

No. 697,667.

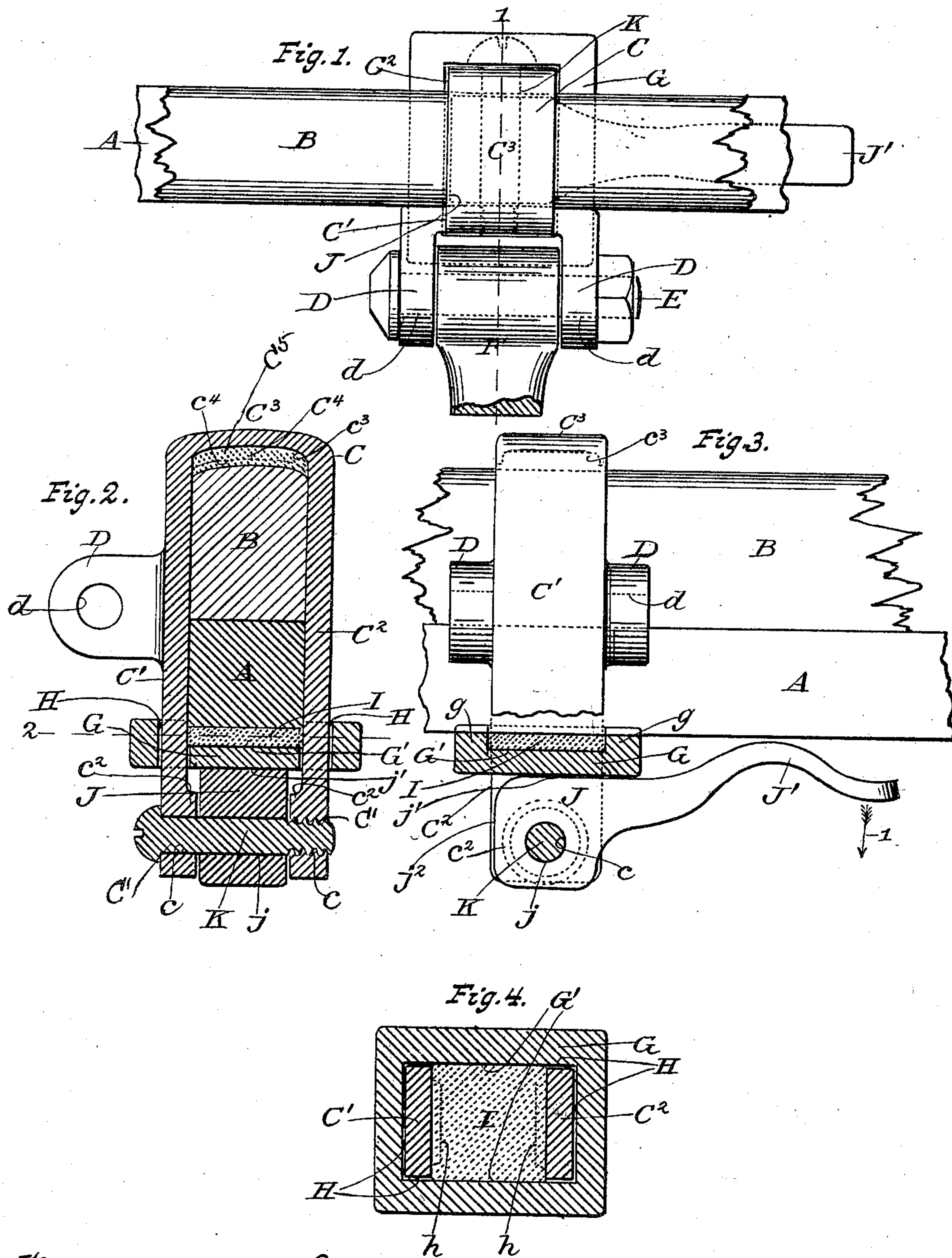
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THILL COUPLING.

(Application filed Jan. 28, 1901. Renewed Jan. 14, 1902.)

(No Model.)



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THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 697,667, dated April 15, 1902.

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To all whom it may concern:

Be it known that I, WALTER F. SCHAEFFER, a citizen of the United States, and a resident of Schoharie, in the county of Schoharie and State of New York, have invented new and useful Improvements in Adjustable Thill-Couplings for Vehicles, of which the following is a specification.

My invention relates to thill-couplings which may be readily adjustable in direction of the axle of a carriage or a draft-bar of a sleigh; and it consists of the novel construction and combinations of the several parts, as will be hereinafter fully set forth in the claims.

