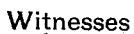


TRACE.

APPLICATION FILED JAN. 30, 1911.

Patented Dec. 12, 1911.



J. R. Duntin
V. L. Colamer

Columbus L. Ward,
Inventor

by

Chenoweth
Attorneys

UNITED STATES PATENT OFFICE.

COLUMBUS L. WARD, OF McARTHUR, OHIO, ASSIGNOR TO I. M. LANTZ, OF McARTHUR, OHIO.

TRACE.

1,011,534.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed January 30, 1911. Serial No. 605,511.

To all whom it may concern:

Be it known that I, COLUMBUS L. WARD, a citizen of the United States, residing at McArthur, in the county of Vinton and State of Ohio, have invented a new and useful Trace, of which the following is a specification.

This invention relates to harness, and more especially to the traces thereof; and the object of the same is to produce a trace which shall be light and strong, and which shall yet be able to flex between its ends.

To this end the invention consists in a trace constructed as hereinafter more fully described and claimed and as shown in the drawing wherein—

Figure 1 is a perspective view of a horse collar with a pair of my improved traces attached thereto, each showing one type thereof. Fig. 2 is a plan view of one type of my trace partly broken away, and Fig. 3 is a side view of another type thereof. Fig. 4 is a perspective detail of the metal fastening device shown in Fig. 3, and at the top of Fig. 1.

In the drawing, the letter C designates a horse collar, and with my improved trace the hames may be omitted and in their place plates P are secured to the sides of the collar and provided with a series of holes H. Into one of these holes, according to the height at which it is desired to attach the traces, is passed a snap hook S at the front end of the traces as shown in Fig. 1, and a similar snap hook at the rear end of each trace is attached to the whiffletree in a manner not necessary to elaborate.

Coming now more particularly to the present invention, my improved trace consists of two principal members although there might be more if desired. Each member comprises a body 5 made of a rectangular piece of wood, and metal attaching devices at both ends thereof. By preference each trace comprises a rather short body section toward the front, and a rather long body section toward the rear as shown in Fig. 1, although this is not necessary. The attaching member at the front end of the front section and at the rear end of the rear section is a snap hook. The attaching devices at the adjacent or meeting ends of the sections are shown in the drawings as of two types, one illustrated at the top of Fig. 1 and in Figs. 3 and 4 and the other at

the bottom of Fig. 1 and in Fig. 2. In either type there are two members flexibly connected between the adjacent ends of the wooden members 5, and each member has a fork which is rigidly connected with the wooden member. In Fig. 2 the flexible connection consists of a ball 6 and a socket 6', and in Figs. 3 and 4 the flexible connection consists of interlocking eyes 60 and 60' the former being given a one-quarter twist as best seen in Fig. 4. The fork arms 7 shown in Fig. 2 pass astride the wooden member 5 and the fork arms 70 shown in Figs. 3 and 4 do the same; and through either is passed a series of transverse bolts or rivets 8 for holding the fork arms to the wooden section, while an additional series of bolts or rivets 9 pass through the wooden section at right angles thereto and alternate with those numbered 8 as shown. It will be clear that the fork arms of the nut hooks may be attached to the outer ends of the wooden sections in the same manner.

I consider it essential that the connection between the adjacent ends of the two trace sections shall be flexible and loose because the former permits the sections to flex in all directions and to a considerable extent the latter permits one member to rotate partially upon the other as sometimes occurs when one end of the brace has been attached to the collar and the other end is turned slightly in the act of attaching it to the whiffletree. Without any joint in the trace the same would be cumbersome, especially in hitching and unhitching the horse, and when the body of the trace is made of wood it would be liable to become broken unless it had some joints. I also consider it necessary that the adjacent ends of the two sections shall be permanently connected, that is that they shall not be detachable in any way as they would be if they were connected by a hook and eye. The latter might permit them to automatically disconnect from each other when the sections were pushed toward each other, but a permanent connection even if it be flexible and loose will not permit disconnection. I consider wood preferable because it is light, tough, and yet strong, and it does not yield when the horse starts with a sudden jerk and hence his power is delivered directly to the load. By practical experiment I have found

that a rectangular cross section is preferable to others. I consider the arrangement of crossed bolts desirable because the fastening device is less likely to pull out of place when they are used and they prevent splitting of the wood. The plate on the collar and the holes therein avoid the necessity for the use of hames.

What is claimed as new is:—

- 10 1. The herein described trace, made in two sections whereof each comprises a rectangular body of wood, metal attaching devices at both ends of such body, those at the extremities of the trace being snap hooks and
 15 those between its sections being made in two members flexibly but permanently connected with each other, each metal member having a forked end embracing the wooden body, and two series of bolts at right angles to
 20 each other, one passing through the arms of the fork and through the wooden member between them and the other passing through the wooden member at points interposed between the bolts of the first-mentioned series,
 25 to provide a fastening for the metal mem-

bers and to prevent the bolts fastening the metal members from pulling endwise of the wooden members.

2. The herein described trace made in two sections whereof each comprises a rectangular body of wood, metal attaching devices at both ends of such body, those at the extremities of the trace being snaphooks and those at the adjacent ends of said sections comprising a ball-and-socket connection between said sections, a series of bolts passing through the body of the member for connecting each metal member with one end of said wooden body, and another series of bolts passing through the wooden members between the first series of bolts and at right angles thereto.

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

COLUMBUS L. WARD.

Witnesses:

FRANK V. LANTZ,

OTTO E. VOLLENWEIDER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."