(No Model.)

B. D. DRUEN.

WHIFFLETREE COUPLING.

No. 485,003. Patented Oct. 25, 1892.

Fig 1

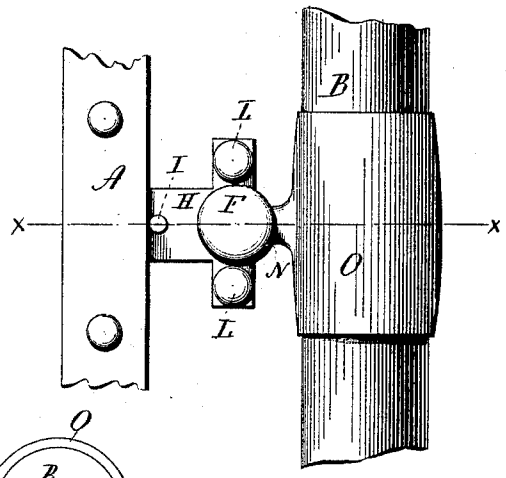


Fig 3

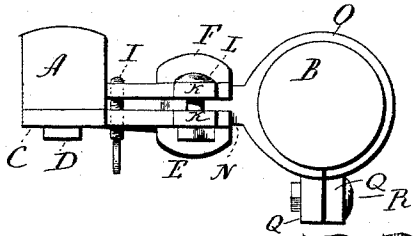


Fig 2

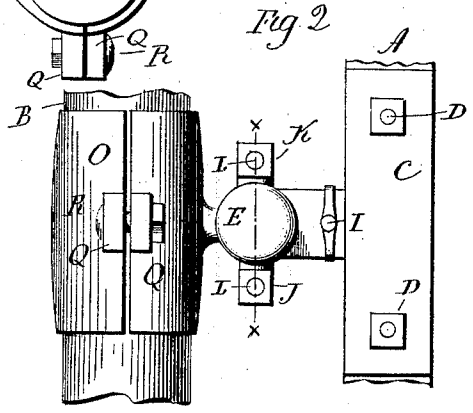


Fig 4

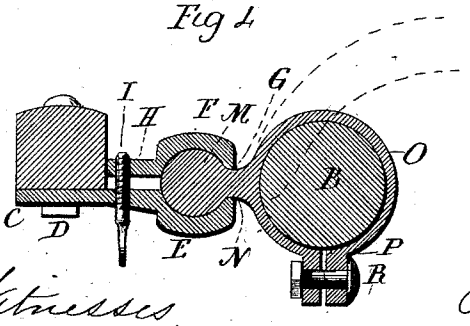
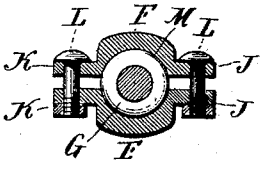


Fig 5



Witnesses
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UNITED STATES PATENT OFFICE.

BERNARD D. DRUEN, OF NEW HAVEN, CONNECTICUT.

WHIFFLETREE-COUPLING.

SPECIFICATION forming part of Letters Patent No. 485,003, dated October 25, 1892.

Application filed July 25, 1892. Serial No. 441,128. (No model.)

To all whom it may concern:

Be it known that I, BERNARD D. DRUEN, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Whiffletree-Couplings; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top view of the joint and so much of a whiffletree-bar as is necessary to illustrate the invention; Fig. 2, an under side view of the same; Fig. 3, an end view of the same; Fig. 4, a vertical central section cutting on line *x x* of Fig. 1; and Fig. 5, a section cutting on line *x x* of Fig. 2, looking toward the left.

This invention relates to an improvement in the device for connecting the whiffletree to the whiffletree-bar of carriages, the object being a simple construction, which may be easily attached or detached and also easily adjustable to the movements of the horse; and it consists in the construction as hereinafter described, and particularly recited in the claim.

A represents the whiffletree-bar, and B the whiffletree. The joint by which the whiffletree is connected to the bar is of a ball-and-socket character.

