

(No Model.)

J. A. GREEN.  
THILL COUPLING.

No. 300,597.

Patented June 17, 1884.

Fig. 1

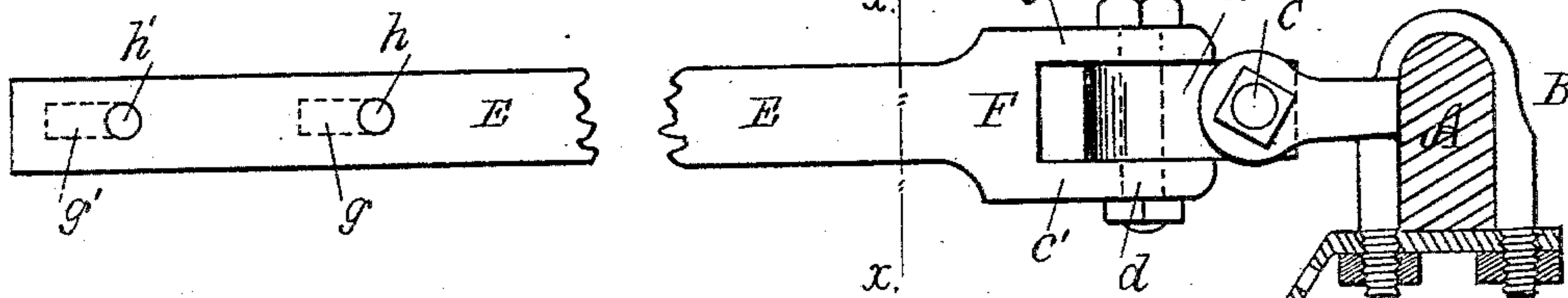


Fig. 2.

