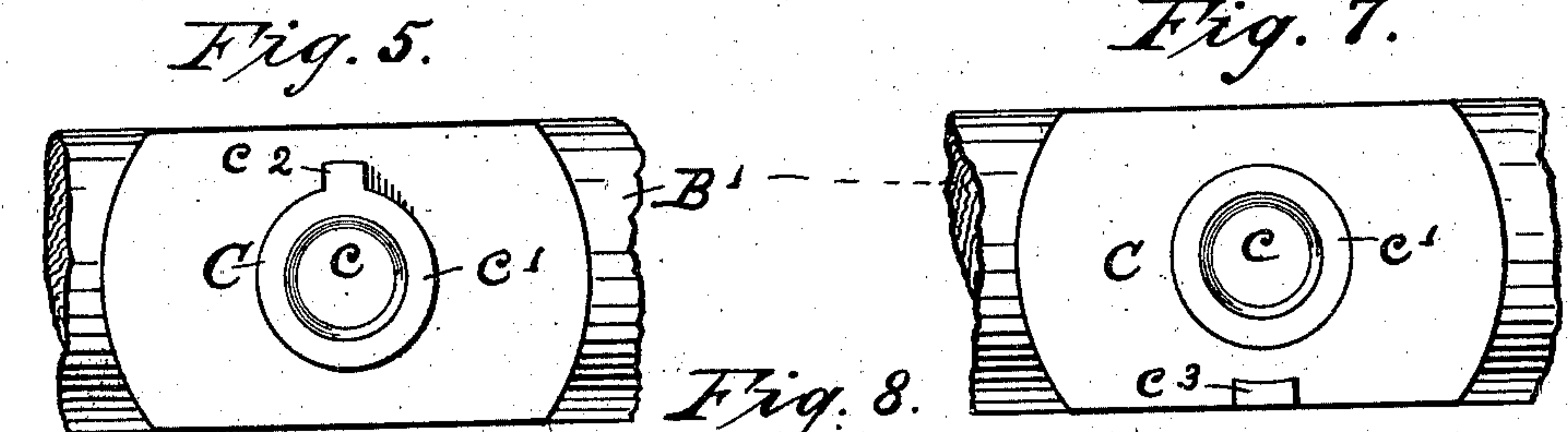
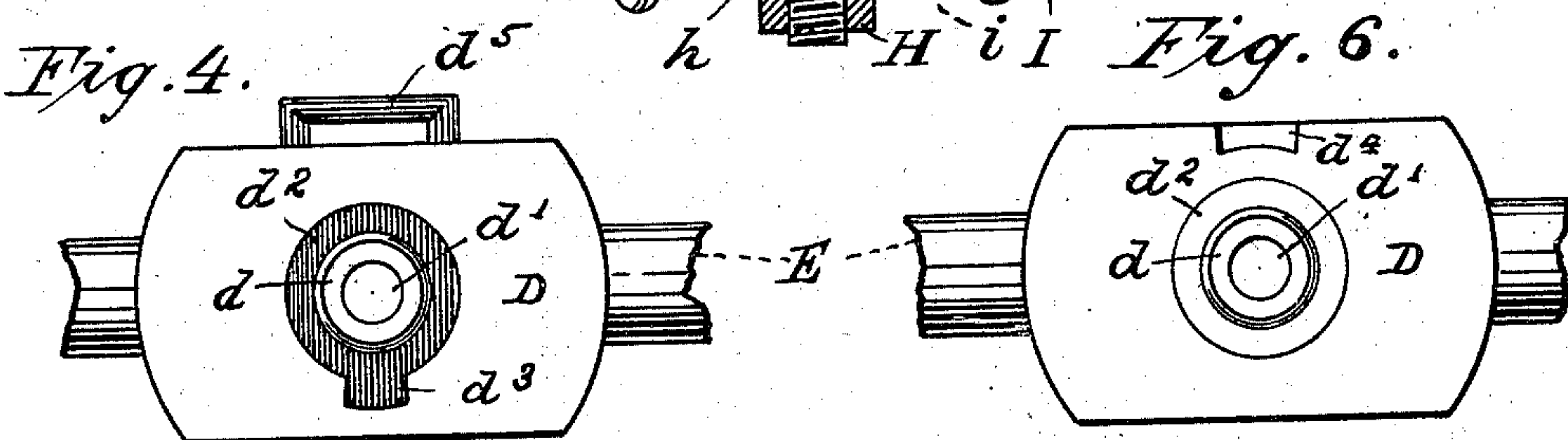
