Aug. 24, 1926. 1,597,383

W. A. MORTON

TOWROPE

Filed Jan. 19, 1926

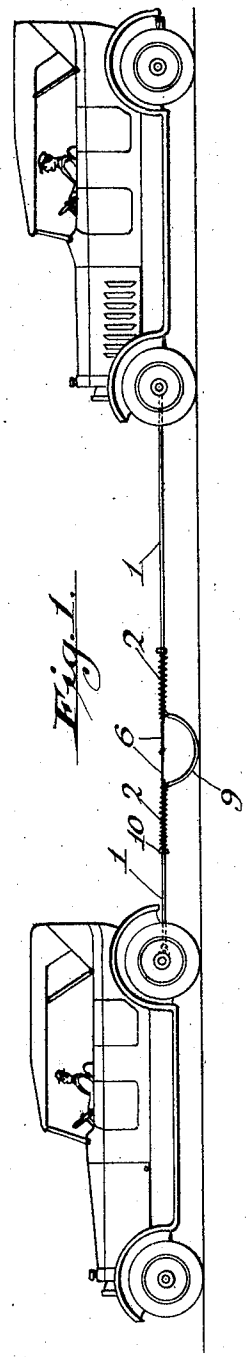


Fig. 1.

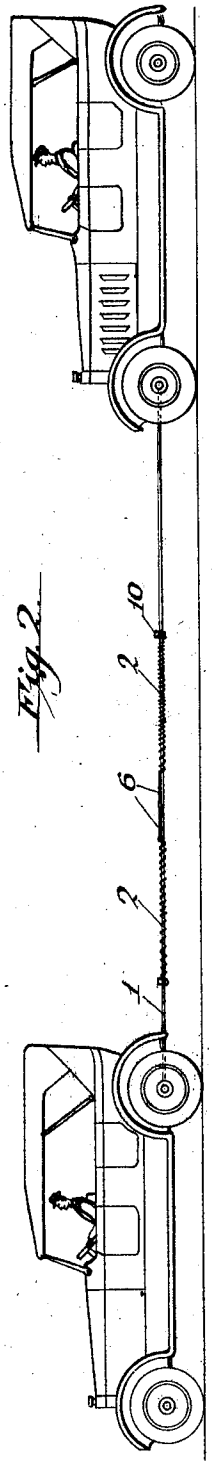


Fig. 2.

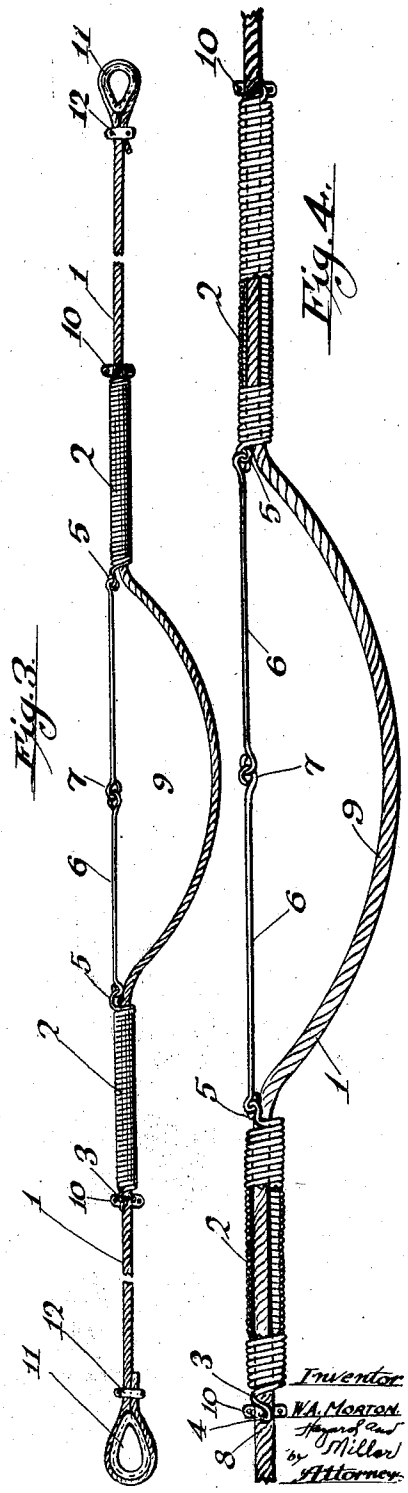


Fig. 3.

Fig. 4.

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Patented Aug. 24, 1926. 1,597,383

UNITED STATES PATENT OFFICE.

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TOWROPE.

Application filed January 19, 1926. Serial No. 82,241.

My invention is a tow rope adapted for use in towing automobiles or the like, being constructed of a resilient type.

An object of my invention is a tow rope formed with a resilient device incorporated therein to allow extension of the rope, whereby the rope may accommodate itself to sudden jolts or the like, or sudden starting in towing an automobile.

A particular object of my invention is the incorporation of a resilient device with a rope so that the resilient connection bridges a bight or slack in the rope, the resilient device being adapted to stretch so that the slack may be taken up. Normal towing strain is transmitted through the resilient device and rope when stretched.

A specific object of my invention is the use of coil springs through which a tow rope may be roved, there being two springs with links connecting the springs, the links being adapted to bridge a slack or bight in the tow rope and the ends of the springs being adapted to hook underneath or through a strand of the rope and hence maintain the springs in proper position.

