Dec. 25, 1934. E. STRANG 1,985,468

TOWLINE

Original Filed Jan. 16, 1933 2 Sheets-Sheet 1

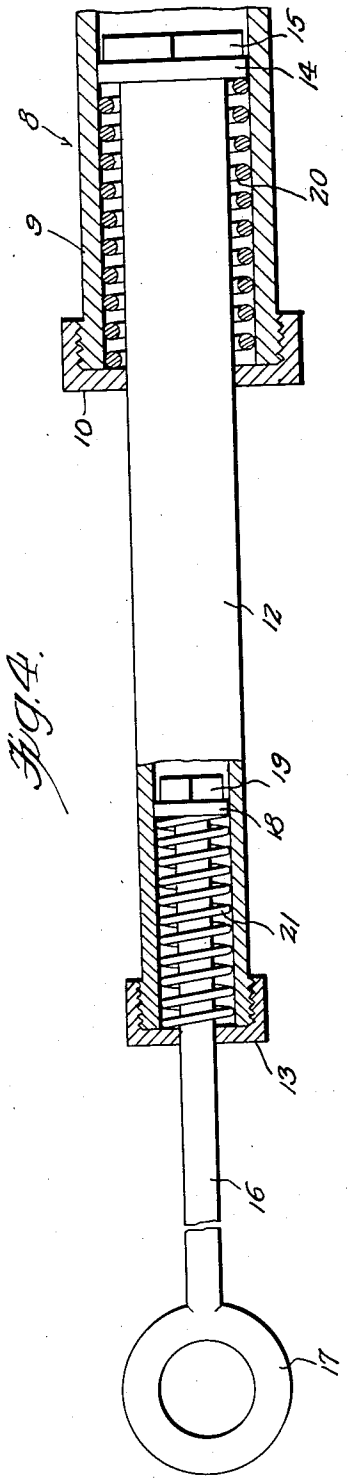


Fig. 4.

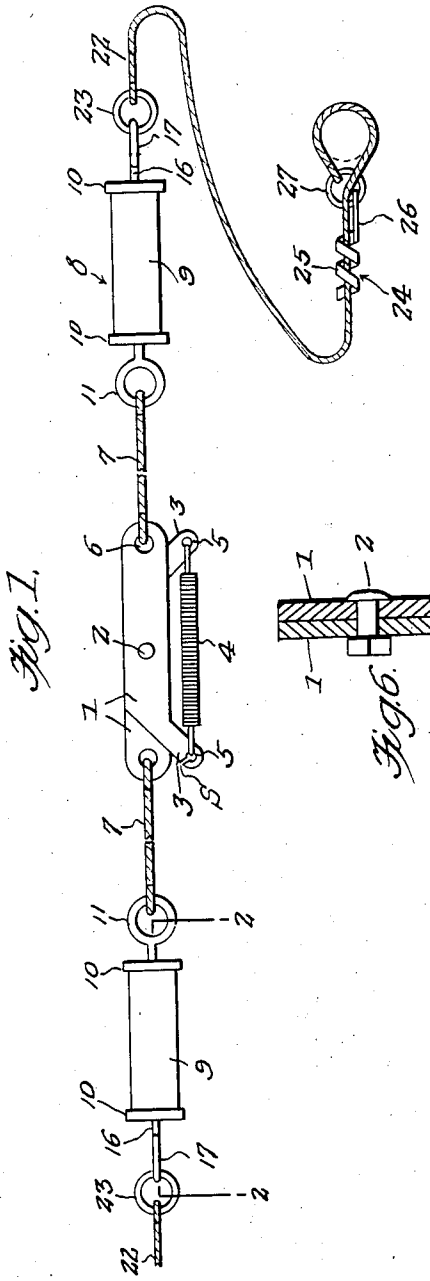


Fig. 1.

Fig. 6.

