

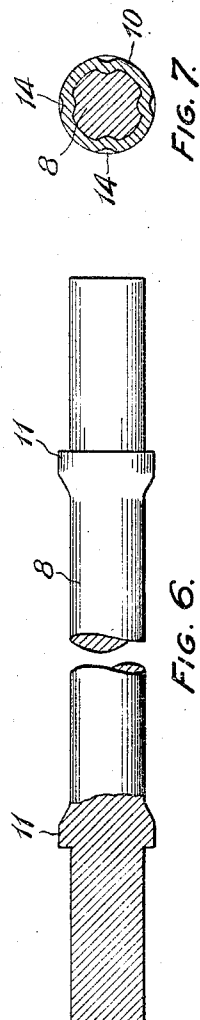
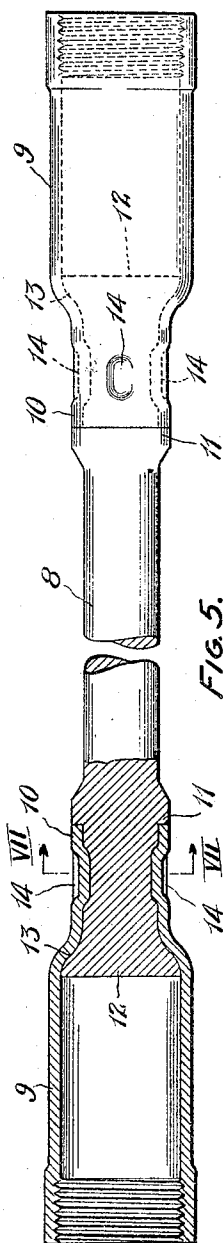
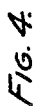
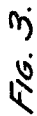
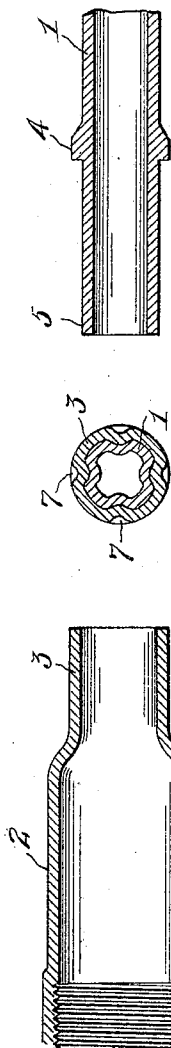
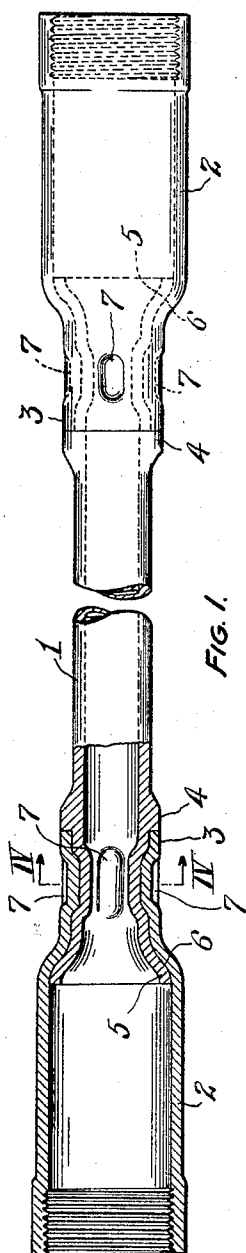
Aug. 11, 1925.

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DRAG LINK

Filed Dec. 14, 1921

2 Sheets-Sheet 1



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Aug. 11, 1925.

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1,548,990

DRAG LINK

Filed Dec. 14, 1921

2 Sheets-Sheet 2

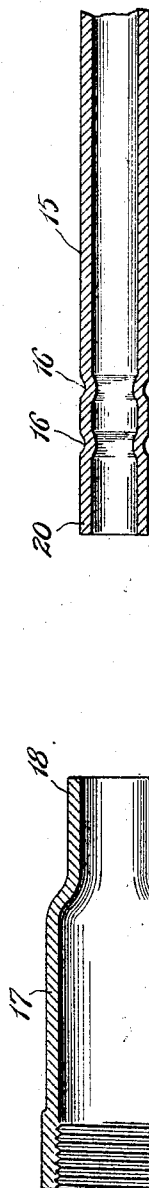
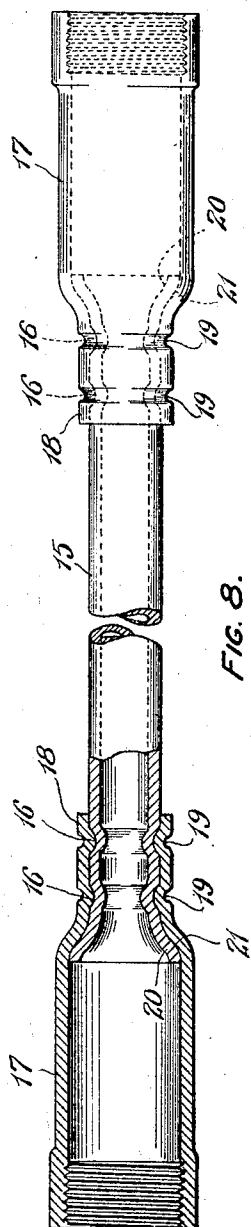


FIG. 10.

