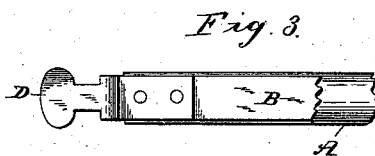
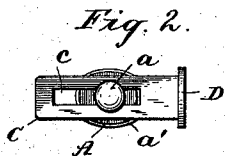
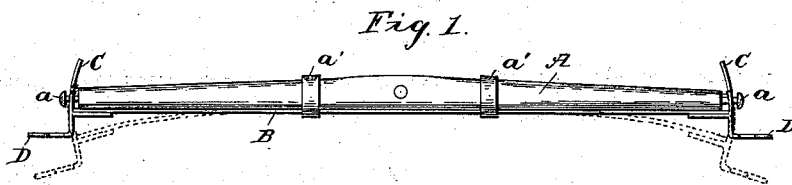


(No Model.)

J. H. WILLEY.  
WHIFFLETREE.

No. 402,638.

Patented May 7, 1889.



Witnesses  
Edwin L. Bradford  
Wm. M. Shackbridge.

Inventor,  
John H. Willey.  
By his Attorneys  
V. D. Shackbridge & Son.

# UNITED STATES PATENT OFFICE.

JOHN H. WILLEY, OF MANCHESTER, NEW HAMPSHIRE.

## WHIFFLETREE.

SPECIFICATION forming part of Letters Patent No. 402,638, dated May 7, 1889.

Application filed February 27, 1889. Serial No. 301,366. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. WILLEY, a citizen of the United States, residing at Manchester, in the county of Hillsborough and State of New Hampshire, have invented certain new and useful Improvements in Whiffletrees; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in that class of whiffletrees in which means are provided for taking up the shocks caused by the sudden starting of the horse or by striking uneven places, rocks, and the like in the road, thus relieving the occupants of the vehicle of the disagreeable consequences of such shocks.

The invention is especially applicable to singletrees, and is an improvement upon the device patented to George B. N. Dow jointly with myself, August 7, 1888, numbered 387,216.

In the drawings, Figure 1 is a plan view of a whiffletree embodying my improvement. Fig. 2 is an end view of the same, showing the pin or stud in the end of the bar and the slotted flanged portion of the flat spring; and Fig. 3 is a front elevation of the same.

A is the bar or beam, having studs or tenons *a*, and B is a flat spring attached to the front side of the bar by means of the clips *a'*, or any suitable fastening. The said spring has flanges C at its ends, which are slotted, as shown at *c*, and which extend backward over

the ends of the bar A. The studs *a* pass through the slots, and a limited forward movement of the ends of the spring B is permitted. Riveted or otherwise attached to the ends of the spring are hooks D, to which the traces are attached.

It will be seen that by my invention the initial shock, caused by the starting of the horse of the vehicle, is taken up by the spring B, which bends forward until the ends of the slots in the flanges bear against the pins on the cross-bar, when a permanent and positive attachment to the load is secured.

The improvement on the former patent referred to consists in doing away with the yokes encircling the cross-bar, thereby decreasing the cost of manufacture and providing a device more simple in construction.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A whiffletree consisting of the combination of a bar, a flat spring on the front side thereof, which has longitudinally-slotted flanged portions at its ends extending backward over the ends of said bar and encircling pins therein, and trace-hooks attached to the spring, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN H. WILLEY.

Witnesses:

ALBION R. SIMMONS,  
ARTHUR H. HALE.