

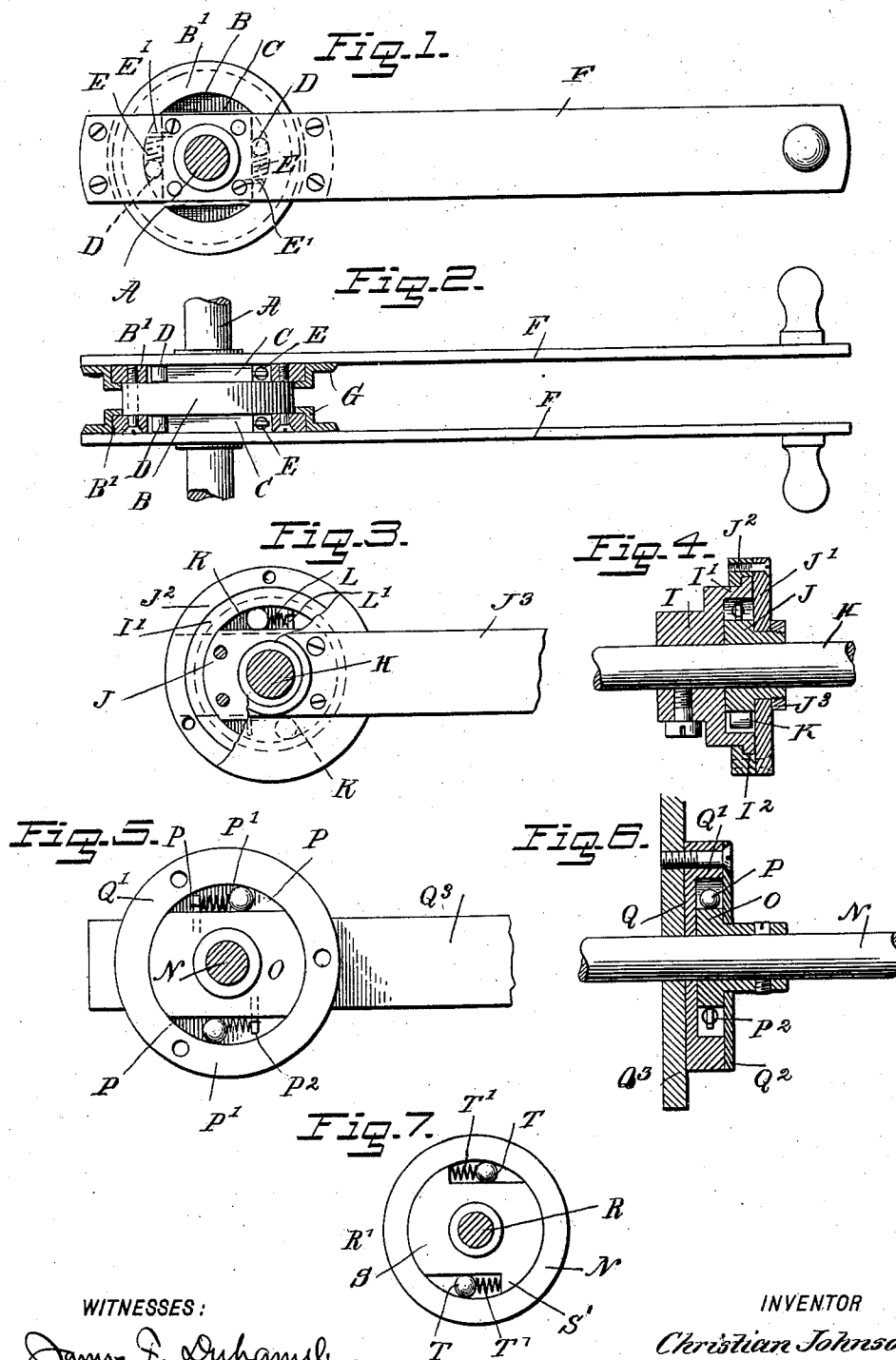
No. 691,548.

Patented Jan. 21, 1902.

C. JOHNSON.
CLUTCH.

(Application filed July 9, 1901.)

(No Model.)



WITNESSES:

James F. Duhamel
Geo. G. Foster

INVENTOR

Christian Johnson

BY *Munn & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHRISTIAN JOHNSON, OF ELGIN, ILLINOIS.

CLUTCH.

SPECIFICATION forming part of Letters Patent No. 691,548, dated January 21, 1902.

Application filed July 9, 1901. Serial No. 67,594. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN JOHNSON, a citizen of the United States, and a resident of Elgin, in the county of Kane and State of Illinois, have invented a new and Improved Clutch, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved clutch more especially designed for use in winding up springs in motors and other instruments requiring winding up and braking and arranged to readily turn the shaft on a forward motion and release or brake the same on a return stroke.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of my invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improvement arranged as a double clutch. Fig. 2 is a plan view of the same, with parts in section. Fig. 3 is a side elevation of a modified form of the improvement, showing a single clutch and part broken out. Fig. 4 is a transverse section of the same. Fig. 5 is a side elevation of another modified form of the improvement with the cover removed. Fig. 6 is a transverse section of the same, and Fig. 7 is a face view of another modified form of the improvement.