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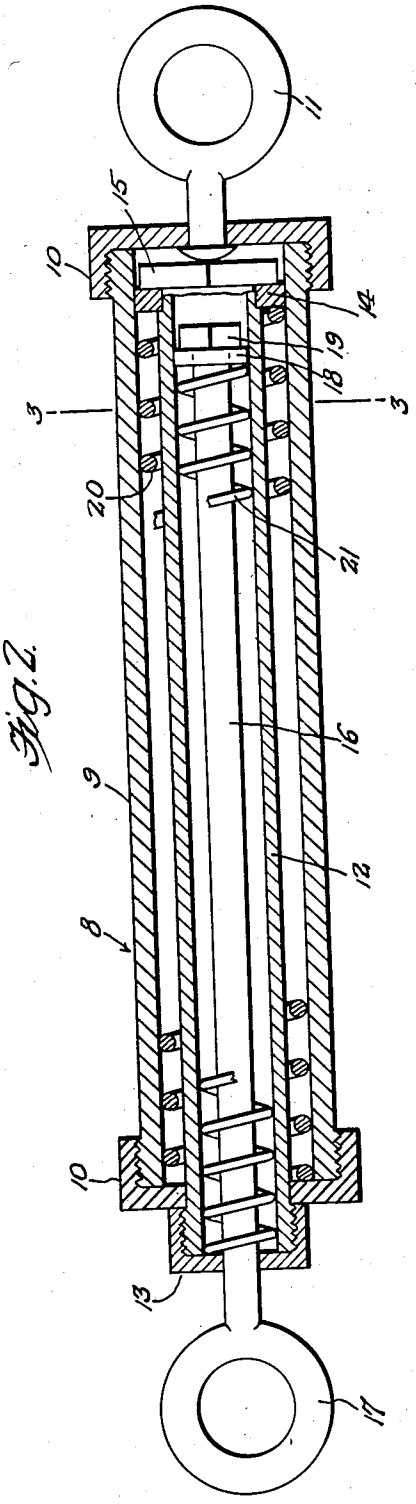


Fig. 2.

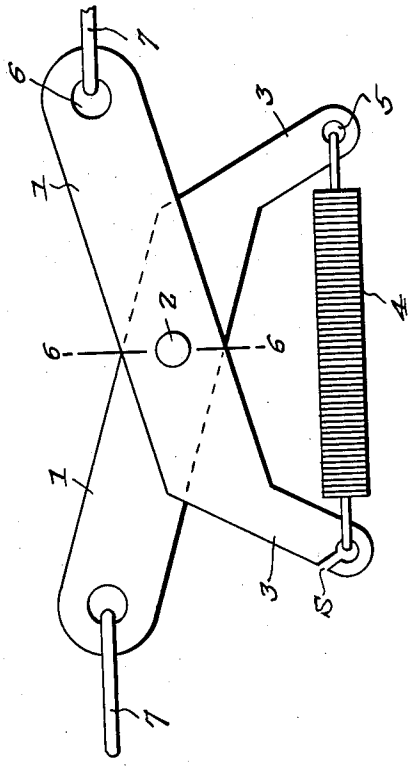


Fig. 5.

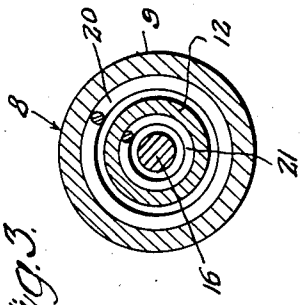


Fig. 3.

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1,985,468

UNITED STATES PATENT OFFICE

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TOWLINE

Edward Strang, Glendale, Calif.

Application January 16, 1933, Serial No. 652,087
Renewed June 16, 1934

4 Claims. (Cl. 280—33.14)

The present invention relates to new and useful improvements in vehicle towlines and has for its primary object to provide, in a manner as hereinafter set forth, a device of this character embodying a novel construction, combination and arrangement through the medium of which a resilient connection is provided between the towing and the towed vehicles, thus preventing such vehicles from being subjected to jerks and consequent strains.

Other objects of the invention are to provide a towline of the aforementioned character which will be simple in construction, strong, durable, efficient and reliable in use, compact and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a view in side elevation of a towline constructed in accordance with the present invention.

Figure 2 is a longitudinal sectional view, taken substantially on the line 2—2 of Figure 1.

Figure 3 is a view in vertical transverse section, taken substantially on the line 3—3 of Figure 2.

Figure 4 is a view principally in longitudinal section through an end portion of one of the cylinder units, showing same in extended position.

Figure 5 is a detail view in side elevation of the intermediate resilient unit.

Figure 6 is a detail view in transverse section, taken substantially on the line 6—6 of Figure 5.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises a pair of angular, metal levers 1, which are pivotally connected with each other at intermediate points, as at 2. The levers 1 include reduced, angularly extending end portions 3 between which a coil spring 4 extends, said end portions 3 having openings 5 therein for receiving the ends of the spring 4. One of the openings 5 has a slot S communicating therewith for facilitating detachment of the spring 4 to permit the levers 1 to be positioned parallel to each other when the towline is not in use. The construction and arrangement is such that the spring 4 yieldingly maintains the main portions of the levers 1 at an angle relative to each other, as seen in Figure 5 of the drawings. The other end portions of the levers are provided with openings 6 to facilitate the connection of cables 7 thereto.

