D. R. PORTER.

Traces or Tugs.

No. 216,217. Patented June 3, 1879.

Fig. 1.

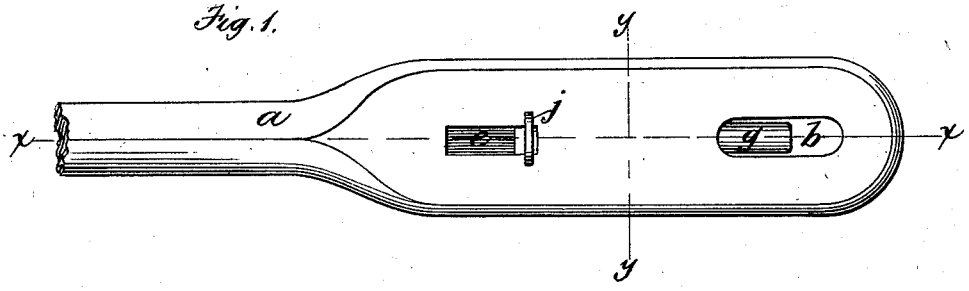


Fig. 2.

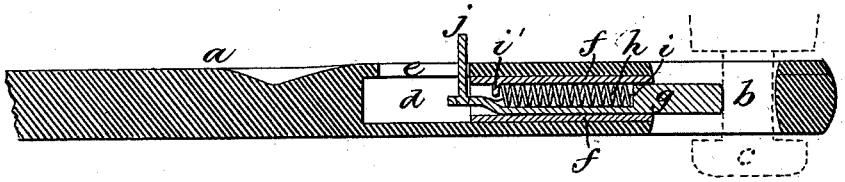
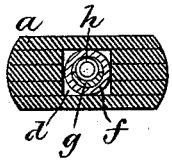


Fig. 3.



Witnesses.

Geo. W. Pierce

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UNITED STATES PATENT OFFICE.

DANIEL R. PORTER, OF SHARON, NEW HAMPSHIRE.

IMPROVEMENT IN TRACES OR TUGS.

Specification forming part of Letters Patent No. **216,217**, dated June 3, 1879; application filed April 2, 1879.

To all whom it may concern:

Be it known that I, DANIEL R. PORTER, of Sharon, in the county of Hillsborough and State of New Hampshire, have invented certain Improvements in Traces or Tugs, of which the following is a specification.

This invention relates to a trace-fastener, consisting of a spring-bolt for securing the trace to the button or iron of a whiffletree, the bolt being so located as to spring into the hole in the trace that receives the whiffletree-iron, and prevent the trace from being drawn off from said iron.

Heretofore, in fasteners of this class, the bolt has been located in a metallic casing, which contains the hole, and is secured to the trace, and constitutes the entire end thereof, the outer surface of the metal casing being exposed, so that it is liable both to strike against and disfigure the portions of the carriage adjacent to it, and to be scratched and injured by use and disfigured by rust. The amount of metal necessarily employed adds both to the weight and expense of the trace.

My invention has for its object to apply a metallic fastener to a leather trace in such manner as to cause the leather to cover and protect the metal and obviate the objections above named.

To this end my invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side view of a trace provided with my invention. Fig. 2 represents a section on line *x x*, Fig. 1. Fig. 3 represents a section on line *y y*, Fig. 1.

Similar letters refer to like parts in all the figures.

In the drawings, *a* represents a leather trace having in its end a hole, *b*, to receive the headed iron *c* of a whiffletree. The end of the trace is preferably composed of several thicknesses of leather, sewed together at their edges, and is of such thickness that it can contain a cavity, *d*, which communicates with the hole *b*, said cavity being formed by cutting out parts of the central thicknesses of leather. *e* represents a slot in one side of the trace, communicating with the cavity *d*. *f* represents a metallic casing or socket, preferably of a tubular form, adapted to fit snugly in the cavity *e*. Said socket, with its hereinafter-described attachments, is preferably inserted in the cavity *e* before the thicknesses composing the end of the trace are sewed together, or, in other words, the socket is incorporated into the trace during the manufacture of the latter, although the socket may be applied to a trace previously completed by ripping up one of the outer layers, cutting the cavity in the inner layers, inserting the socket, and restitching the ripped outer layer. Whichever way the socket is applied, it should be securely and permanently attached to the trace, so as to be incapable of any movement therein.

g represents a bolt, which extends through the socket *f*, and is adapted to slide longitudinally therein. *h* represents a spring, which is interposed between a shoulder, *i*, on the bolt and a shoulder, *i'*, on the socket, and is adapted to push or project the end of the bolt *g* into the hole *b*, as shown. *j* represents a thumb-piece, which is attached to bolt *g* and projects through slot *e*.

When it is desired to apply the trace to a whiffletree, the operator withdraws the bolt from the hole *b* by pressing on the thumb-piece *j*, and then slips the hole *b* over the whiffletree-iron *c* until it passes the head of the same. The bolt is then released, and is projected by its spring into the hole *b* and against the shank of the iron *c*. The trace is thus prevented from slipping off from the iron *c* until the bolt is retracted.

It will be seen that no metal projects beyond the surface of the tug, excepting the thumb-piece *j*, which is so located as to do no injury. The trace is therefore free from liability to sear the wood-work with which it may come in contact, and the fastener is incased and cushioned, so that it is, in a measure, protected from dampness, and is not liable to be damaged by rough usage.

The small size of the fastener enables it to be made at small cost and with little weight.

I claim—

1. A leather trace having a metallic bolt, which is incased in and practically covered by

the trace, and is provided with a spring, which projects the bolt into the hole of the trace, and with a thumb piece projecting through the side of the trace, as set forth.

2. In combination with a leather trace having a cavity, *d*, and a slot, *e*, a socket, *f*, located in the cavity, a bolt, *g*, adapted to slide in the socket, and provided with a thumb-piece, *j*, projecting through the slot *e*, and a spring, *h*, adapted to project the bolt into the hole of the trace, as set forth.

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

DANIEL R. PORTER.

Witnesses:
W. G. HAWES,
GEO. W. PIERCE.