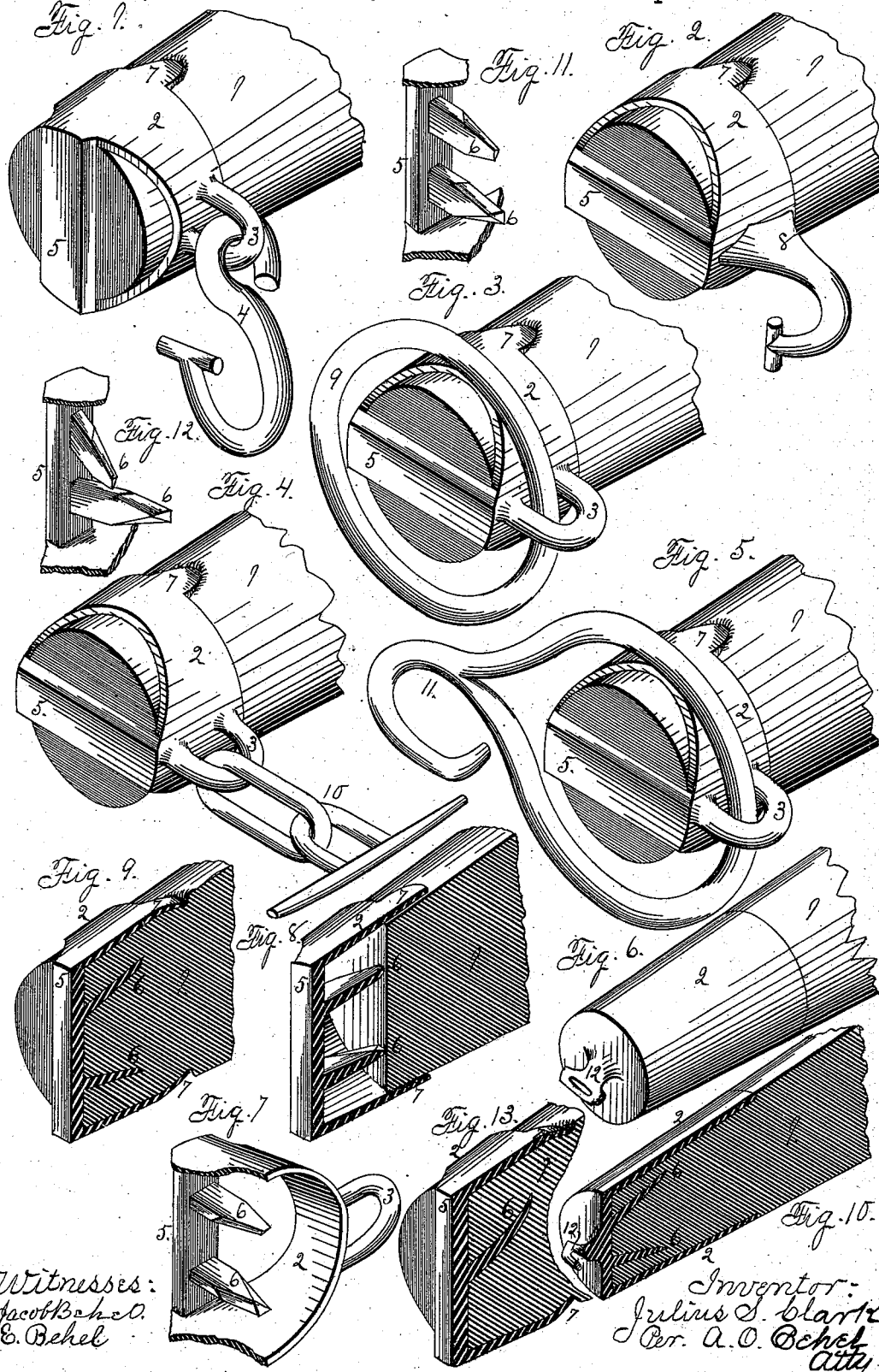


(No Model.)

J. S. CLARK.
TRACE FASTENING.

No. 381,334.

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UNITED STATES PATENT OFFICE.

JULIUS S. CLARK, OF ROCKFORD, ILLINOIS.

TRACE-FASTENING.

SPECIFICATION forming part of Letters Patent No. 381,334, dated April 17, 1888.

Application filed December 27, 1887. Serial No. 259,081. (No model.)

To all whom it may concern:

Be it known that I, JULIUS S. CLARK, a citizen of the United States, residing in the city of Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Trace-Fastenings, of which the following is a specification.

This invention relates to a class of fastenings known as "trace-fastenings," secured to the end of whiffletrees to receive the trace.

The object of this invention is to produce a trace-fastening attached to the whiffletree in a simple manner without slotting or boring the wood.

This invention consists in a ferrule to snugly fit the end of the whiffletree and fastenings adapted to fix the ferrule in place, and a fastening to receive the trace, and in the various combinations of these parts.

All the views in the accompanying drawings are representations in isometrical.