The objects and advantages of the invention will be fully understood from the following description and claims when taken in connection with the annexed drawings, in which—

Figure 1 is a plan of a thill-coupling embodying my invention. Fig. 2 is a section taken at line 1 in Fig. 1. Fig. 3 is a front view with a part shown in section, and Fig. 4 is a section at line 2 in Fig. 2.

Similar letters of reference refer to similar parts throughout the several views.

In the drawings, A is the axle-bar of a carriage, and B is the axle-bed of the same. C is the clip, which binds axle-bed B tight on axle-bar A. This clip may be made of wrought-iron or malleable cast-iron or cast-steel, as may be preferred. The side limbs C' C² of this clip are integral with the bow portion C³ thereof and are made with any suitable preferred thickness and width, as the service of the clip for light or heavy vehicles may require. The lower ends c c of these limbs C' C² are perforated by suitable holes c' c' in alignment with each other, as shown in Fig. 2. The metal around these holes may be thickened or reinforced by suitable bosses c² c², if preferred. Provided in the under side of the bow portion C³ of this clip is recess c⁵, seated in which is the rubber cushion C⁴.

D D are lugs common in thill-couplings, integral with one of the limbs, as shown, which lugs are perforated with holes d for receiving the coupling-bolt E for coupling the thill-iron F with the thill-coupling, as shown in Fig. 1.

G is the tie-plate, made with suitable form and proportions suitable for the vehicle to

which this thill-coupling is to be applied. In the upper side of this tie-plate G is the shallow recess G', of width in direction of width of axle A corresponding to that of the latter, as shown in Fig. 2, and a width in transverse corresponding with the width of the limbs C' C², as shown in Fig. 3. This recess is made with a uniform depth of about one-eighth of one inch or a little less, while the margin portions g and g are made to project upward at two sides of said recess for service as walls to the same and also to stiffen the said tie-plate G.

H H are oblong perforations in tie-plate G, which are vertically through the same and receive the lower end portions of limbs C' C², as shown in Fig. 2. These perforations are in length corresponding with the width of said limbs and of width corresponding with their thickness, so as to nicely receive the same. When the metal around the perforations c', through the lower ends of the limbs C' C², is reinforced by the bosses c² c², as shown in Fig. 2, I supplement the width of said limb-receiving perforations H by an increase of their width, as indicated by dotted lines h, Fig. 4, so that said bosses c² may freely be passed through perforations H by way of the increase of width h. When this recessed tie-plate is in place, the limbs C' C², passed through the perforations H, the portions of the said limbs between the line of lower side of the axle-bar A, and the bottom g' of recess G' will form side walls to said recess, as shown in Fig. 2.

I, Figs. 2, 3, and 4, is an elastic cushion, preferably of rubber, in its size of area nearly corresponding with the length and width of recess G between walls g g in one direction, as in Fig. 3, and sides of limbs C' C², as in Fig. 2, in the transverse, while this cushion I will be of thickness a little greater by, say, one-sixteenth of an inch, or more or less, than the depth of said recess. When the tie-plate G is forced up against the lower surface of the axle-bar A, this elastic cushion will be compressed, and when released from such upward pressure said plate will be moved down a short distance, when the thill-coupling may be moved in either direction of the length of the axle of the vehicle.

J is a suitable compressing-cam provided

with arm J' and having through it pivot-hole j , in alinement with pivot-holes $c' c'$ in the lower ends of limbs $C' C^2$. This compressing-cam J has its pressing side j' , Fig. 3, on a straight plane at greater distance from the center of pivot-hole j than the line j^2 of front surface is from said center, as shown in Fig. 3. This cam J is pivoted between the lower ends of limbs $C' C^2$ by pivot-bolt or screw K , Figs. 2 and 3.

When the cam J is turned up to position shown in Fig. 3, the face side j' of the same will force the tie-plate G upward toward the axle-bar A , and through pivot bolt or screw K the cam will draw downward on the clip C , when the axle-bar A and the axle-bed B will be tightly drawn together and the clip will be secured in place and held from being moved in any direction. In this fixed condition of the thill-coupling the rubber cushion C^4 , seated in recess C^5 , will form a cushion between the wood of the axle-bed and the bow portion of the clip and prevent the latter from marring said bed or the paint thereon. This cushion C^4 is of thickness about one-sixteenth of an inch greater than the depth of the recess c^3 , as shown by full and dotted lines in Fig. 2. When arm J' is turned down in direction of arrow 1 in Fig. 3, the cam will be so turned on its pivot-bolt K as to carry the face side j' thereof out of pressing contact with the tie-plate and so as to remove all pressure of the cam from that plate, when the elastic cushion I , seated in the same, will by its elastic force move said plate from a gripping position on axle A , and thereby loosen the clip of this thill-coupling on both the axle-bar and the bed-piece, so as to allow the coupling to be moved at pleasure in either direction lengthwise on the axle, so as to set it nigher to or off from a like thill-coupling, (not shown,) which may be operated in like manner and moved in either direction to a like distance, so that the thills or pole to be coupled to the vehicle may be properly placed about central in the length of the axle between the wheels.

