

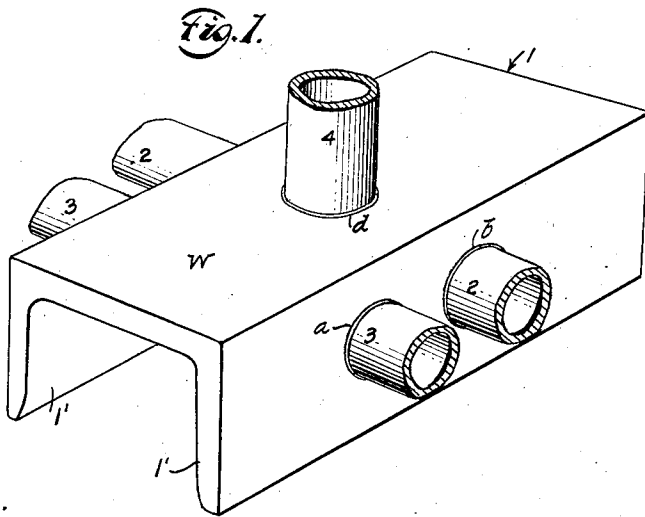
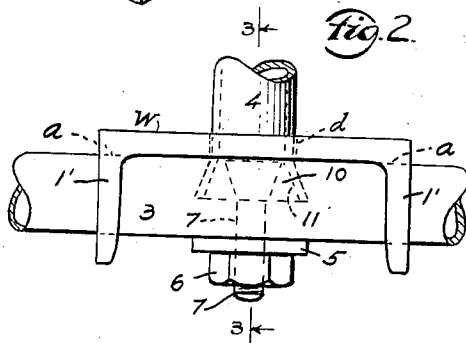
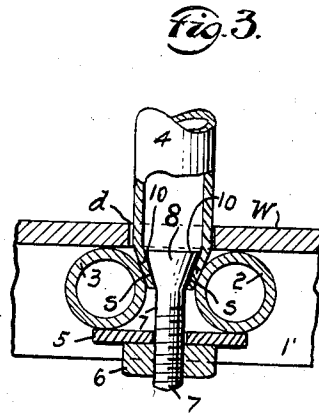
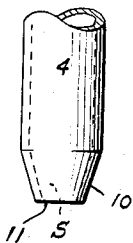
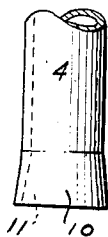
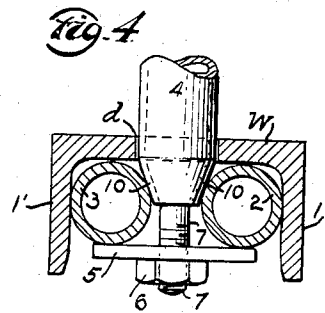
June 13, 1939.

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2,161,978

MECHANICAL JOINTURE

Filed Sept. 18, 1937



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2,161,978

MECHANICAL JOINTURE

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Application September 18, 1937, Serial No. 164,604

15 Claims. (Cl. 189—36)

The present invention relates to an improvement in mechanical joints, which are especially adapted for use in rigid or knock-down framing, such as may be used for erecting portable trucks, and rolling racks such as may be used in clothing factories, wherein several dozen suits or dresses may be transported on a single rack.

Other uses will be suggested by a study of the present improvement, such as making portable or permanent scaffolding or framing or the like.

Modifications may be made in the structures herein disclosed, without departing from the spirit hereof, or the scope of the appended claims.

In the drawing,

Fig. 1 is a perspective view, in part fragmentary, of a preferred form of the present improvement;

Fig. 2 is an end view of Fig. 1;

Fig. 3 is a sectional view taken on the line 3—3, Fig. 2, looking in the direction of the arrows;

Fig. 4 is a partially sectioned view of a modified form of jointure;

Fig. 5 is a fragmented side view of the end of a tubular or cylindrical locking extension; and

Fig. 6 is a similar front view of the extension of Fig. 5.

The jointure herein is comprised of only a few simple, coacting parts, and as will be hereinafter ascertained is easily erected, or taken apart, and forms when erected, an extremely rigid joint. While the present structures are all shown as forming right angled jointures but it is obvious from the showing herein that the jointures may be arranged to form angles less than right angles if so desired, relative to the base portion 1, thus to form diagonal bracing, in some instances.

As disclosed in Fig. 1, the jointure comprises generally, an anchoring base piece 1, made, preferably of a piece of stock channel iron. The opposed legs 1'—1' are provided with two aligned, spaced apart sets of bores, Figs. 1 and 2, into which tubular struts or braces 2 and 3, broken for convenience, are introduced in parallel position. These members 2 and 3 may extend through the base as shown, or may have their ends flush with either leg 1'—1', and form, when locked in operative position, struts, braces or extensions, connected to other coacting similar lock joints which may be all conjointly used to form the desired structure, when erected.

As a means for locking the strut pieces 2 and 3 in the positions shown, the web W of the channel base 1 is provided with a bore d, which, as will be noted in Fig. 3, is located at right angles

to and centrally above the bores a—b and the struts 2 and 3, and midway between the webs 1'—1', as disclosed in Fig. 2. Thus, the bores a—b, a—b and d are symmetrically disposed to each other. The parallel bores a—b and a—b in the legs 1'—1' may be longitudinally spaced from each other about a distance, of at least equal to one quarter of the diameter of said bores, and up to, in some instances, equal to, at the most, three quarters of the dimension of said bores. There must be a space between the struts 2 and 3, as shown in Fig. 3.