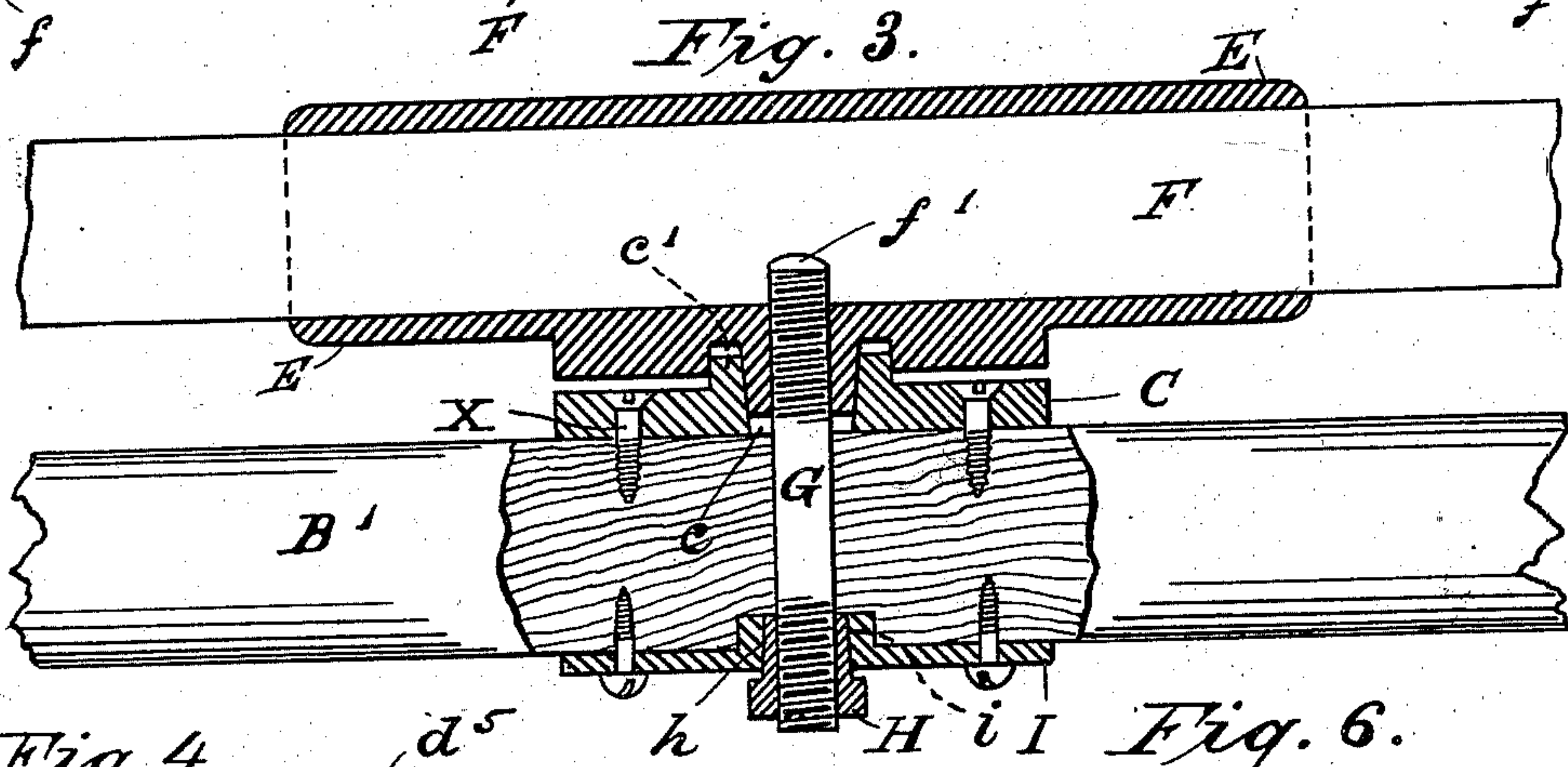
