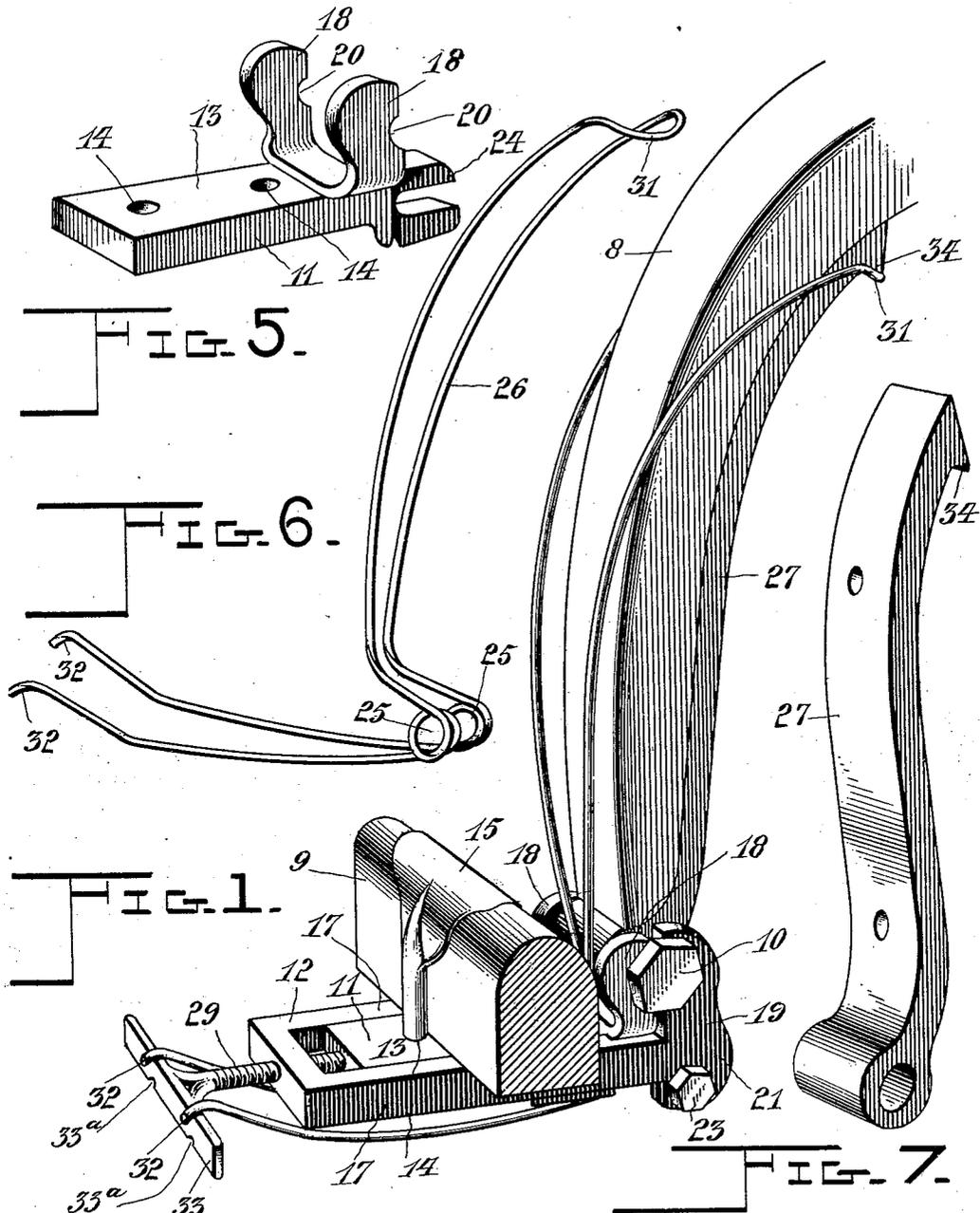


J. B. UREN.  
THILL COUPLING.

(Application filed Mar. 24, 1902.)

(No Model.)

