

(No Model.)

D. STRETCH.
TENSION BUFFER.

No. 577,272.

Patented Feb. 16, 1897.

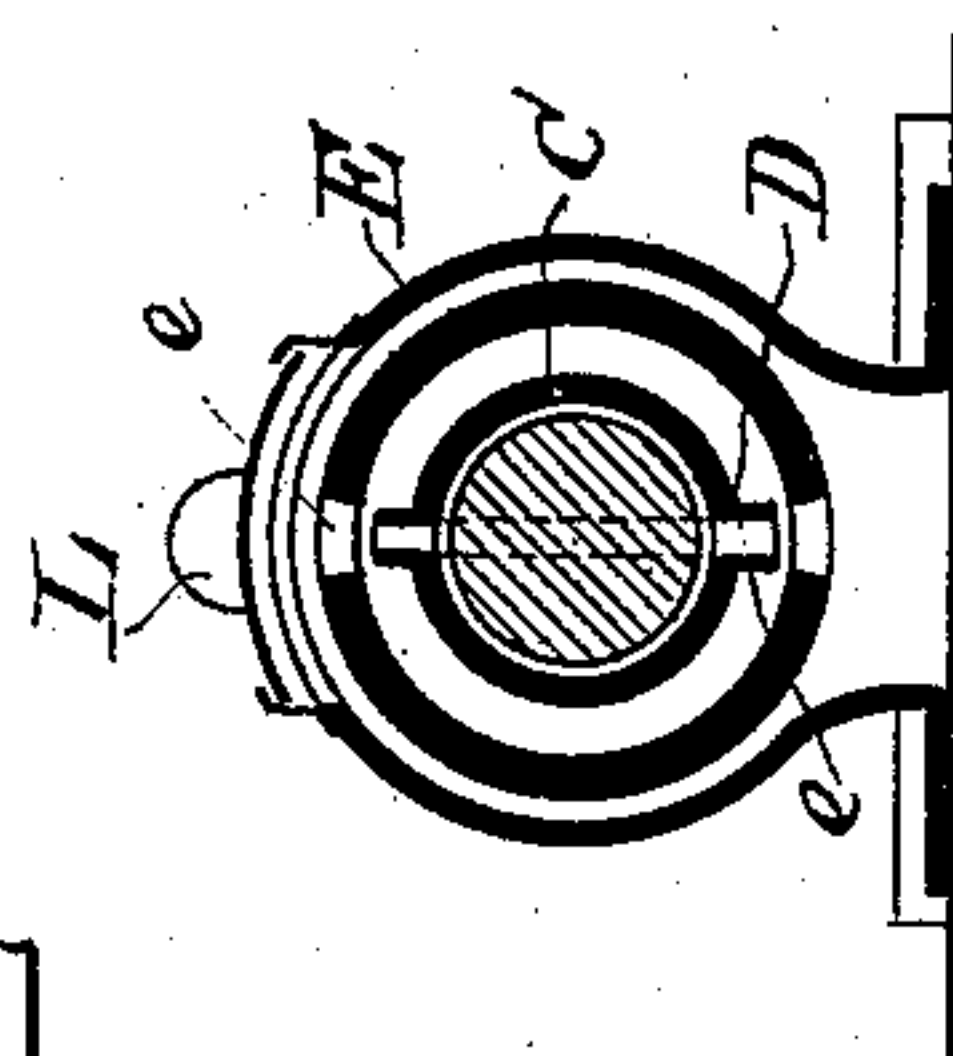


Fig. 2.



Fig. 4.

