No. 617,142. Patented Jan. 3, 1899.

L. D. BROWN.

THILL COUPLING.

(Application filed Nov. 3, 1897.)

(No Model.)

Fig. 1.

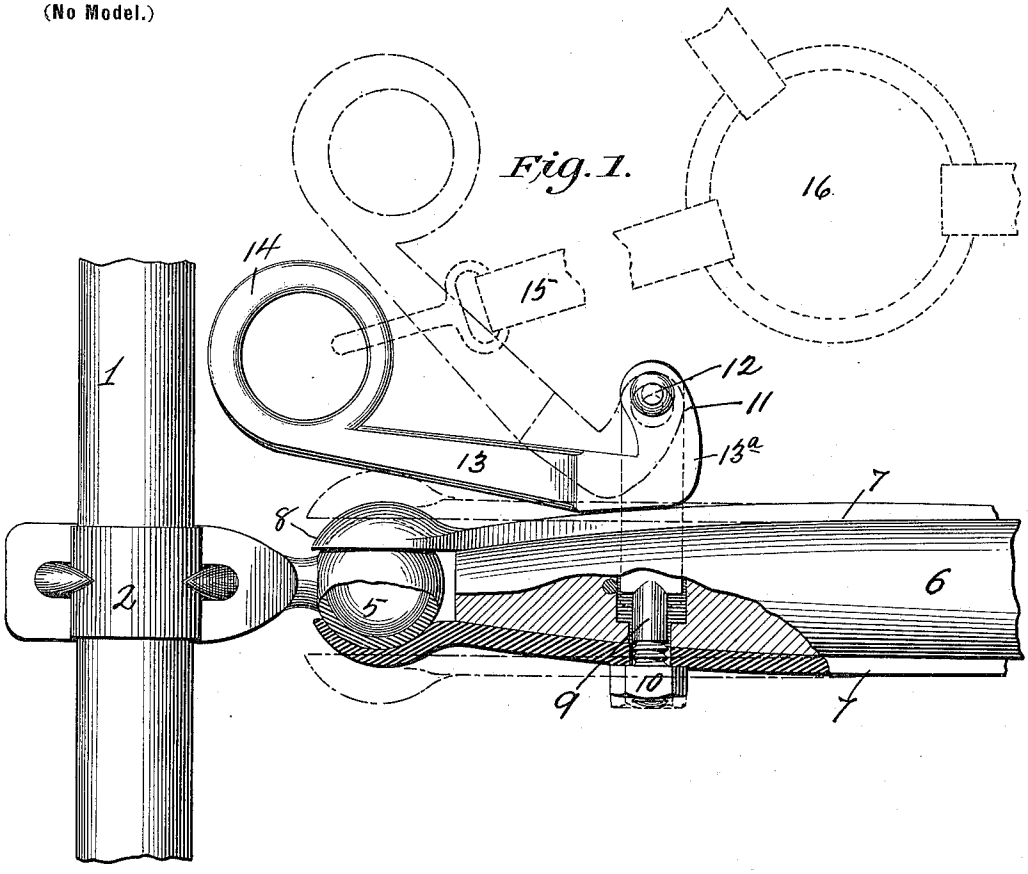
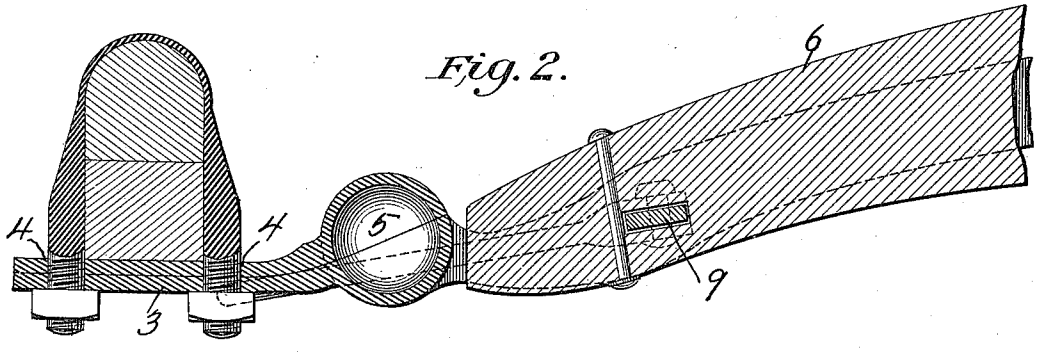


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

LORENZO D. BROWN, OF ELKHART, INDIANA.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 617,142, dated January 3, 1899.

Application filed November 3, 1897. Serial No. 657,302. (No model.)

To all whom it may concern:

Be it known that I, LORENZO D. BROWN, a citizen of the United States, residing at Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in 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.

This invention relates to thill-couplings; and in addition to providing an improved construction of thill-coupling *per se* it is also the purpose of this invention to provide a ready means whereby the thills and animal may be detached from the vehicle in case of accident or upon other contingency.

The detailed objects and advantages of the invention will appear in the course of the subjoined description.

The invention consists in certain novel features and details of construction hereinafter fully set forth, illustrated in the drawings, and incorporated in the claims hereto appended.

