

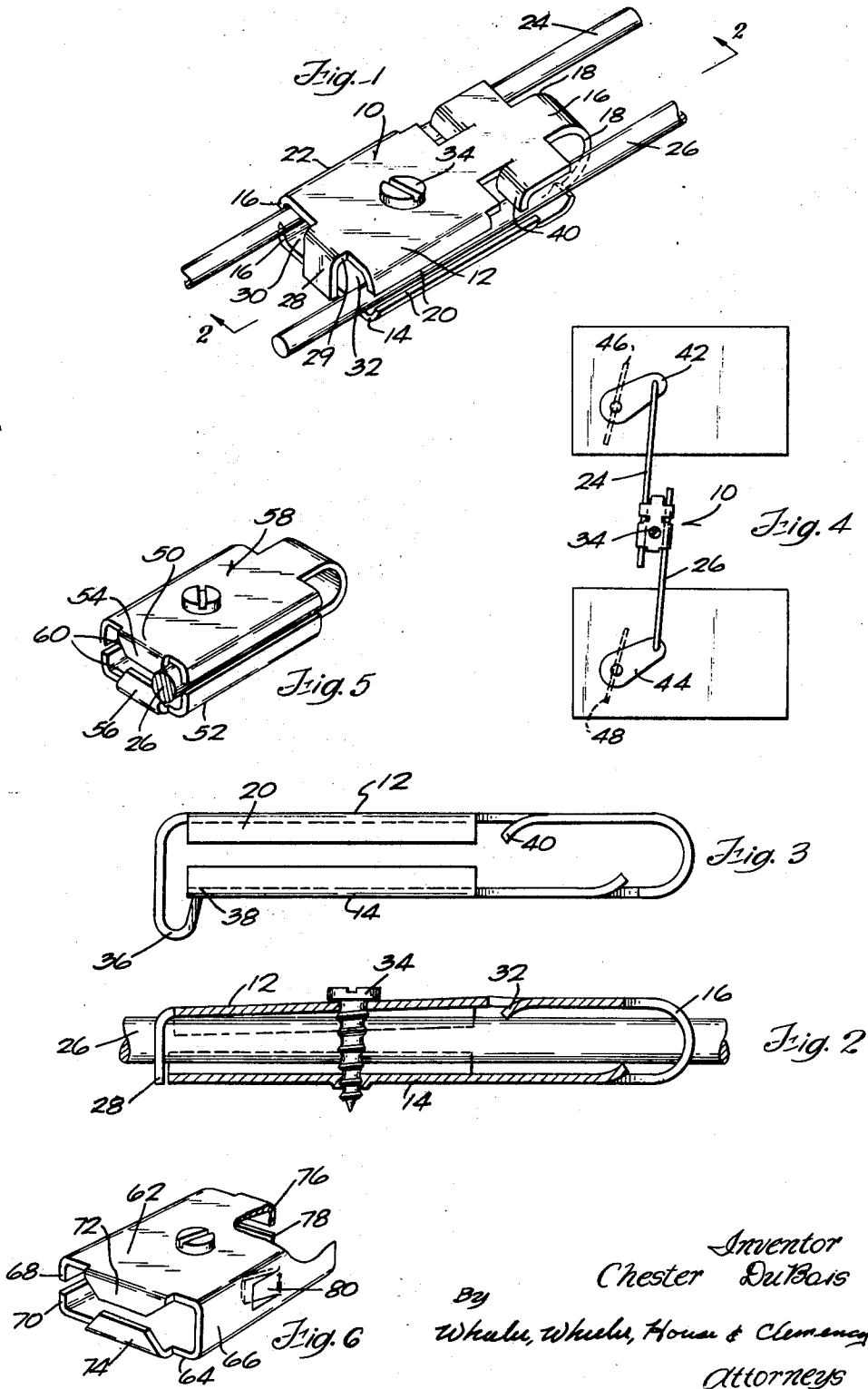
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COUPLER

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COUPLER

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14 Claims

ABSTRACT OF THE DISCLOSURE

Disclosed herein is a coupler which is adapted for adjustably connecting two links or shafts and which is formed from a single piece of material with opposed jaw portions connected at one end by a spring portion which biases the jaws outwardly. Inturned longitudinal edges on the jaw portions, together with the spring portion and an inturned flange at the other end of the jaws define two spaced channels between the jaws which receive the coupled members. Teeth projecting inwardly from the jaw portions secure the members against slippage. A bolt extending through one jaw portion and threaded into the other jaw portion adjustably compresses the jaw portions against the coupled members.