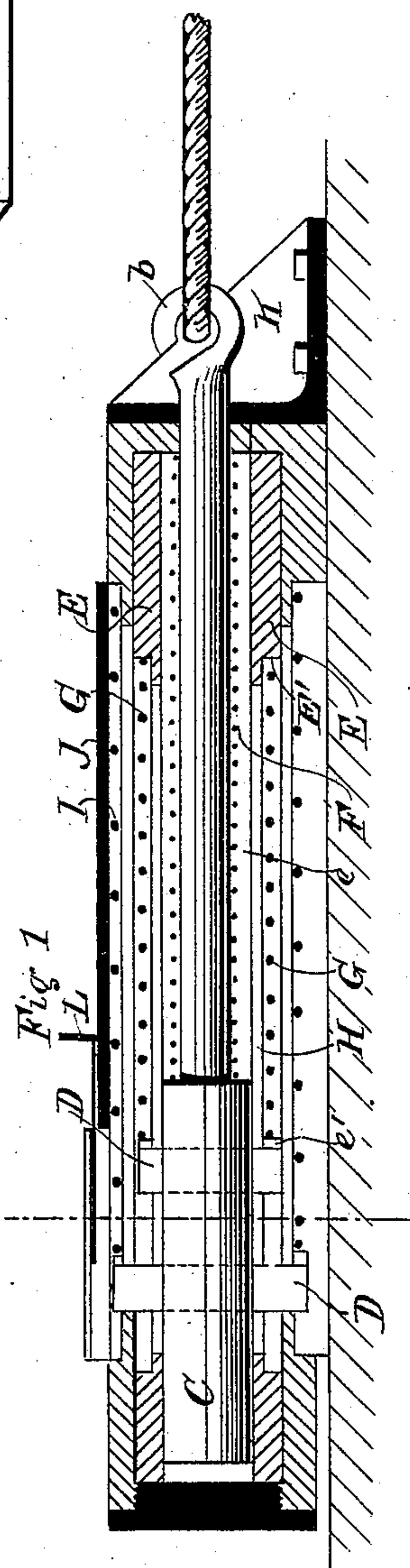
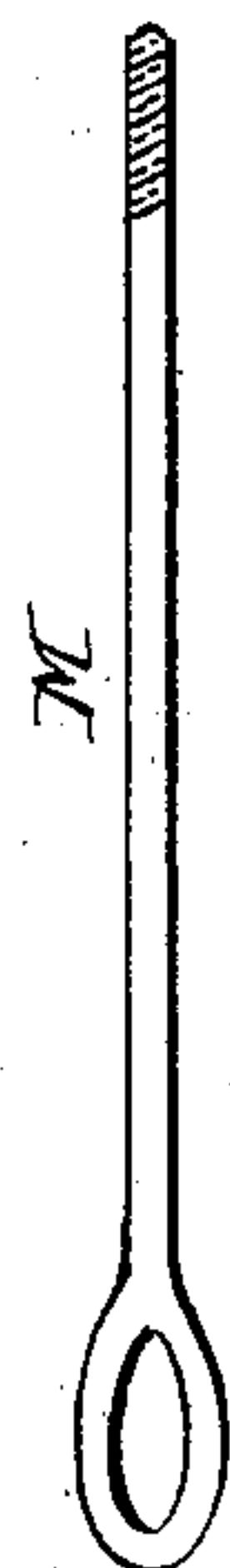


Fig. 1.

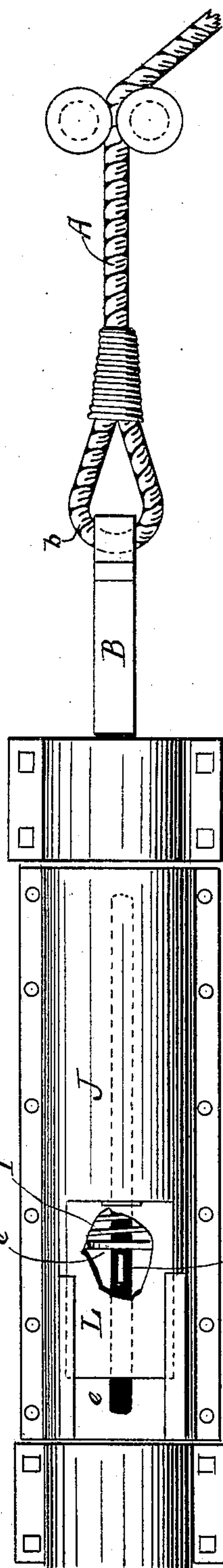


Fig. 3.

Witnesses

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Inventor

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By
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UNITED STATES PATENT OFFICE.

DREW STRETCH, OF LITHERLAND, ENGLAND.

TENSION-BUFFER.

SPECIFICATION forming part of Letters Patent No. 577,272, dated February 16, 1897.

Application filed September 5, 1896. Serial No. 604,937. (No model.) Patented in England August 14, 1895, No. 15,282, and in France March 10, 1896, No. 254,653.

To all whom it may concern:

Be it known that I, DREW STRETCH, mariner, a subject of the Queen of Great Britain, residing at Litherland, near Liverpool, in the county of Lancaster, England, have invented certain new and useful improvements in tow-heads, tension-buffers, or attachment devices for use on steamers, barges, steam-plows, and other structures towed, drawn, or used for towing or drawing, (for which I have received Letters Patent in England, dated August 14, 1895, No. 15,282; also, in France, dated March 10, 1896, No. 254,653,) of which the following is a specification.

This invention has for its object a tow-head, tension-buffer, or attachment device the tension or compression of the springs of which can be varied to suit the strains likely to be brought upon it.

