

[54] **LOAD CUSHION**

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[51] Int. Cl. **F16d 3/64**

[58] Field of Search **64/14, 16, 13, 27 NM**

[56] **References Cited**

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[57]

ABSTRACT

A meshing jaws-type flexible coupling and an individual cushion between each adjacent pair of jaws, the cushion having retaining shoulders limiting inward radial movement of the cushion, axially directed spring projections and convex jaw-contacting surfaces and a ribbed band securing the cushions in place.

2 Claims, 4 Drawing Figures

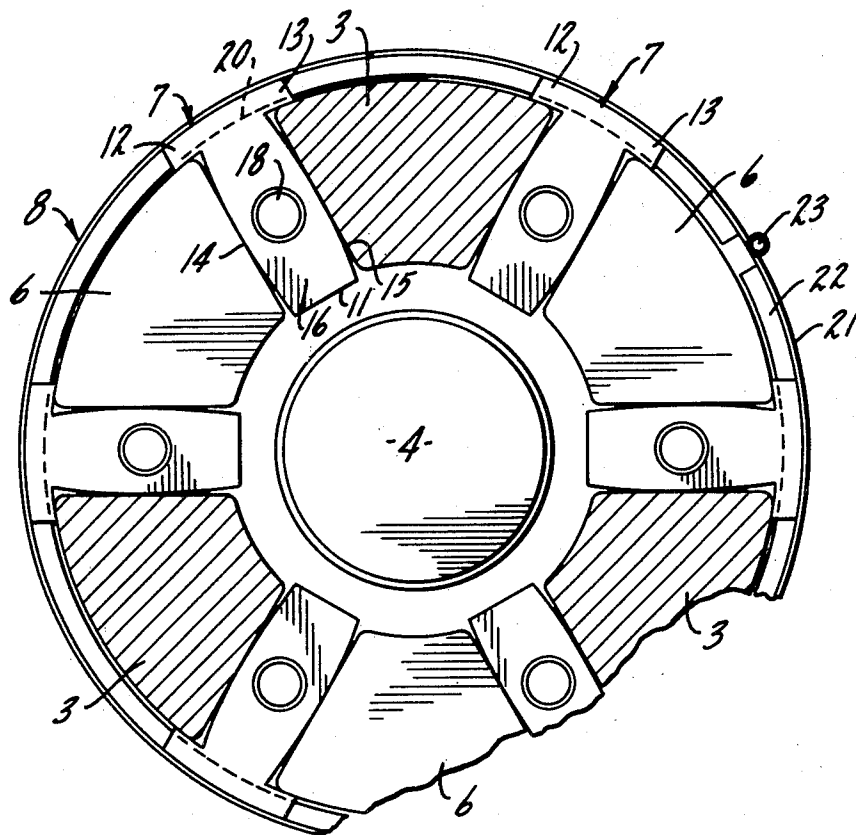


fig. 1.

