

W. P. RILEY.
Tug-Link.

No. 200,803.

Patented Feb. 26, 1878.

Fig. 1.

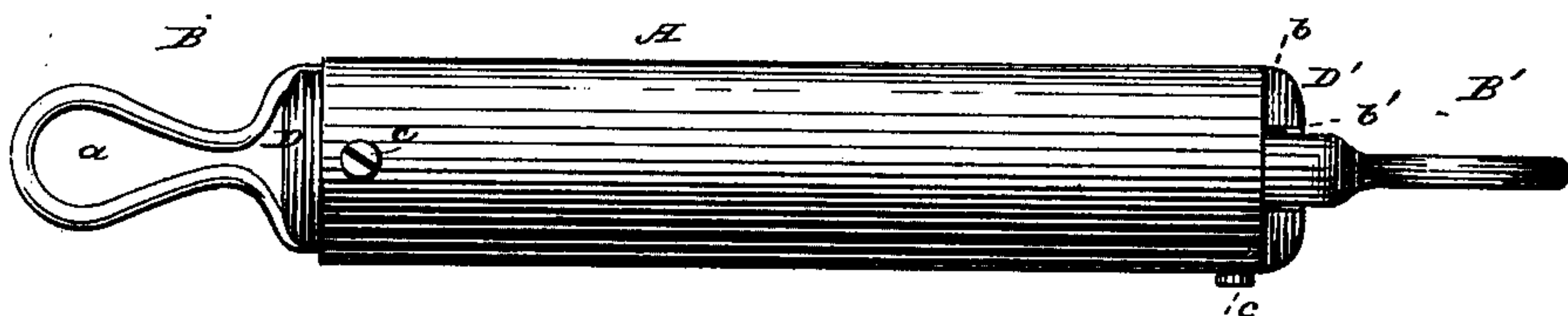


Fig. 2.

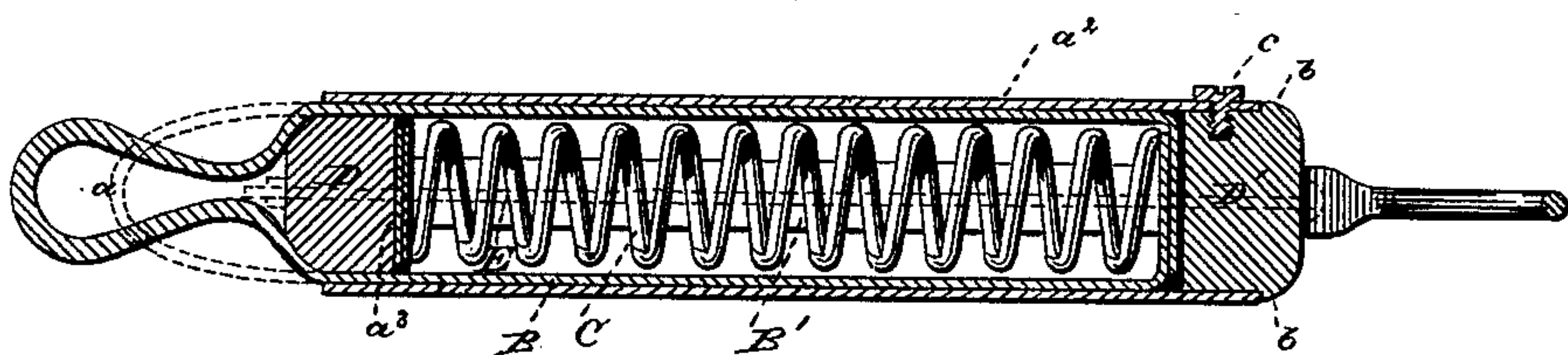


Fig. 3.