C represents a metal plate, which is secured to the under side of the whiffletree-bar A, (here represented as by means of bolts D D,) extending vertically through the bar and plate. The plate C carries as an integral part of it the lower half E of the socket. This part E projects forward from the plate C, and on its upper surface is a cavity, in shape corresponding, substantially, to half or somewhat less than half the spherical shape of the ball, as indicated in Figs. 4 and 5.

F represents the other half or companion part of the socket, which is made entirely separate from the part E and has upon its under face a cavity like and corresponding to the cavity in the part E, and so that the space between the two forms, substantially, a chamber corresponding to the spherical shape of the ball to be inclosed therein, with an opening G into it from the front side. The part F is constructed with a rearwardly-projecting tail H over the projection from the plate C, in which the part E of the joint is formed, and through these two parts a thumb-screw I is introduced between the cavities and the whiffletree-bar, the screw being threaded alike into the two parts and the head of the screw, preferably, on the under side, as seen in Fig. 4. The two parts of the joint are each constructed with laterally-projecting ears J J on one side and K K on the opposite side, as seen in Figs. 2 and 5, and through the said ears bolts L are introduced, with nuts, so that the two parts may be drawn together and secured.

M represents the ball, which in shape corresponds to the interior of the two parts of the joint, and from its front side a neck N projects through the opening G, and that neck terminates in a band O around the whiffletree B, as seen in Fig. 4. The band O is divided, preferably, on the under side, as at P, and at the division each end of the band is constructed with an ear Q to permit the introduction of the bolt R through the said two ears, and by which the band may be clamped around the whiffletree. The parts being assembled as represented in Fig. 4, the neck N of the ball part of the joint is smaller than the opening into the socket. Consequently the neck and the band it carries are free to swing in all directions, as in the case of the well-known ball-and-socket joint, which permits a universal movement of the whiffletree carried by the band O.

The two parts of the joint are bolted together at each side by the bolts L L, as before described, after the ball has been introduced, and the screw I is introduced through the two parts at the rear, and these two parts being screw-threaded that screw serves to retain the two parts in a firm position with relation to each other and resist to a considerable extent the tendency of the ball to open the joint under a pull upon the whiffletree and also prevents any rocking movement of the cap upon the ball, it being understood that the two parts normally stand at a slight distance from each other, as shown, and so as to permit the taking up of the joint as the ball and socket may wear away—that is to say, whenever there is any perceptible wear the bolts L L are tightened—and in whatever position they may be secured the screw I retains the

two parts in their proper parallel relation to each other, so as to prevent the possible rocking of one part upon the other under the working of the ball in the socket.

In the illustrations the joint is represented as to receive a whiffletree for two horses; but it is desirable that a carriage thus fitted for two horses shall be readily adapted for the application of thills for a single horse. In such case the thills terminate at their rear ends with a ball corresponding to the ball M. (Broken lines, Fig. 4, representing the thill-iron.) In either case there is the same adjustment and security of the two parts of the socket upon each other by means of the screw I through the two parts between the socket and the bar to which the one part of the socket is secured. While, therefore, the invention is specially designed for the attachment of whiffletrees to the whiffletree-bar, it is equally applicable for attachment of thills. By the term "whiffletree joint," therefore, it is to be understood that the joint for thills is included.

I claim—

The herein-described coupling, consisting of the socket composed of two parts E F, the one part E extending rearward and adapted for attachment to the whiffletree-bar, the other part F arranged over the part E, with a corresponding extension toward the whiffletree-bar, the adjacent faces of the two parts constructed with cavities together corresponding to the ball to be inclosed, the two parts constructed with laterally-projecting ears on opposite sides, with bolts through said ears, and a screw I through the projection at the rear of the two parts, the screw being threaded into both parts, combined with a ball M, corresponding to the cavity in the socket, the ball M, constructed with a neck projecting through an opening in the front of the socket formed for the purpose, and the said neck fitted for attachment to the part to be carried by the ball, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

BERNARD D. DRUEN.

Witnesses:
J. H. SHUMWAY,
FRED C. EARLE.