Aug. 30, 1927. 1,640,894

H. HEBERT ET AL

SHOCK ABSORBER

Filed April 5, 1924

Fig. 1.

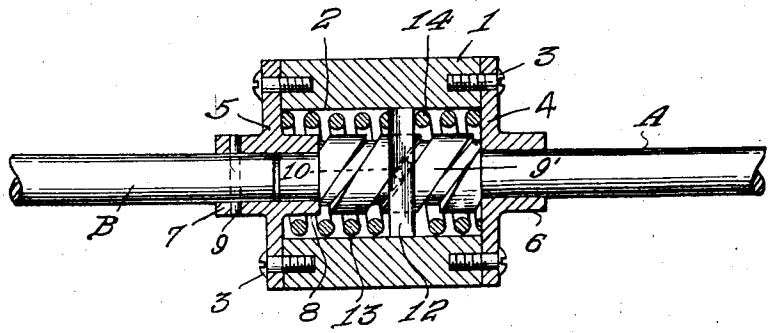


Fig. 2.

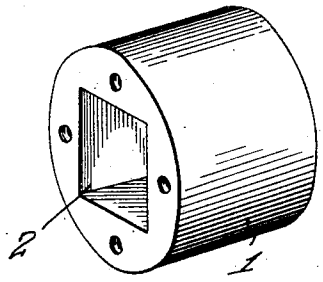
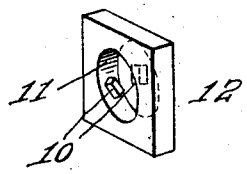


Fig. 3.



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WITNESS:

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UNITED STATES PATENT OFFICE.

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SHOCK ABSORBER.

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This invention relates to resilient rotary shock absorbing shaft couplings.

The primary object of this invention is to provide a shock absorbing coupling for shafts that will transmit power without sudden strain and eliminate slippage of the parts involved and also has the qualities of absorbing all shocks due to sudden changes in the relative speed of the shafts, or increase or decrease in load which the shafts are subjected to and further to eliminate lost motion to a great degree.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claim.

In describing our invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a vertical sectional view through the coupling to illustrate the parts thereof.

Figure 2 is a perspective view of the coupling housing.

Figure 3 is a similar view of the drive block.

Referring to the drawings in detail the letter A indicates a drive shaft and B the driven shaft which are associated for cooperation through the instrumentality of the coupling which forms the subject matter of the present invention and which includes a cylindrical housing 1, formed with a square cross sectional bore 2 throughout its length and having secured to the ends thereof, through the medium of screw bolts 3 received in longitudinally disposed threaded sockets in the ends, caps 4 and 5 having centrally formed thereon outwardly extending flanges 6 and 7 as shown in Figure 1 of the drawings.

The shaft A passes through the cap 4 and its flange 6 and has its adjacent end disposed in juxtaposition to the adjacent end of the shaft B and received in an inwardly extending annular flange 8 formed on the cap 5. The mentioned end of the shaft B is fixed to the flange 7 by a pin 9 so as to rotate with the casing as will be readily apparent.

The shaft A has formed on its portion disposed within the casing a screw member 9′ which is adapted to receive diametrically oppositely disposed studs 10 formed on the walls of an opening 11 centrally disposed in driving block 12 which is mounted for slidable movement in the cross-sectional square bore of the housing as shown in Figure 1, the driving block being the same shape as the shape of the bore.

Disposed within the housing and having its end convolutions engaging the cap 5 and driving block 12 is a relative large coil spring 13 and a similar spring 14 is also disposed in the bore and has its end convolutions engaging the block upon the opposite side and the cap 4 respectively, the spring 14 being relatively smaller than the spring 13 with the result that the spring 13 subjects a greater tension upon the block and normally disposes the same toward the cap 4.

From the above and the disclosure presented by the drawings it will be apparent that when power is applied to the shaft A by any suitable means the same is adapted to be rotated with the result that the driving block will be moved forward by the engagement of the studs 10 with the groove of the screw member and put the spring 13 under tension so that the cylindrical housing will be rotated and such rotation transmitted to the shaft B, therefore the power is transmitted gradually to the shaft B with the result that all shock is absorbed and slippage is prevented in the parts associated with the shaft B.

We are aware that prior to our invention there were numerous kinds of shock absorbers, but we have never come in contact with any of which the shock is absorbed on rotation.

We claim:

The herein described shock absorbing shaft coupling consisting essentially of a housing exteriorly of circular cross section and having a longitudinal central bore of square cross section extending throughout its length, a cap for one end of the housing, a cap for the other end of the housing, an exterior and an interior flange formed on the first mentioned cap, an exterior annular flange formed on the second cap, a driven shaft fixedly connected in the exterior annular flange of the first mentioned cap, a drive shaft journaled in the flange of the second cap and having a terminal portion disposed in the interior

flange of the first named cap and also having a diametrically enlarged screw member arranged in said housing and interposed between and abutting against the inner side of the second cap and the inner end of the interior flange of the first named cap, a square in cross section driving block snugly fitting and moving rectilinearly in the square bore of the housing and being provided with an opening surrounding the threaded portion of the drive shaft, obliquely disposed studs extending inwardly from diametrically opposite sides of the opening for cooperation with the threads of the screw member, and coiled springs surrounding the drive shaft and interposed between said caps and the said driving block.

Montreal 21st of February, 1924.

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