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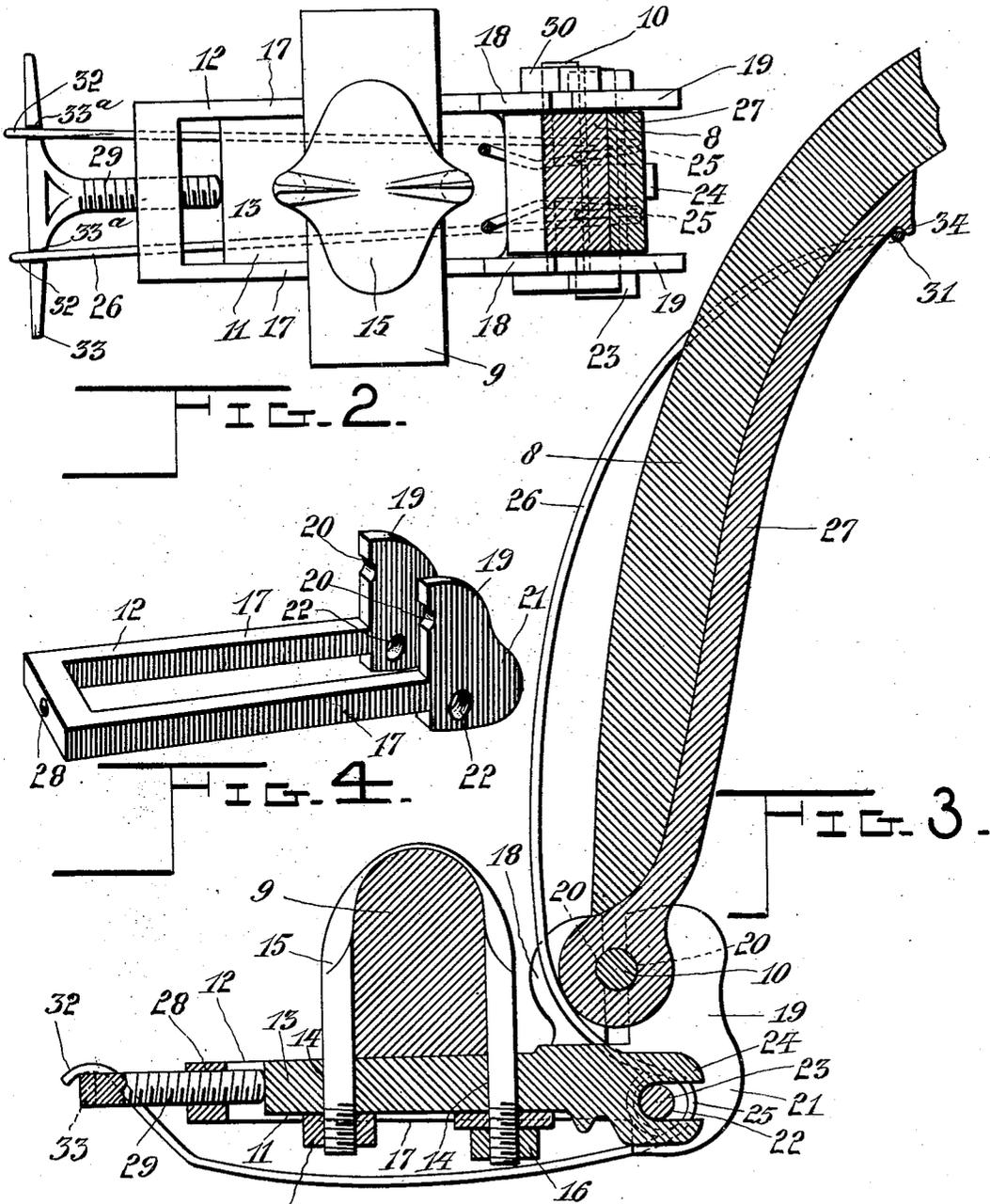


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# UNITED STATES PATENT OFFICE.

JAMES BOTTRELL UREN, OF LILLOOET, CANADA.

## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 713,180, dated November 11, 1902.

Application filed March 24, 1902. Serial No. 99,596. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES BOTTRELL UREN, a subject of the King of Great Britain, residing at Lillooet, county of Cariboo, Province of British Columbia, Canada, have invented certain new and useful Improvements in Thill-Couplings; and I do hereby declare that the following is 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.

My invention relates to an improved anti-rattling thill-coupling or device for attaching the thills or shafts of vehicles to the axles thereof; and the object of the invention is to provide such a coupling which will remain tight and prevent the rattling which produces noise and wear in ordinary vehicles.

Another object of the invention is to produce such a coupling which can be adjusted to take up wear of the connecting-pin, and thus positively prevent the rattling.

Still another object of the invention is to produce a thill or shaft supported by a spring which will yieldably take the weight of the same, whereby the latter is supported from the carriage or vehicle when in use, and thus the horse is relieved from the weight thereof, and while not in use the supporting means causes the thills to be turned into upright position, so that they are out of the way and are kept from being broken by objects falling across them, as well as taking up less space in the carriage house or shed where the vehicle may be kept.

Another object of my invention is to produce such a coupling which can be cheaply manufactured and will successfully accomplish all the objects intended for it and one which can be easily operated and will be automatically held in the position to which it is set without necessity of any supervision or danger of the coupling coming loose or the coupling-pin rattling out, as often happens with ordinary couplings.

