

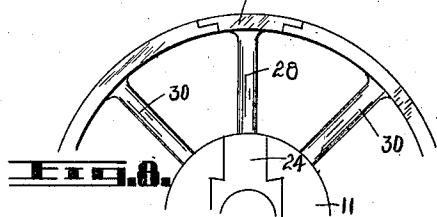
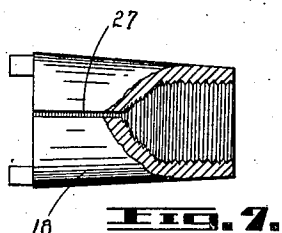
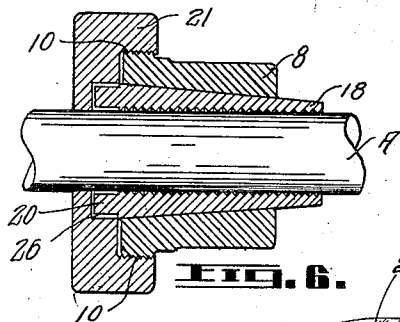
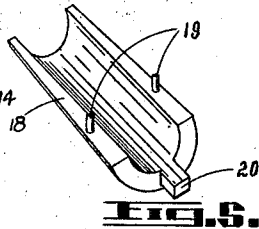
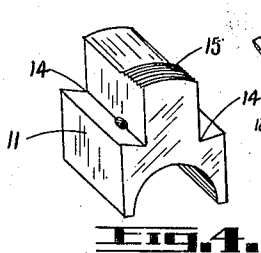
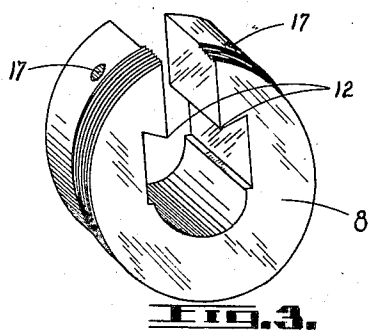
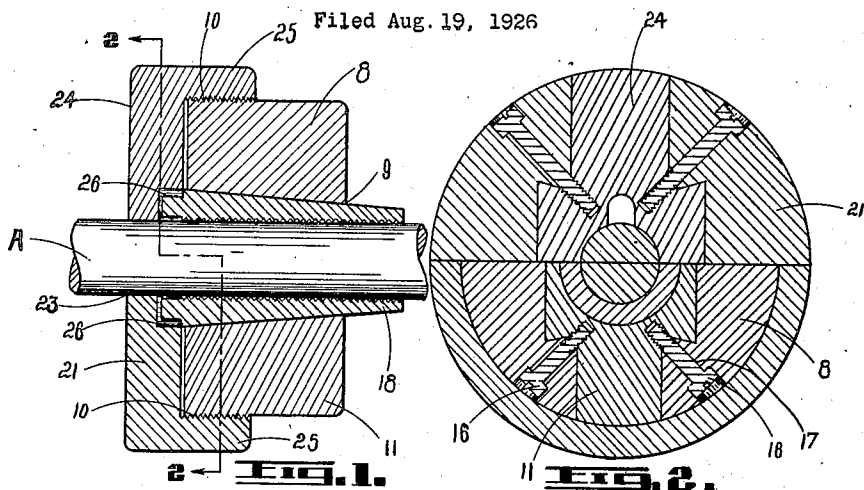
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W. T. CRAIG

COLLAR

Filed Aug. 19, 1926



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## UNITED STATES PATENT OFFICE.

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## COLLAR.

Application filed August 19, 1926, Serial No. 130,299, and in Germany May 18, 1927.

This invention relates to shaft collars which will provide a means to eliminate longitudinal movement or vibration of the shaft, when the collar is properly positioned on the shaft relative to a hanger or any other fitting that might be positioned in connection with the shaft.

The principal object is to provide a simple construction wherein the parts are few, the means of assembling easy and readily adjusted on the shaft.

A further object is to provide a collar, adapted to be placed in position on fixed or assembled shafting without having to remove the fittings thereon.

A further object is to provide a collar commonly known as a split collar wherein the removable portion is so connected to the body portion that pressure exerted outwardly on the removable portion will cause a binding by the body portion on the removable portion.

Other objects and advantages of my invention will become apparent ensuing a perusal of the following specification read in conjunction with the annexed drawings, in which:

Fig. 1 is a longitudinal sectional view of the preferred embodiment of my invention.

Fig. 2 is a transverse sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a perspective view of the body portion of the hub.

Fig. 4 is a perspective view of the removable portion of the hub.

Fig. 5 is a perspective view of one of the parts of the sleeve.

Fig. 6 is a modified form showing what might be termed as a split collar.

Fig. 7 is a side elevation of the sleeve, a part being broken away.

Fig. 8 is an end section view showing the cap, with radial spokes carrying a pulley wheel rim.

Like numerals of reference designate corresponding parts throughout the different views.

A represents a shaft which will be normally supported by suitable hangers or other fittings commonly used to support a shaft. It has been found that a certain amount of end play may be taken up by the use of collars and it is my desire to provide a collar of simple construction which will be easily adapted for connection to a shaft and working in co-operation with hangers or

other fittings will eliminate longitudinal end play of the shaft.