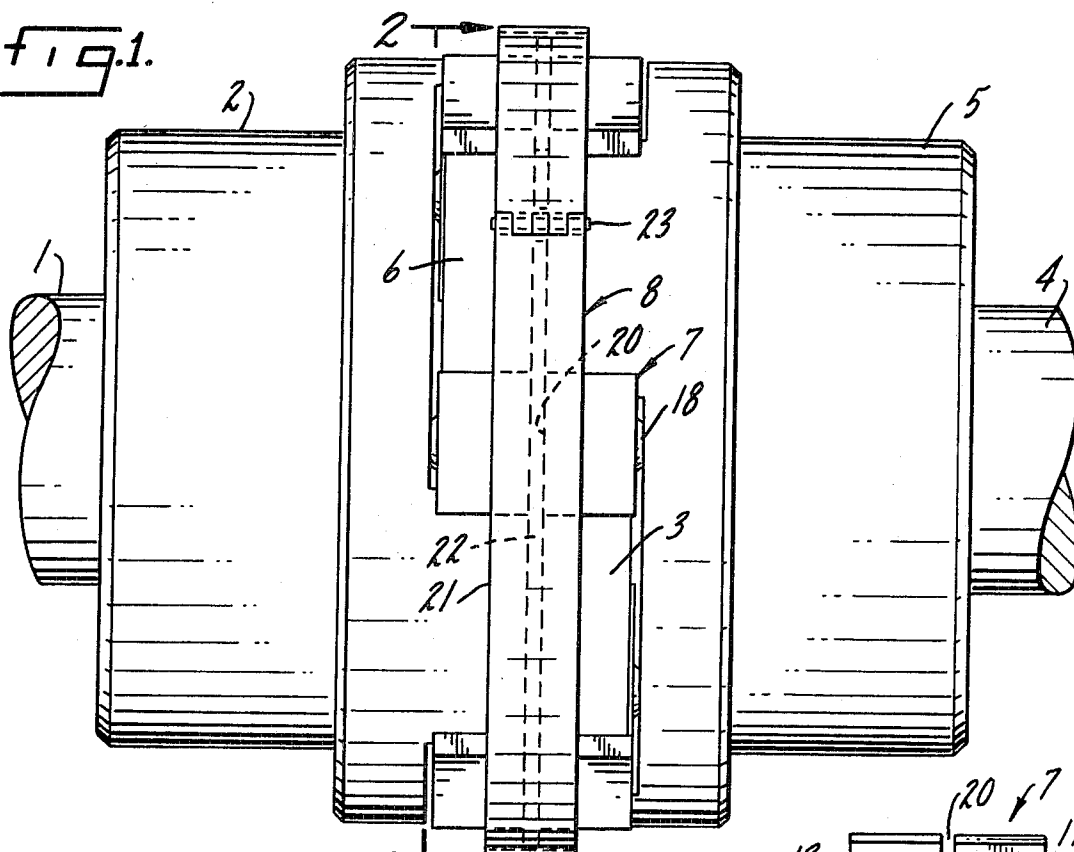


fig. 2.

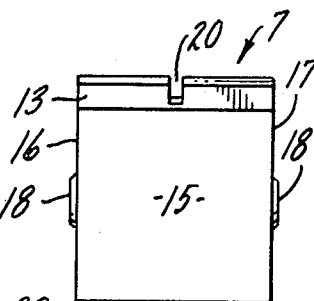
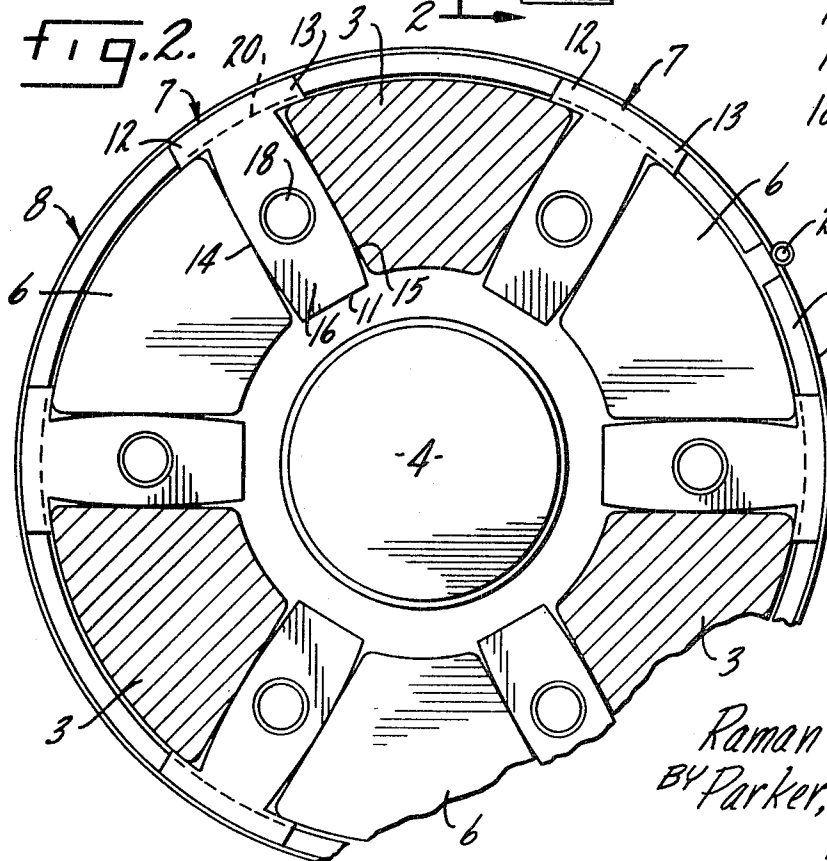


fig. 3.

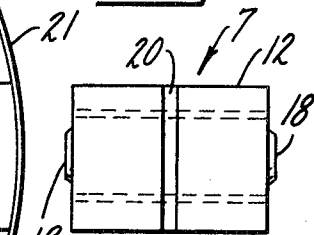


fig. 4.

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LOAD CUSHION

SUMMARY OF THE INVENTION

A flexible coupling assembly including coupling blocks having interpenetrating circumferentially spaced jaws, individual cushions positioned between each pair of adjacent jaws, the cushions having oppositely directed shoulders engaging the outer surfaces of the jaws, axially projecting abutments limiting axial interpenetration of the jaws and convex jaw-contacting surfaces preloading the coupling assembly, each cushion having a lateral groove bisecting its outermost surface and shoulders and a band retaining said cushions in said coupling, the band having a flat ringlike portion engaging said outermost surface of said cushion and shoulders and a depending central rib seated in said grooves.

This invention relates to flexible couplings of the meshing jaw type and has particular relation to a coupling assembly including individual load cushions positioned between each pair of adjacent jaws.

One purpose of the invention is to provide a load cushion of maximum simplicity and economy in manufacture and use.

Another purpose is to provide a load cushion which may be easily and simply individually removed and replaced.

Another purpose is to provide a coupling cushion and retaining means of minimum outside diameter.

Another purpose is to provide a coupling assembly including individual load cushions retained in the assembly by a flat band having a depending rib engaging grooves in said cushions.