In constructing my invention I use a pair of strong helically wound springs of sufficient diameter so that a tow rope may be roved through the springs. The near end of the springs are connected by links or hooked bars to transmit the strain from one spring to the other, the free ends of the springs being secured to the tow rope thereby leaving a bight or slack between the adjacent ends of the spring; the strain of towing normally being transmitted by the springs through the links and the rope.

My invention will be more readily understood from the following description and drawings, in which:

Figure 1 is a side elevation illustrating the use of my tow rope in normal operation with the strain of towing being transmitted by the springs through inextensible links, the slack or bight of the rope hanging loosely.

Fig. 2 illustrates the operation under a sudden strain or in difficult pulling, in which the springs are extended and the strain is transmitted mainly by the rope, the slack being taken up.

Fig. 3 is a side elevation of a tow rope with my resilient attachment connected thereto, being shown with a slack in the rope.

Fig. 4 is an enlarged detail of Fig. 3, partly broken away, illustrating the manner of attaching the ends of the springs to the tow rope.

My invention is intended to be used mainly with hemp or similar type of tow ropes, the ropes being indicated by the numeral 1. A pair of springs 2 formed of wire coiled helically are provided with engaging prongs 3 being bent in the form of a hook 4 at one end and having an eye 5 formed at the other end. These springs are of such internal diameter that the tow rope may be readily roved through same.

One or more links 6 are secured between the eyes of adjacent springs, the illustration showing two links each connected by loops 7 or in any other suitable manner. The prongs and hooks 3 are adapted to be twisted underneath one or more strands 8 of the rope and to be firmly secured thereto so that when the springs are normally contracted as shown in Fig. 3 and even under a towing load, there will be a slack or bight 9 formed in the rope.

As an additional precaution against tearing of the rope strands or slippage of the springs, metal clamps 10 are secured on the ropes, firmly attaching the prongs and hooks to the rope. If a metal tow rope is used it is preferable to have the ends of each of the springs formed with tight fitting coils and with the hooks 3 fitting snugly in the outside periphery of the rope, the prong 4 lying along the surface of the rope so that the clamps 10 will securely hold the end of the spring to the rope without requiring lifting of the strands.

After the ropes have been roved through the springs in the manner above described, clews 11 may be secured to the end, the rope being fastened by the clamps 12, in order to allow a simple attachment to the axles of automobiles or the like by means of lashing ropes.

The operation of my tow line resilient attachment is substantially as follows:

Usually the springs are of sufficient strength to take up any slack which readily forms by the towed vehicle running up on the towing machine, thereby preventing the slack from dragging behind the axle of the towed machine or getting tangled in the wheels.

It is to be understood that my tow rope may be utilized having a spring of consid-

erable strength and sufficient to maintain a slack in the rope when towing an ordinary weight vehicle on reasonably smooth roads, such slack being taken up by excessive strains due to starting or hard pulling. Therefore in the specification and claims the mention of the slack being in the rope during normal towing and the rope straightened out under excessive strain is to cover both constructions with the light and the heavy spring.

In using the term rope I intend my invention to cover not only hemp or other types of rope but wire rope, belts, straps or a suitable type of chain which may pass through the coils of the springs.

Although my invention is of a simple character, nevertheless, it will be apparent that the general construction and specific details may be changed to suit different towing arrangements. For instance, the springs and links may be adapted to towing chains as well as ropes and instead of using long links 6 as indicated ordinary size chain links, wire cable or heavy hemp rope could be utilized. Such various changes would be within the spirit of my invention as set forth in the description, drawings and claims.

Having described my invention, what I claim is:

1. A tow rope comprising in combination a flexible rope, a plurality of springs, the rope being roved through the springs, means to attach the springs to the rope, inextensible means connecting the adjacent ends of the springs, the springs being positioned on the rope to normally form a slack therein in normal towing operations and in abnormal conditions to stretch, allowing the towing strain to be transmitted partly by the rope and partly by the springs and inextensible connection.

2. A tow rope comprising in combination a plurality of helically coiled springs, flexible rope roved through said springs, means to attach the springs to the rope, an inextensible connecting means between the adjacent ends of the springs, the springs being mounted on the rope to normally form a slack between the adjacent ends of the springs.

3. A tow rope comprising in combination a pair of helically coiled springs, a flexible rope roved through said springs, the outer ends of the springs having ends caught through strands of the rope, an inextensible connection between the adjacent ends of the springs, the springs being mounted on the rope to normally form a slack, the slack being taken up by the extension of the springs thereby transmitting abnormal stresses directly through the rope and through the springs and the connection between said springs.

4. A tow rope comprising in combination a pair of helically coiled springs, a flexible rope roved therethrough, clamps securing the opposite ends of the pair of springs to the rope, links connecting the adjacent ends of the springs, the springs being mounted on the rope to normally form a slack between the springs.

5. In a tow rope, an extensible attachment comprising a pair of helically coiled springs, said springs being of such internal diameter to allow roving of a tow rope therethrough, inextensible links connecting the adjacent ends of the springs, the opposite ends of the pair of springs being constructed and adapted to allow securing to a tow rope.

In testimony whereof I have signed my name to this specification.

WILLIAM A. MORTON.