

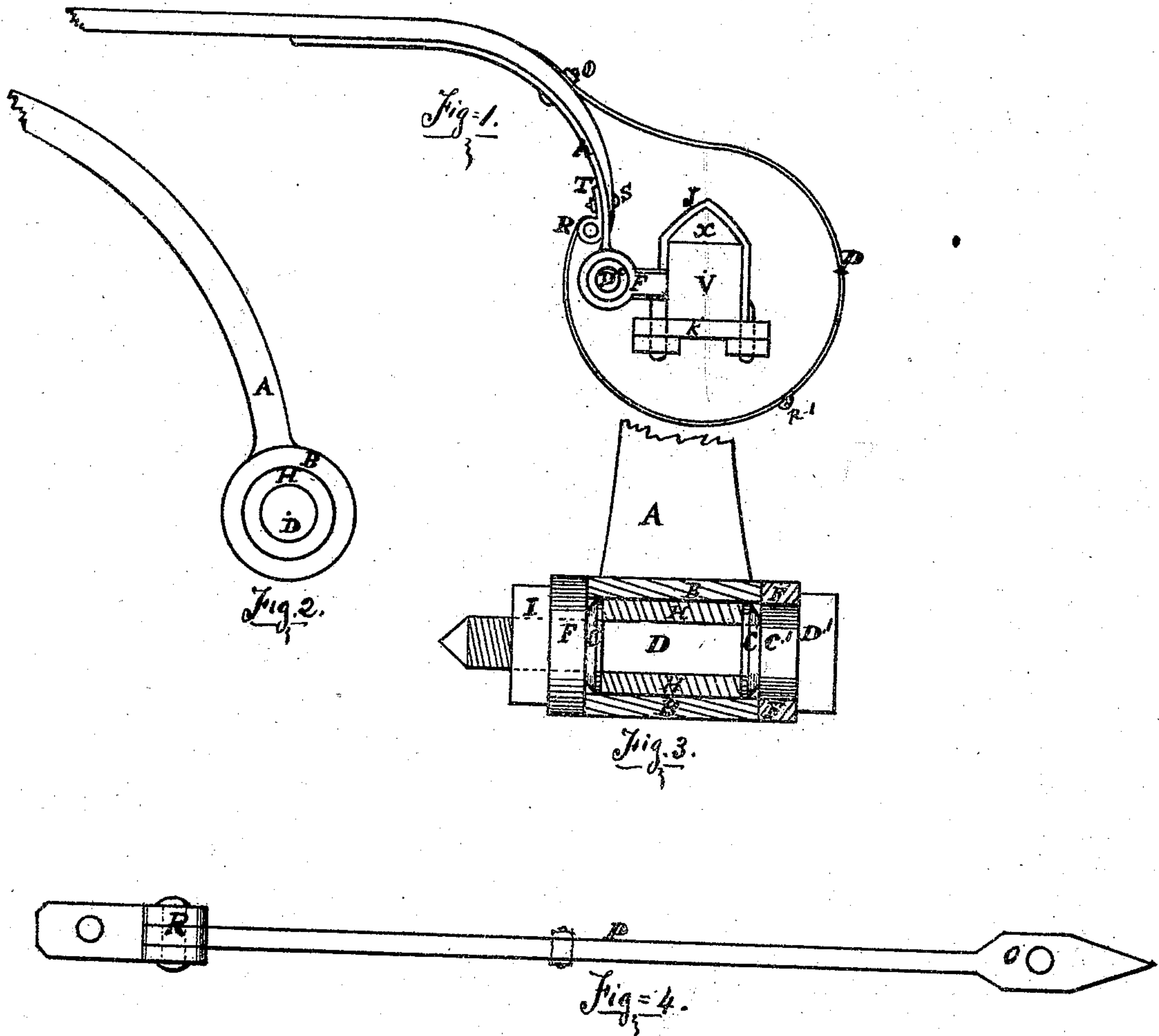
CYRUS W. SALADEE.

Improvement in Thill Couplings.

No. 120,001.

Patented Oct. 17, 1871.

Application A.



Witnesses  
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# UNITED STATES PATENT OFFICE.

CYRUS W. SALADEE, OF ST. CATHARINE'S, CANADA.

## IMPROVEMENT IN THILL-COUPINGS.

Specification forming part of Letters Patent No. 120,001, dated October 17, 1871.

*To all whom it may concern:*

Be it known that I, CYRUS W. SALADEE, of St. Catharine's, in the Dominion of Canada, have invented certain improvements for attaching thills and poles to axles, of which the following is a specification:

The first part of my invention relates to that of passing the connecting-bolt D through the ears F of the shaft-clip J and the elastic tube H, or its equivalent, in such manner that the action of the bolt upon the tube shall expand it, as hereinafter described and claimed. The second part of my invention relates to that of placing within the shaft-head B an elastic tube or a solid block of rubber, or other elastic substance, when said shaft-head is made of one solid piece of iron, as hereinafter described and claimed. The third part of my invention relates to that of the combination of the elastic tube H, or its equivalent, with the connecting-bolt D, shaft-head B, and ears F of the shaft-clip J, as and for the purpose hereinafter described and claimed. The fourth part of my invention relates to that of protecting the ends of the elastic tube H, or its equivalent, by means of the collars C and C', and which, in combination with the bolt D, compresses the tube longitudinally and expands its diameter within the shaft-head B, as and for the purpose hereinafter described and claimed. The fifth part of my invention relates to the application of a metallic guard, P, to secure the rear ends of the thills or pole from falling to the ground in the event the connecting-bolt D works out of its position or is broken, as hereinafter described and claimed.

