July 25, 1933. S. REICHERT 1,920,106

TOW LINE

Filed Oct. 25, 1932

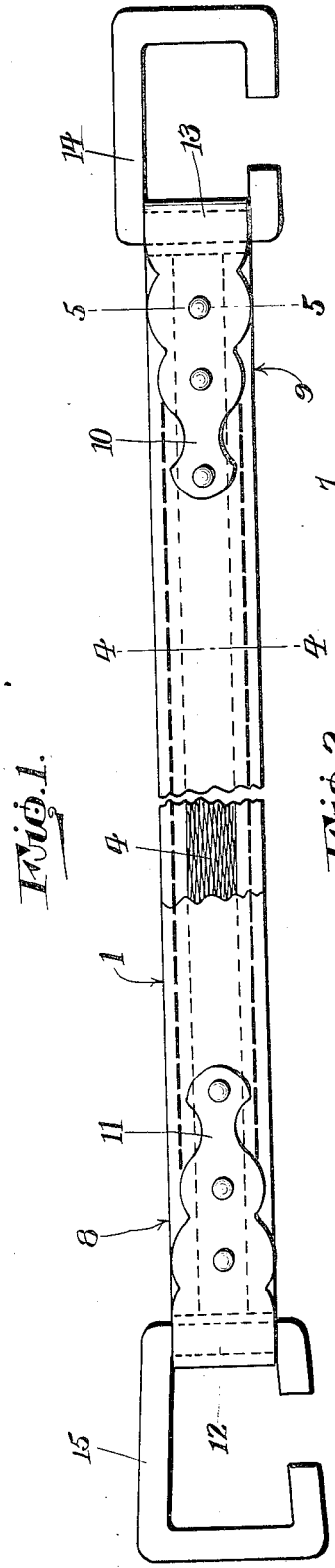


Fig. 1.

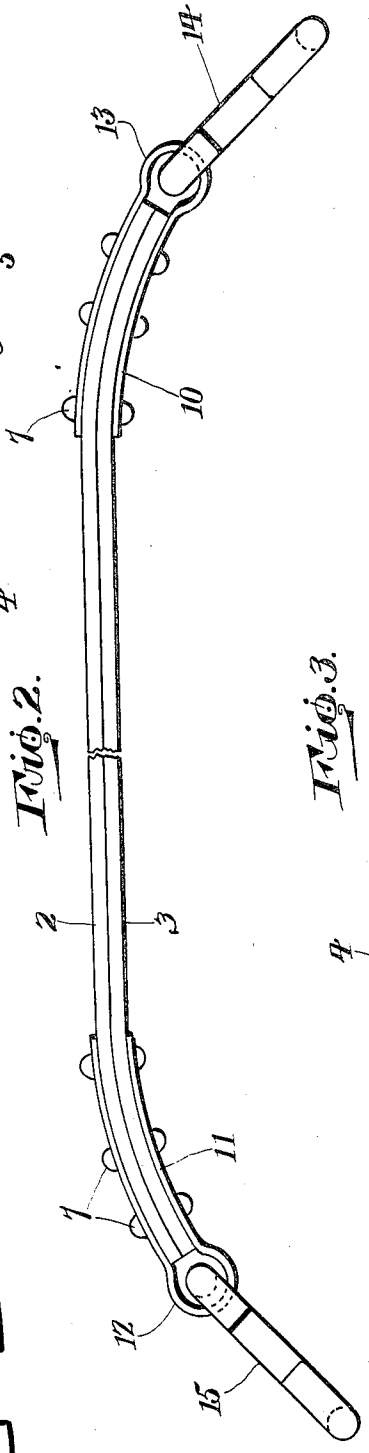


Fig. 2.

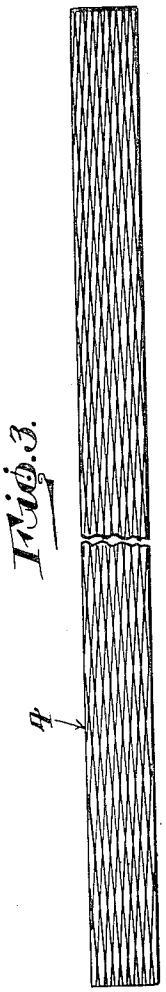


Fig. 3.

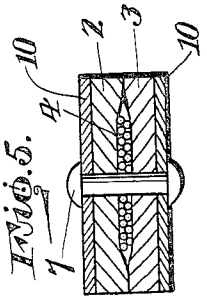


Fig. 5.

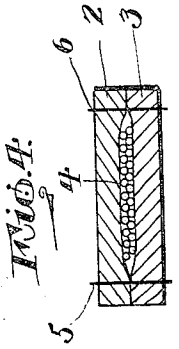


Fig. 4.

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Patented July 25, 1933 1,920,106

UNITED STATES PATENT OFFICE

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TOW LINE

Application filed October 25, 1932. Serial No. 639,501.

This invention relates to a tow line and pertains particularly to a tow line which is capable of a certain amount of stretch or give so as to act as a shock absorber for sudden pulls or jerks upon a vehicle being towed. It is well known that the many sudden jerks and pulls upon a tow line are the cause of most of the failure of such lines at critical times, as for example when a vehicle is being towed up a hill. In the latter event it oftentimes becomes necessary for the towing vehicle to shift gears and thus cause a jerk when the new forward speed is resumed which is sufficient to snap a tow line not possessing innate shock absorbing qualities.

