Oct. 9, 1923. 1,470,493

J. D. SHOW

SNUBBER

Filed Oct. 12, 1922

Fig. 1.

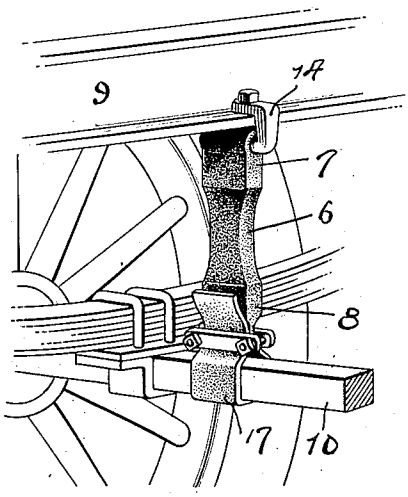



Fig. 2.

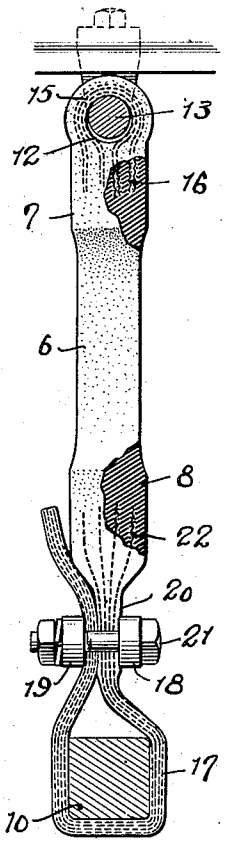



Fig. 3.

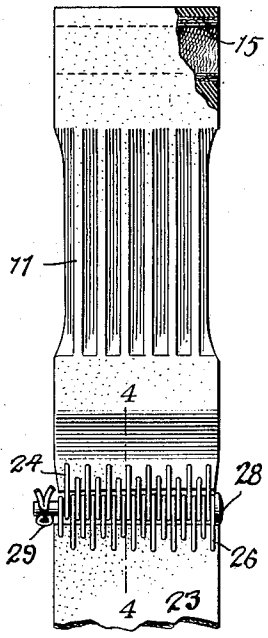



Fig. 5.

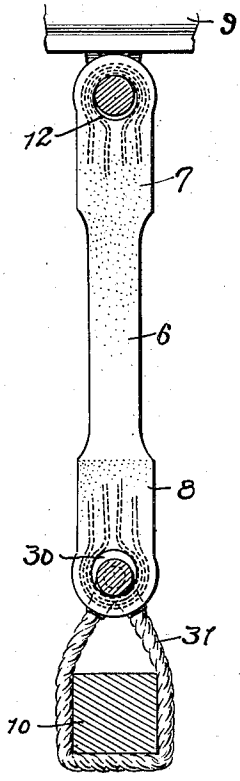
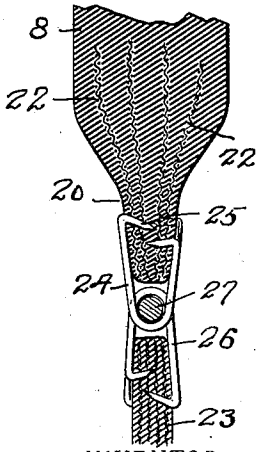



Fig. 4.




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# UNITED STATES PATENT OFFICE.

JOHN D. SHOW, OF NEW YORK, N. Y.

## SNUBBER.

Application filed October 12, 1922. Serial No. 594,049.

*To all whom it may concern:*

Be it known that I, JOHN D. SHOW, a citizen of the United States of America, residing at New York city, borough of Bronx, in the county of Bronx and State of New York, have invented certain new and useful Improvements in Snubbers, of which the following is a specification.

My invention relates to snubbers, and particularly to snubbers for reducing the rebound shock or upward throw of the spring supported body of a vehicle. The object of my invention is to improve the construction shown in my prior Patent No. 1,095,936, dated May 5, 1914, in certain particulars hereinafter pointed out or illustrated in the accompanying drawing, in which—

Fig. 1 is a perspective view showing my improved snubber in operating position;

Fig. 2 is a broken edge elevation thereof drawn to a larger scale;

Fig. 3 is a broken face view thereof illustrating modified construction;

Fig. 4 is an enlarged section on the line 4—4, Fig. 3; and

Fig. 5 is an edge view of a further modification.

In its essential features, the present snubber comprises a solid body portion 6 of high grade rubber which consitutes the main resilient element of the snubber. Integral therewith are end blocks 7 and 8 to which are anchored respectively the means for attaching one end of the snubber to the chassis side bar 9, or other element of a car body, on the one hand, and the means for attaching the opposite end of the snubber to the wheel axle 10, or other element of the running gear, on the other hand.

The resilient body member 6 of the snubber may be of substantially the same character as that shown in my prior patent above mentioned, or it may be modified as illustrated in Fig. 3 by forming reinforcing ribs 11 on the opposite faces thereof. Where a construction of the latter type is used, the body portion may be not only concaved at its opposite edges, but the web of the body may be of less thickness than usual without material lessening the effective strength of the product.

