

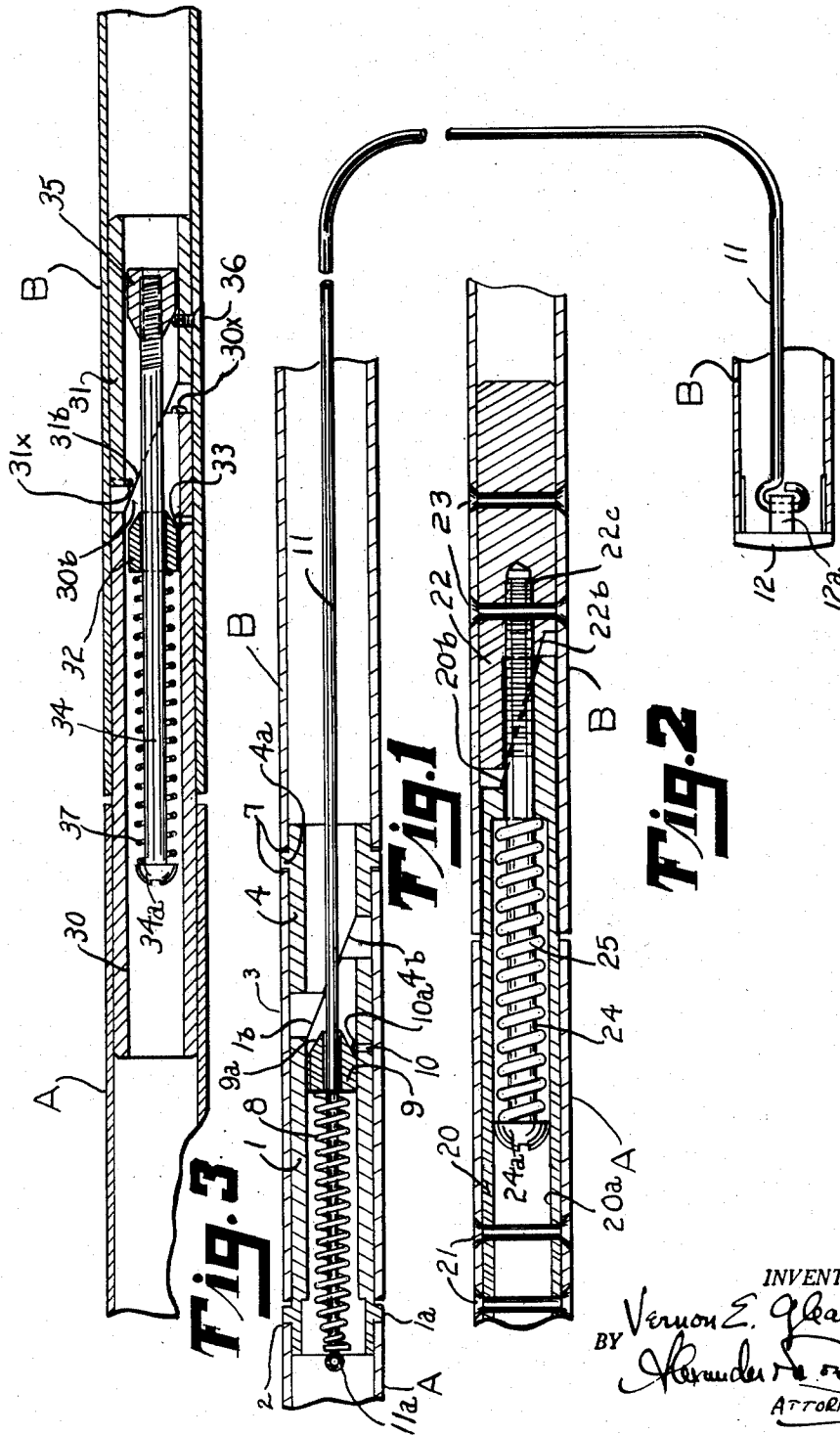
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ROTARY LOCK JOINT

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ROTARY LOCK JOINT

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The present invention relates to rotary lock joints particularly adapted for use in folding furniture such as laundry driers as shown in my copending application Serial No. 40,352, filed July 23, 1948, now Patent No. 2,597,788, said furniture being made of tubular framing for domestic or household use, and the principal object of the invention is to provide a rotary lock joint which can be entirely housed or installed in the abutting ends of tubular sections of a frame without detracting from the appearance of the frame, all parts being hidden from view within the tube sections, and the joint being stronger than the tubing itself, while permitting one section to be rotated axially with respect to the other section, means being provided for normally yieldably maintaining the sections in one relative rotative position.

Other minor objects of the invention will be hereinafter set forth.

I will explain the invention with reference to the accompanying drawing which illustrates several practical embodiments thereof, to enable others to adopt and use the same; and will summarize in the claims the novel features of construction, and novel combination of parts for which protection is desired.

In said drawings:

Fig. 1 is a longitudinal section through one form of rotary lock joint showing the parts in locked position.

Fig. 2 is a similar view showing a modified joint.

Fig. 3 is a similar view showing a further modified joint.

As shown in Fig. 1, the folding furniture includes tubular frame sections A and B disposed in axial alignment, section B being adapted to be rotated with respect to section A when section B is pulled away from section A, but the sections A-B being normally yieldably maintained in one relative rotative position by the said joint.

