Feb. 11, 1964 R. L. FINCH 3,120,951

STABILIZING DEVICE

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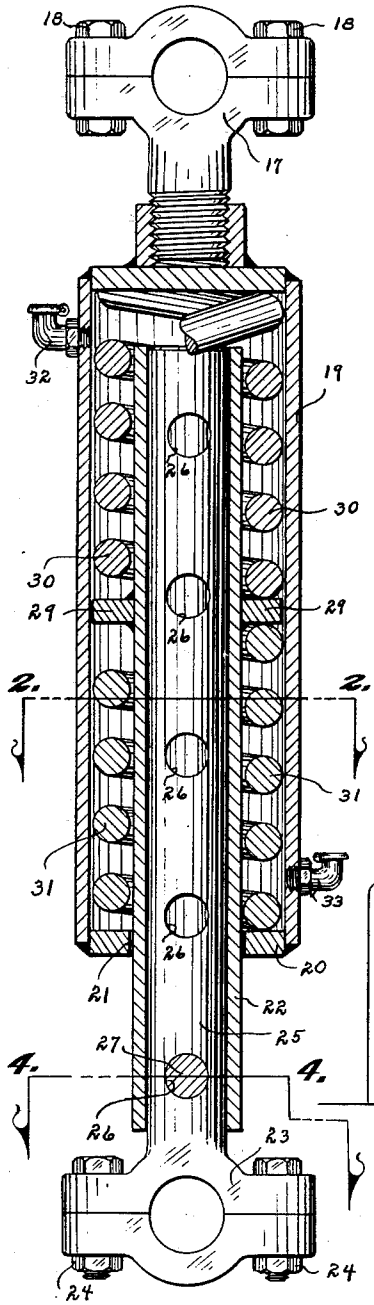


Fig. 1

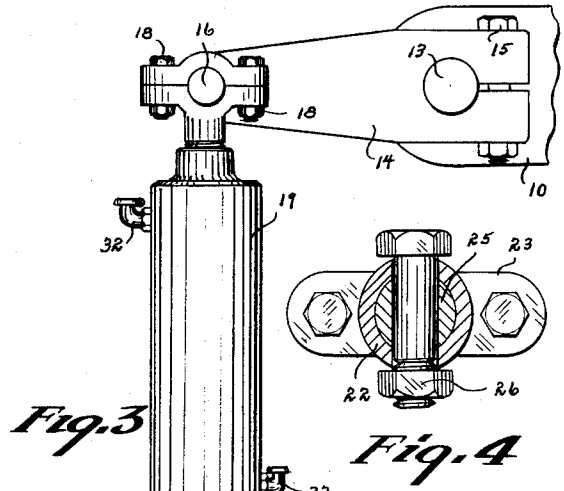


Fig. 3

Fig. 4

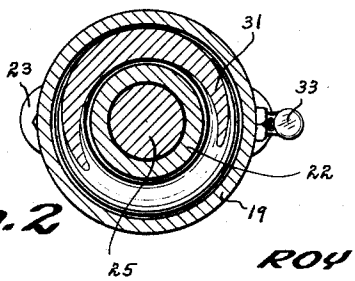


Fig. 2

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STABILIZING DEVICE

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This invention relates to yieldable snubbers and more particularly to a stabilizing device used on such machinery as road conditioning implements having blade moldboards.

In such equipment it is most difficult to maintain the proper position of the blade. The blade moldboard is highly susceptible to "bounce" as it travels over the road surface due to the method of supporting and suspending of the blade from the vehicle chassis. The results are that not only is the efficiency of the blade greatly reduced, but the entire operation at hand is slowed down, the road surface is often damaged, the blade damaged, and greater power output is necessary to complete the task. Also, with such equipment, the controls must be changed when the device goes around corners.

Therefore, one of the principal objects of my invention is to provide a successful stabilizer for moldboards and like that yieldingly stabilizes the moldboard or like in both upward and downward movements.

A further object of this invention is to provide a moldboard or like stabilizer that may be easily and quickly installed.

A still further object of this invention is to provide a stabilizer that resists lateral stresses and strains.