Figure 1 shows a ferrule to receive the wood whiffletree and a loose or drop trace-fastening of hook form. Fig. 2 shows the ferrule to receive the wood whiffletree and a rigid trace-fastening of hook form. Fig. 3 shows the ferrule to receive the wood whiffletree or neck-yoke and a ring capable of use as a whiffletree or neck-yoke. Fig. 4 shows the ferrule to receive the wood whiffletree and a link and bar trace-fastening. Fig. 5 shows the ferrule to receive the wood whiffletree and a trace-fastening of hook form as employed in wagons. Fig. 6 shows a ferrule to receive the wood whiffletree and a cockeye-fastening projecting from the end thereof. Fig. 7 shows the construction of the ferrule and fastening. Fig. 8 is a vertical central section of Fig. 1, with the fastenings to fix the ferrule in place on the whiffletree about to enter the end of the wood. Fig. 9 is also a vertical central section showing the ferrule in place on the wood whiffletree. Fig. 10 is a central section of Fig. 6. Fig. 11 shows the ferrule-fastening set opposite to that shown in the preceding figures as they appear before being driven on the whiffletree. Fig. 12 shows the fastening represented in Fig. 11 after being driven into the wood. Fig. 13 shows a construction in which but one tongue-fastening is employed to fix the ferrule to the whiffletree.

So far as known to me, ferrules as heretofore employed in whiffletrees, neck-yokes, &c., have been secured to the whiffletrees by a bolt, rivet, or screw passing through the ferrule into the wood; and so far as known to me I am the first to secure the ferrule to the whiffletree by a fastening driven into the end of the whiffletree, said fastening deviating from a line parallel with the lengthwise axis of the whiffletree as it is driven into the end portion thereof; also of lip-fastenings projecting from the inner side of the ferrule.

Fig. 1 shows an end portion of a wood whiffletree, 1, prepared in the usual manner. A ferrule, 2, with an eye, 3, projecting therefrom, is shown in place on the whiffletree. A trace-fastening, 4, of the usual hook form has a free connection with the eye 3 of the ferrule. An end bar, 5, spans the end of the whiffletree and is connected to the ferrule. From the inner side of the end bar, 5, project tongues 6, as shown in Fig. 7, to enter the end wood of the whiffletree to hold the ferrule to the whiffletree in the best manner, and are pointed and somewhat thinner at their free ends. The bevel at the extreme ends is the angle best adapted to insure the departure of the tongues from a line parallel with a lengthwise axis of the whiffletree while being driven into the end portion thereof, and consequently will attain the position shown in Figs. 9, 10, and 13.

Lips 7 project from the inner edge of the ferrule, and are intended to be depressed into the whiffletree as an additional fastening to the ferrule; or if, after the whiffletree has been in use a length of time, it should, from any cause, become loosened, the lips may then be depressed into the wood, as shown.

Fig. 8 shows the ferrule with its tongues 6 about to be driven into the end of the whiffletree, also the lips in their straight position. In the several Figs. 2, 3, 4, and 5 I have shown some of the known varieties of trace-fastenings in connection with my improved ferrule, in which a rigid trace-fastening, 8, of hook form, is shown in Fig. 2.

A loose ring, 9, capable of use as a neck-yoke or as a whiffletree, is shown at Fig. 3.

At 10, Fig. 4, I have shown the well-known link-and-bar form of trace-fastening in connection with my improved ferrule.

A loose trace-fastening such as commonly used on wagon-whiffletrees is shown at 11, Fig. 5.

At 12, Fig. 6, I have shown a form of my improved ferrule with the usual cockeye trace-fastening projecting from its closed end, which is a form adapted for use in connection with light vehicles, a lengthwise central section of which is shown at Fig. 10, in which the tongue-fastenings 6 are shown as driven into the end of the wood whiffletree.

Fig. 11 shows the end bar of my improved ferrule with the tongues 6 set lengthwise of the bar, and when driven into the whiffletree will assume the position shown in Fig. 12.

At Fig. 13 I have shown the employment of one tongue, which in many instances will be sufficient to hold the ferrule in place on the wood whiffletree with or without the use of the lips.

In the foregoing I have shown and described my improved ferrule constructed with a transverse end bar, from which the tongues project inward to enter the end of the wood whiffletree. Instead of the bar, it is evident that the ferrule may be produced with a closed end and the tongues may project from the inner face of the closed end. I have also shown my improved ferrule with lips projecting from its inner edge, to be depressed into the wood whiffletree as an additional fastening. These may be omitted, in which instance my improved ferrule will be substantially as shown in Figs. 6, 7, and 10.

I claim as my invention—

1. The combination, with a ferrule, of an end fastening projected into the end of the whiffletree, the fastening when in position occupying a position oblique to the longitudinal axis of the ferrule, substantially as set forth.

2. The combination, with a ferrule, of an end fastening consisting, essentially, of a tongue

extending inwardly from an end-piece in engagement with the ferrule, said tongue when in position to fasten occupying a position oblique to the longitudinal axis of the ferrule, substantially as set forth.

3. The combination, with a ferrule, of an end piece in engagement with the ferrule and provided with inwardly-projected tongues, said tongues occupying when in position to fasten positions oblique to the longitudinal axis of the ferrules, substantially as set forth.

4. The combination, with a ferrule, of an end piece formed integral with the ferrule and provided with a tongue projected inwardly therefrom, the end of the tongue being provided with a greater bevel on one side than on the other to throw it to one side of a line parallel with the axis of the ferrule as the fastening is driven home, substantially as set forth.

5. The combination, with the whiffletree, of the ferrule and an end fastening projected into the end of the whiffletree obliquely to the axis of the ferrule, the ferrule being provided with a trace-fastening and with lips projecting from its edges and indented into the wood, substantially as set forth.

6. The combination, with the whiffletree, of the ferrule and an end fastening projected into the end of the whiffletree obliquely to the axis of the ferrule, the ferrule being provided with lips projecting from its edge and indented into the wood, substantially as set forth.

7. The herein-described whiffletree hook, consisting of the ferrule and an end fastening occupying a position oblique to the longitudinal axis of the ferrule, the ferrule being provided with a trace-fastening, substantially as set forth.

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