Dec. 17, 1957 E. J. McCLOSKEY 2,816,452

ADJUSTABLE SHEAVES

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FIG_1_

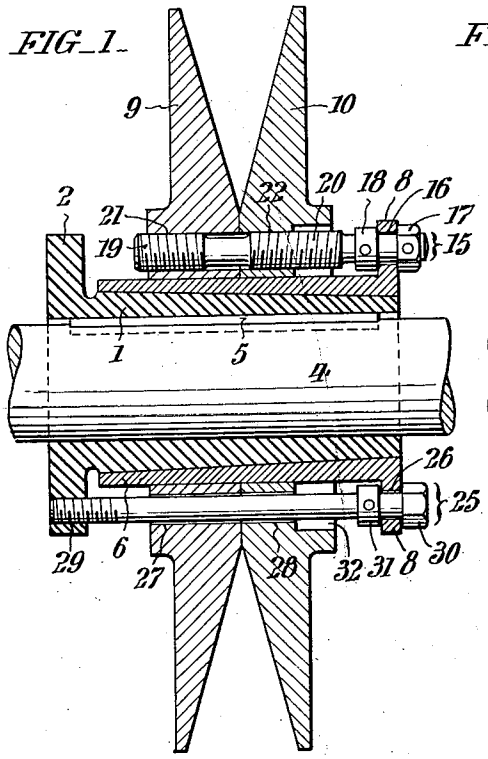


FIG_3_

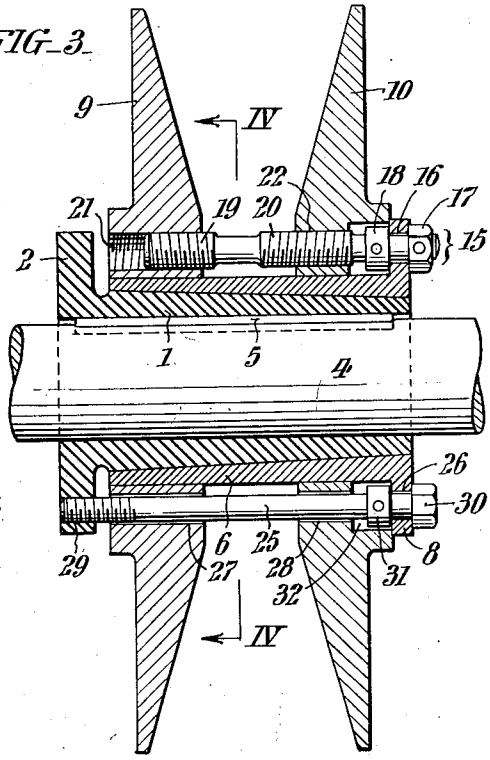


FIG_2_

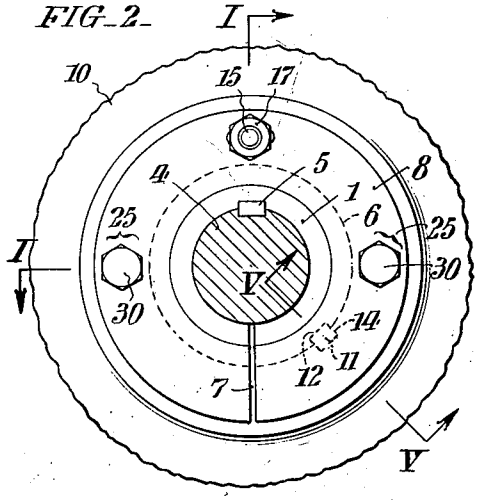
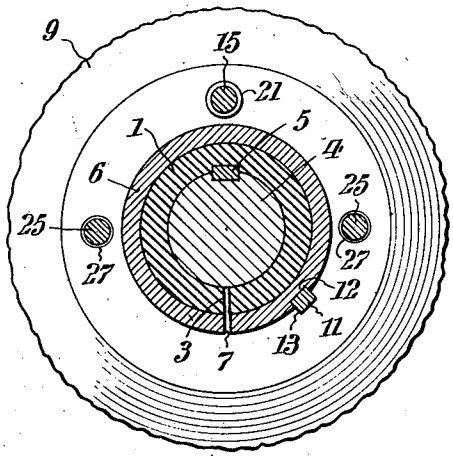


FIG_4_



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FIG. 6.