My invention consists in the peculiar construction and combination of parts herein shown and described, and which will be particularly pointed out in the claims annexed to this specification.

I have illustrated my improved coupling in the accompanying drawings, wherein—

Figure 1 is a perspective view of a coupling, showing a thill and axle attached thereto. Fig. 2 is a plan view of the same, showing the thill and thill-iron in cross-section. Fig. 3 is a longitudinal central section through the thill-coupling, thill-iron, and axletree, the clip being shown in elevation. Fig. 4 is a perspective view of one half of the coupling. Fig. 5 is a similar view of the other half. Fig. 6 is a similar view of the spring, and Fig. 7 is a similar view of the thill-iron.

The same numerals of reference denote like parts in all the figures of the drawings.

The shaft or thill of the vehicle is shown at 8, the axletree at 9, and the connecting bolt or pin at 10, and these are of the ordinary type.

My improvement consists in the intermediate connecting devices, which will now be described. The coupling consists of a pair of interacting halves 11 12, one of which (shown in Fig. 5) is formed in the shape of a block 13, having two vertical holes 14 therein, through which pass the ends of the axletree clip 15, the block 11 being secured to the axle by this clip in connection with the nuts 16 on the lower side thereof. The other half of the coupling is made in U form, having two arms 17, adapted to embrace the sides of the block 13, so that the half 11 slides longitudinally in the half 12 of the coupling. Each coupling carries at its forward end a pair of jaws, (designated as 18 and 19, respectively,) the jaws 18 facing forwardly and formed to oppose the jaws 19, which face backwardly, and each jaw has formed transversely thereof an arcuate recess 20 of somewhat less than semicircular length, these two pairs of jaws being thus adapted to embrace and securely hold the pin 10 in the manner shown in Figs. 1 and 3. The enlarged end 21 of the arms 17, which carry the jaws, is also formed with a depending portion, through which are pierced transverse holes 22 for the purpose of supporting a pin 23, this pin forming a sliding support for the forward end of the half 11, which is formed with a slotted lug 24, adapted to embrace the pin 23, as shown, whereby the half 17 of the coupling is supported in horizontal position; but the pin 23 serves the further function of forming a center for the coiled portion 25 of the spring 26,

which is formed as shown in Fig. 6 and whose function will be hereinafter more fully referred to.

In order to hold the jaws together, so as to  
 5 firmly clamp the pin 10 on each side of the thill-iron 27, the central member of the half 12 is pierced by a threaded aperture 28, in which is suitably mounted a T-headed set-screw 29, whose inner or forward end abuts  
 10 against the rear end of the half 11, and thus presses it forwardly, and by turning up the set-screw 29 it will be seen that the two pairs of jaws 18 19 are pressed together to firmly hold the bolt 10, and this will not only keep  
 15 said bolt from rattling in the coupling, but will prevent the loss of the bolt, which has been heretofore commonly occasioned by the rattling loose of the nut 30 upon the end of the bolt 10, so that if necessary such nut may  
 20 be dispensed with altogether, as the pin 10 will be held in position without such means.

My improved spring-support for the thill, which assists in preventing the rattling, is in the form of a double-armed wire spring, which  
 25 is looped at 31 in a peculiar form, as shown in Fig. 6. At an intermediate point of each arm it is coiled, as shown at 25, and these coils are mounted upon the pin 23 on each side thereof and between the two halves 11 and 17, the  
 30 lug 24 being of reduced width to allow for the spring, as indicated in Fig. 5, and the ends of the spring extend rearwardly beneath the coupling and are each provided with a hook-finger 32, which is adapted to be hooked over  
 35 the T-head 33 of the set-screw 29 on each side thereof and to lie in a shallow notch 33<sup>a</sup>, as shown in Figs. 1 and 2. When in this position, the loop 31 of the spring is adapted to engage the thill-iron and to engage a project-  
 40 ing snug 34, formed on the extremity of this iron to catch the loop of the spring, so that the turning of the thill into horizontal position causes the spring 26, or rather the upper  
 45 portion thereof between the loop 31 and the coil 25, to be bent, as shown, and thereby the tension placed on the spring will tend to raise the thill into vertical position again. The  
 50 upper or fore portion of the spring thus serves the purpose of supporting the thill and at the same time prevents its rattling upon the pin 10; but the tail or end portions of the spring serve a different function—that is to say, that  
 55 of holding the set-screw 29 against turning—and which it will be seen these ends perfectly fulfil by having the fingers 32 hooked over the T-head 33 when the latter is in horizontal position. In order to disengage the T-head to allow the set-screw to be turned to tighten  
 60 the coupling, the fingers 32 are removed by raising them from the notches 33<sup>a</sup> and pushing them laterally off the head, and thereafter the screw can be turned and properly tightened up, when the fingers are replaced on the head in the position shown.

