assembled relation, said handle or body comprising a pair of steel plates formed of sheet steel bent to provide right angle end portions engaging said screw threaded end portions, the lat-

ter having means to permanently hold said plates together, and to hold said nuts in fixed position against both axial and rotary displacement in said body.

2. A turn buckle constructed to combine the advantages of inexpensive construction with freedom or immunity from rusting or corrosion of the screw threads thereof, comprising means forming the handle or body of the turn buckle proper, formed of metal subject to rust, and separately formed one-piece rigid end portions each provided with a threaded bore and formed of a different material adapted to prevent or minimize rusting or corrosion of the screw threads, each end portion being non-removable and serving to hold said means in assembled relation, said handle or body comprising a pair of steel plates formed of sheet steel bent to provide right angle end portions engaging said screw threaded end portions, said end portions comprising nuts formed of relatively non-rusting composition metal, each nut having a reduced outer portion of polygonal formation, and the bent end portion of each steel plate having an opening of similar shape to receive said reduced portions, the latter having means to permanently hold said plates together, and to hold said nuts in fixed position against both axial and rotary displacement in said body.

3. A turn buckle constructed to combine the advantages of inexpensive construction with freedom or immunity from rusting or corrosion of the screw threads thereof, comprising means forming the handle or body of the turn buckle proper, formed of metal subject to rust, and separately formed one-piece rigid end portions each provided with a threaded bore and formed of a different material adapted to prevent or minimize rusting or corrosion of the screw threads, each end portion being non-removable and serving to hold said means in assembled relation, said handle or body comprising a pair of steel plates formed of sheet steel bent to provide right angle end portions engaging said screw threaded end portions, each plate being curved to give the handle a more or less cylindrical shape, said end portions comprising nuts formed of relatively non-rusting composition metal, each nut having a reduced outer portion of polygonal formation, and the bent end portion of each steel plate having an opening of similar shape to receive said reduced portions, each reduced portion having recesses into which portions of the steel plate end portions are forced to solidly and permanently anchor the said non-rusting composition nuts in the said bent end portions of the steel plates, and the inside portions of said nuts being curved to fit said plates.

4. A turn buckle comprising a pair of plates made of sheet metal bent into shape

to provide right angle end portions having openings therein, and threaded one-piece nut portions anchored in said openings, each one-piece nut having means to permanently hold said plates together in fixed relation, said means comprising lateral recesses in the nut portions into which portions of said plates are forced.

Specification signed this 13th day of Aug. 1928.

WILLIAM D. FERRIS.