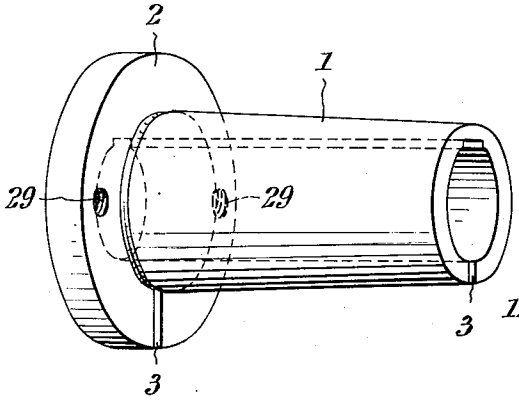


FIG. 7.

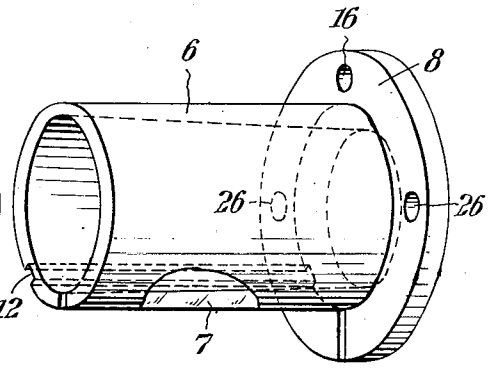
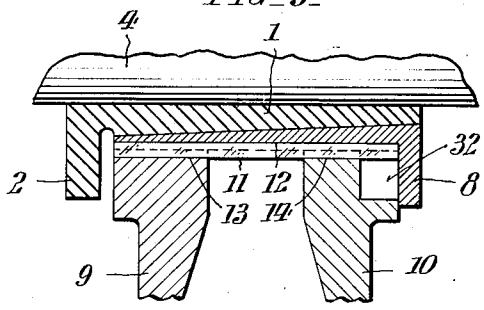


FIG. 5.



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ADJUSTABLE SHEAVES

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Application May 29, 1956, Serial No. 588,087

2 Claims. (Cl. 74—230.17)

This invention relates to adjustable sheaves. Amongst the aims of my invention are to simplify the construction of such sheaves; to provide improved facilities for relatively adjusting the belt-engaging disk components; and also to provide improved means which can be relied upon to secure the disk components against the possibility of accidental displacement in adjusted positions.

Other objects and attendant advantages will appear from the following detailed description of the attached drawings, wherein:

Fig. 1 is a staggered axial section of an adjustable sheave conveniently embodying my invention, the section being taken as indicated by the angled arrows I—I in Fig. 2.

Fig. 2 is a fragmentary elevational view of the sheave as seen from the right of Fig. 1.

Fig. 3 is a sectional view corresponding to Fig. 1 but with the belt-engaging disk components of the sheave differently adjusted.

Fig. 4 is a fragmentary view in transverse section taken as indicated by the angled arrows IV—IV in Fig. 3.

Fig. 5 is a fragmentary detail view in section taken as indicated by the angled arrows V—V in Fig. 2.

Fig. 6 and 7 are perspective views respectively of a sleeve and a bushing embodied in the sheave.

