

W. REIMERS.
 EXPANSIBLE PULLEY.
 APPLICATION FILED MAY 26, 1915.

1,205,020.

Patented Nov. 14, 1916.

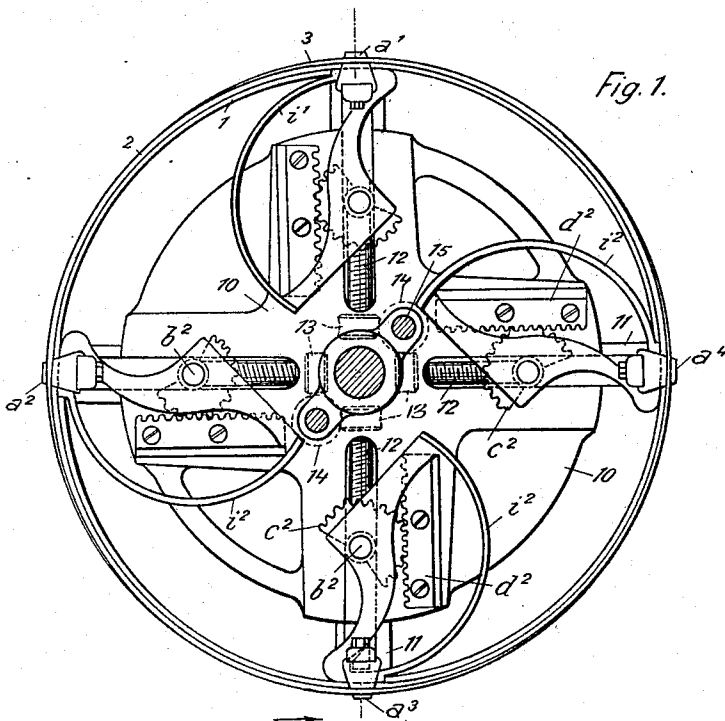


Fig. 1.

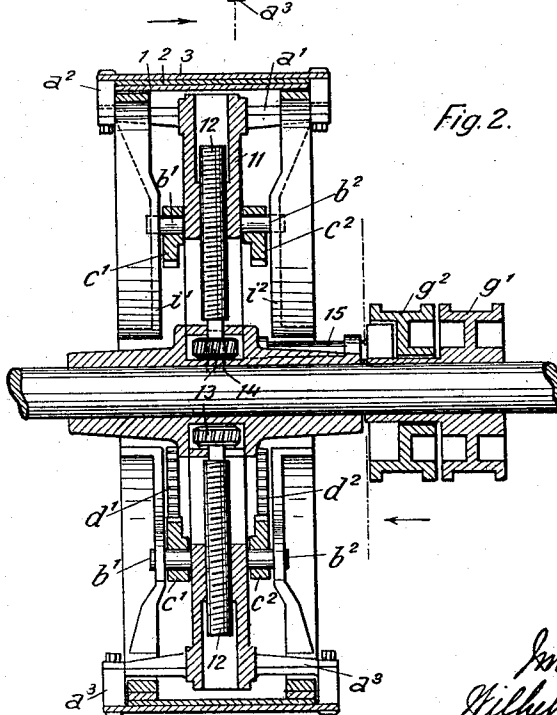


Fig. 2.

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UNITED STATES PATENT OFFICE.

WILHELM REIMERS, OF KIEL, GERMANY.

EXPANSIBLE PULLEY.

1,205,020.

Specification of Letters Patent.

Patented Nov. 14, 1916.

Original application filed February 18, 1914, Serial No. 819,429. Divided and this application filed May 26, 1915. Serial No. 30,569.

To all whom it may concern:

Be it known that I, WILHELM REIMERS, a subject of the Emperor of Germany, residing at Klinke 7-9, Kiel, in the Empire of Germany, have invented new and useful Improvements in Expansible Pulleys, of which the following is a specification.

The present invention relates to improvements in expanding pulleys formed of one or more superimposed spirally wound spring strips held in the form of a closed rim and capable of being expanded at will by a centering device as for instance, disclosed in my copending application, Serial No. 819,429, patented June 29, 1915, under Number 1,144,381, of which this application is a division.

The improvements consist in new and improved means for expanding and contracting the outer diameter of the pulley face formed by the spring strips.

In the accompanying drawing:—Figure 1 is an elevation, partly in section, of the preferred form of construction of my improved pulley, and Fig. 2 is a vertical section through the same.

As shown, the rim of the pulley consists of four spring strips, 1, 2, 3, 4 and has a cross-shaped central member 10. Each arm of the cross is hollow and forms a guide for the sockets 11 of the bridge members a^1, a^2, a^3, a^4 . The sockets 11 receive two spindles 12, by means of which the bridges can be made to slide radially.

On the sockets 11 are located pivots b^1, b^2 , for segments i^1, i^2 to which are fastened the gears c^1, c^2 engaging the racks d^1, d^2 on the cross arms. By moving the sockets 11 inward the segments are compelled to turn on their pivots. To the segments i^1, i^2 are secured the inner ends and to the bridges the outer ends of the spring strips. To obtain a simultaneous inward movement of one set of ends and winding up of the other ends of the spring strips, the screw spindles 12 are simultaneously turned in one or the other direction. For this purpose the bridge members a^1, a^2 and a^3, a^4 are provided with a centrally located sleeve or hub 11 adapted to slide within a guide of the inner pulley body. In this sleeve two pivots b^1 and b^2 are provided upon which the segments i^1 and i^2 are turnably arranged. These segments, by means of the toothed wheels c^1 and c^2 engage the racks d^1 and d^2 . The

sleeve 11 of each bridge engages the spindle 12 like a nut. Said spindle receives its rotation from the pulleys g^1 and g^2 by any well known transmission means. The inner ends of the spring strips are secured to the segments i^1, i^2 , while the other ends of said strips are secured to the bridges. By uniformly and correspondingly turning the four spindles 12 the four bridge members a^1, a^2, a^3 and a^4 are drawn toward the inside or toward the outside, as the case may be, and the segments i^1 and i^2 are turned.

As shown in Fig. 2 of the drawing, the spindles 12 are actuated by means of worm gears 13 on the shafts 14 of said spindles meshing with worms on the spindles 15 which in turn are actuated by means of the pulleys g^1 and g^2 .

By applying a brake to one or the other of the pulleys the spindle 15 will be caused to rotate in correspondingly opposite directions because the toothed pinion at the end of the spindle 15 is engaged by the inner gearing of the pulley g^2 and the outer gearing of pulley g^1 .

What I claim is:—

In an expansible pulley of the character described, in combination, an expansible rim consisting of spring strips, a cross-shaped central member having hollow arms, socket members guided in the hollow arms of said cross shaped member, bridge members to which the outer ends of said strips are secured, said members being secured to the outer ends of said socket members, screw spindles on said socket members for sliding the bridge members in a radial direction, pivots upon said socket members, segments on said pivots, racks secured to said arms, gears on said segments adapted to mesh with said racks, said spring strips being secured with their inner ends to said segments and with their outer ends to said bridge members, and means for turning the screw spindles simultaneously in one or the other direction for moving one set of ends of the spring strips inwardly and winding up the other set, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

WILHELM REIMERS.

Witnesses:

J. WYNEN,

J. D. ZIESECKE.