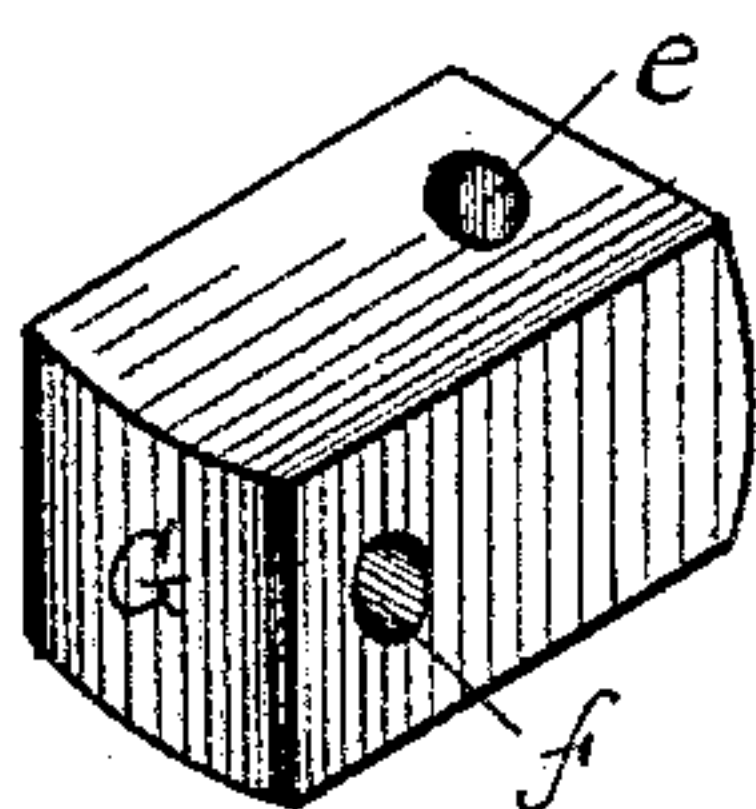
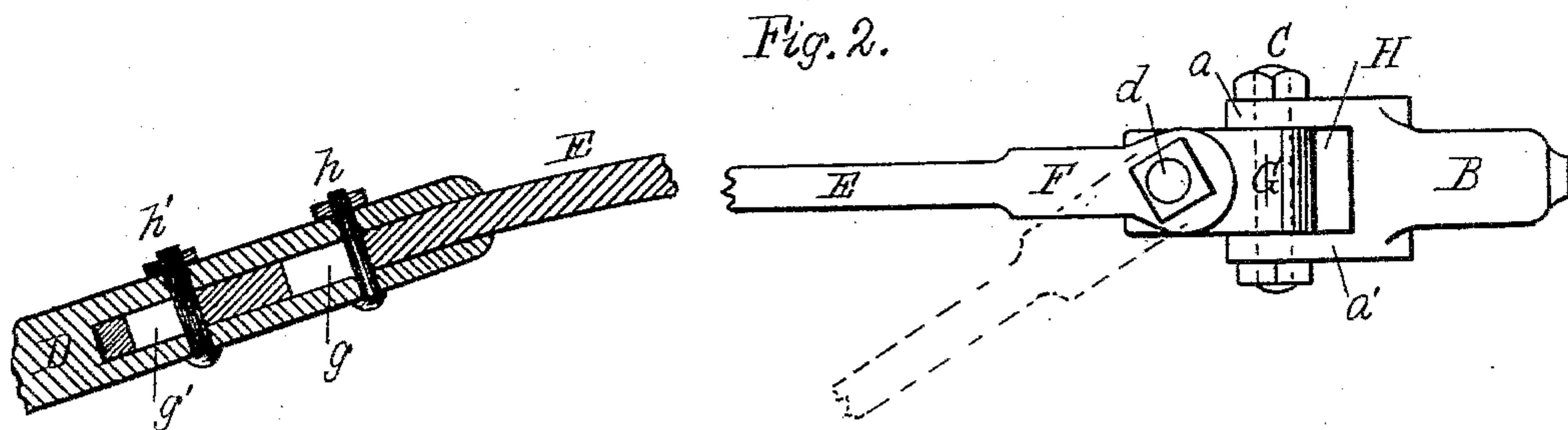
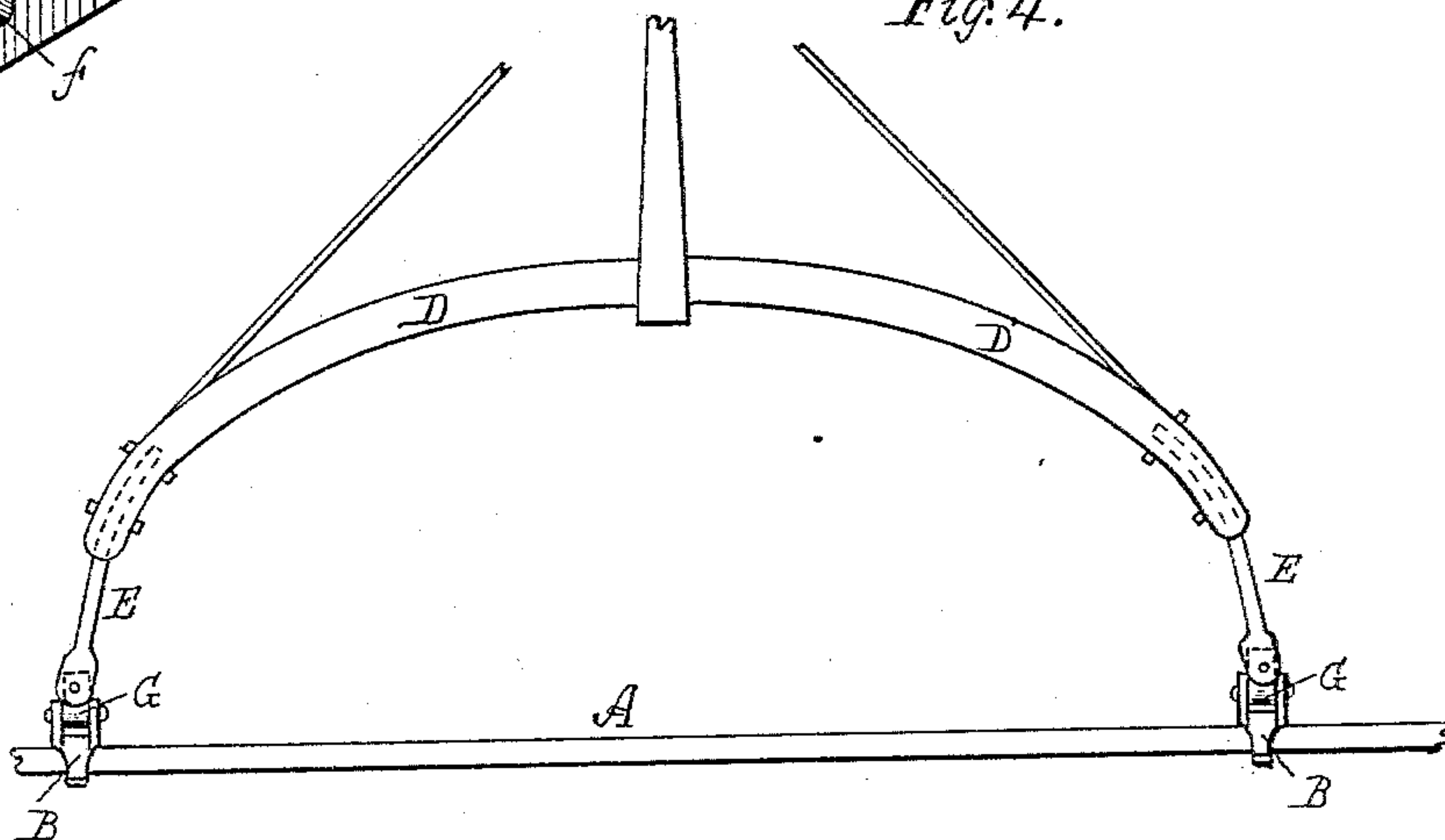


Fig. 3.

