

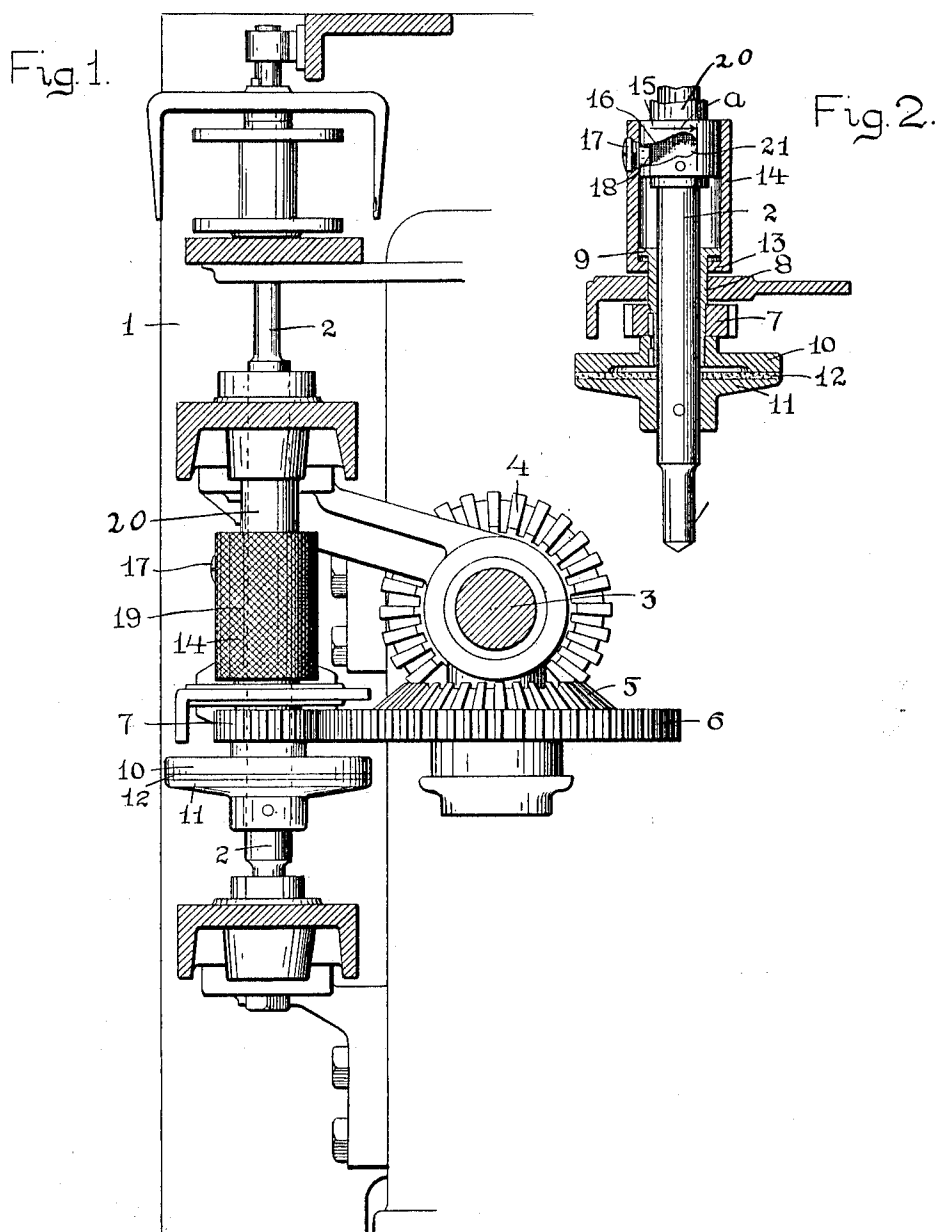
G. L. BROWNELL.

CLUTCH.

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1,041,010.

Patented Oct. 15, 1912.



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GEORGE L. BROWNELL, OF WORCESTER, MASSACHUSETTS.

CLUTCH.

1,041,010.

Specification of Letters Patent.

Patented Oct. 15, 1912.

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To all whom it may concern:

Be it known that I, GEORGE L. BROWNELL, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in Clutches, of which the following is a specification, accompanied by drawings forming a part of the same, in which—

Figure 1 represents a side elevation of so much of a spinning or twisting frame as is necessary to illustrate the nature of my present invention, and Fig. 2 is an elevation of a portion of the rotating spindle, with a part of the driving mechanism shown in sectional view.