The reference numeral 8 designates generally what will be hereinafter referred to as a pair of resilient, extensible cylinder units which are connected with the cables 7 on opposite sides of the levers 1. As the cylinder units 8 are of identical construction, a detailed description of one will suffice for both.

Each unit 8 includes a cylinder 9 having caps 10 threaded on its ends. The innermost cap 10 has mounted thereon an eye 11 for connection with the adjacent cable 7. Mounted for longitudinal sliding movement in the cylinder 9 is a tube 12 which extends slidably through an opening provided therefore in the outermost cap 10, said tube 12 being spaced concentrically from the cylinders 9. A cap 13 is threaded on the outer end of the tube 12 and an annular abutment 14 is secured on the inner end of said tube 12 through the medium of a nut 15.

Mounted for longitudinal sliding movement in the tube 12 and spaced concentrically from said tube 12 is a rod 16 which passes slidably through an opening provided therefor in the cap 13. An eye 17 is provided on the outer end of the rod 16 and an abutment 18 is secured on the inner end of said rod 16 through the medium of a nut 19. A coil spring 20 encircles the tube 12 in the cylinder 9 and has one end engaged with the outermost cap 10 and its other end engaged with the abutment 14 for yieldingly urging said tube 12 inwardly in its cylinder. A comparatively weak coil spring 21 encircles the rod 16 in the tube 12 and has one end engaged with the cap 13 and its other end engaged with the abutment 18 for yieldingly urging the rod inwardly in said tube 12.

The reference numeral 22 designates cables which are connected, at one end, to the eyes 17 of the units 8 through the medium of rings 23. If desired, the rings 23 may be omitted and the cables 22 connected directly with the eyes 17. Connected to the other end of each cable 22 is a hook which is designated generally by the reference numeral 24. Each hook 24 comprises a strip of flat metal formed to provide a spiral 25 and a straight end portion 26, said portion 26 having an opening in its free end portion in which a ring 27 is loosely mounted. The cables 22 are connected to the rings 27.

In use, the outer portions of the cables 22 are looped around any suitable portions of the vehicles, such as the axles, and secured by the hooks 24, as illustrated to advantage in Figure 1 of the drawings. The comparatively weak springs 21 in

the units 8 are compressed and then, as the load increases, the springs 20 are compressed. It will thus be seen that a resilient construction is provided which will prevent jerking and straining of both vehicles. At all times when there is any load on the tow line, the levers 1 are in the position shown in Figure 1 of the drawings, thus providing a direct pull between the cables 7. However, when the pull is eliminated, as when going downgrade and the towed vehicle runs up on the towing vehicle, the coil spring 4 contracts and swings the levers 1 to the position shown in Figure 5 of the drawings for taking up slack.

It is believed that the many advantages of a towline constructed in accordance with the present invention will be readily understood, and although the preferred embodiment of the invention is as illustrated and described, it is to be understood that changes in the details of construction, and in the combination and arrangement of parts may be resorted to will fall within the scope of the invention as claimed.

Having thus described my invention, what I claim as new is:

1. A vehicle towline comprising, in combination, a pair of resilient units, means for connecting the units to the vehicles, and resilient slack compensating means connecting the units together, said slack compensating means including a pair of levers pivotally connected with each other at an intermediate point, a spring connected with one end of the levers for yieldingly urging said levers in one direction, and means connecting the other ends of the levers with the units.

2. A vehicle towline comprising, in combination, a pair of levers pivotally connected with each other at an intermediate point, a spring connected to one end of the levers for yieldingly urging said levers in one direction, and means for connecting the other ends of the levers to a pair of vehicles.

3. A vehicle towline comprising, in combination, a pair of pivotally connected levers, resilient means operatively connected with the levers for yieldingly urging said levers in one direction, and means for connecting the levers with a pair of vehicles for actuating said levers against the tension of the resilient means when the towline is under load.

4. A vehicle towline comprising, in combination, a pair of levers pivotally connected with each other at an intermediate point, each lever including an angularly extending end portion, a coil spring connected to the angularly extending end portions for yieldingly actuating the levers in one direction, and flexible means for connecting the other end portions of the levers to a pair of vehicles.

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