It is an object of this invention to eliminate or reduce to a minimum this common cause of tow line breakage by providing a tow line as hereinafter described.

A further object of this invention is to provide, in a manner as hereinafter set forth, a tow line which is composed essentially of like strips of elastic material such as rubber and an interposed web or webs, depending on the strength desired, of loosely woven metallic fabric, anchored together at their extremities so as to thus provide a tow line in which the pull or strain upon the line will be taken up first by the stretch of the elastic strips and then by the web of metallic fabric in conjunction with the elastic strips after the web has been extended as far as the looseness of its weave will permit.

Other objects of this invention are to provide in a manner as will be apparent, a tow line which is strong, light weight, durable, quick and easy to attach, inexpensive to manufacture and which may be conveniently stored in a small space.

The invention will be best understood from the following detailed description taken in connection with the accompanying drawing which forms a part of this specification, with the understanding that changes and modifications may be effected which come within the scope of the hereunto appended claims.

In the drawing wherein like numerals indicate like parts throughout the several views,

Figure 1 is a plan view broken away and partly sectioned of the tow line of this invention showing the position the metallic web assumes when extended.

Figure 2 is a side view broken away.

Figure 3 is a plan view broken away, of the metallic web in relaxed form showing its normal width.

Figure 4 is a section on line 4—4 of Figure 1.

Figure 5 is a section on line 5—5 of Figure 1.

A tow line made in accordance with this invention comprises a body portion indicated generally as 1, formed of a pair of superimposed flat strips 2 and 3 respectively, which are of elastic material and generally oblong in contour and which may be of any desired length or width The two strips are stitched together adjacent their side edges for the greater portion of their length by rows of stitching 5 and 6 so as to provide in effect a sheath for a web of loosely woven metallic fabric 4 which lies between the strips 2 and 3 and is of a less width than the latter. The web 4 is of the same length when it is extended as the elastic strips 2 and 3 when they are stretched. The purpose of forming the strips and the web of the same length extended is to allow the elastic strips to shorten the web when the strips are relaxed. The strips 2 and 3 are anchored to the web by rivets indicated as 7 which latter serve also to secure to the flat outer surfaces of the strips adjacent their end terminal portions, 8 and 9 respectively, substantially U-shaped metal straps 10 and 11 respectively, both formed alike, which overlap the ends of the strips 2 and 3 and extend a little distance from the aforesaid end portions. The metal straps 10 and 11 lie flush upon the surfaces of the strips 2 and 3 where they are anchored to the latter. The portions of the metal straps 10 and 11 which extend from the ends 8 and 9 form barrels 12 and 13 respectively for the reception of coupling elements 14 and 15 respectively, which are made substantially

alike, for coupling the tow line in operation.

The tow line above described is constructed generally in the following described manner: Two strips of elastic material of the same length and width are cut from the side walls of a tire casing, one from each opposite side thereof so that when the strips are placed in superimposed relation, they will counteract the tendency of each other to curl. The elastic strips are placed upon a suitable stretching apparatus, not shown, and are stretched to within a safe limit of their breaking point. A web of loosely woven metallic fabric, of the same length when extended as the stretched elastic strips and of a less width than the latter, is extended as far as the looseness of its weave will permit and is positioned between the elastic strips. The elastic strips, still extended, are stitched together for a substantial part of their length adjacent their side edges to form, in effect, a sheath for the web. A metal strap bent in the general form of a U is placed over each of the end terminal portions of the sheath and spaced from the said end portions to form barrels for the reception of coupling elements. Rivets are put through the straps and extend through the strips and the web so as to anchor together the straps, strips and web. Tension upon the now substantially completed tow line is released by the stretching apparatus and the coupling elements are inserted through the barrels to complete the tow line.

What I claim is:—

1. A tow line comprising a pair of superimposed flat elastic strips of like form, means for connecting them together in proximity to their side edges, a web of loosely woven metallic fabric interposed between said strips and arranged adjacent the means for connecting the strips together, coupling elements extended from the ends of the strips and means for anchoring said elements, strips and web together.

2. A tow line comprising a pair of superimposed, flat resilient stretched strips, means for connecting said stretched strips arranged adjacent the side edges of the strips, a metallic web of loosely woven material interposed between and the same length as said stretched strips, said web arranged adjacent the means for connecting the strips together, coupling elements overlapping and extending from the end terminal portions of the strips, and means for anchoring said elements, end portions and web together thereby permitting the parts of the strips and web between said elements to relax.

3. A tow line comprising in combination, elastic means for taking up the initial load strain on the line, a web of stretchable metallic fabric acting in conjunction with said elastic means to carry a subsequent full load strain placed upon said line when said means is stretched and arranged in parallelism to said elastic means, and anchoring elements for anchoring said elastic means and said fabric together.

4. A tow line comprising in combination, elastic means for taking up the initial load strain on the line, a web of stretchable metallic fabric acting in conjunction with said elastic means to carry a subsequent full load strain placed upon said line when said means is stretched and arranged in parallelism to said elastic means; anchoring elements for anchoring said elastic means and said fabric together, and coupling elements connected with said elastic means by said anchoring means.

5. A tow line comprising superimposed elastic strips, a web of loosely woven metallic fabric interposed between said strips, means for anchoring together said web and strips, and coupling elements connected with said web and strips by said anchoring means.

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