W. G. LE DUC.

ELASTIC DRAFT-LINKS.

No. 194,448. Patented Aug. 21, 1877.

Fig. 1.

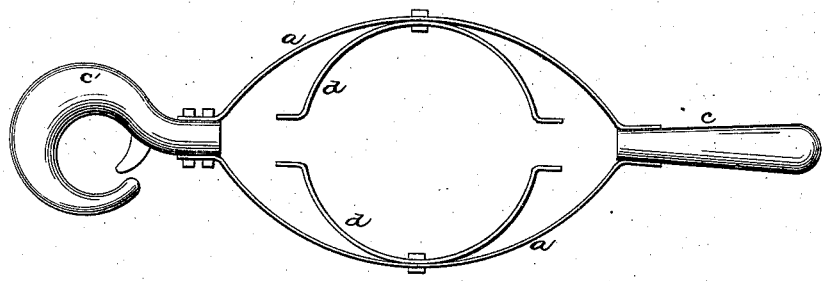


Fig. 2.

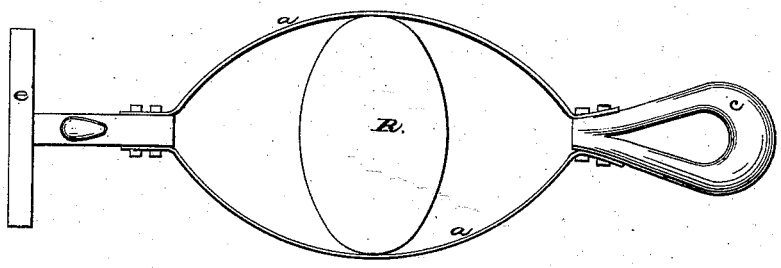


Fig. 3.

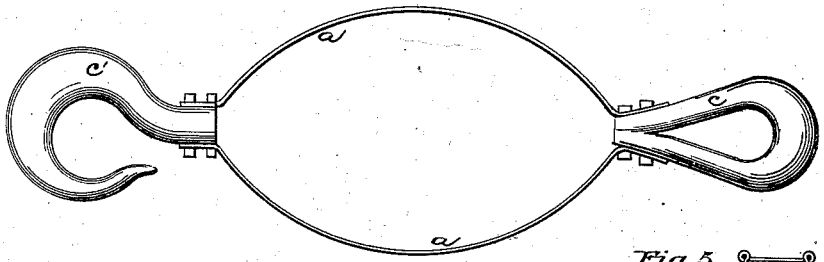


Fig. 5.

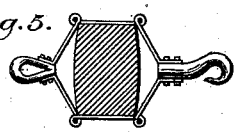
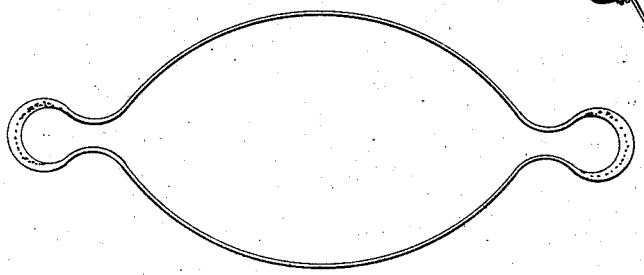


Fig. 4.



Attest:

Thomas L. Connolly
Jos. C. Fales,

Inventor:

Wm. G. Le Duc.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM G. LE DUC, OF HASTINGS, MINNESOTA, ASSIGNOR TO A. V. GARDNER, OF NEW YORK CITY.

IMPROVEMENT IN ELASTIC DRAFT-LINKS.

Specification forming part of Letters Patent No. **194,448**, dated August 21, 1877; application filed March 13, 1877.

To all whom it may concern:

Be it known that I, WM. G. LE DUC, of Hastings, Dakota county, Minnesota, have invented a new and useful Elastic Draft-Link, which invention is fully set forth in the following specification and accompanying drawings.

In Figures 1, 2, and 3, *a a a a* represent strips or ribbons of spring steel, brass, or other metal, bent and set in a semi-elliptical form and attached to the eyes or hooks *c* by bolts, rivets, or otherwise.

In Fig. 2, R is a rubber ball, cylinder, or ellipse introduced between the metal springs *a a* to catch up the draft, should it be too great for the springs.

In Fig. 1, *d d* are supplemental springs, of metal, for the same purpose. *c* is an eye, the opening in which is perpendicular to the face of the ribbons of metal; and *c'* is a snap-hook.

In Fig. 2, *c* is an eye, open at the side of the spring, and *e* is a fastening for buggy-trace.

It is evident that the kind of fastening hooks or eyes may be varied at pleasure; also, that the metallic strips or ribbons may be increased in number, length, or form, as the necessities or convenience of the case may require.

Fig. 4 is a closed link, of spring-steel or other metal, either round or flat, of elliptical shape, re-enforced at the draw-eyes by thickening the steel or other metal at the ends, or by riveting a re-enforce wearing-piece, substantially as appears in the drawing.

It is evident that the metal used in these various forms of the elastic draft-link may be either flat, round, or half-round, or of other shape, and may be continuous strips or bands, or may be pieces of metal jointed with one or more joints, (one form of which is shown in Fig. 5,) according to the service required of the link.

The object of my invention is to break the force of the sudden shock or jar of the draft in starting or drawing loads, either applied by horse or steam power, and thus prevent the ill effects of sudden strain upon the horse's shoulders or upon the machinery, and also to economise the power necessary to start a heavy load, and to equalize the varying resistance of traction. It is also apparent that the elastic link may be used as a dynamometer.

I claim—

1. The elastic draft-link, composed of elliptically-curved band or bands, rod or rods, of suitable metal, provided at their ends with hooks or eyes, all substantially as set forth.

2. The elastic draft-link, composed of the curved band or bands, rod or rods, of suitable metal, provided with end-fastening devices, in combination with the intermediate springs or their equivalent, all substantially as and for the purpose set forth.

WM. G. LE DUC.

Witnesses:
THOMAS C. CONNOLLY,
JOS. T. FALES.