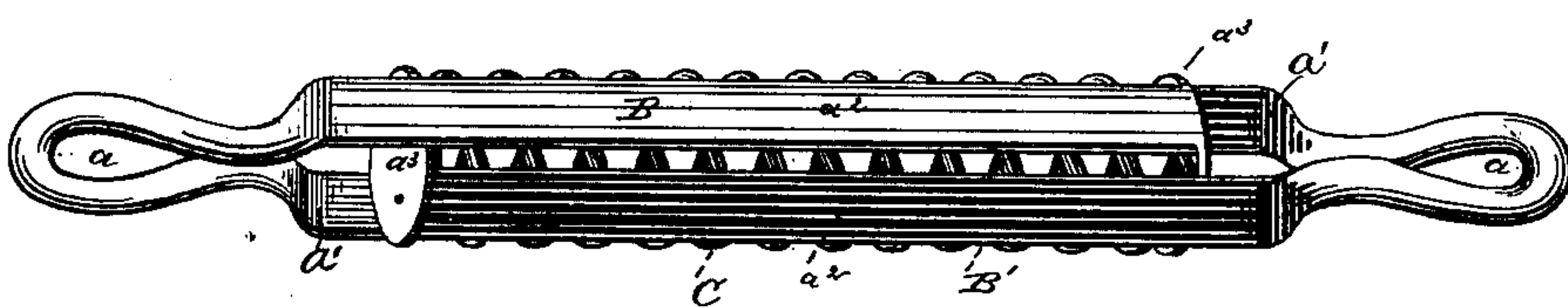


Fig. 4.

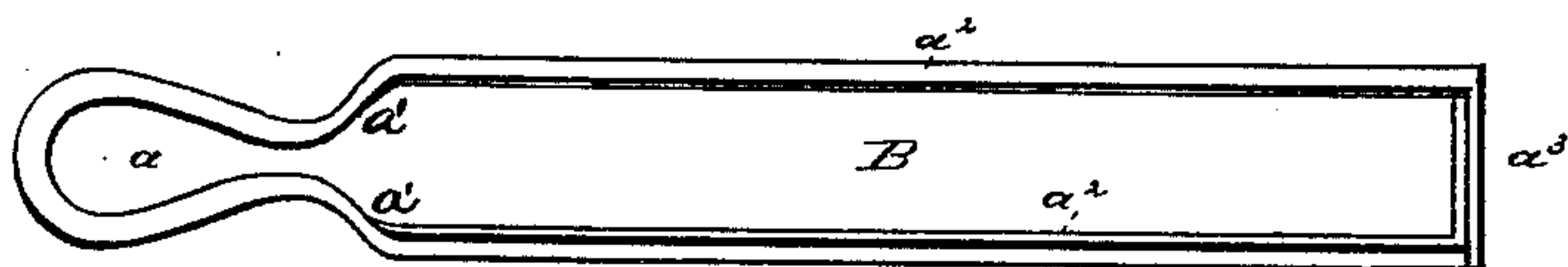
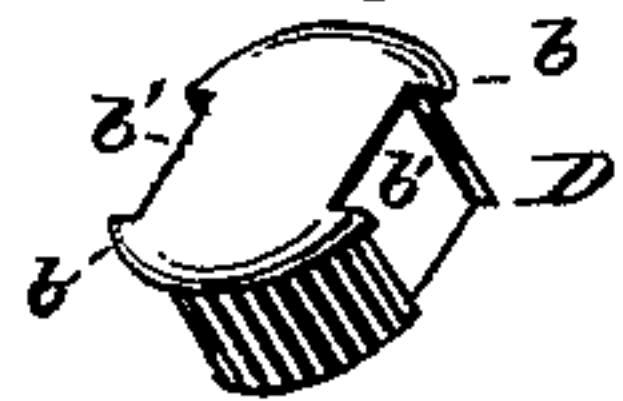


Fig. 5.



Attest:
R. T. Dyer
J. A. Payne

Inventor:
William P. Riley
by Geo. W. Dyer
att'y

UNITED STATES PATENT OFFICE.

WILLIAM P. RILEY, OF WILLIAMSPORT, PENNSYLVANIA, ASSIGNOR OF
ONE-HALF HIS RIGHT TO THOMAS MAITLAND, OF SAME PLACE.

IMPROVEMENT IN TUG-LINKS.

Specification forming part of Letters Patent No. **200,803**, dated February 26, 1878; application filed
January 26, 1878.

To all whom it may concern:

Be it known that I, WILLIAM P. RILEY, of Williamsport, in the county of Lycoming and State of Pennsylvania, have invented a new and useful Improvement in Tug-Links; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object I have in view is to produce an elastic tug-link which will be cheap, durable, and efficient.

My invention therein consists, first, in the employment, within a cylindrical shell, of broad and flat interlocking draft-links and a cylindrical spring inclosed by such links; second, in the peculiar construction of the draft-links to adapt them for use with a cylindrical spring; and, further, in the elastic tug-link, the parts of which are constructed and arranged as fully hereinafter explained.

