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LESTER D. BELNAP.

Improvement in Thill Coupling.

No. 122,146.

Patented Dec. 26, 1871.

Fig 1.

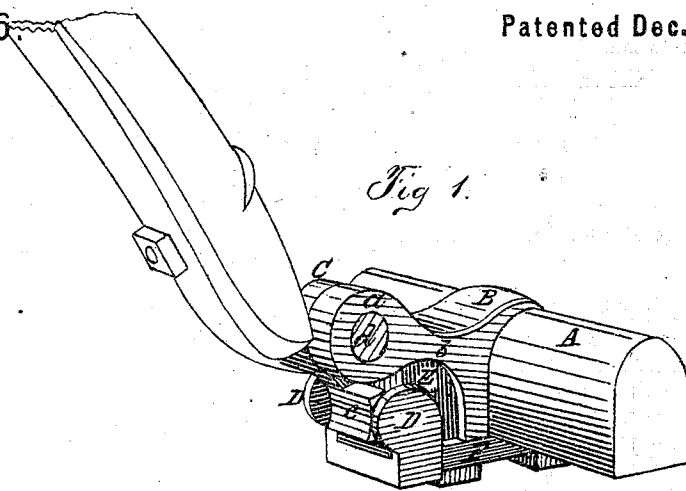


Fig 2.

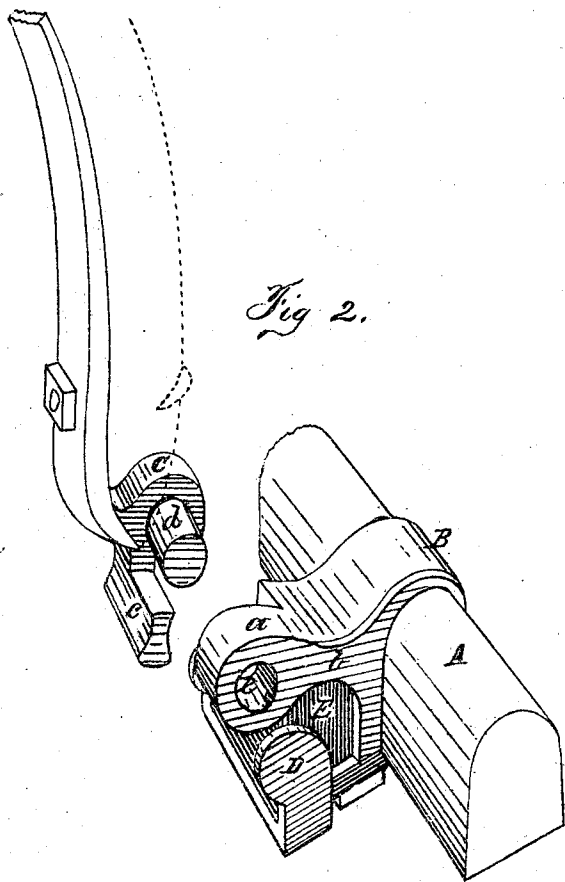
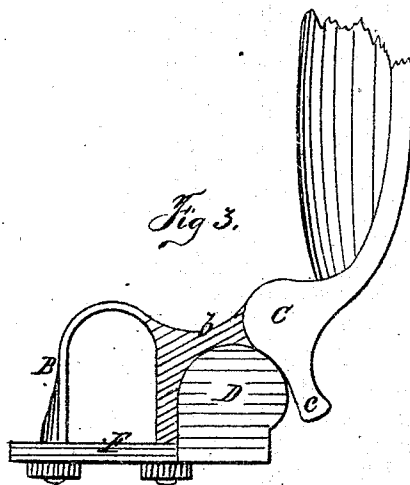


Fig 3.



WITNESSES:

Otto Le Johnson.
C. F. Cook.

INVENTOR:

Lester D. Belnap.
by his Atty in fact.
George Johnson.

UNITED STATES PATENT OFFICE.

LESTER D. BELNAP, OF JONESVILLE, MICHIGAN, ASSIGNOR OF ONE-HALF HIS
RIGHT TO GEORGE W. BULLOCK, OF SAME PLACE.

IMPROVEMENT IN THILL-COUPPLINGS.

Specification forming part of Letters Patent No. 122,146, dated December 26, 1871.

Specification describing certain Improvements in Clip-Couplings for Thills or Poles of Vehicles, invented by LESTER D. BELNAP, of Jonesville, in the county of Hillsdale and State of Michigan.