The improved double clutch illustrated in Figs. 1 and 2 is connected with a shaft A, adapted to be intermittently turned, and on the said shaft is secured a wheel B, provided on opposite faces with concentric rims B'. These rims are arranged in parallel planes to the wheel and project laterally from the wheel a distance equal to the thickness of the rim. Said rims also project beyond the periphery of the wheel, thus having a somewhat greater diameter than the wheel for the purpose hereinafter explained. Within the plane of these rims are located the disks C, having flat faces, on which are mounted loosely the rolls or balls D, each pressed on by a spring E, held on a pin E', projecting from the corresponding disk C.

By the arrangement described the roll or

ball D is pressed by the spring E in contact with the inner surface of the corresponding rim B', so that when the disk C is turned in one direction the roll or ball impinges on the rim and turns the latter, and with it the shaft A, and when the disk is turned in the opposite direction the roll or ball D rolls off easily on the rim without turning the same. The disks C are preferably attached to handles F, alternately moved up and down, so that the disks are readily turned forward and backward by the operator manipulating the handles F correspondingly.

In order to hold the several parts together, the handles F are provided on their inner faces with retaining-clips G, engaging the rims B', so as to hold the disk C and the handles in proper position relative to the wheel B and its rims B'. These clips G, it will be seen, extend inwardly over the rims B', where the latter project beyond the periphery of the wheel, which projection of the rims thus forms a swiveling locking edge to hold the disks into the wheels.

In the modified form shown in Figs. 3 and 4 the shaft H carries a wheel I, having an annular rim I', adapted to be engaged at the inside flat faces of the disk J, turning loosely on the shaft H. A spring L presses each of the balls or rolls K, the said spring being held on a pin L', secured to the disk J. The rim I' is closed by a cover J', secured on the disk J, and on the said cover J' is arranged a retaining-flange J², engaging an outwardly-extending flange I² on the rim I', so that the several parts are held in position. This outwardly-extending flange I² corresponds to the projection of the rims B' of Fig. 2 in furnishing means for holding the two swiveling parts of the clutch together. A handle J³ is secured to the hub of the disk J, and this handle is moved forward and backward, so as to turn the disk J and to cause the rolls or balls K to alternately engage and release the rim I', so as to impart an intermittent rotary motion to the wheel I and the shaft H.

In the modified form shown in Figs. 5 and 6 the disk O is secured to the shaft N, and on the flat faces of the disk are loosely mounted the rolls or balls P, pressed on by springs P', held on pins P², secured to the disk O, the

said springs pressing the rolls or balls P in contact with the inner faces of the rim Q' of a wheel Q, mounted to turn loosely on the shaft N. A cover Q² fits onto the rim Q' and the disk O, so as to inclose the rolls or balls P, as well as the springs P' and pins P², and on the said wheel is also secured a handle Q³, adapted to be taken hold of by the operator to impart a turning motion to the wheel to alternately engage and release the rolls or balls P to impart an intermittent rotary motion to the disk O and the shaft N. A similar arrangement is shown in Fig. 7, in which the disk S is secured on the shaft R, and on the flat faces of the disk are held rolls or balls T, pressed on by springs T', abutting against shoulders S' on the said disk S. As the rim U is turned forward or backward an intermittent rotary motion is given to the shaft R.

It is understood that in either of the cases described I employ two clutch members, of which one is secured to the shaft and the other is mounted to rotate loosely but concentrically on the shaft. The two members are locked together with a swiveling connection that precludes lateral separation, and one of the members has flat faces on which are mounted loosely balls or rolls pressed on by springs, so as to insure contact of the rolls or balls with the rims.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A clutch comprising a shaft, a circular member rigidly attached to the shaft and having at its periphery laterally-projecting rims extending outwardly to a greater diameter than the body part, a disk arranged loosely on the shaft and located within the plane of the laterally-projecting rim of the rigid mem-

ber, said disk having a runway on its edge containing a ball or roller and a spring, said movable member having also an attached part overlapping and inclosing the outward projection of the peripheral rim to lock the swiveling parts together against lateral separation substantially as described.

2. A clutch comprising a shaft, a circular member rigidly attached to said shaft and having secured to its periphery a marginal rim extending beyond the periphery of said circular member, a loose disk arranged within the plane of said rim and having on its outer edge a runway with a ball or roller and a spring behind it, a handle attached to said disk, and clips attached to the handles and extending over and around the projecting rims to hold the swiveling parts together substantially as and for the purpose described.

3. A clutch comprising a central shaft, a wheel rigidly attached thereto and having on each side at its periphery an attached rim projecting laterally from the wheel and also projecting beyond the periphery of the wheel, two disks loosely turning on the shaft and lying in the plane of said rims on opposite sides of the wheel, said disks having on their edges runways with balls or rollers in them and springs behind the balls, handles attached to the two disks and clips attached to the inside of the handles and overlapping the projecting edges of the wheel-rims, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHRISTIAN JOHNSON.

Witnesses:

CHAS. R. EAMES,
ANDREW ROVELSTAD.