BACKGROUND OF THE INVENTION

The invention relates generally to a coupling device and more particularly to a coupler adapted to adjustably vary the length of a linkage.

SUMMARY OF THE INVENTION

The coupler of the invention can be formed or stamped from a single piece of material to provide opposed parallel spaced apart jaw portions connected at one end by a spring portion adapted to bias the jaw portions outwardly. The jaw portions have inturned longitudinal edges that come together to define, in part, a closed channel construction and prevent lateral displacement of the coupled members. An inturned flange at one end of one of the jaw portions has a width equal to the spring portion. The inturned flange and spring portion together define the inside of the channels and maintain the coupled members in generally parallel relation.

The jaw portions are adjustably compressed by a fastener in the form of a bolt or screw extending through the jaw portions. Teeth on each jaw portion grip the coupled members. The coupled members can be shifted through the coupling after releasing the jaw pressure by unthreading the screw.

Further objects and advantages of the invention will become apparent from the following disclosure.

DRAWINGS

FIGURE 1 is a perspective view of a coupler in accordance with the invention.

FIGURE 2 is a sectional view along line 2-2 of FIGURE 1.

FIGURE 3 is a view of a modified embodiment of the invention.

FIGURE 4 is a view of the coupler shown in FIGURE 1 connecting two links connected to two throttle shutters.

FIGURE 5 is a perspective view of a further embodiment of the invention.

FIGURE 6 is a perspective view of an additional embodiment of the invention.

DETAILED DESCRIPTION

Referring to FIGURE 1, there is shown a coupler in accordance with the invention which is generally designed

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and which includes two parallel opposed jaw portions 12 and 14 which are interconnected at one end by a spring portion 16 having margins or edges 18. The spring portion 16 is adapted to bias the jaw portions 12 and 14 outwardly. Each jaw portion 12 and 14 has inturned longitudinal edges 20 and 22 which come together when the jaws are compressed. The spring portion 16 has a narrower width than the jaw portions 12 and 14 and the edges of the spring portion are spaced from the longitudinal edge portions and thus the spring portion functions as a guide between the coupled members 24 and 26 to prevent inward displacement of the members 24 and 26 and maintain the members in parallel relation. An inturned flange 28 equal in width to the spring portion 16 located at the forward end of one of the jaw portions 12 and 14 provides a guide at the forward end of the coupler 10. The margins 29 of the flange 28 are in the same planes as the margins 18 of the spring portion 16. The jaw portions 12 and 14, inturned longitudinal edges 20 and 22 together with the spring portion 16 and the inturned flange 28 define two spaced channels 30 and 32 to receive the coupled members 24 and 26. The spring portion 16 and the inturned flange 28 define the inside of the channels and the longitudinal edge portions define the outside of the channels.

In accordance with the invention means are provided for securing the jaw portions in clamping engagement on the coupled members 24 and 26. In the construction disclosed in FIGURES 1 and 2 such means comprises an adjustable fastener in the form of a sheet metal screw 34 which extends through the jaw portion 12 and is threaded into the jaw portion 14. The means also adjustably compresses the jaw portions.

In the construction disclosed in FIGURE 3 the means provided for securing the jaw portions in clamping engagement on the coupled members comprises a lip or hook portion 36 on the lower edge of inturned flange 28. The lip 36 extends beneath the forward edge 38 of the jaw portion 14 to secure the jaw portions against the links 24 and 26. The jaw portions are manually compressed to engage the lip 36 with the adjacent edge 38 of the jaw portion 14.

Additional means are provided to secure the links within the jaw portions. In the illustrated construction the means are in the form of teeth 40 which extend inwardly between the jaw portions and which can be formed by terminal portions by cutting or stamping parts of the jaw portions 12 and 14.

As shown in FIGURE 4, the coupler 10 is illustrated connecting the links 24 and 26 which are connected to the arms 42 and 44 of carburetor shutters 46 and 48. The positions of the throttle shutters with respect to each other are easily adjusted by unthreading screw 34 to release the grip of the jaws on the links 24 and 26 and sliding the links through the coupler 10 to the desired position. The links are then secured in the desired position by tightening the screw 34.

A further embodiment of the invention is disclosed in FIGURE 5. In this embodiment each jaw portion 50 and 52 is provided with an inturned flange respectively 54, 56 at one end of the coupler 58. The inturned flanges 54, 56 are provided with inclined edges 60 adapted to grip a coupled member 26 and secure the coupled member 26 against displacement. The inclined edges 60 define notches which form the inside of the channels.