Figure 1 is a side elevation of my shaft-guard and coupling embodying my invention. Fig. 2 is a detached view of the shaft-head B, showing the end of the elastic tube H and the connecting-bolt D. Fig. 3 is a front view of my complete coupling; the shaft-head B, the elastic tube H, and the right-hand ear F and F' in section, with the connecting-bolt D C' D' and the compressing-collars C and C' in position. Figure 4 is a top view of the guard P before it is bent into the form seen in Fig. 1, and showing the joint R.

The general construction of the shaft-clip and coupling shown in the drawing does not differ materially from those now in general use. The outside ear F of the shaft-clip has an enlarged hole, in diameter equal to the diameter of the

elastic tube H, which, when in position on the bolt D, is passed through this hole into the shaft-head B, which also has an enlarged hole of exactly the same diameter as the one through the outside ear of the clip. The inside ear F' of the shaft-clip J has a hole about one-quarter inch smaller in diameter than the one through the shaft-head B and the outside ear F, or of such diameter as to closely fit the main body of the connecting-bolt D, whose diameter is enough smaller than the before-mentioned hole through the shaft-head as to admit of the bolt passing through the elastic tube H, while the latter closely fits the hole in the shaft-head B. The connecting-bolt D is formed with a solid collar, C', next the head D', which collar is of a length and diameter to closely fit the enlarged hole in the outside ear F of the shaft-clip J. And now, for the purpose of protecting the ends of the elastic tube H from wear against the inside surfaces of the ears F, the loose collars C and C' are provided, as seen in Fig. 3. One of these collars C is first passed over the end of the bolt D, and passed up against the solid collar C'; the rubber tube H is next slipped on the bolt and against the collar C first in position, when the second collar C' is placed in position against the outside end of the tube. The shaft-head B is now placed in position between the ears F and F' of the shaft-clip J and the bolt D, with collars C and C' and elastic tube H in position thereon, as described, is passed through the enlarged hole of the outside ear F and the shaft-head B, as well as through the rear end hole in the opposite ear F', when the tap I is run on the outer end of the bolt and firmly drawn up against the ear F. The elastic tube H being cut a little longer than the entire length through the shaft-head B, the drawing up of the tap I against the ear F' will draw the solid collar C' of the bolt D against the collars C, and the tube H is longitudinally compressed and expanded within the shaft-head to any desired extent that will effectually prevent rattling in this connection. Figs. 2 and 3 clearly show all of the parts above described.

I do not confine my claims to the exact manner here shown and described for the interposition of an elastic tube within the shaft-head B, and the manner of compressing and expanding the same, as I may fill the enlarged hole in the shaft-head with a solid block of rubber, or other



elastic substance, and compress and expand the same by the use of two set-bolts, having their thread cut in each of the ears F, and which may be screwed up against each end of the rubber filling the shaft-head, and thus compress and expand it the same as the tube H, shown and described. Also, a bolt, D, might be used having a screw-thread cut the entire length, and being formed a size larger in diameter than the hole through the elastic tube H, the action of which, in being screwed through the tube, would likewise expand it within the shaft-head B. Neither do I limit my claims to the manner here shown and described for protecting the elastic tube from wear, as the collars C and C may be formed on the ends of the tube as a part thereof in their manufacture, and if found necessary to protect the outside or inside surface of the tube from wear, a small sized coiled wire may be embedded the full length of the tube in its manufacture for this special purpose.

In connection with the shaft-coupling described, as well as in connection with those now in general use, I make a metal guard, P, as seen in Figs. 1 and 4. The rear end of this guard is provided with a joint, R, as seen in the figures last named, and which is secured to the under side of the shaft-iron A at T, by the bolt S, and it is then bent in the form seen in Fig. 1, and the top end of the guard is secured to the upper side of the shaft by a bolt at O. I thus completely inclose the axle V within the circle of this guard, and thus effectually prevent the shaft from dropping to the ground in case the connecting-bolt D should work out or be broken. The guard may be attached without a joint R, if preferred.

When the thills or pole are to be detached, remove the top O, when the guard P is allowed to drop back upon the joint R, and by removing the connecting-bolt D the connection between the thills and axle is severed. These guards I contemplate manufacturing separate and apart from my shaft-coupling, of a proper length and left straight, as seen by Fig. 4; and they are readily applied to any vehicle by bending them in proper form and attaching, as shown and described.

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

1. Passing the connecting-bolt D through the ears F of the shaft-clip J and the elastic tube H, or its equivalent, in such manner that the action of the bolt upon the tube shall expand it, substantially as and for the purpose set forth.

2. The combination of the elastic tube H, or its equivalent, confined within the ears F, with the connecting-bolt D, and shaft-head B of the shaft-clip J, substantially as and for the purpose set forth.

3. Protecting the ends of the elastic tube H, or its equivalent, by means of the collars C and C, and which, in combination with the bolt D, compress the tube longitudinally and expand its diameter within the shaft-head B, substantially as and for the purpose shown and described.

4. Broadly, the use of a metallic guard, P, constructed and operating substantially as and for the purpose shown and described.

August 22, 1871.

CYRUS W. SALADEE.

Witnesses:

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