J. IVES.

Whiffletree Coupling Plate.

No. 196,155. Patented Oct. 16, 1877.

Fig. 1

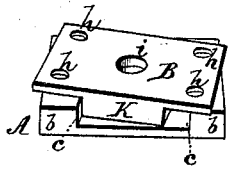


Fig. 2

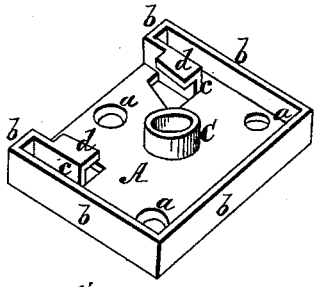


Fig. 3

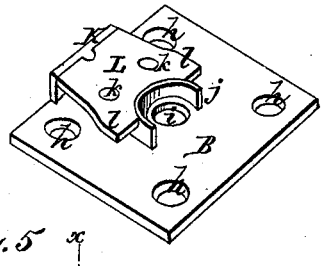


Fig. 4

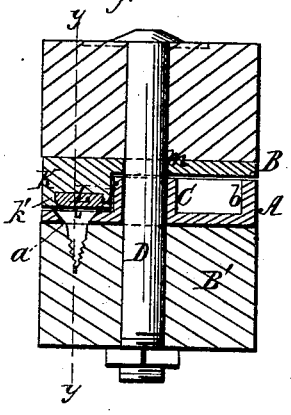
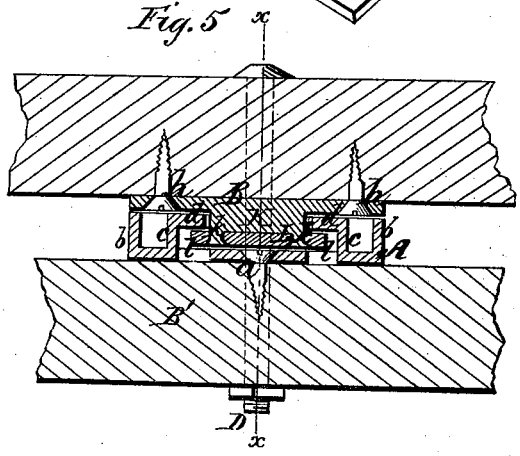


Fig. 5



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES IVES, OF MOUNT CARMEL, CONNECTICUT.

IMPROVEMENT IN WHIFFLETREE COUPLING-PLATES.

Specification forming part of Letters Patent No. **196,155,** dated October 16, 1877; application filed March 21, 1877.

To all whom it may concern:

Be it known that I, JAMES IVES, of Mount Carmel, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Whiffletree Coupling-Plates; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a perspective view of the two plates placed together in operative relation to one another. Fig. 2 is a top perspective view of the bottom plate. Fig. 3 is a bottom perspective view of the top plate. Fig. 4 is a section of the plates attached to their respective bars in the line *x x* of Fig. 5. Fig. 5 is a section of the same in the line *y y* of Fig. 4.

The nature of my invention consists in the construction of the top and bottom plates forming the coupling in such a manner that the plates can be interlocked with each other by a horizontal movement of the top plate, and when thus interlocked the bottom plate will have a limited pivotal motion and will be prevented from moving around too far in either direction, and also from moving upward.

In the accompanying drawings, A is the bottom plate, and B the top plate, forming the coupling. The plate A is formed with holes *a*, for fastening it to the cross-bar B′ of the shafts or to the single bar of a double-tree. On three of the edges of this plate a narrow vertical rim, *b*, is formed, and this rim is continued on the back edge of the plate a short distance beyond each rear corner, and then turned inward parallel with the sides, and continued to near the center of the length of the sides, so as to form stops *c c*, and from the top edge of the stop portion *c c* horizontal lips *d d* are made to extend, as shown. At the center of the plate a hollow arbor, C, is constructed, for the pin or pivot bolt D to pass through, and also for the top plate B to swing upon.

The top plate B is made with holes *h* for fastening-screws to pass through into the single-tree, and with a hole, *i*, for the passage of the pivot-bolt, and around the hole *i* a semicircular flange, *j*, is extended down from the plate, which flange fits half around the hollow arbor of the bottom plate. And in rear of this flange *j* a tapering lug, K, is formed out to the rear edge of the plate, and on the sides of said lug thin horizontal lips *l l* are formed, by riveting a thin plate, L, to the bottom of the lug, as shown. The rivets *k* are formed on the lug K and passed through holes in the plate L, after which the rivets are mashed down, so as to secure the plate L in position.

k′ is a teat or key also formed on the plate B, of semicircular or beveled form, which fits in a central depression corresponding to its shape in the plate L. This teat or key serves, with the rivets, to hold the plate firmly in position.

The lug K is narrower at its rear end than the space between the portions *c c* of the rim of the bottom plate, and, therefore, when the two plates are interlocked together, the top plate can swing about the hollow arbor in either direction to a certain extent, in the manner illustrated in Fig. 1.

To interlock the plates after they are screwed to their respective bars, it is simply necessary to slip the lips of the top plate under the lips of the bottom plate, and bring the lug and its semicircular flange in contact with the hollow arbor of the bottom plate, as shown in the drawings. When the parts are thus connected together the lips prevent the parts moving upward, the lug limits the swinging vibrations of the top plate, and the hollow arbor and semicircular bearing relieve the pivot-bolt of undue strain, while the said bolt takes a part of the strain from the arbor at the point *m*.

My coupling device is made at slight cost, can be made of cast metal, and it is light and very durable, as well as neat in appearance, and at the same time it keeps the parts perfectly horizontal, and can in a moment be attached or detached by a horizontal movement simply.

By my invention it will be seen that a stop in the motion of the whiffletree is effected, so that when, by accident or otherwise, one end of the whiffletree might be disconnected from the trace, the other end cannot go so far forward as to let the tugs of the harness off the ends of the vehicle-shafts.

Having described my invention, what I claim

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

1. The combination of the plates A and B, the plate A being constructed with the rim-stops *c*, lips *d d*, and central hollow arbor C, and the plate B with semicircular flange *j*, lug K, and lips *l l*, substantially as and for the purpose described.

2. The combination of the plate B, having lug K and plate L, provided with lips *l l*, with the plate A, having shoulders *c c* and lips *d*, whereby the plates are capable of being united by a horizontal movement, and when united have a limited vibration in right and left directions, and are prevented from an upward movement, all as and for the purposes set forth.

Witness my hand in the matter of my application for a patent for an improvement in whiffletree coupling-plates.

JAMES IVES.

Witnesses:
H. M. IVES,
M. A. IVES.