Into the bore d is introduced a tubular, cylindrical lock or strut tube 4, the end of which, as noted in Figs. 3, 5 and 6 is pinched, or slightly flattened, to flare the end 10 as in Fig. 6, and to form a wedge shaped end, as at 10, Fig. 5. The end 10 is not entirely closed but is left open to receive therein a threaded bolt or screw 7 having a countersunk head 8 thereon, the angle of which coincides with the interior angle of the seat S of the pinched tube end 10. The lower threaded end of screw 7 extends down beyond the diameters of the struts 2 and 3 when in operative position, as disclosed in Fig. 3, and a metal clamping strap 5, bored to receive the extended threaded end of screw 7 and through which the outer threaded end extends, and upon which outer end is tightly screwed a nut 6, which binds the assembled structure firmly together. The wedge end 10 is forced downwardly into the space between the struts 2 and 3, causing them to oppositely press against the bores a—b, and thus firmly lock the struts in immovable position therein.

A slightly modified form of the instant jointure is shown in Fig. 4, in which all of the elements disclosed in Fig. 1 are used, and bear the same indices, but the struts 2 and 3 are laid longitudinally against the inside surfaces of the legs 1'—1', and the assembly locked as described for Fig. 3. The legs 1'—1' are unbored, and the web W is bored as described for the other figures.

To release any of the assemblies herein, it is only necessary to unscrew the nut 6, and the jointure may then be taken apart.

By the present structure, complete units may be shipped, knocked down, to save shipping space, and may thereafter be erected at the location of use, for permanent or temporary use.

What is claimed is:

1. A jointure comprising a base having a bore, spaced strut pieces supported in said base in parallel positions therein, a wedge ended strut passing through said bore and having its wedge

end in contact between said first struts and means out of contact with the base for drawing said wedge ended strut and said first struts together.

2. A jointure as set forth in claim 1, in which the base is formed of a section of channel iron, the legs of which base spacedly support said spaced struts in operative position.

3. A jointure as set forth in claim 1, in which all of the said struts are tubular.

4. A jointure comprising a channel iron section having a bore in its web, the legs of said section being each provided with spaced bores, the bores of each leg being alined with the bores of the opposite leg, a tubular strut located in each pair of opposed bores, a wedge ended tubular strut passing through said first named bore and having its wedge end in wedging contact between said first named tubular struts, and means out of contact with the base for causing said wedge ended strut to wedge said first tubular struts firmly in operative position in said bores.

5. A jointure as described in claim 4, in which the means for wedging said first tubular struts in said bores comprises a headed screw having a threaded end, the head of said screw being anchored in the wedge end of said second tubular strut with its threaded end protruding between and beyond said first tubular struts, a bored clamp plate on said first struts said threaded stem protruding through said plate and a threaded nut tightly screwed against said clamp plate thereby to draw the wedge ended strut into wedging contact with said first struts.

6. A knock-down frame jointure structure comprising a base; a strut piece supported on the base; a wedge ended frame strut having its wedge end engaged against said piece; and means for drawing the wedge end into wedging contact with said piece.

7. A jointure comprising a base; a piece supported on the base; a strut having a tapered end portion engaging against said piece; and means for drawing said end portion into wedging contact with said piece; parts of the thickest part of the strut being much more remote from said base than said tapered portion.

8. A jointure comprising a base; a strut piece supported on the base; a tubular strut having a tapered end engaged against said piece; and means engaged in said end for drawing said end into wedging contact with said piece.

9. A jointure comprising a base; a strut piece supported on the base; a tubular strut having a hollow wedge end engaged against said piece;

and means for drawing the wedge end into wedging contact with said piece.

10. A jointure comprising a base; spaced strut pieces supported on the base; a wedge ended tubular strut having its wedge end engaging between and against both of said pieces; and means for drawing the wedge end into wedging contact with said pieces.

11. A jointure comprising a base; spaced strut pieces supported on the base; a strut having a tapered end engaging between said pieces; and means for drawing said end into wedging contact with said pieces; the thicker part of the strut being extended a remote distance from the base.

12. A jointure comprising a base having an opening therein; spaced strut pieces supported on the base; a strut having a tapered end engaged between said pieces; and means for drawing said end into wedging contact with said pieces; the thickest part of the strut near said base being disposed in said opening.

13. A jointure comprising a base having an opening; spaced strut pieces supported on the base; a tubular strut having a tapered end engaged between said pieces; and means engaged in said end for drawing the wedge end into wedging contact with said pieces.

14. A jointure comprising a channel iron section having a web and legs, each leg being provided with a pair of bores; a pair of strut pieces, each disposed in bores of the respective legs; a tubular strut having a tapered end engaged against the strut pieces; a perforate clamp plate engaged on said pieces at the side most remote from said strut; and a headed screw having its head engaged in the tapered end and its threaded portion passed through the perforation of the plate; and a clamping nut on the threaded portion and engaged against the plate.

15. A jointure comprising a channel iron section having a web having a bore therein and legs, each provided with a pair of bores, the bores of one leg being alined with the bores of the other leg; a pair of strut pieces in the alined bores respectively; a tubular strut in the bore of the web and having an end flattened to approximate web form and engaged against the strut pieces; a perforate clamp plate engaged on said pieces at the side most remote from the web; and a headed screw having its head engaged in the flattened portion, and its threaded portion passed through the perforation of the plate; and a clamping nut on the threaded portion and engaged against the plate.

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