As herein illustrated, the sheave of my invention comprises a tapered bushing **1** which has a flange **2** at one end thereof, said bushing being longitudinally split as at **3** (see Figs. 4 and 6) and axially bored to fit about the shaft **4** upon which the sheave is mounted, it being fixed against rotation relative to the shaft by a key designated **5**. Engaged over the bushing **1** is a sleeve **6** which is taperingly bored complementally and split longitudinally as at **7** see Figs. 4 and 7, and which has a circumferential flange **8** at the end thereof remote from the flange **2** of the bushing **1**. The outer surface of the sleeve **6** is cylindrical, and surrounding it, in turn, with capacity for being adjusted toward and away from each other, are two belt-engaging disk components **9** and **10** of which the beveled faces confront each other. A spline **11**, engaged in key way **12** in the outer surface of the sleeve **6** and in registering key ways **13** and **14** (see Figs. 4 and 5) respectively in the bore of the disk components **9** and **10**, serves to prevent rotation of these parts relative to each other.

The adjusting screw designated **15** passes freely through an aperture **16** in the flange **8** of the sleeve **6**, and is held against axial shifting relative to flange by a polygonal end head **17** and a stop collar **18** thereon which respectively engage the outer and inner faces of said flange. The oppositely threaded portions **19** and **20** of the adjusting screw **15** are engaged in correspondingly tapped holes **21** and **22** in the respective disk components **9** and **10**.

Displacement of the disk components **9** and **10** in adjusted position is prevented by a pair of locking screws **25** which, see Figs. 2 and 4, are circumferentially spaced from the adjusting screw **15**. As shown, the locking screws **25** pass freely through apertures **26** in the flange **8** of the sleeve **6** and also through aligned clearance holes **27** and **28** respectively in the disk components **9** and **10**, the distal threaded end of said screws engaging in complementally tapped holes **29** in the flange **2** of the bushing **1**. Like the adjusting screw **15**, each locking screw **25** is held against shifting axially relative to the flange **8** of the sleeve **6** by virtue of being provided with an end head **30** and a stop collar **31** for respectively engaging the outer and inner faces of said flange. From Fig. 3 it will be observed, that the disk component **10** has, in its outer face, an axial recess or counterbore **32** for clearance of the collars **18** and **31** respectively of the adjusting and locking screws **15** and **25** when the two disk components are adjusted to the maximum extent away from each other.

To adjust the sheave, the locking screws **25** are backed off slightly whereby the wedging action between the bushing **1** and the sleeve **6** is eased and the disk components **9** and **10** are relieved of restraint so that they can be shifted along said sleeve. With this accomplished, the adjusting screw **15** is turned clockwise in Fig. 1 with attendant separation of the disk components by the reverse action of the differential threads **21** and **22** of said screw. After the desired adjustment is attained, the locking screws **25** are re-tightened to draw the bushing **1** and the sleeve **6** axially in a direction toward each other, the bushing being thereby circumferentially contracted and the sleeve circumferentially expanded within the disk components **9** and **10**. As a result of this improved construction, it will be seen that the disk components are effectively secured against the possibility of displacement in adjusted positions by pull of the belt (not illustrated) during operation of sheave.

Having thus described my invention, I claim:

1. In an adjustable sheave, a tapered bushing bored to fit about a shaft upon which the sheave is mounted and having a circumferential flange at one end thereof; an internally tapered split sleeve fitting about the bushing and having a flange at the end thereof opposite to the flanged end of the bushing, the outer surface of the sleeve being cylindrical; a pair of belt engaging risk components surrounding and shiftable relative to each other along the sleeve, and respectively having beveled faces confronting each other; an adjusting screw constrained to rotation in the flange of the sleeve and having oppositely pitched threaded portions engaged in correspondingly tapped holes in the respective disk components; and at least one locking screw constrained to rotation in the flange of the sleeve, said screw passing through aligned clearance holes in the two disk components and threadedly engaging a tapped hole in the flange of the bushing.

2. An adjustable sheave according to claim 1, wherein one of the disk components has an axial recess or counterbore in its outer face to clear the stop collars of the adjusting and locking screws when the two disk components are adjusted to the maximum extent away from each other.

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