D. W. COPELAND
Thill-Coupling.

No. 197,101.

Patented Nov. 13, 1877

Fig 1

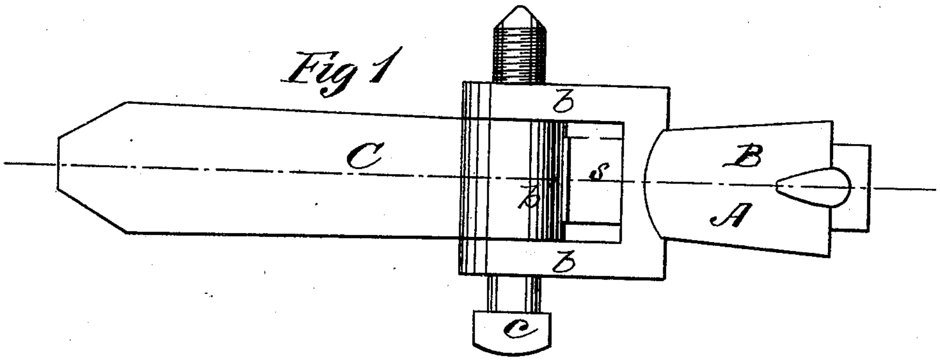
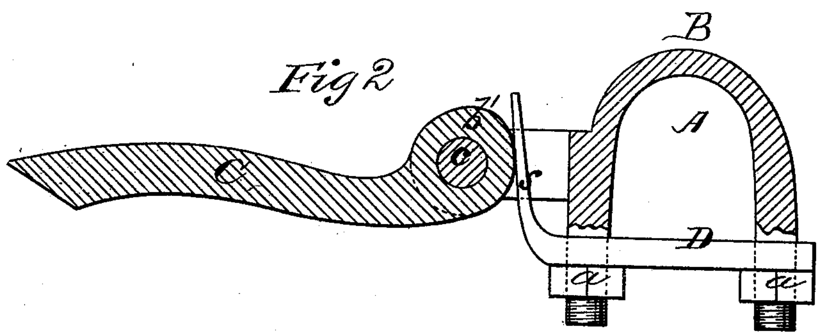


Fig 2



WITNESSES
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UNITED STATES PATENT OFFICE.

DAVID W. COPELAND, OF THERESA, NEW YORK.

IMPROVEMENT IN THILL-COUPLINGS.

Specification forming part of Letters Patent No. **197,101**, dated November 13, 1877; application filed July 28, 1877.

To all whom it may concern:

Be it known that I, DAVID W. COPELAND, of Theresa, in the county of Jefferson and State of New York, have invented a new and valuable Improvement in Thill-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a top view of my improved thill-coupling, and Fig. 2 is a longitudinal vertical section thereof.

This invention has relation to improvements in thill-couplings; and it consists in the construction and novel arrangement, in connection with the clip and its journal-bearing arms, of the cam-bearing between the journals of the shaft-plate and the spring end of the metallic plate, through which plate the ends of the clip are passed, said spring end extending upward between the cam-bearing and the clip, all as hereinafter fully shown and described.

In the accompanying drawings, the letter A designates the clip, and *b* its journal-bearing arms, said arms and clip being made of one piece of metal. C designates an ordinary thill-iron, having a cam-shaped bearing end, *b'*, said end being perforated to receive a bolt, *c*, by means of which the shaft is secured to the clip. D designates an angular steel plate having spaced perforations, through which the rabbeted screw-threaded ends of clip A are passed; and *a* designate nuts screwed on the said ends, and clamping the clip about the axle-tree. The free end of plate D extends upward between the cam-bearing *b'*, the clip, and arms *b*, and forms a spring, *s*, which, being above the lower portion of the clip and shut in by the parts thereof, is not liable to be broken when the jack is applied in greasing the wheels, or from other causes, against which said bearing operates, thus preventing all jarring or rattling of the coupling.

When the thills are lowered, with their free ends resting upon the ground or raised in the air, as when the vehicle is housed, the spring *s* is relieved from compression, and is prevented from becoming weakened by being kept under strain when the vehicle is not in use; but when the thills are raised to a horizontal position the cam presses back upon the spring, and the resilience thereof effectually prevents rattling.

By constructing the coupling as above described, plate D serves a double purpose—first, it clamps the clip upon the axle; and, secondly, it forms a spring, which prevents all possibility of rattling. I also do away with the usual rubber or separate metallic springs, which are both expensive and troublesome, being liable to get out of order.

What I claim as new, and desire to secure by Letters Patent, is—

The combination, with the clip A, having bearing-arms *b*, the coupling-bolt *c*, and the plate D, having the spring-arm *s*, extending up obliquely between the said arms *b*, and protected thereby, of the thill-iron C, having a cam, *b'*, adapted to compress said spring-arm when the thills are in use, and to release it when they are raised or lowered to the ground, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

DAVID WEBSTER COPELAND.

Witnesses:

WILLIAM DRESSER,

CHESTER B. AUSTIN.