In the accompanying drawings, Figure 1 is a plan and top view showing, partly in section, the front axle of a vehicle with the improved thill-coupling applied thereto and means for detaching the thill. Fig. 2 is a side elevation and perspective view, partly in section, of one of the thill-couplings.

Similar numerals of reference designate corresponding parts in both views.

Referring to the drawings, 1 designates the front axle of a vehicle, which has applied thereto an axle-clip 2 of ordinary construction. Upon the lower threaded ends of the clip 2 is secured a plate 3 of oblong form and provided with openings 4 to receive the ends of the clip 2, beneath which plate nuts are placed upon the ends of the clip to secure the clip and plate together and upon the axle. The line drawn through the center of the clip-yoke 3 and ball 5 in Fig. 2 shows it may be made in halves with ball hollow, the clip 2 and sockets 8 securely holding the halves together.

In carrying out the present invention the plate 3 is provided at its forward end with a spherical enlargement or ball 5. Each of the thills 6 is provided upon opposite sides with spring-plates 7, and these plates at their rear ends are fashioned into hemispheroidal cups or sockets 8, adapted to partially embrace the ball 5, upon opposite sides thereof. The plates 7 and thill 6 are provided with transversely-alining openings, in which is fitted the shank 9 of a bolt, the said shank extending through the opening in the thill and spring-plates and receiving one or more adjusting and tightening nuts 10. At its opposite end the bolt is provided with spaced ears 11, provided with vertically-alining openings 12 to receive a pin forming the fulcrum of an elbow or double-cam lever 13, which is pivotally mounted between the ears 11 and which operates against the adjacent spring-plates 7 for pressing said plates into frictional but yielding contact with the ball 5 and rigidly to the thill 6 with the same motion. The lever 13 extends rearward (but may extend forward as well) and is provided at its rear end with an opening 14 to receive a flexible cord, chain, or similar device 15. Connected to the rear end of the lever 13 is a latch 13^a and formed after the manner of one of the handles of a pair of shears, and the opening therein is just large enough to insert a finger therein to unlatch the coupling in ordinary operations.

The two cords or flexible connections 15 extend to an approximately central point, where they are merged into a single cord or connection 16, the latter being extended upward within convenient reach of the driver and being for convenience provided with a loop adapted to fit over a knob or hook on the top rail of the dashboard or where it is easily accessible to driver.

From the foregoing description it will be seen that by drawing upon the connection 16 the connections 15 will be simultaneously drawn inward in opposite directions, thereby simultaneously operating both double-cam levers and releasing the spring-plates 7. This allows one plate of each pair (or both plates) to spring away from its opposing plate, thus releasing the balls 5 and allowing a separation between the balls and the sockets of the thill-couplings. This disengages the animal from the vehicle and will be found of great advantage in the event of a runaway and in any case where it is important to instantly detach the animal from the vehicle. The dotted lines of

the plates 7 and of the lever 13 show its position when detached. Not only is the construction above described important from the standpoint just referred to, but it will be seen that the thill-coupling itself is capable of being adjusted for the purpose of taking up wear between the ball and socket and at the same time preventing all rattling between the two members of the coupling. Not only this, but the form of coupling described provides a ready means for detaching the thills or pole of the vehicle, as the case may be. If desired, the plates 7 of each thill may be secured by one or more additional bolts passed through transversely-alining openings in said plates and the thill, and this, together with other changes in the form, proportion, and minor details of construction, may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

It will be seen that if while detaching thills one should fall to the ground before the other coupling is detached it is not strained in the least, as the ball-and-socket joint readily yields to the twisting motion. It ought also be observed that the tension or strain and line of draft in my device are on a straight line and parallel with the neck connecting ball 5 with clip-plate 3 and not at right angles with said neck of clip-yoke 3, (which neck is necessarily the weakest place in the device,) as exist in some other patented devices somewhat similar to mine. In these devices the tension or strain of draft on the ball operates somewhat as a pry or lever to break the neck connecting the ball with the clip-yoke, thereby about one-half of the strength of the said neck and weakest part of said device is lost. Neither is any "web" or flange used or needed on the ball or neck connecting it to clip-yoke on my device to strengthen it as some other devices patented have. My clip-yoke has on its forward end a ball in fact, either solid or hollow, as may be preferred, and not a ball in name only.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. The combination with a plate for attachment to an axle, said plate being provided with a ball at its forward end, of a thill, spring-plates secured to the opposite sides of said thill and having cup-shaped ends to partially embrace said ball, a bolt passing through said spring-plates and thill and provided with oppositely-located ears, and a cam-lever fulcrumed between said ears and adapted to bear against the adjacent spring-plate, substantially as and for the purpose described.

2. The combination with an axle, of a plate secured thereto and provided at its forward end with a ball, a thill provided with oppositely-located spring-plates secured to each side thereof and having their rear ends cup-shaped to partially embrace said ball, a bolt passing through said plates and thill and provided with oppositely-located ears, a cam-lever pivotally mounted between said ears and operating against the adjacent spring-plate, and a flexible connection attached to said lever and arranged within convenient reach of the driver, substantially as and for the purpose described.

In witness whereof I hereunto set my hand and seal this 9th day of October, 1897.

LORENZO D. BROWN. [L. S.]

Witnesses:
R. M. JOHNSON,
AARON WORK.