Still further objects of my invention are to provide a yieldable stabilizing device that is economical in manufacture and durable in use.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangements, and combination, of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, specifically pointed out in my claim, and illustrated in the accompanying drawings, in which:

FIG. 1 is a longitudinal sectional view of my device ready for use;

FIG. 2 is a cross-sectional view of my unit taken on line 2—2 of FIG. 1 and more fully illustrates its construction;

FIG. 3 is a reduced side view of my stabilizer installed and in use; and

FIG. 4 is a cross-sectional view of the unit taken on line 4—4 of FIG. 1.

As before indicated, my stabilizer may be successfully used on any type of machinery requiring a unit of this character. It, however, is illustrated in the drawings as being imposed between the beam and the blade unit of road conditioning equipment. In the drawings I have used the numeral **10** to designate the beam of a road plow or like and the numeral **11** its blade portion. The numeral **12** designates a stub shaft on the plow unit and the numeral **13** a stub shaft on the beam portion. The numeral **14** designates an arm having a split end embracing the stub shaft **13**, and tightenable thereon by the bolt means **15** as shown in FIG. 3. The numeral **16** designates a stub shaft on the outer free end of the arm **14** and above the stub shaft **12**. It is between the stub shafts **16** and **12** that I secure my device and which I will now describe in detail.

The numeral **17** designates a split head bearing embracing the stub shaft **16** and tightenable thereon by bolt means **18**. The numeral **19** designates an outer cylinder having its upper end closed and operatively threaded onto the bearing head **17**, as shown in FIG. 1. The

lower end **20** of this cylinder is closed except for a passageway **21** in its center. Slidably extending through the passageway **21** and into the cylinder **19** is a tube **22**. The numeral **23** designates a split bearing head detachably embracing the shaft **12** and tightenable thereon by the bolt means **24**. This bearing **23** has an upwardly extending shaft **25** adjustably slidably mounted in the tube **22**. This shaft has a plurality of spaced apart transverse holes **26**. The numeral **27** designates a bolt means extending through the lower end portion of the tube **22**, and detachably selectively through one of the holes **26** of the shaft **25**. Rigidly secured around the tube **22** and slidable in the cylinder **19** is a radially extending bearing ring **29**. The numeral **30** designates an upper coil spring in the cylinder **19**, embracing the tube **22**, and having its upper end engaging the inside top of the cylinder **19** and its lower end engaging the top surface of the ring **29**. The numeral **31** designates the lower coil spring in the cylinder **19**, embracing the tube **22**, and having its lower end engaging the inside bottom of the cylinder **19** and its upper end engaging the underside of the ring **29**. It is important that these two coil springs **30** and **31** are installed under tension, i.e., the spring **30** will at all times be yieldingly pressing down on the ring **29**, and the spring **31** will at all times be yieldingly pressing upwardly on the ring **29**. A grease nipple or cup **32** extends through the upper wall area of the cylinder **19** and a like greasing means **33** extends through the lower wall area of the cylinder **19**.

In use, and with the two springs **30** and **31** under tension, and both working against each other, the device will resiliently hold the blade **11** from both objectionable upward movement and downward movement. Thus, in operation the blade **11** will substantially "float" but in a most even horizontal plane. Obviously vertical adjustment of blade positioning is necessary and I accomplish this by the holes **26** and bolt means **27**. By selecting the proper hole **26** for the bolt means **27**, the blade will be maintained at the required elevation. My cylinder unit is sealed against unauthorized tampering by welding the upper and lower ends of the cylinder to the cylinder wall, as shown in FIG. 1.

Some changes may be made in the construction and arrangement of my stablizing device without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claim, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

In a stabilizing device, comprising,

(*a*) a cylinder,

(*b*) a bearing means secured to the upper end of said cylinder,

(*c*) a tube slidably extending into said cylinder from its lower end,

(*d*) a bearing ring in said cylinder and secured to said tube,

(*e*) a coil spring in said cylinder having its upper end operatively engaging the upper portion of said cylinder and its lower end engaging said bearing ring,

(*f*) a second coil spring in said cylinder having its lower end operatively engaging the lower portion of said cylinder and its upper end engaging said bearing ring,

(*g*) a shaft slidably extending into said tube and having a plurality of spaced apart transverse holes;

(*h*) said tube having a hole extending transversely through its lower end area,

(*i*) a detachable member extending through the hole in the lower end area of said tube and selectively through one of the holes of said shaft,

(*j*) and a bearing means on the outer lower end of said shaft;

(*k*) said two coil springs being under substantial compression at all times.

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