An additional embodiment of the invention is disclosed in FIGURE 6. In this embodiment the jaw portions 62 and 64 are interconnected by a spring portion 66 which is generally parallel to the inturned longitudinal edge portions 68 and 70 of the jaw portions 62 and 64. The jaw portions 62, 64 are provided with inturned flanges 72, 74, 76 and 78.

The spring portion 66 can be provided with an intumed tooth 80 to secure a coupled member against displacement, which can be formed from cutting or stamping the spring portion 66. In the embodiment shown in FIGURE 6, the spring portion 66 and longitudinal edge portions 68 and 70 define the outside of the channels and the inclined edges on intumed flanges 72, 74, 76 and 78 define notches which form the inside of the channels.

Various of the features of the invention are set forth in the following claims.

What is claimed is:

1. A coupler comprising a pair of opposed spaced apart jaw portions each having intumed longitudinal edge portions, and a spring portion interconnecting one end of said jaw portions and adapted to bias said jaw portions outwardly, said spring portion having edges spaced from said longitudinal edge portions and defining together with said jaw portions and said longitudinal edge portions, a pair of spaced apart channels between said jaw portions adapted to receive members in generally parallel relation for coupling, with said spring portion edges defining the inside of said channels and said longitudinal edge portions defining the outside of said channels and means for securing said jaw portions in clamping engagement on the members to be coupled.

2. The coupler of claim 1 including an intumed flange at one end of one of said jaw portions, said flange spanning the space between said jaw portions and having a width equal to the width of said spring portion, the margins of said flange being in the same planes as the margins of said spring portion.

3. The coupler of claim 2 wherein said means for securing said jaw portions in clamping engagement on the members to be coupled comprises a lip on said intumed flange adapted to engage the adjacent edge of the other of said jaw portions.

4. The coupler of claim 1 wherein said means for securing said jaw portions in clamping engagement comprises a fastener extending through one of said jaw portions and threaded into the other of said jaw portions.

5. The coupler of claim 1 wherein said jaw portions have teeth on their inner surfaces adapted to grip the members to be coupled.

6. The coupler of claim 5 wherein said teeth comprise inwardly extending terminal portions of said jaw portions.

7. The device of claim 1 wherein said jaw portions and said spring portion are formed from one piece of material.

8. A coupler comprising a pair of opposed spaced apart jaw portions having an intumed longitudinal edge portion, and a spring portion interconnecting each of said jaw portions and adapted to bias said jaw portions outwardly, an intumed flange at one end of one of said jaw portions having spaced edges defining together with said jaw portions and said spring portion, a pair of spaced apart channels between said jaw portions adapted to receive members in generally parallel relation for coupling and

means for securing said jaw portions in clamping engagement on the members to be coupled.

9. The coupler of claim 8 wherein each of said jaw portions has an intumed flange at one end of said jaw portions.

10. The coupler of claim 9 wherein each of said intumed flanges has inwardly inclined edges adapted to engage the members to be coupled with said inclined edges of each of said jaw portions defining notches which form the inside of said channels.

11. The coupler of claim 8 wherein each of said jaw portions has intumed flanges at each end.

12. The coupler of claim 8 wherein said spring portion is generally parallel to said longitudinal edge portions.

13. A coupler comprising a pair of opposed spaced apart jaw portions having an intumed longitudinal edge portion, and a spring portion generally parallel to said longitudinal edge portion and interconnecting each of said jaw portions and adapted to bias said jaw portions outwardly, an intumed flange at one end of one of said jaw portions and defining, together with said jaw portions and said spring portion, a pair of spaced apart channels between said jaw portions adapted to receive members in generally parallel relation for coupling and a tooth on said spring portion, said tooth being adapted to engage a member to be coupled.

14. A coupler comprising a pair of opposed spaced apart jaw portions having intumed longitudinal edge portions, and a spring portion interconnecting each of said jaw portions and adapted to bias said jaw portions outwardly, an intumed flange at one end of one of said jaw portions and defining together with said jaw portions and said spring portion, a pair of spaced apart channels with the outside of said channels being defined by said spring portion and said longitudinal edge portions and the inside of said channels being defined by said intumed flange, said channels being adapted to receive members in generally parallel relation for coupling, and means for securing said jaw portions in clamping engagement on the members to be coupled.

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