Although I show and describe two cushions, one, c^4 , seated in the bow of the clip and the other, I , in the tie-plate, yet but one cushion may be employed, and in such a case I would employ cushion c^4 of elastic rubber, so as to adapt it to operate as a cushion for preventing the bow of the clip marring the paint or wood of the axle and also adapt it to act as an elastic force to loosen the clip that it may be moved lengthwise on the axle, yet I prefer to use two cushions, one in the bow of the clip, made of material adapted to prevent the clip from marring the axle-bed, and the other of elastic material adapted to force the tie-plate out of clamping contact with the axle when the cam J is turned out from a clamping position against the lower side of said tie-plate.

This thill-coupling is adapted to be applied to shifting bars of sleighs, so as to adapt

thills and poles of different widths of spread of their respective thill-irons to be coupled to such bars by simply adjusting the pair of these coupling devices on the bar, as may be required. The metal at the sides of the respective recesses operates to prevent the cushions, respectively, therein from becoming displaced when the coupling is loosened and is being moved for adjusting it to places on the axle or bar, as may be required when changing the thills or poles for use.

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

1. In an adjustable thill-coupling, the combination with clip C having the lower ends of its limbs, respectively, provided with a pivot-hole which is in alinement with that of the other, and having integral with one of said limbs forwardly-projected perforated lugs adapted to receive between them a thill-iron, of a tie-plate having vertical perforations through which the perforated end portions of said limbs of the clip freely pass to a distance above the pivot perforations therein, a cam provided with an arm for operating it in either direction and having through it a suitable pivot-receiving perforation, and a pivot through the perforations in the lower ends of the limbs of the clip and said cam, as set forth.

2. In an adjustable thill-coupling the combination with clip C having a recessed seat in its bow portion from its under side, and having integral with one of its vertical limbs a pair of perforated lugs between which a thill-iron may be received, and having in the lower end of each limb a pivot-hole, and a pivot supported from said holes in said limbs, of a tie-plate having vertical perforations receiving the lower ends of said limbs of the clip, a cushion in the recessed form-seat in the bow portion of the clip and a cam pivoted between the lower ends of the limbs of the clip and below the said tie-plate and adapted to be operated so as to force the latter upward in direction toward the said bow of the clip and at pleasure operated in reversed direction for allowing said tie-plate to move downward in direction from said bow, as set forth.

3. In an adjustable thill-coupling the combination with clip C having in its bow portion a recessed seat, and having in the lower ends of its sidelimbs perforations in alinement, and a cushion in said seat adapted to prevent the said bow portion of the clip marring the axle-bed at said bow portion, of a tie-plate provided with vertical perforations through which the perforated lower end portions of the said limbs of the clip are freely passed, an elastic cushion between the said tie-plate and the bow portion of the clip, and a cam provided with a suitable operating-arm between the perforated lower ends of the said limbs of the clip and below the tie-plate, and a pivot holding said cam jointed on said lower portions of said limbs, as set forth.

4. In an adjustable thill-coupling, the combination with clip C having in the lower ends of its side limbs perforations which are in alinement, a tie-plate provided with vertical
5 perforations which freely receive the said lower end portions of said limbs, and having in its upper side and between the said vertical perforations a recessed seat, of an elastic cushion seated in said seat, a cam provided
10 with an operating-arm and a pivot jointing said cam on the lower ends of the said limbs of the clip, the cam being adapted to be operated at pleasure to force said tie-plate toward the bow of said clip and said cushion
15 being adapted to move said tie-plate in opposite direction, as set forth.

5. The combination with an axle of a vehicle, of a pair of perforated lugs for receiving

between them a thill-iron, a clip holding said lugs connected to the axle, a tie-plate provided with vertical openings which freely
20 allow the lower end portions of the limbs of the clip to have passage through the said tie-plate, a cam provided with an operating-arm, a pivot pivoting said cam between the
25 lower ends of said clip-limbs and beneath said tie-plate and adapting the said cam to force the said tie-plate upward for clamping the axle and at pleasure loosening the same and
30 an elastic cushion adapted to force said tie-plate, when loosened, to move relatively down toward the pivot of said cam as set forth.

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