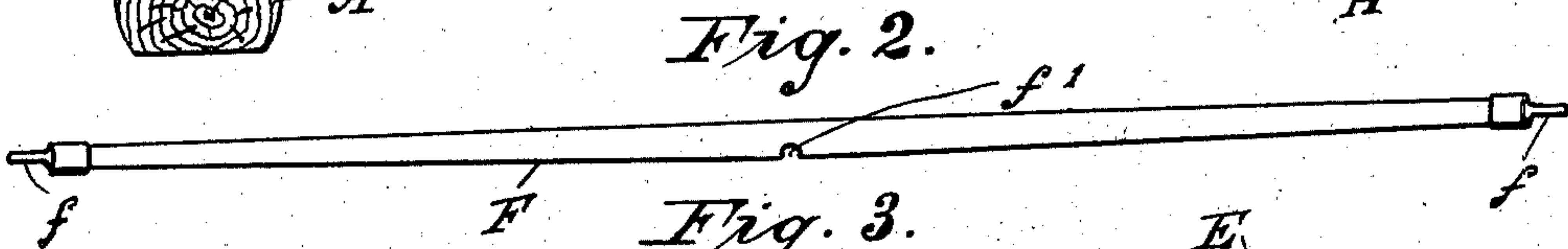
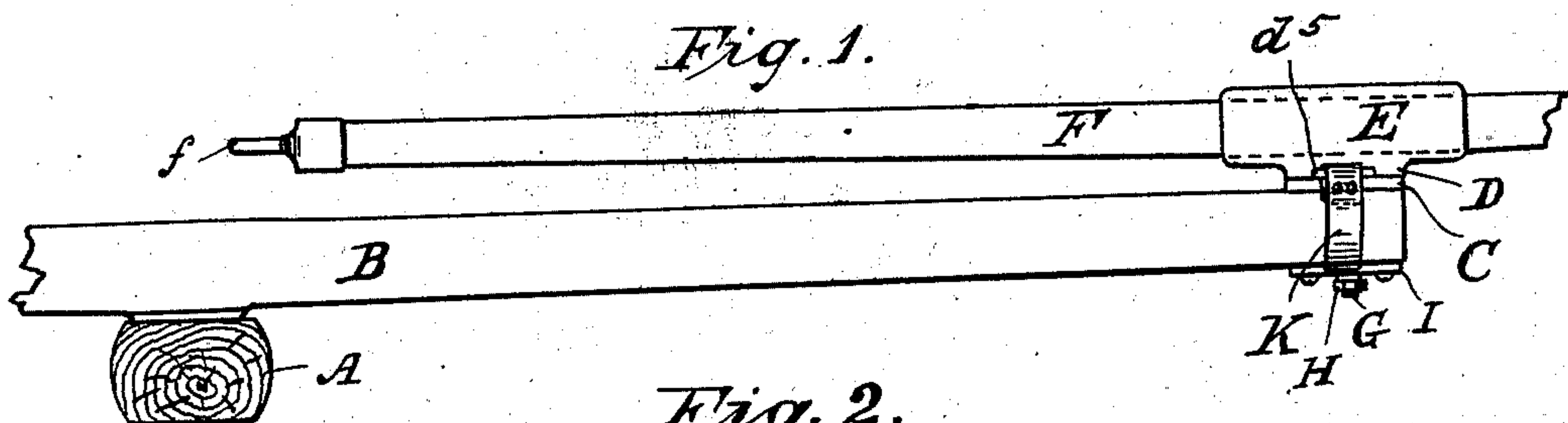