In my prior patent I suggested that the end blocks of the snubber may be covered with canvas at the point at which the attachment is made by means of the bands 2. I have found that a far more satisfactory anchorage for the attaching elements may be obtained by embedding the fabric in the end blocks. Where the attaching element comprises a member penetrating the block from its opposite edges, as for example in Figs. 1 and 2 at the chassis end of the snubber, the block is preferably pierced by a hole 12 adapted to receive the cross bar of attaching clamps 14, or other suitable attaching devices. In order to reinforce the hole 12 against strains imposed on the block when the snubber functions, I embed therein a multi-ply fabric reinforce 15, which lines the wall of the hole toward the end of the snubber, but the several plies of which are spaced apart and individually embedded in the material of the block and extend toward the resilient web or body of the snubber. This may be readily accomplished by building the snubber from strips of raw rubber, the plies 16 of the fabric 15 being spaced apart by the strips of raw rubber, and also covered by the outer strips of raw rubber, the whole being compressed in a mold and vulcanized in a manner readily understood by those skilled in the art. It will be observed that the wall of the hole 12 against which strain is exerted is formed substantially entirely by the fabric, and that the strains to which the fabric is subjected are distributed throughout substantially the entire area of the block 7 by reason of the separation of the plies 16 and their deep anchorage in the block.

Substantially the same method of anchoring the plies of the fabric may be employed at the opposite end of the snubber from which extends the attaching strap 17, which passes around the axle 10. As here shown, the four plies of the fabric strap are separated and spaced apart in the block 8, being anchored deeply therein and serving to distribute the strains throughout substantially the entire area thereof. As will be noted, the block 8 is extended in the form of a nose 20 through which the plies of the fabric pass, and in which they gradually approach each other as they near the strap 17.

If the strap 17 be rubberized, a clamp such as indicated in Figs. 1 and 2, may be successfully used to hold the strap against slipping from adjusted position. The clamp comprises a pair of bars 18 and 19 arranged on opposite sides of the nose 20 of the block 8 and of greater width than the snubber, the projecting ends of the plates being pierced to receive the clamping bolts

21. The rubber-to-rubber contact resulting from the clamping of the rubberized strap 17 against the nose 20 of the block 8 affords a very secure non-slip engagement.

In Figs. 3 and 4 I have shown another way of connecting the strap to the snubber. In this modification the fabric reinforce 22 terminates in the nose 20 of the block 8, and the strap 23 forms an independent element of the structure. The connection between the strap and the snubber is effected through a series of wire loops 24, the sharpened points 25 of which are driven into the nose 20 and through the reinforcing fabric plies. A like series of loops 26 is secured in similar manner to the strap 23. The loops of the respective series are sufficiently spaced apart to permit the same to be intermeshed and engaged by a cross pin 27, which is held from escape by its head 28 at one end, and a thill pin 29 at its other end. This construction has the advantage not only of permitting the strap 23 to be prepared independently of the snubber body proper—a practical advantage avoiding the necessity for a second vulcanizing step in the preparation of the snubber—but it also permits the strap to be renewed without discarding the snubber as a whole.

In Fig. 5 I have shown another modification in which both blocks 7 and 8 are provided with holes 12 and 30 respectively, through which pass the attaching means by which the snubber is secured to the respective vehicle members. In case of emergency, a rope 31 may be passed through the hole 30 and will suffice to anchor the end of the snubber.

Various other modifications will readily occur to those skilled in the art, which do not depart from what I claim as my invention.

I claim—

1. A snubber comprising a solid block of resilient material adapted to be connected in tension between the body and running gear of a vehicle, and having at its opposite ends means for securing the same to appropriate vehicle parts, said ends having embedded therein multiple fabric plies spaced apart and extending in spaced relation from the ends of the block toward its resilient mid area, and serving to take the strain of the attaching means.

2. A snubber comprising a solid block of resilient material adapted to be connected in tension between the body and running gear of a vehicle, and having at its opposite ends means for securing the same to appropriate vehicle parts, one of said ends being pierced by a hole to receive said securing means, together with multiple fabric plies superposed in closely adjacent relation around the portion of the wall of said hole adjacent the end of the block and extending therefrom in spaced relation toward the resilient mid area of the block to afford a secure anchorage and to distribute the stresses imposed thereon during the operation of the snubber.

3. A snubber comprising a solid block of resilient material adapted to be connected in tension between the body and running gear of a vehicle, and having at its opposite ends means for securing the same to appropriate vehicle parts, one of said ends having a nose of reduced section projecting therefrom, together with multi-ply fabric reinforce embedded in said end, the plies of said reinforce extending from relatively closely juxtaposed relation in said nose to relatively widely spaced relation in said end to afford secure anchorage and to distribute the stresses imposed thereon, in combination with securing strap means operatively associated with said reinforce to transmit thereto the stresses occasioned by the functioning of the snubber.

4. A snubber comprising a solid block of resilient material adapted to be connected in tension between the body and running gear of a vehicle, and having at its opposite ends means for securing the same to appropriate vehicle parts, one of said ends having a nose of reduced section projecting therefrom, together with multi-ply fabric reinforce embedded in said end, the plies of said reinforce extending from relatively closely juxtaposed relation in said nose to relatively widely spaced relation in said end to afford secure anchorage and to distribute the stresses imposed thereon, in combination with securing strap means operatively associated with said reinforce to transmit thereto the stresses occasioned by the functioning of the snubber, said plies being combined to form a securing strap in extension of said nose and permanently anchored thereto.

In testimony whereof I have signed my name to this specification.

JOHN D. SHOW.