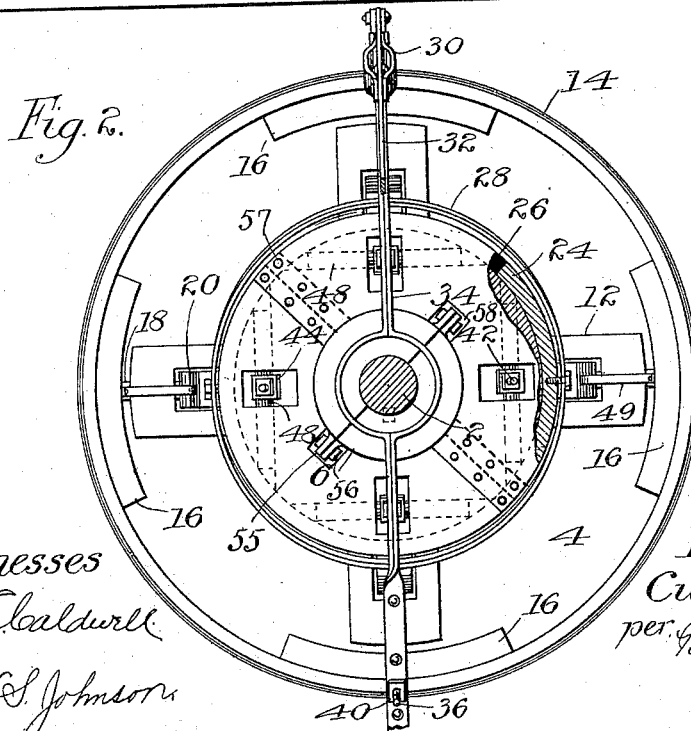
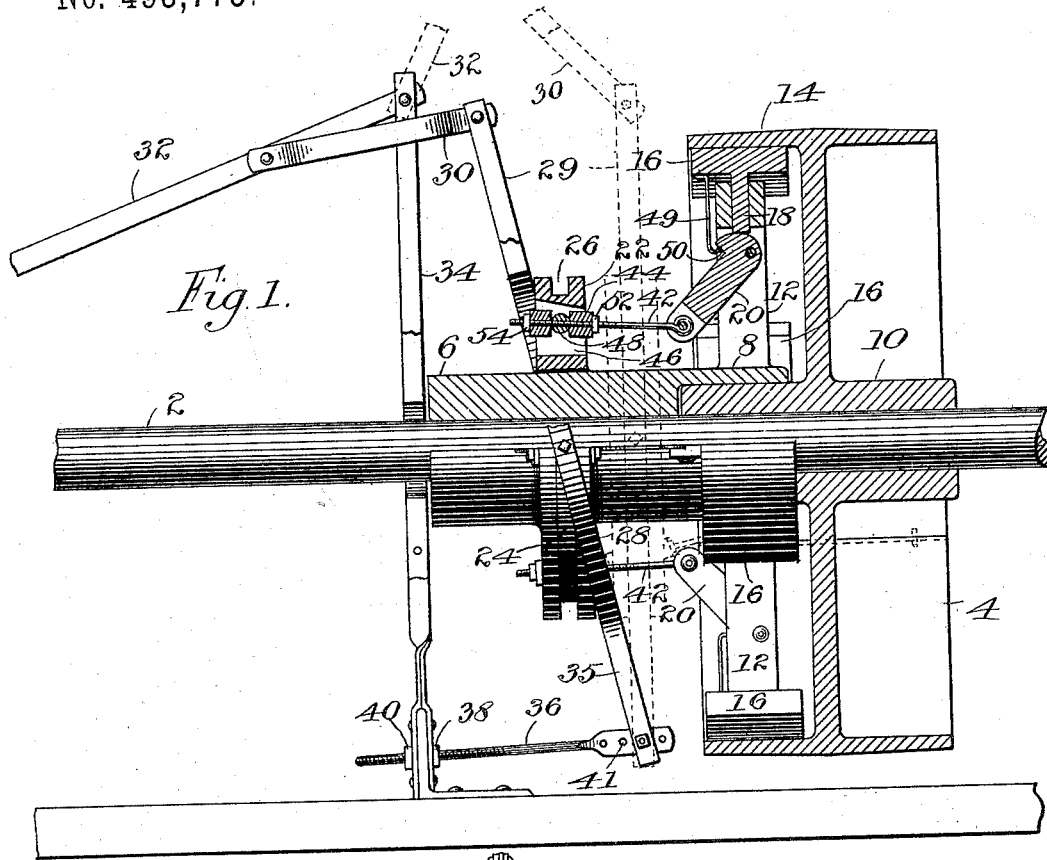


(No Model.)

C. JOHNSON.
FRICTION CLUTCH PULLEY.

No. 493,775.

Patented Mar. 21, 1893.



Witnesses
C. H. Caldwell
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UNITED STATES PATENT OFFICE.

CURTIS JOHNSON, OF RIVER FALLS, WISCONSIN.

FRICTION CLUTCH-PULLEY.

SPECIFICATION forming part of Letters Patent No. 493,775, dated March 21, 1893.

Application filed April 12, 1892. Serial No. 428,778. (No model.)