(No Model.)

W. A. BENNETT.  
WHIFFLETREE.

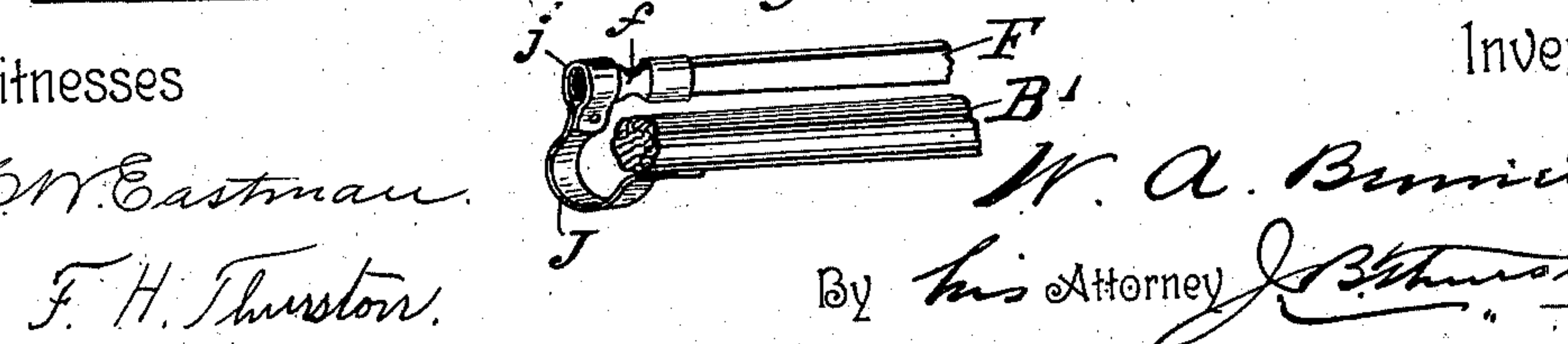
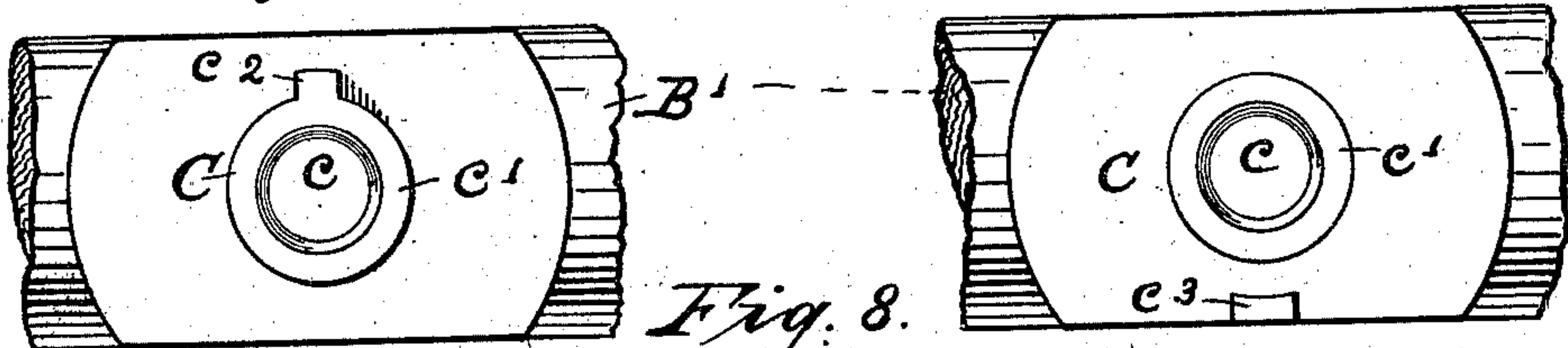
No. 559,353.

Patented May 5, 1896.



Witnesses  
H. W. Eastman.  
F. H. Thurston.

*Fig. 6.*



Inventor  
W. A. Bennett  
By his Attorney J. B. Thurston



# UNITED STATES PATENT OFFICE.

WILLIAM A. BENNETT, OF MANCHESTER, NEW HAMPSHIRE, ASSIGNOR OF  
THREE-FOURTHS TO CARRIE M. BENNETT, OF HOOKSETT, NEW HAMPSHIRE.

## WHIFFLETREE.

SPECIFICATION forming part of Letters Patent No. 559,353, dated May 5, 1896.

Application filed April 4, 1895. Serial No. 544,368. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. BENNETT, 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.

This invention relates to whiffletrees for either a "single" or "double" hitch—*i. e.*, it is equally well adapted to a "pole" carrying two whiffletrees as to a pair of shafts which carry but one. With the exception of the thill-couplings there is probably nothing pertaining to the general construction of a carriage which causes such constant annoyance as the whiffletree. This results from many causes. Some rattle at their connection with the cross-bar. Others are so tightly secured by their pivot as to be too stiff to prevent the irregular motion of a horse being felt by those who ride behind him. Some are neat and tasty, while others, being strong enough, are clumsy. Another great source of annoyance is that the driving-reins will frequently catch under the ends of a whiffletree.

The object of this invention is to provide a whiffletree which shall be at once handsome in appearance, simple in construction, and which avoids the foregoing difficulties.

To this end my invention consists, essentially, in a whiffletree composed of a single piece of flexible steel, and in the novel means of mounting and attaching the same to either the cross-bar of a pole or shafts, all of which, together with other novel features of the invention, will be fully set forth in the following specification and claims, and clearly illustrated in drawings which accompany and form a part of the same, of which—

Figure 1 is a broken elevation of a portion of one of my improved whiffletrees mounted upon one end of a cross-bar, which is shown attached to a pole for a double hitch, Fig. 2 being an elevation showing my improved whiffletree as when detached. Fig. 3 is a sectional elevation showing a portion of my improved whiffletree, a portion of a cross-bar,

and my improved connection for the same. Fig. 4 is an inverted plan of the whiffletree, showing the construction of its bearing-plate. Fig. 5 is a broken plan of the cross-bar, showing the construction of its bearing-plate. Figs. 6 and 7 are details showing modifications of the bearing-plates. Fig. 8 is a perspective view showing an end of a whiffletree and a portion of cross-bar, to which is applied my improved rein-guard.

Similar letters designate corresponding parts throughout the various views.

A represents a cross-section of an ordinary pole for a double hitch, and B is a cross-bar for the same, upon which to mount the whiffletrees, one only of the latter being shown so mounted.