65 While I have shown in the accompanying drawings the preferred form of my invention, it will be understood that I do not limit my-

self to the precise form shown, for many of the details may be changed in form or position without affecting the operativeness or 70 utility of my invention, and I therefore reserve the right to make such modifications as are included in the scope of the following claims.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is— 75

1. A thill-coupling comprising a pin adapted to extend through an aperture in one of the thill-irons, a pair of halves sliding on one 80 another, a pair of jaws on each half coacting with the jaws of the opposite half, means for securing one of said halves to the axletree of the vehicle, and a set-screw mounted in one half and abutting against the other half, 85 whereby said jaws may be tightened upon the pin, each pair of coacting jaws having its members movable in lateral planes with respect to each other so as to move past each other and to have a shear-like action on said 90 pin.

2. A thill-coupling comprising a pin adapted to pass through an aperture in the thill-iron, a pair of halves slidable on one another, a pair of jaws carried by each half and co- 95 acting with the jaws in the opposite half, a T-headed set-screw mounted in one half and abutting against the other half whereby to clamp said jaws upon the said pin, and a spring having fingers adapted to overlie the 100 head of said set-screw to hold the same against turning.

3. A thill-coupling comprising a pin adapted to pass through an aperture in the thill-iron, a pair of halves slidable on one another, 105 one half consisting of a block having forwardly-facing jaws and means for securing it to the axletree of a vehicle, and the other said half being formed in U shape with back- 110 wardly-facing jaws on the ends of the limbs, and a set-screw mounted in the central member of said last-mentioned half, and abutting against the rear end of the first-mentioned half, whereby to draw the jaws together and 115 clamp them upon the pin.

4. A thill-coupling comprising a set-screw, a pin adapted to pass through an aperture in the thill-iron, a pair of halves slidable on one another, one half consisting of a block hav- 120 ing forwardly-facing jaws and means for securing it to the axletree of a vehicle, and the other said half being formed in U shape with backwardly-facing jaws on the ends of the limbs, a set-screw mounted in the central 125 member of said last-mentioned half and abutting against the rear end of the first-mentioned half whereby to draw the jaws together and clamp them upon the pin, a T-head carried on the set-screw, and a spring having 130 fingers adapted to overlie said T-head and hold the screw in position.

5. A combination thill-coupling and shaft-support comprising a thill-iron having an aperture and a snug formed upon its upper end,

a pin passing through said aperture, a pair of interacting halves, jaws carried by each half opposing and coacting with the jaws of the opposite half, a second pin carried by one of said halves transversely thereon, the other half having a slot engaging said pin, means for securing one of said halves to the axle, a set-screw mounted in one of said halves and abutting against the opposite half to clamp said jaws upon the connecting-pin, a T-head formed on said set-screw, and a loop-spring having a coil intermediate thereof embracing said second pin and a loop engaging the snug formed on the thill-iron.

6. A combination thill-coupling and shaft-support comprising a thill-iron having an aperture and a snug formed upon its upper end, a pin passing through said aperture, a pair of interacting halves, jaws carried by each half opposing and coacting with the jaws of the opposite half, a second pin carried by one of said halves transversely thereon, the other half having a slot engaging said pin, means for securing one of said halves to the axle, a set-screw mounted in one of said halves and abutting against the opposite half to clamp said jaws upon the connecting-pin, a T-head formed on said set-screw, and a loop-spring having a coil intermediate thereof embracing said second pin and a loop engaging the snug formed on the thill-iron and rearwardly-extending fingers overlying said T-head.

7. A combination thill-coupling and shaft-support comprising a thill-iron having an aperture and a snug formed upon its upper end,

a pin passing through said aperture, a pair of interacting halves, jaws carried by each half opposing and coacting with the jaws of the opposite half, a second pin carried by one of said halves transversely thereon, the other half having a slot engaging said pin, means for securing one of said halves to the axle, a set-screw mounted in one of said halves and abutting against the opposite half to clamp said jaws upon the connecting-pin, a notched T-head formed on said set-screw, and a loop-spring having a coil intermediate thereof embracing said second pin and a loop engaging the snug formed on the thill-iron and rearwardly-extending fingers overlying said T-head and lying in the notches thereof.

8. A thill-coupling comprising a pin adapted to extend through an aperture in one of the thill-irons, a pair of halves sliding on one another, a pair of jaws on each half coacting with the jaws of the opposite half, said jaws on one half being within the jaws of the other and adapted to slide laterally across the same, means for securing one of said halves to the axletree of the vehicle, and means extending between the two halves to cause one half to slide forcibly on the other, whereby to force the jaws together upon the pin.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JAMES BOTTRELL UREN.

Witnesses:

W. G. DUGUID,  
P. P. MCCALLUM.