The rotary lock joint (Fig. 1) comprises a sleeve 1 having adjacent one end an annular shoulder 1a which abuts the end of section 2, sleeve 1 being fixedly mounted, preferably by butt welding as at 2, or by any other suitable fastening means, such as by brazing or swaging, in the end of section A. The outer end of sleeve 1 makes a slip fit within a pilot tube 3 carried by section B, the outer end of sleeve 1 being beveled as at 1b to engage the correspondingly beveled end 4b of a second sleeve 4 which is securely fastened in like manner within section B as shown in Fig. 1 sleeve 4 having a shoulder 4a adjacent one end which is secured by any suitable fasten-

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ing means, preferably by butt welding, or by brazing, or swaging, to the end of section B. Pilot tube 3 encloses the sleeves 1 and 4 between the shoulders 1a and 4a and is secured by any suitable fastening means, preferably by butt welding as at 7 or by brazing or swaging to the shoulder 4a of sleeve 4, as is shown.

Within sleeve 1 is a spring 8 adapted to urge the two beveled ends 1b and 4b of sleeves 1 and 4 toward each other to take up clearance therebetween and to firmly seat the same to produce a rigid joint which will resist rotation and will eliminate play or shaking, sleeve 1 thus serving as a rigid support for frame section B.

Within sleeve 1 is a member 9 having a cone shaped outer end 9a (Fig. 1) which forms a base for spring 8. In order to prevent member 9 from moving to the right (Fig. 1) under action of spring 8, a rivet 10 is placed in its path, same having a shank removably seating in a hole in the wall of sleeve 1 and having a head 10a engaged by the cone shaped end 9a of member 9, whereby the cone shaped head will hold rivet 10 in place, rivet 10 serving as a key to the assembly of the parts.

The opposite end of spring 8 is held under compression by a loop 11a or the like formed at the end of a retaining wire 11 which passes through a hole in member 9 and continues throughout the entire length of section B, same terminating in a loop attached to the hooked portion 12a of a standard pipe cap 12. Since sleeve 4 is secured in section B, and since the compressed spring 8 has one end acting against the member 9 which is secured in sleeve 1, the two beveled ends 1b and 4b will be yieldably urged toward each other by the action of spring 8.

From the above construction it can be seen that the two beveled ends 1b and 4b can be separated by an outward pull on section B while holding section A from movement therewith. This pulling action will further compress spring 8 to a point where the beveled ends 1b and 4b will clear each other. At this point section B can be rotated into desired folded position relative to section A.

A modified construction is shown in Fig. 2, which shows a riveted assembly, the wedge carrying members being machined from solid stock. In section A is a sleeve member 20 having a bore 20a in its inner end, said sleeve being secured at its inner end in section A by a pair of rivets 21. Member 20 projects beyond the end of section A and into section B, and the outer end of member 20 is beveled as at 20b to engage the correspondingly beveled end 22b of a member

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22 which is secured by a pair of rivets 23 within the section B. A screw rod 24 is disposed in the bore 20a of sleeve 20 and passes through a hole in the outer end of sleeve 20 and has its threaded end engaging a tapped bore 22c in member 22, one of the rivets 23 passing through the screw rod 24 to lock same when seated against rotation; and a spring 25 is interposed between the base of bore 20a and the head 24a of screw 24. The joint shown in Fig. 2 is operated in the same manner as that described in connection with Fig. 1.

In Fig. 3 a further modification of the lock joint is shown, same utilizing tubular stock for the wedge carrying members. In this modification section A carries a sleeve 30 of tubular stock which is swaged, brazed or welded therein, the outer end of sleeve 30 entering section B, and said end being beveled as at 30b to engage the correspondingly beveled end 31b of a sleeve 31 which is swaged, brazed, or welded into section B. In the outer end of sleeve 30 is a cone-shaped member 32 similar in all respects to member 9 of Fig. 1, same being retained by a removable rivet 33 similar to the rivet 10 of Fig. 1, a screw rod 34 passing through a bore in member 32 and into section B. On the threaded end of screw rod 34 is a second cone-shaped member 35 held against movement towards member 32 by a set screw 36 tapped through the walls of section B and sleeve 35 and having its inner end engaging the cone shaped end member 35. A spring 37 is interposed between member 32 and the head 34a of screw rod 34. The joint shown in Fig. 3 is operated in the same manner as that disclosed in Figs. 1 and 2. In Fig. 3, however, the outer tip of sleeve 30 is provided with a lug 30x formed to fit a depression 31x in the outer tip of sleeve 31 to lock the rotary lock joint in its "open" position in which the beveled ends 30b and 31b are out of engagement, also to hold the sections A and B in their relative folded positions.

I do not limit my invention to the exact forms shown in the drawing, for obviously changes may be made therein within the scope of the claims.

I claim:

1. A rotary lock joint for a pair of aligned

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tubular sections, comprising a sleeve fixedly mounted within one section and projecting into the other section; a second sleeve fixedly mounted within said other section; said sleeves having complementary beveled ends; and means for normally yieldably urging the beveled ends into engagement comprising a plug member in the outer end of the first sleeve having a bore therethrough; a removable stop having a shank seated in a hole in the wall of said first sleeve and having a head contacting the outer end of the plug member to limit the outward movement thereof; a rod anchored in the second sleeve and passing through the plug member and first sleeve and having an enlargement disposed within the first section behind the plug member; and a compressed spring interposed between the enlargement and the plug member.

2. In a joint as set forth in claim 1 said rod having a threaded end within said other section; a second plug member within said other section threaded onto said rod; and a stop tapped through the wall of said other section and second sleeve and engaging the outer end of the second plug member.

3. In a joint as set forth in claim 1, the outer tip of one sleeve having a lug adapted to enter a correspondingly shaped depression on the outer tip of the other sleeve when the beveled ends are disengaged and the sections rotatively adjusted.

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