B' represents a cross-bar for a single hitch.

My improved connection for the whiffletree, adapted for use upon either of the cross-bars B B', comprises two plates C D, the former being secured by screws X to either bar B B', and the latter may be attached to, but is preferably formed integral with, a sleeve E, the opening through which is of equal height and width its entire length, and adapted to receive my improved whiffletree F, which is composed of a single piece of flexible steel, preferably tapered toward its ends, where suitable tug-holders *f* are provided. Midway from its ends the whiffletree is provided in its lower edge with a slot *f'*, which forms part of my improved means for fastening the same in proper position within the sleeve E, which is accomplished in the following manner:

The plate C, besides having the perforations for the screws X, is provided with a central perforation *c*, around which is formed at its upper edge an annular flange *c'*, and the plate D has a central cylindrical boss *d*, which is sufficiently long to extend nearly through the perforation *c* of the plate C, and the boss *d* is provided with a central threaded perforation *d'*, and surrounding the boss *d* is an annular groove or recess *d''*, registering with the flange *c'* of the plate C. A threaded stud or bolt G, which may have an ordinary head for tightening by a screw-driver or wrench, is passed upward through either cross-bar B B', through the opening *c* of the plate C, and



fitted to the threaded opening  $d'$  of the plate D, passing through the latter far enough to enter the slot  $f'$  of the whiffletree F, and thus secures the latter within the sleeve E while  
 5 forming a firm connection between the whiffletree and cross-bar. In lieu of the ordinary head mentioned for this screw or bolt G, I prefer to use for the purpose a screw having a thread at each end, as shown, provided with a  
 10 suitably-threaded nut H, having a tapered portion  $h$  fitted to the tapered perforation  $i$ , formed for the purpose in the metal plate I, secured to the under side of the cross-bar, and through which the threaded stud G will  
 15 pass. This construction permits of ready adjustment for taking up the wear and preventing any rattle of the whiffletree.

As a means of limiting the rotative motion of the whiffletree when the same is applied to  
 20 a pair of shafts, I form a lateral projection  $c^2$  upon the flange  $c'$  of the plate C, which registers with a recess  $d^3$ , properly located at one side of the annular groove  $d^2$ , care being taken that the said recess be enough wider  
 25 than the projection  $c^2$  to permit sufficient movement of the whiffletree, or instead of the foregoing the plate C may be provided with a tongue  $c^3$ , located on one of its edges, as seen in Fig. 7, said tongue being adapted to  
 30 rest within a groove  $d^4$ , formed for the purpose in one edge of the plate D, as seen in Fig. 6, either construction serving a good purpose.

To prevent the reins from catching under the end of the whiffletree, I provide a suitable stiff strap J, one end of which is attached  
 35 to a cross-bar and the other provided with a loop  $j$ , which is made a tight fit for the tug-holders  $f$  of the whiffletree F. After having placed the tugs upon the tug-holders this  
 40 loop  $j$  of the strap J has only to be pressed upon the holders  $f$ , and as their ends are concealed, or at least do not project through the loops, the reins have nothing on which to catch.

45 It is obvious that the coupling device which I have shown herein is readily adapted for

use upon any whiffletree, whether made of wood or metal. I do not therefore confine myself to its use only upon a whiffletree of my improved construction. 50

If desired, a metal loop  $d^5$  may be formed upon one side of the bearing-plate D of the whiffletree to receive a strap K, attached to the cross-bar to serve the purpose of a guard.

Having thus described my invention, what 55 I claim as new, and desire to secure by Letters Patent, is—

1. A whiffletree composed of a single piece of steel and provided midway from its ends with a slot located in its lower edge said 60 steel being preferably flexible and confined at its center within a suitable metal sleeve forming part of the whiffletree-coupling a retaining-bolt extending from the cross-bar threaded to a perforation in said sleeve and 65 extending through the same and into the slot in said whiffletree, substantially for the purpose set forth.

2. In a whiffletree-coupling, a bearing-plate attached to the whiffletree provided with a 70 tapered cylindrical projection having a central threaded perforation, a bearing-plate for the cross-bar having a central tapered perforation adapted to receive the tapered projection of the whiffletree-plate, a screw-stud 75 having threads at both ends, one end being threaded to the whiffletree-plate and the other passing downward through the cross-bar, and through a metal plate attached to its under side, said metal plate being provided with a 80 tapered opening, and the adjacent end of said screw-stud being fitted with a nut having a tapered portion fitting the tapered opening of the metal plate, all substantially for the purpose set forth. 85

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

WILLIAM A. BENNETT.

Witnesses:

J. B. THURSTON,

LEONARD G. SMITH.