Similar reference figures refer to similar parts in the different views.

My present invention relates to a clutching mechanism designed for the rotating spindles of spinning and twisting frames, and it has for its objects to provide means for connecting and disconnecting the spindle and driving power, and it consists in the construction and arrangement of parts as hereinafter described and pointed out in the annexed claims.

Referring to the accompanying drawings 1 denotes a portion of a framework of a spinning or twisting machine, 2 is a rotating spindle, 3 a horizontal driving shaft carrying a bevel gear 4 engaging a similar bevel gear 5 attached to a spur gear 6 in permanent engagement with a pinion 7. The pinion 7 is attached to a sleeve 8 turning loosely on the spindle 2 and provided at its upper end with a flange 9. Attached to the lower end of the sleeve 8 is a disk 10 which is normally supported by a disk 11 attached to the spindle 2. Interposed between the disks 10 and 11 is a frictional washer 12, preferably of leather, and attached to the upper surface of the disk 11. As the disk 10 is rapidly rotated by the engagement of the pinion 7 with the driving gear 6, its rotation is imparted to the spindle 2 by its frictional contact with the washer 12. The flange 9 at the upper end of the sleeve 8 overlaps an interior flange 13 on a cylindrical shell 14 which incloses a cylindrical collar 15 which is attached by a pin as shown in Fig. 2 to the bolster 20 which is held in a fixed position in the framework of the machine, and is provided with a spiral slot 16 extending partially around the periphery of the collar. The

shell 14 carries a stud 17 on which is mounted a roller 18 entering the spiral slot 16. The outer surface of the shell 14 is preferably milled, as shown at 19, Fig. 1.

In the normal operation of the machine the shell 14 carrying the stud 17 is in a position to allow the sleeve 8 to occupy its lowest position with the disk 10 in frictional engagement with the driven disk 11. In order to disengage the disks 10 and 11 the shell is rotated by hand in the direction of the arrow *a*, Fig. 2, thereby moving the stud 17 in the spiral slot 16 of the collar 15, causing the shell 14 to be raised and by means of the overlapping flanges 9 and 13, to lift the sleeve 8, and raise the disk 10 away from the disk 11, thereby disconnecting the spindle from the driving power. As the stud 17 moves through the spiral slot 16 the roller 18 is brought into a depression 21 at the end of the slot which locks the roller in position and prevents the accidental dropping of the disk 10 upon the washer 12. A slight reverse movement of the shell 14 by the operator will effect the descent of the shell 14 allowing the sleeve 8 and disk 10 to fall by gravity into their operative position and again connect the spindle with the driving power.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In a clutch, a driven member, a driving member, movable into and out of engagement with said driven member, a flanged sleeve attached to said driving member, a cylindrical shell inclosing the flange of said sleeve, and having an interior flange engaging the flange of said sleeve, a collar inclosed in said shell and held in a fixed position, said collar having a spiral peripheral slot, and a stud held in said shell and engaging said spiral slot.

2. In a clutch, the combination with frictionally engaging clutching members, of means for moving one of said members into and out of engagement with the other of said members, comprising a shell engaging said movable member to impart an axial movement thereto, a fixed collar having a peripheral cam slot, and a stud carried by said sleeve and engaging said slot.

3. In a clutch, comprising a pair of clutch engaging members, one of said members being capable of an axial movement toward and away from said other member, means for disengaging said clutching members,

- and holding them out of engagement at will, comprising a shell connected with said movable clutch member, a fixed collar inclosed in said shell and provided with a cam slot, a stud carried by said shell and engaging said cam slot, said cam slot having a lateral recess at one end for engaging said stud and holding it from reverse movement.
- 10 4. In a clutch, a driven member, a driving member above said driven member and movable thereto by gravity, said members having vertical axes, means for raising said driving member out of engagement with
- 15 said driven member, comprising a fixed collar having its axis coincident with the axis of said driving member, and having a spiral slot with a lateral recess at its upper end, a shell rotatable at will and having a stud engaging said spiral slot and said recess, 20 said shell having means for engaging said driven member, whereby the upward axial movement of said shell will raise said driving member out of engagement with said driven member.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."