My invention relates to the arrangement and construction of a joint branch forged on and projecting from near the upper side of the clip, a guard-ear or ears on the forward end of the clips clamping-bar, and a rubber block placed in the intervening space or recess, all in combination with each other and with the clip, and a joint head on the thill-iron, said head being furnished with a projecting lock and bearing-cam; the object and effect of my invention being to furnish a side lap-eye and pin-joint drawing from the strongest part of the axle-clip, to form guides for quickly entering the coupling-pins into their respective eyes, and, when entered, to secure them in place by causing the lock-cams to enter between the clip-bar guards when the thills are lowered to the draft-line, said cams at the same time pressing sidewise against the elastic blocks to ease the vertical oscillations of the thills or pole and prevent rattling when the joints are worn.

Figure 1 exhibits my invention in perspective, the thill-head being fully coupled to the clip and in position to draw. Figs. 2 and 3 are views in perspective of the clip and thill-section in a proper line with each other for coupling. Fig. 4 is an elevation of opposite side, showing enlarged guard-ear to cover up opening and also the position of the thill-head before lowering to place, after the pin's insertion.

A represents a short section of the vehicle-axle and B the clip clamped on the axle in the usual manner. The clip is constructed with a branch, *b*, as shown, projecting horizontally in front from near the top of the band, which branch is formed with a joint head, *a*, halved in the thickness to admit an overlap of the thill-iron head, and has a central eye, *e*, for the reception of the side coupling-pin of said head, which I will now proceed to describe. The head of the curved thill-iron strap is indicated at C, corresponding in form and size with the joint-head *a*, but having a cam-shaped tongue, *c*, projecting radially from its lower edge and having a side coupling-pin, *d*, sunk centrally within a half-thickness recess or abatement, so that when the coupling-pin is inserted in the clip-eye half the width or thereabout

of the cam *c* and thill-strap will overlap the edge of the clip-joint head and form a lap-joint; but, if deemed best, the pin may be in the clip-branch and the eye in the thill-head. The clamping-bar F of the clip has a forward extension provided with an ear-guard, D, on one or both sides, between which ears the thill-head cam enters when lowered to place, securing the coupling-pins against side displacement; and, although one guard on each clip will be sufficient for that single purpose, if both the pins are entered from the same side, I find it best to employ two, for the reason that they stiffen the joint while turning the vehicle. A block of rubber or other suitable elastic substance, as shown at E, is fitted within the space between the clip-branch, cross-bar, and back part of the ears, so that when the thills or pole are hitched to the team the cam *c* will act against the block with the necessary side pressure. To cover the lateral openings to exclude rain or dust, if desired, the circle arc of the guard-ears may be enlarged, as clearly shown in Fig. 3, for, as the draft-strain does not come upon the clip cross-bar, it may be made of any desired form, of cast malleable metal, at small cost; but for the other parts I prefer wrought-iron, as they can be forged and finished cheaper than the parts composing the ordinary shackle-clip. The back concave sides of the cams and the convex edges of the guard-ears should bear such relation with each other and with the coupling-pins and eyes that when the operator, holding the thills or pole, as the case may be, horizontally, or nearly so, pushes the cams against the guard-ears on the coupling side and the ends of the pins against the joint-heads of the clip, and elevates the thills or pole sufficiently, the pins (lying in the same concentric circle arc with the eyes) will be guided in and the coupling effected with great ease and celerity. When the thills are lowered to place the cams are entered between the guards, and cannot be liberated to uncouple the joints until again oscillated upward to clear the said guards. Should it be desired, the clips may be right-and-left, one side being sprung in after the other side has been coupled, as previously described; and, when not in use, the thills or pole may be thrown back against the dash-board, out of the way, and relieve the rubber block from compression.

In addition to the advantages of strength and security, ready facility of changing from thills to

pole, and vice-versa, as possessed by my improved clip, the action of the thill-cams against the rubber is simply compressive, and not in any degree frictional, and, besides preventing rattle, relieves the team in great measure from the weight of the pole or thills; and the rubber may be renewed or a backing inserted without uncoupling or displacing any other part.

I claim as my invention, and desire to secure by Letters Patent—

The combination, with the clip proper and the

thill-iron, of the upper branch *b*, the side lap-joint connection between said branch and thill-iron, the locking cam-tongue *c*, rubber block *E*, and projected guard-ears *D*, all constructed and arranged substantially as and for the purpose set forth.

LESTER D. BELNAP.

Witnesses:

GEO. W. BULLOCK,
W. H. PENNOCK.

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