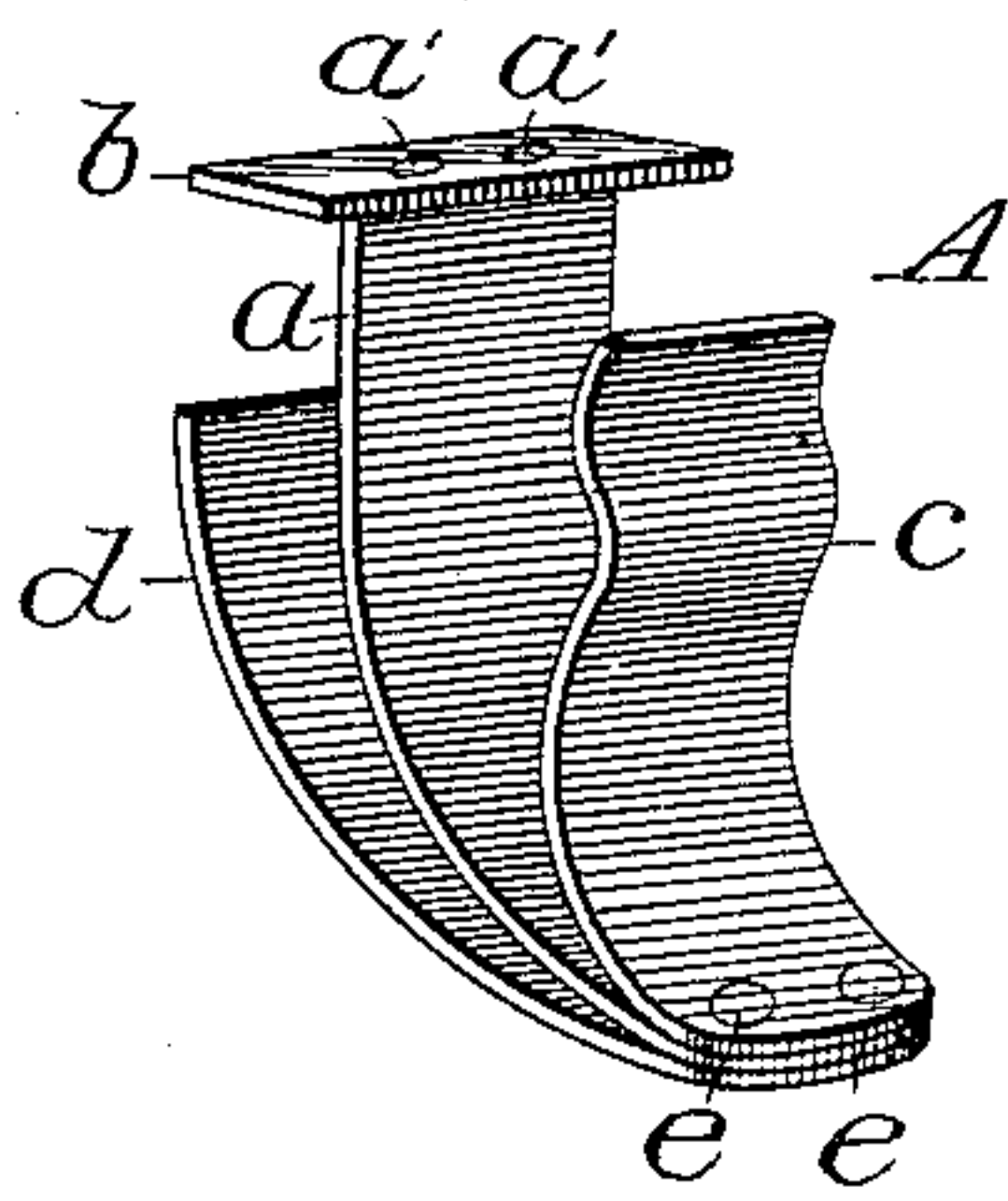


(No Model.)

G. T. ALPRESS.
ANTIRATTLER FOR THILL COUPLINGS.

No. 561,152.

Patented June 2, 1896.



Witnesses.
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Willard J. Curtis

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UNITED STATES PATENT OFFICE.

GEORGE T. ALPRESS, OF BRISTOL, CONNECTICUT, ASSIGNOR TO DUNBAR BROTHERS, OF SAME PLACE.

ANTIRATTLER FOR THILL-COUPPLINGS.

SPECIFICATION forming part of Letters Patent No. 561,152, dated June 2, 1896.

Application filed September 30, 1895. Serial No. 564,244. (No model.)

To all whom it may concern:

Be it known that I, GEORGE T. ALPRESS, a citizen of the United States, residing at Bristol, in the county of Hartford and State of Connecticut, have invented a new and useful Thill-Coupling Spring, of which the following is a specification.

My invention relates to the spring-wedge class of devices to take up the lost motion between the thill-eye and bolt of vehicles and prevent rattling and wear of the same.

The object of my improvement is to provide a more efficient, elastic, and lasting spring for the above-named purpose, and one more easily inserted without removing the bolt from the thill-eyes; also to provide a means to neatly exclude all mud and dust from the space between the thill-eye and shackle-clip. I attain these objects by the construction and 20 assemblage of parts as illustrated in the accompanying drawing and description.