Fig. 4.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

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## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 300,597, dated June 17, 1884.

Application filed March 20, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ADAMS GREEN, a citizen of the United States, residing at Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Adjustable Thill-Couplings; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to adjustable couplings for thills or poles; and it consists in the construction and combination of parts hereinafter set forth and claimed.

The drawings accompanying this specification represent in Figure 1 a side elevation, and Fig. 2 a plan view, (partly in horizontal section and broken at the middle,) of a coupling embodying my invention. Fig. 3 is an isometric view showing the reversible block; and Fig. 4 represents the attachment as applied to the bow of a pole.

In these drawings, A represents the axle of a carriage, supplied with the ordinary clips, B, now employed in attaching shafts or poles thereto. Each clip is supplied with a pair of ears, *a a'*, and the usual bolt, C. The wood portion of the shaft or bow of a pole is to be attached to the piece D, which embraces a curved piece of iron, E, and is not, as usual, made with a tongue at the end to fit the lips *a a'* of the lug B, but terminates in a V-shaped head, as shown at F, the ears *c c'* of which are bored to admit of a second bolt, *d*. The curved pieces or arms E are pivoted to the clips, so that they may be turned or vibrated toward or from one another, and they are adapted to enter recesses in the ends of said piece D, the said arms passing in toward one another, and being afterward bolted or fastened to said piece D in any convenient manner.

It is well understood in shifting the draft-fixtures from single to double, or vice versa, how essential it is—in fact, a necessity—that the ordinary tongue which fits the lug, and to which the latter is attached, should span exactly the same distance from center to

center as that of the lugs from center to center; moreover, that the axis of the tongue should be parallel with the sides of the ears of the lug; otherwise the hole to admit the bolt C will not align with said bolt, nor can the tongue be entered. Such difficulties are occurring daily, and it is to overcome them that I have employed the device embodied in this invention. To obviate these difficulties I form a hardened-steel block, G, square in cross-section, and bore two holes, *e f*, vertical and horizontal, respectively, and of the same bore as the bolts C and *d*, which are passed through said holes—C through *f* and *d* through *e*. The space between the lips *a a'* of the clip B and *c c'* of the head F are the same, and correspond with the length of the sides of the block G, which are the same in cross-section.

It is evident from the above description that insertion of the bolts C *d* secures the shaft or pole to the axis of the carriage or other vehicle, the horizontal bolt C allowing of the motion vertically, as required, in admitting an animal when harnessing, while the purpose of the vertical bolt is to allow swinging of the piece G until it is in proper alignment with the ears of the clip B and capable of being admitted. Suppose the distance between the ends of the shafts is too small, or the angle of the shafts not at right angles with the axle, as shown in the broken lines in Fig. 2, it is simply required to swing the block until the exact angle required is obtained, when it is pushed into place and the bolt C inserted. Heretofore it has been necessary to cut off the tongue, weld on a piece, and then bend it until the tongue is at right angle to the axle or ears of the clip before it may be entered therein.

To permit of the adjustment of various shafts or poles to any pair of lugs, irrespective of the distance between their centers, I have formed two slots, *g g'*, in the curved piece E, and secured the latter with bolts *h h'* to the piece D; hence by relaxing the bolts *h h'*, &c., the arm E, with its coupling, may be extended or retracted, thereby altering the distance between the ends of said couplings to accommodate them approximately to the span of the lugs. A similar construction is used for both shafts, of which I have described but one.



A modified form of my device may be employed as follows: The piece E would be formed in two parts, divided at line *x x*, and the head F, provided with a short cylindrical stud which fits a hole bored in the extremity of E, and secured by a screw and nut. By this means horizontal adjustment of F and the parts attached is rendered possible in case the lips of the lug have been displaced from the vertical by twists or strains from the shafts when in use.

I have shown the block G as reversible, from the fact that the major part of the wear will come upon the bolt C; hence, if there is any rattle from the hole wearing out of true, the block

is reversed, and the horizontal hole *f* and vertical one, *e*, exchange places. An opening, H, is shown to admit of a piece of rubber as an anti-rattle.

I claim—

In adjustable couplings for vehicles, the combination, with the clip B, the adjustable piece E, and their bolts C *d*, of the reversible block G, substantially as described.

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

JOHN ADAMS GREEN.

Witnesses:

A. F. HAYDEN,  
F. CURTIS.