8 represents a hub of cylindrical formation provided with a central tapered opening 9. This hub is partially threaded on its outer circumference as at 10. 11 illustrates a removable portion, the shape of which is more particularly shown in Fig. 4. The slotted formation in the hub 8 is provided with side projections 12 extending angularly towards the central opening of the hub and which are adapted to snugly fit into the longitudinal recesses 14 in the opposite sides of the removable portion 11. In having a construction of this nature, any radial strain against the removable portion 11 will cause the binding of the projections 12 in the recesses 14, and instead of the removable portion 11 forcing apart the sides of the hub 8, the angular formation will tend to draw them together. 15 represents the threaded outer face of the removable portion 11, which threading corresponds with the threading 10 and is in alignment therewith when the removable portion 11 is in its proper position relative to the hub 8. To retain this removable portion 11 in its proper fixed position relative to the hub 8, set screws 16 are provided to extend through countersunk openings 17 in the hub 8 and threadedly engage in the removable portion 11.

18 illustrates the sleeve. This sleeve in one modification is made up of two half sections, one of which is illustrated in the perspective view (Fig. 5). The dowel pins 19 extend from one of the half sections to the other so as to retain the half sections in proper fixed position relative to each other. This sleeve 18 is tapered and the larger end is provided with lugs 20 extending outwardly therefrom. The taper on the sleeve 18 is such as to co-operate with the taper on the central opening 9, so that when the hub 8 is forced on the sleeve it will cause a binding effect between the sleeve 18 and the shaft A. The inner face of the sleeve 18 may be smooth as illustrated in Fig. 5, but preferably this is to be spirally threaded as shown in Fig. 1, the purpose of which will herein-after be explained.

21 is a cap provided with a central opening 23 to fit over the shaft A. This cap is provided with a removable portion 24 of a similar shape to the removable portion 11 and is retained in position in a similar man-

ner. This is clearly illustrated in Fig. 2 and I therefore do not feel that it is necessary to go over the specific details of this removable portion in the cap 24. The cap 24 has an inwardly directed flange 25 threaded on its inner face to co-act with the threaded portion 10 on the hub 8 and 15 on portion 11. Recesses 26 are formed on the inner flat face of the cap 21 to receive the outwardly extended lugs 20 on the sleeve 18 and thus provides a means whereby the sleeve is retained in fixed position relative to the cap 24.

When it is desirous of fitting one of these collars on to a fixed or assembled shaft, the sleeve 18 is first taken. The respective half sections are taken apart and placed around the shaft so that the dowels 19 will fit into the opposite openings in the respective half sections and thus position these respective half sections in proper position relative to each other. The removable portions 11 and 24 are now taken apart from the hub 8 and cap 21 respectively and the latter fitted over the shaft, after which the said removable portions are again fitted into their normal position. The cap 21 is now positioned tightly against the end face of one of the hangers or other fittings (not shown) on the shaft. The sleeve is pressed up so that the protruding lugs 20 engage in the recesses 26. The hub 8 is now fitted up so that its tapered central portion fits over the tapered sleeve 18 and its threaded portion 10 engages with the threaded portion of the cap 21. The cap 21 is held against rotation and the hub 8 is rotated so as to threadedly engage the threaded portion on the cap 21. As the hub is rotated, it will be drawn up on the tapered sleeve 18 so as to compress the said sleeve to form a tight grip on the shaft A. It may be found that the cap 21 can be positioned in the desired relative position with the hanger or other fitting on the shaft, but if it is found necessary to obtain a tighter fitting towards the hanger, the cap is rotated in the desired direction which will rotate the sleeve 18. As the sleeve 18 is threaded, it will move in the desired direction towards the hanger or other fitting on the shaft. The metal used in the sleeve 18 will be much harder than that commonly used in shafting, so that when the sleeve is bound against the shafting, it will have a tendency to cut grooves therein. The hub 8 is now fully tightened the required distance so as to eliminate any possible movement of the collar on the shaft. Referring to Figs. 6 and 7, I provide what might be termed as a solid collar, without any removable parts such as

described hereinbefore. The design is of practically the same nature, the sleeve 18 being slotted as at 27 instead of being formed in two separate halves. It is thought that the construction will be clearly understood from the illustrations and taken in connection with the above description without again describing the various parts composing this modified form.

This construction as hereinbefore described may be used as a hub of a wheel to be mounted on a shaft, as shown in Fig. 8. The spokes 30 would be fitted to the cap 21. In the case of the split collar, one of the spokes 28 and part of the rim 29 would be integral with the removable portion 24 so that the entire portion can be removed while fitting the parts over and around the shaft.

Minor changes may be resorted to in the commercial adaptation of my invention, but:

What I claim as new is:

1. A collar for shafting comprising a split tapered sleeve; a hub having a central tapered opening co-acting with said tapered sleeve; a cap non-rotatably engaged with one end of said sleeve and threadedly engaging said hub so that said hub may be drawn towards said cap to cause a binding effect between said sleeve and a shaft on which it may be mounted.

2. A collar for shafting comprising a split tapered sleeve; a hub having a central tapered opening co-acting with said tapered sleeve; a cap non-rotatably engaged with one end of said sleeve and threadedly engaging said hub so that said hub may be drawn towards said cap to cause a binding effect between said sleeve and a shaft on which it may be mounted; said hub and said cap each having a removable section; each of said sections being provided with offset side walls and engaging faces; the engaging faces of said sections being such as to cause a binding effect in said hub when outward force is directed thereagainst.

3. A collar for shafting comprising a split tapered sleeve; said sleeve having a threaded inner surface adapted to cut into said shafting when tightened and a plain outer surface; a hub having a central tapered opening co-acting with said tapered sleeve; a cap non-rotatably engaged with one end of said sleeve, so that on the rotation of said cap said sleeve may be moved longitudinally of said shafting; and said cap threadedly engaging said hub, so that said hub may be drawn towards said cap to cause a binding effect between said sleeve and said shafting.

In testimony whereof, I affix my signature.

WILLIAM TALBOT CRAIG.