In the drawing, A is a perspective view of the complete article, showing all the parts consisting of the central drive-piece *a*, with 25 a horizontal top piece *b*, the front spring-limb member *c*, the back spring-limb member *d*, the rivets *e e*, connecting these three spring members together at the bottom. At the top of the central drive member *a* are two tenons 30 *a' a'*, (shown as passed through corresponding slots in the horizontal piece *b* and rigidly secured by swaging.) The front spring member *c* has a concaved portion near the top to conform to the periphery of the thill-eye when 35 placed in position in a thill-coupling. The uniform curvilinear form of the three spring members all bearing in one direction is designed to conform the shape of the article to the aperture between the thill-eye and 40 shackle-clip and avoid interference with the yoke and nut, securing the shackle-clip to the axle, and also to attain this object without the acute bends and consequent weakening of the material of the usual forms used 45 in thill-spring construction. Other advantages of this uniform crescent form are that it is more pleasing to the eye and presents no angles for the lodgment of mud or dust and affords greater scope to the elasticity of the 50 article. In constructing the article the material should be plate or sheet steel of a good

quality. The members should be formed and hardened separately and drawn to a uniform spring temper, after which they should be connected together with soft-iron rivets 55 and finished as desired.

In applying the article to thill-couplings the bottom or thin end should be placed in the aperture between the thill-eye and shackle-clip with the front member, having the concavity at the top, bearing against the thill-eye, and then with a heavy hammer or similar means applied to the horizontal top of the central drive-piece the article should be 65 pushed and driven down until the horizontal piece rests across the ears of the shackle. To avoid marring the finish, it is advisable to place a block of wood on top to receive the blows of the hammer.

The special advantages of my invention 70 will appear from the following statement of the prior art and practice in this line. At one time, and still to a considerable extent, a block of elastic rubber was compressed between the thill-eye and shackle-clip for an 75 antirattler. As rubber is a material not readily driven in it was necessary to first remove the pivot-pin from the thill-eye and place the rubber in position and then devise means to force back the thill sufficiently to 80 allow the pivot-pin to be replaced. The inconvenience of this has prompted inventors to devise improved means to avoid it and also to provide a more durable material than rubber. By almost common consent steel, 85 either in the form of wire or elastic plate, has been settled upon as the best material for the purpose and numerous forms of antirattlers made from steel plate or wire have been patented and placed upon the market. Almost 90 all of them are of one piece bent upon itself to approximate a V-shaped form of two spring-limbs and can be inserted without taking out the pivot-pin by compressing the divergent spring-limbs together with a blacksmith's 95 tongs, placing in position, and then allowed to spring out against the parts to be acted upon. While this was convenient to blacksmiths it was not convenient for those who had not the required tongs or pinchers, and the device was 100 also open to the objection that the hinge-like action of the thill-eye on the pivot-pin and

bearing against one limb of the article tended to work it down through or up out of position. To overcome these objections, at least one or two inventors have made a V-shaped construction from steel plate having a forward bend on the top of the back limb to drive against in inserting the article, and one device has been made having a horizontal piece riveted to the forward bend of the back limb to serve as a drive-piece and also to rest across the ears of the shackle and prevent the article from working down through. There has been heretofore considerable loss from breakage at the acute bends of the above-mentioned devices both at the bottom where the bend is made to form the two spring-limbs and at the point on the back plate where the forward bend is made for a drive-surface. A spring for this purpose is necessarily made very stiff and requires much force to drive into position. It is therefore obvious that a drive-piece attached to the back limb bend does not afford a solid direct drive or a durable means for the purpose. As a step forward in the march of improvement I have added the central drive member *a* uniform with, approximately equidistant from and between, and solidly united by rivets to the two convergent ends of the spring-limbs *c* and *d* of the old forms.

The T-shaped top of the central drive member in my device, formed as hereinbefore described, is adapted to rest snugly across the ears of the shackle centrally, closing the aperture, excluding mud and dust, and preventing the article working down through as well as affording an adequate driving-surface for

forcing the article into place by a direct application of force to the center of gravity of the article and without encountering any acute bends.

In my device the top of the back member not being bent forward presents a sharp upper edge to the shackle-clip, giving a frictional resistance to any tendency of the spring to work up, while the concavity near the top of the front member fitting the periphery of the thill-eye performs the same use on that side. It is evident that I get not only the full spring-tension of the old forms from the two outside members but an added spring-tension and resiliency from the central drive-spring member, owing to the fact that the front member being shorter and having the concavity near the top is much stiffer than either of the others and when compressed by forcing into place draws up the point of the whole article, making it more curvilinear and utilizing the resiliency of the central member as well as the others.

Having described my invention, given the mode of construction and operation, and stated its advantages in comparison with the prior art, what I claim as my invention, and desire to secure by Letters Patent, is—

In a spring-plate antirattler for thill-couplings the combination with two divergent spring members of a central drive member, all firmly united together at the convergent ends, substantially as set forth.

GEORGE T. ALPRESS.

Witnesses:

WILLARD J. CURTISS,
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