The invention will be understood from the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of my improved device; Fig. 2, a cross-section; Fig. 3, a plan of the device with springs compressed, and Fig. 4 the device for removing the cotters.

The invention consists, essentially, in the use of two or more springs acting independently, so that one, two, or any number of the springs in the buffer can be used as required.

The apparatus consists of a draw-bolt B, having a solid abutment C, preferably cylindrical, at one end and an eye *b* or other attachment for the rope A at the other end. Through the abutment are arranged one, two, or more sliding cotters D or their equivalent as points of abutment for the exterior springs, as hereinafter mentioned. This draw-bar and its abutment slide in an outer cylinder E, and between this outer cylinder and the draw-link I place a stout coiled spring F, pressing against the cylinder-head and the abutment C. The outer cylinder E is slotted at *e* for the cotters D to pass through. This cylinder has a projecting abutment E' near its front end—that is, the end through which the eye of the draw-link B projects. A second coiled spring G is placed over this cylinder E and abuts against its abutment E' at the one end and against a washer *e'* at the other end, said washer again abutting against the shortest

and nearest of the cotters D aforesaid. Outside this cylinder can be a similar cylinder H, with a similar spring I and washer abutting against the next cotter D, and in this way several cylinders can be superimposed if desirable, an ordinary sheet-iron casing J covering the outer cylinder. It is obvious that, if desirable, there could be four or more slots *e* in the cylinders instead of two. By this means the two cotters could be placed at right angles, or at an angle of sixty degrees with each other. There is, however, no particular advantage in this. In place of cotters it is also obvious that any other means could be used by which the ordinary draw-link shall be able to form an abutment when required for the outer springs; also, that the various springs could be arranged one behind the other on the inner draw-bar, each abutting against a separate abutment, or they could be arranged in tension or some in tension and some in compression. These plans, however, would all be very clumsy, as they would require a great increase of length in the apparatus, whereas by having the springs concentric and in compression the whole arrangement is exceedingly compact and if the springs break it does not prevent the continued use of the apparatus.

K is a pressure-plate arranged at the point where the draw-bolt emerges from the cylinder. This is designed to give additional strength at the point of resistance to the springs when in action.

L is a sliding cover in the casing J, which can be moved longitudinally when it is desired to get at the cotters D; M, a wire handle which can be screwed into the holes in the cotters when required to lift them out of engagement with the springs. In the position depicted in the drawings the three springs are brought into play when tension is brought to bear on the rope A. If, however, it is not required to use the exterior springs I or G, all that is necessary is to remove one or both of the cotters D. The points of abutment of the said exterior springs being thus removed, they remain idle and are not compressed when tension is brought to bear on the rope A. By this means the tension of the springs can be varied to suit the

strains likely to be brought upon the apparatus.

I declare that what I claim is—

- 5 1. A tow-head, tension-buffer, or attachment device for use on steamers, barges, steam-plows, and other structures, towed, drawn or used for towing or drawing consisting of a sliding draw-bolt having springs arranged concentrically one around the other
10 on the draw-bar, and each abutting against a separate or removable abutment, whereby each spring will act independently so that one, two or any number of springs can be used as required, substantially as described.
- 15 2. A towing-head, tension-buffer, or attachment device for use on steamers, barges, steam-plows, and other structures towed, drawn, or used for towing or drawing, consisting of a sliding draw-bolt having a solid head
20 or abutment at one end and an eyebolt or other attachment at the other for the rope and a coiled spring pressing against the sliding head aforesaid at one end, and against a solid abutment at the other, in combination with
25 an outer cylinder having a coiled spring, one end of which presses against a cotter or other abutment on the draw-link head, and the other against a projecting abutment on the

cylinder, and one or more similar cylinders and springs each arranged concentrically and 30 superimposed one around the other in succession, whereby each spring will act independently so that one, two or any number of the springs can be used as required substantially as described.

- 35 3. In a towing-head, tension-buffer, or attachment device for use on steamers, barges, steam-plows, and other structures in which two, three, or more springs are arranged concentrically on a draw-bar and each abutting 40 against a separate abutment, consisting of cotters D forming when in position points of abutment for the springs to bear against, the said cotters being capable of being placed in position or removed from the draw-bar as re- 45 quired, whereby one, two or any number of the springs can be brought into play or thrown out of connection.

In testimony whereof I have signed my name to this specification in the presence of 50 two subscribing witnesses.

DREW STRETCH.

Witnesses:

G. C. DYMOND,
W. H. BEESTON.