Another purpose is to provide a flexible coupling assembly having individual cushions, said cushions having integral separating and positioning means engaging and spacing the coupling members.

Another purpose is to provide a flexible coupling assembly having individual cushions, the jaw-contacting surfaces of which are convex to provide a preload effect on the cushions and jaws.

Another purpose is to provide a flexible coupling assembly having individual cushions, the cushions having integrally formed shoulders engaging the outer surfaces of adjacent jaws and limiting the radial inward penetration of said cushions.

Other purposes may appear from time to time during the course of the specification and claims.

BRIEF DESCRIPTION OF THE DISCLOSURE

The invention is illustrated more or less diagrammatically in the accompanying drawings wherein:

FIG. 1 is a side elevation of the assembly of the invention;

FIG. 2 is a view taken on the line 2—2 of FIG. 1;

FIG. 3 is a side elevation of a cushion of the invention; and

FIG. 4 is a top plan view of a cushion of the invention.

Like parts are indicated by like numerals throughout the specification and claims.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, and particularly to FIG. 1, a shaft 1 carries a disklike coupling block 2 from which axially projecting jaws 3 extend in circumferentially spaced relationship.

A second shaft 4 carries a similar block 5 from which jaws 6 project axially in circumferentially spaced relationship, the jaws 3 and 6 being sufficiently spaced to provide for radially directed, parallel walled spaces between adjacent pairs of the jaws 3, 6 when said jaws are in intermeshed or interpenetrating relationship. As is well understood, one of the blocks 4, 5 is a driving and the other a driven block.

Identical cushions 7 are positioned between each adjacent pair of jaws 3, 6. The cushions 7 are retained in operative posi-

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tion by a circumferential band 8.

Each of the cushions 7, which are preferably formed of yieldable, rubberlike material in a single integral piece, includes a body portion 10 generally rectilinear in cross-sectional configuration and in side elevation. The body 10 includes a lower end surface 11. At its opposite end the body 10 includes integral, oppositely directed shoulders 12, 13. The shoulders 12, 13 extend from and overhang the jaw-contacting main side surfaces 14, 15 of the cushions 7 and extend the full lateral dimension of the sides 14, 15.

The end surfaces 16, 17 of the cushions 7 have integrally formed therewith and substantially centrally projecting therefrom the buttons or projections 18. As shown in FIG. 2, the surfaces 14, 15 are convex in their extension from the shoulders 12, 13 to the end surface 11, providing a preload effect upon the cushions 7.

Formed in the outer end surface of the cushion 7 is an outwardly open groove 20 paralleling the end surfaces 16, 17 and positioned intermediately thereof, the groove 20 extending through both shoulders 12, 13.

The ring or band 8 includes a flat portion 21 effective to engage a substantial portion of the end surface and shoulders of the cushion 7 on opposite sides of the groove 20 and a depending central annular rib 22 designed for reception within and contact with the bottom of groove 20 in the cushions 7. The opposite ends of the band 8 conveniently include interpenetrating loops or hinge portion through which a connecting pin 23 extends to band the ring 8 in the cushion-clamping position illustrated in FIGS. 1 and 2.

The cushions of the invention may be placed in the recesses or spaces between adjacent jaws and individually removed and replaced as required without disassembly of the shafts 1, 4 or coupling blocks 2, 5. The buttons or projections 18 engage and assure predetermined spacing of the blocks 2, 5, as well as positioning of the cushion 7. Shoulders 12, 13 limit the radial inward traverse of the cushions 7 and preclude any necessity for inner supporting elements beneath the inner end surfaces 11 of the cushions 7. The band 8 clamps the shoulders 12, 13 to the outer surfaces of the jaws 3, 6 and the groove 20 engages rib 22 to retain the band 8 against axial movement. A preloading effect is accomplished by the convex configuration of the surfaces 14, 15 of body portion 10 of the cushions 7.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A flexible coupling including a pair of coupling members having interpenetrating jaws positioned to provide circumferentially spaced areas between adjacent pairs of interpenetrating jaws, each pair of jaws having opposed, flat, straight, parallel sides defining the circumferential extension of one of said areas, individual load cushions positioned one in each said area, each of said load cushions having a body portion positioned between a pair of said opposed, flat sides of adjacent jaws, the sides of said cushion body portions opposed to said jaw sides being convex whereby a progressively greater area of said body portion is contacted by its opposed jaw side as said area is reduced, each of said load cushions having oppositely directed, circumferentially disposed shoulder elements at its outer end, the shoulder elements of each of said cushions engaging the outer edge surfaces only of a set of adjacent, opposed jaws.

2. The structure of claim 1 characterized by and including an outwardly open, circumferentially directed groove disposed laterally on and bisecting the outer surface of each of said cushions and the shoulders thereof, a flat clamping band encircling said cushions, said band engaging the outer surfaces of said cushions and the shoulders thereof and urging said shoulder portions against said outer jaw edge surfaces and an annular, inwardly extending rib on said band, said rib being received within and occupying the entirety of said grooves.

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