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UNITED STATES PATENT OFFICE.

HARRY B. GARMAN, OF DETROIT, MICHIGAN, ASSIGNOR TO THE STEEL PRODUCTS COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

DRAG LINK.

Application filed December 14, 1921. Serial No. 522,376.

To all whom it may concern:

Be it known that I, HARRY B. GARMAN, a citizen of the United States, resident of Detroit, county of Wayne, and State of Michigan, have invented new and useful Improvements in Drag Links, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

This invention relates to drag links for use as a part of the steering mechanism of automobiles and more particularly the connection of the enlarged end sockets to the central body portion of the link.

It is the object of this invention to provide a link which can be cheaply constructed, is neat in appearance and is possessed of the necessary rigidity and strength. More specifically, it is the object of this invention to provide a joint between the end sockets and the central body portion of the link which permits quick assembly and interlocking of the parts in forming a permanent connection between them, and by means of which the parts are rigidly held against relative movement either longitudinally or circumferentially.

The annexed drawings and the following description set forth in detail certain means embodying my invention, the disclosed means, however, constituting but a few of the various mechanical forms in which the principle of the invention may be employed.

In said annexed drawings:

Fig. 1 is a broken plan view showing one end of the link in section.

Fig. 2 is a longitudinal section through an end socket before assembling.

Fig. 3 is a fragmentary longitudinal section of an end of the central portion of the link before assembling.

Fig. 4 is a section on line IV—IV of Fig. 1.

Fig. 5 is a broken plan view partly in section showing a link with a solid body portion.

Fig. 6 is a broken plan view of the solid body portion before showing one end thereof in section.

Fig. 7 is a section on line VII—VII of Fig. 5.

Fig. 8 is a broken plan view of a link having a slightly modified form of joint, one end being shown in section.

Fig. 9 is a longitudinal section through the end socket member of Fig. 8 before assembling.

Fig. 10 is a longitudinal section through the central body member of Fig. 8 before assembling.

In the modification shown in Figs. 1 to 4 inclusive, the drag link consists of a central tubular body portion 1, and enlarged tubular end socket members 2. As shown in Fig. 2 the socket members 2 have a restricted neck portion 3 at one end, the internal diameter of which is such as to fit snugly upon the central tubular body member 2. As shown in Fig. 3 the central body portion 1 is first formed with external ribs or shoulders 4 spaced somewhat from the ends thereof. In assembling the link the neck portion 3 of a socket member 2 is slipped on the end of the body member 1 with the end thereof in engagement with the shoulder 4. The outer end 5 of the tubular body member is then upset or expanded within the enlarged portion of the socket member 2 to fit against the shoulder 6 formed by the reduced neck portion 3. Indentations 7 are then formed in the neck portion 3 of the socket member and the tubular body member 1 effectually locking the members 1 and 2 against relative circumferential movement.

In the modification shown in Figs. 5, 6 and 7 the central body portion 8 of the link is a solid bar. The end socket members 9 are exactly the same as in Fig. 1. The neck portion 10 fits snugly upon the end of the body member 8 with its outer end in engagement with the shoulder 11 on the body member, the outer end 12 of the body member is upset within the socket member 9 against the shoulder 13 at the inner end of the neck portion, and the neck portion 10 has indentations 14 projecting into the solid body member 8.

In the modification shown in Figs. 8, 9 and 10 the tubular body member 15 has peripheral grooves 16 formed therein adjacent the ends thereof. An end socket member 17 has a reduced neck portion 18 adapted to fit snugly on the body member 15. The neck portion 18 is slipped on the end of the

body member 15 and peripheral grooves 19 are formed therein, the internal ribs formed by the grooves 19 filling the grooves 16 of the body member. The inner end 20 of the
5 body member 15 is then expanded or upset inside the socket member 17 against the shoulders 21 at the inner end of the neck portion 18.

What I claim is:

10 1. A drag link comprising a tubular body member; and a tubular end socket member, said socket member having a restricted tubular end portion fitting over said body member, the end of said body member being
15 expanded to fit within the internal shoulder at the inner end of said restricted portion of the socket member, said restricted portion of the socket member and the body

member having additional interengaging shoulders. 20

2. A drag link comprising a body member, and a tubular end socket member, said socket member having a restricted tubular end portion fitting over said body member, said body member having an upset shoulder
25 adapted to engage the outer end of said restricted portion of the socket member, the inner end of said body member being upset within the tubular member to fit against the shoulder at the inner end of said restricted
30 portion of the socket member, the restricted portion of said socket member having an indentation projecting into said body member.

Signed this 9th day of November, 1921.

HARRY B. GARMAN.