In the drawings, Figure 1 is an elevation of the tug-link; Fig. 2, a longitudinal section of the same; Fig. 3, a perspective view of the device with the shell and heads removed; Fig. 4, a separate view of one of the draft-links, and Fig. 5 a separate view of one of the heads.

Like letters denote corresponding parts.

A represents the shell or case of the tug-link, which is made of cylindrical form, with open ends, and is of requisite size to inclose the parts of the device. This shell is constructed of wrought or cast iron or brass, and, since it is subjected in use to very little, if any, strain, as will be soon explained, it can be made very light and quite inexpensive. B B' are two draft-links, working within the shell, and acting in opposite directions upon the inclosed cylindrical spring C. Each of these links is, preferably, made of a single piece of strap-metal, doubled on itself in parallel lines, and closed together at a point near one end to form an eye, *a*, extending from the shoulders *a*¹ to the end of the link. Below the shoulders *a*¹ the sides *a*² of the link are parallel, or nearly so, and are, preferably, made slightly concave, to fit closely and smoothly between the cylindrical shell and similarly-shaped spring. The ends of the strap forming each link are bent at right an-

gles to the sides, overlapped, and secured together, thus closing the end of the link. This end *a*³ of each link is, preferably, enlarged into a circular form, so as to make a bearing-surface for the spring of the same size as the end of such spring. Before the second of the two draft-links is closed at its end *a*³ the links are interlocked or linked together in the manner shown, so that the sides and the eye *a* of one link stand at right angles to those of the other link. Between the ends *a*³ of these draft-links is placed the cylindrical spring C. This spring is, preferably, a spiral metallic spring, but may be constructed of rubber or other suitable elastic material, and is of such size as to fit closely between the sides *a*² of the links, as shown in Figs. 3 and 4. Into the ends of the shell A are fitted heads D D' of metal. Each head (shown in detail in Fig. 5) has a shoulder, *b*, which rests on the circular end of the shell, and keeps the head in place, while on opposite sides the heads are cut away to form slots *b'*, which allow the sides of the draft-links to play freely through the ends of the shell. These heads are inserted into the ends of the shell, under the shoulders *a*¹, and, when the parts are in place, the shoulders are drawn by the spring close against the outer faces of the heads. One or more screws, *c*, are tapped through each end of the shell into the heads, by which they are held in place.

In use, my link is supported in the line of draft by the eyes *a*, which receive the strain, and transmit it from one to the other through the inclosed spring, thus lessening the jar both upon the horse and the vehicle being drawn; and, although especially designed for use upon heavy wagons, the link can also be employed, without change of construction, with street-cars or other vehicles.

My tug-link, it will be seen, is very compact and light; and, in addition, since the strain is entirely upon the draft-links, and not upon the heads of the shell, as in tug-links where the spring presses directly against one of the heads, the device is not so liable to get out of order, and the parts are not jammed together by use, so that the shell cannot be opened to replace the spring when required.

As a modification of my device, I have de-

signed, instead of securing the heads in the ends of the cylindrical shell by means of the screws *c* tapped through the sides of the shell, to pass a bolt, *E*, (shown in dotted lines in Fig. 2,) longitudinally through the center of the shell, and centrally through the heads *D D'*, with a head upon one end and a screw-thread on the other end, to receive a nut, or both ends may be screw-threaded. By these means the heads *D D'* can be made quite thin, so as to lessen the weight of the device, and they will be securely held in position by the bolt without interfering at all with the operation of the parts. With this manner of securing the heads, I prefer to make the eyes *a* in the form shown in dotted lines at the left-hand side of Fig. 2.

Having thus fully described my tug-link and explained some of its advantages, I claim as new therein, and desire to secure by Letters Patent—

1. The combination, with the cylindrical shell, of the broad and flat draft-links *B B'*, and a single cylindrical spring inclosed by such draft-links, substantially as described.

2. In a tug-link, the draft-links *B B'*, having eyes *a*, concave parallel sides *a²*, and ends *a³*, in combination with the cylindrical spring *C*, substantially as described and shown.

3. The elastic tug-link described, consisting of the cylindrical shell *A*, heads *D D'*, the broad and flat draft-links *B B'*, and the inclosed spring *C*, all constructed, arranged, and combined substantially as described and shown.

This specification signed and witnessed this 28th day of December, 1877.

WILLIAM P. RILEY.

Witnesses:

JOHN RILEY,
M. L. CLAY.