To all whom it may concern:

Be it known that I, CURTIS JOHNSON, of River Falls, Pierce county, Wisconsin, have invented certain Improvements in Friction-Pulley Clutches, of which the following is a specification.

My invention relates to improvements in friction clutches for pulleys, and consists in the construction and combination hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a central longitudinal section of my improved device, the full lines indicating the position of the parts with the shoes in engagement with the pulley, and the dotted lines indicating them thrown off, and Fig. 2 is an end elevation of the same.

In the drawings 2 represents the driving shaft and 4 the pulley mounted loosely thereon. Fixed to the shaft is the split sleeve 6, the sections being provided with the ears 55 secured together by bolts 56, and having the projection 8 which fits over and incloses the end of the hub 10 of the pulley. Carried by this sleeve are radiating standards 12 extending nearly to the rim 14 of the pulley. The shoes 16 are mounted upon the standards 18, which slide in the standards 12. Pivoted to the standards 12 are the cams 20, which may be turned so as to make contact with the standards 18, and thrust the shoes 16 outward into bearing contact with the rim 14 of the pulley L. Slidably mounted on the sleeve 6 is the split collar or sleeve 22, the meeting edges of the members of which form lap joints and are secured together by bolts 57 the notches 58 fitting over the ears 55. This collar is provided with the circumferential groove 26 in which are arranged the curved bars or shoes 24. Pivoted to these shoes on opposite sides of the shaft 2 is the annular ring 28, having an upwardly projecting arm 29, to which is pivoted the link 30, the other end of which is pivotally connected to the operating lever 32. The fulcrum end of the lever is pivoted to the standard 34, having suitable fixed support beneath the shaft. The arm 35 projecting downward from the lower part of the ring 28, is pivotally connected in adjustable position to the rod 36, by means of a pin

inserted in one of the holes 41, the other end of the rod 36 being adjustably connected to the standards 34, as by means of the nuts 38 and 40 threaded upon the rod and arranged on opposite sides of the standard. The cams 20 are connected to the collar 22 by means of the rods or links 42, which are rigidly secured in adjusted positions in the blocks 44 by means of nuts 52 and 54 threaded thereon and abutting against said blocks. These blocks are arranged in slightly wider openings 46 in the collar, and turn on pivots 48 to which they are rigidly secured to adjust themselves to the varying positions of the cams and collar in the use of the device. The shoes 16 are linked or otherwise connected to the cams 20, as by means of the hooks or links 49 engaging the lateral projections or offset points 50 upon the cams, so that when the cams are turned to release the shoes from the rim of the pulley, the links will draw the shoes inward, thus dispensing with the use of springs.

Operation: The length of the rods 32 and 42 being properly adjusted, when it is desired to clutch the pulley, the lever 32 is thrown over, as shown in the full lines in Fig. 1, which by means of the link 30 throws the annular ring 28 into an inclined position, and slides the collar 22 outward upon the sleeve 6. The projecting ends of the cams 20 are thus drawn outward, turning the cams on their pivots so as to bring them into contact with the standards 18, and thrusting the shoes 16 outward against the rim 14 of the pulley, the blocks 44 rocking on their pivots 48. To unclutch the pulley, the lever 32 is thrown over into the opposite position, as shown by the dotted lines, thus reversing the movement of the collar 22, and turning the cams in the opposite direction, the hooks 49 drawing the shoes 16 inward, and away from the rim of the pulley.

I claim—

1. In a device of the class described the combination with the driving shaft and the loose pulley mounted thereon, of the radial standards carried by said shaft within said pulley, the shoes slidably supported upon said standards adapted to engage the inside of the rim of the pulley, the levers pivoted to said standards, the cams upon their fulcrum ends adapted to engage said shoes, the sliding col-

lar upon said shaft, the adjustable connection between the power ends of said levers and said collar, means for sliding said collar upon said shaft, offset points upon said levers, and 5 links connecting said offset points with said shoes, whereby as said collar is moved in one direction said cams are operated to thrust said shoes outward, and when moved in the opposite direction the cams are thrown off said 10 shoes and the links withdraw the shoes from the pulley, substantially as described.

2. In a device of the class described, the combination of the cams for supporting the shoes, the sliding collar, the blocks pivoted to 15 said collar, and the adjustable link connections between said cams and blocks, substantially as described.

3. In a device of the class described, the combination of the sliding collar having a circumferential groove, the clutching devices 20 connected therewith, the shoes lying in said groove, the annular ring surrounding said collar and pivoted to said shoes, the adjustable link connecting said ring with a fixed 25 support, and the lever connected to said ring

at a point opposite said ring and adapted when operated to turn said ring upon its pivots, and thereby slide said collar upon said shaft, substantially as described.

4. In a device of the class described, the 30 combination with the driving shaft and the pulley mounted loosely thereon, of the radial standards carried by said shaft and arranged within the rim of said pulley, the shoes slidably mounted upon said standards, the cams 35 pivoted upon said standards and engaging said shoes, the links connecting said shoes with offset points on said cams, the collar slidable upon said shaft, the blocks pivoted to said collar, the links adjustably connecting 40 said cams and blocks, and adjustable means for sliding said collar, substantially as described.

In testimony whereof I have hereunto set my hand this 12th day of March, 1892.

CURTIS JOHNSON.

In presence of—

F. M. WHITE,
T. D. MERVIN.