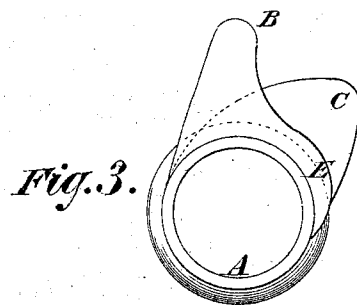
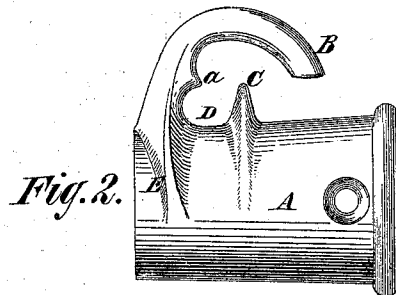
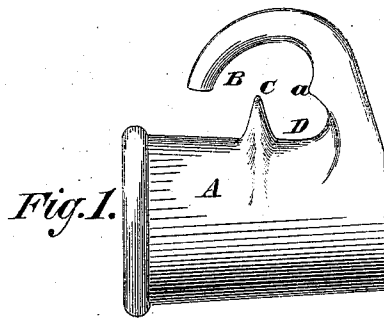


F. M. CALDWELL.
Whiffetrees.

No. 149,834.

Patented April 21, 1874.



Witnesses:

John H. Parsons
Thomas W. Smith

Inventor:

Francis M. Caldwell

UNITED STATES PATENT OFFICE.

FRANCIS M. CALDWELL, OF NEW YORK, N. Y.

IMPROVEMENT IN WHIFFLETREES.

Specification forming part of Letters Patent No. **149,834**, dated April 21, 1874; application filed March 6, 1873.

To all whom it may concern:

Be it known that I, FRANCIS M. CALDWELL, of the city, county, and State of New York, have invented a new and useful Improvement in Whiffletrees; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the figures and letters marked thereon, and in which—

Figure 1 is a top view of my improvement; Fig. 2, an under-side view of the same; Fig. 3, an end view.

The nature of my improvement consists in so constructing and forming the end irons of the whiffletree as to permit of the ready attachment of the trace-rings thereto, and at the same time preventing the traces from becoming detached from the whiffletree while in use.

To enable others skilled in the art to make and use my invention, I will now describe the construction and operation of the same.

I make my end irons of the whiffletree in the form of a ferrule, using as preferable for this purpose malleable-iron castings. On the outer end of the ferrule A is the hook B, carried inward, and having a small projection, *a*, on the inner part of the hook, at a point immediately above the trace-ring when in place upon the whiffletree. I also make a projecting tongue, C, upon the ferrule A, the apex of which is some short distance from the hook toward the lower side of the ferrule, as shown in Fig. 3. This tongue is placed the thickness of the trace-ring from the hook, so that the trace-ring may lie snugly between it and the hook. The point of the hook B must extend sufficiently over the tongue C to permit the

passage of the trace-ring over the tongue into the space or recess D, which is formed between the hook and the tongue for its reception. The hook B has also a projection or lip, E, upon the under side, as shown in Fig. 2.

In attaching the traces to the whiffletree I first put the trace-ring over the hook B into the space D, and then pass it over the end of the ferrule into its place around the end of the whiffletree, from which position it cannot be dislodged by any possible motion of the parts while in use.

I have herein described an operation and safe device for securing the traces to the whiffletree; but I do not wish to confine myself to the exact details of construction herein shown. Thus the tongue C may be dispensed with, and in lieu of it a hook may be cast upon the ferrule, having its point bent over toward the end of the ferrule, and in a reverse position to the hook B; or such a hook may be formed upon the tongue C, and other alterations might possibly be suggested without thereby changing the principle of my invention.

Having thus described my invention, and some of the variations of which its construction is susceptible, what I claim therein as new, and desire to secure by Letters Patent of the United States, is—

An end iron for whiffletrees, having projection C formed thereon, and having hook B turned inwardly, substantially as and for the purpose shown and described.

FRANCIS M. CALDWELL.

Witnesses:

THOMAS N. SMITH,
JOHN H. PARSONS.