(No Model.)

# G. W. FAIL.

## TRACE.

No. 406,436. Patented July 9, 1889.

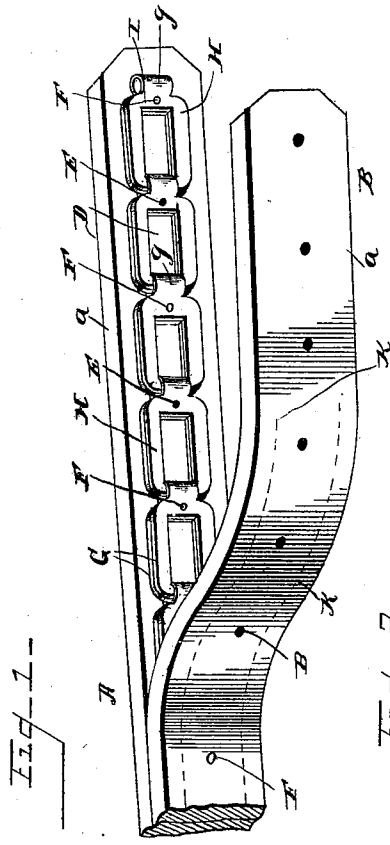


Fig. 1.

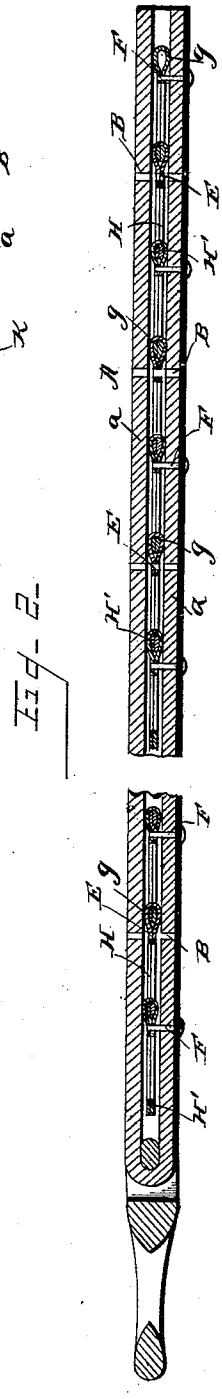


Fig. 2.

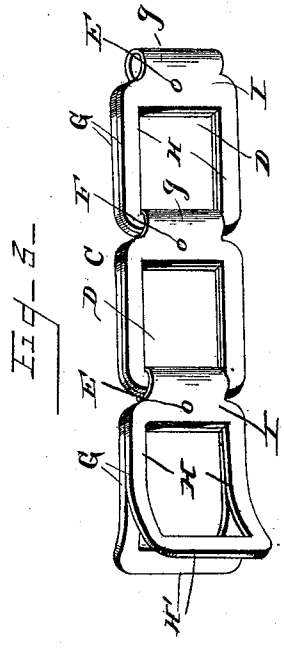


Fig. 3.

Witnesses

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Wm. Bagger

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# UNITED STATES PATENT OFFICE.

GEORGE W. FAIL, OF BETHANY, MISSOURI.

## TRACE.

SPECIFICATION forming part of Letters Patent No. 406,436, dated July 9, 1889.

Application filed November 20, 1888. Serial No. 291,331. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. FAIL, a citizen of the United States, residing at Bethany, in the county of Harrison and State of Missouri, have invented a new and useful Improvement in Protectors or Strengtheners for Traces, &c., of which the following is a specification.

The invention relates to a protector or strengthener for traces; and it consists in a certain novel construction and combination of devices, fully described hereinafter and claimed.

In the drawings, Figure 1 is a perspective view of a portion of a trace provided with the improved protector or strengthener, the side straps comprising the trace being separated for a portion of their length to indicate the position of the protector. Fig. 2 is a longitudinal central sectional view of a portion of the trace. Fig. 3 is a detail perspective view of a portion of the protector detached from the trace.

Referring by letter to the drawings, A designates a trace of the well-known or any preferred form, comprising the side straps *a a*, stitched together at their upper and lower edges.

The protector C, which is located between the side straps of the trace, consists of a series of connected links D D, having perforations E E, which register with perforations B B in the side straps, and alternate links are secured firmly to one of the side straps by rivets F F. These links, which are shown clearly in Fig. 3 of the drawings, consist each of two integral leaves G G, connected at one end by the eye *g*, the said leaves being provided with the side bars H H and the end bars H′. The end bars of each link are received in the eye of the adjoining link, the free ends of the leaves forming the links being thereby held together, and the solid portions I I of the links, adjacent to their eyes *g*, are perforated, as seen at E E. The perforation of each alternate link registers with one of the perforations B B of the trace, and in the perforations of the intermediate links are fitted the rivets F F, above described. The links are preferably of sufficient width to fit snugly between the rows of stitching K K, and thereby prevent lateral displacement of the links, and the riveting of the alternate links prevents longitudinal movement of the protector, and therefore the perforations of the protector are held in alignment with the perforations of the trace.

It will be understood that the perforations B B are for the tongue of the buckle which is used to adjust the length of the trace, and it is obvious that said perforations are to be formed only at the front end of the trace, where it is to be connected with the tug. The buckle, however, is not shown in the drawings, as its character and use are well known and its construction and application do not form parts of this invention.

The advantages of this protector will be readily appreciated by any one skilled in the art to which it appertains. It strengthens the trace as an entirety and prevents the stretching and the tearing out of the perforations in which the buckle is engaged. It is flexible and permits the trace to bend freely, as when not provided with the protector. As the links are detachable simply by separating the free ends of the leaves, the protector may be readily suited in length to the length of the trace to which it is to be attached. If the strap to be strengthened is single, (instead of being double, as shown in the drawings,) the protector may be secured to one side thereof in the same manner as it is secured to one of the sides of the double trace—namely, by riveting.

Having thus described the invention, I claim—

As an improvement in traces, the combination, with the pair of straps forming a trace connected by stitching along their edges, of a metallic chain interposed between said straps, said chain being composed of flat double-leaved links, each of which has a perforation in its solid portion, each alternate link being secured to one of the straps by a rivet passing through its perforation, and the perforations in the intermediate non-riveted links registering with perforations for the buckle-tongue in both straps, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE W. FAIL.

Witnesses:
M. C. TURNER,
GEO. W. WILLIAMS.