

L. P. CRANDALL.  
Trace-Fastening.

No. 205,359.

Patented June 25, 1878.

Fig. 1.

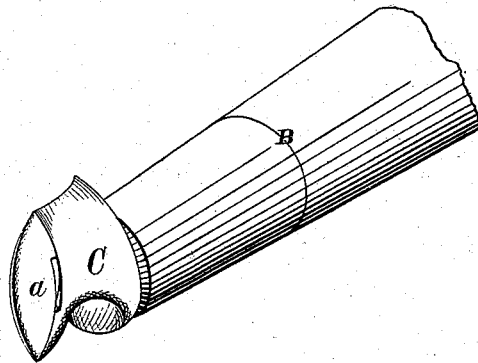


Fig. 2.

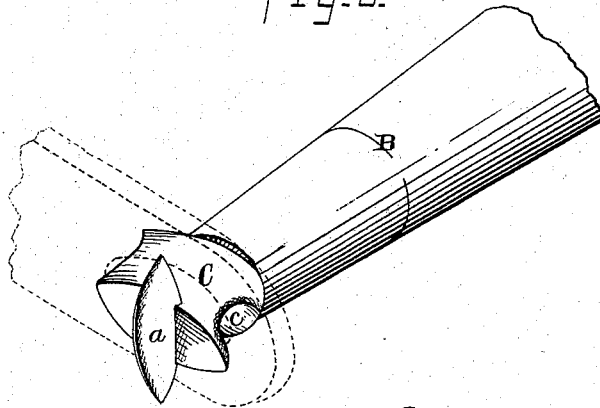
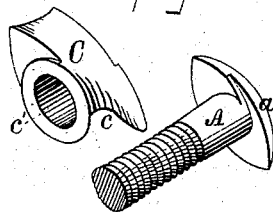


Fig. 3.



WITNESSES=

Geo. C. Hutchinson.  
Henry C. Hazard.

INVENTOR-

L. P. Crandall, by  
Prindle & Co. for his Attys

# UNITED STATES PATENT OFFICE.

LUCIUS P. CRANDALL, OF EAU CLAIRE, WISCONSIN, ASSIGNOR TO CLARK ROBINSON AND JOSEPH F. ELLIS.

## IMPROVEMENT IN TRACE-FASTENINGS.

Specification forming part of Letters Patent No. **205,359**, dated June 25, 1878; application filed September 14, 1877.

*To all whom it may concern:*

Be it known that I, LUCIUS P. CRANDALL, of Eau Claire, in the county of Eau Claire, and in the State of Wisconsin, have invented certain new and useful Improvements in Trace-Fastenings; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a perspective view of my improved device as arranged for the reception of a trace. Fig. 2 is a like view of the same with the trace in position, and Fig. 3 is a perspective view of said device detached from the whiffletree.

Letters of like name and kind refer to like parts in each of the figures.

The design of my invention is to enable a trace to be easily attached to or removed from a whiffletree, and when in place to be prevented from becoming accidentally detached; to which end it consists in the peculiar construction of the stationary and pivoted portions of the fastening, substantially as and for the purpose hereinafter specified.

In the annexed drawing, A represents the hook portion of my device, which consists of a tapering threaded bar, to be screwed into the end of a whiffletree, B, provided upon its outer end with a cross-bar, *a*, that is placed at a right angle thereto, and is arranged vertically.

From the bar A the head *a* tapers vertically in each direction to its ends, and from its inner side to its outer side is cut away, so as to cause the latter to have the form of a wedge, the object sought by such construction being the ready passage of the end of a trace over said head.

Between the inner face of the head *a* and the end of the whiffletree B is left a space, which is somewhat greater than the thickness of a trace, and receives a block, C, that is pivoted upon the bar A and loosely fills said space.

The outer face of the block C corresponds in shape to the contiguous face of the head *a*, and the same conformation is extended across the upper end of said block, while from said end downward the inner side increases in horizontal dimensions, and within its sides and lower

end is formed a half-round groove, *c*, as shown, which causes said portion to be concentric with the axial opening *c'*.

If, now, the slotted end of a trace is passed over the head *a* and around the block C, and then permitted to assume its usual horizontal position, said block will turn to the position shown in Fig. 2, and its groove *c* will furnish a bearing for the sides of the slot of said trace, the depth of the said slot at the (present) rear end of said block being sufficient to prevent the lateral displacement of the rear end of said trace when the same is taut, while the position of the head *a* at a right angle to the length of the slot of said trace prevents the disengagement of the latter when slackened.

It is impossible that a trace should be disengaged from my fastening while occupying a horizontal position and the parts of said fastening remain intact; but if said trace or its rear end be turned to a vertical position it may as easily be removed from engagement with said fastening as from one of the ordinary form.

The form of the pivoted block gives to the trace a broad firm bearing, and prevents the strain and wear which would be caused if said block were omitted and the bar A used as a bearing for said trace.

In order that the block C may have but one-half a revolution, and thus be prevented from changing or reversing the positions of its ends, its outer face—from the lower side of its pivotal opening *c'* upward—is removed for about one-sixteenth of an inch, and the inner face of the head *a* is in like manner cut away from the upper side of the bar A downward, the result being that the projecting face of one part bears against the cut-away face of the other part, when they occupy the positions shown in Fig. 1; but when said block C is turned to the position shown in Fig. 2 the corner of the projecting portion of its said face engages with the corner of the projecting portion of the face of said head, and limits further rotation.

It will be seen that all wear of the slotted end of the trace in consequence of the vertical motion of the front end of the same is prevented by the pivoted block C, which turns freely upon the bar A, thus furnishing a pivotal

bearing for and with which said trace moves.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

As a means for attaching a trace to or upon a whiffletree, the bar A, provided with the vertically-elongated head *a*, and the block C, pivoted eccentrically upon said bar, between said head and the end of the whiffletree, and having within its rear side a semicircular groove,

*c*, for the reception of the slotted end of the trace, said parts being constructed and combined to operate as specified.

In testimony that I claim the foregoing I have hereunto set my hand this 31st day of July, 1877.

LUCIUS P. CRANDALL.

Witnesses:

CLARK ROBINSON,  
J. F. ELLIS.