

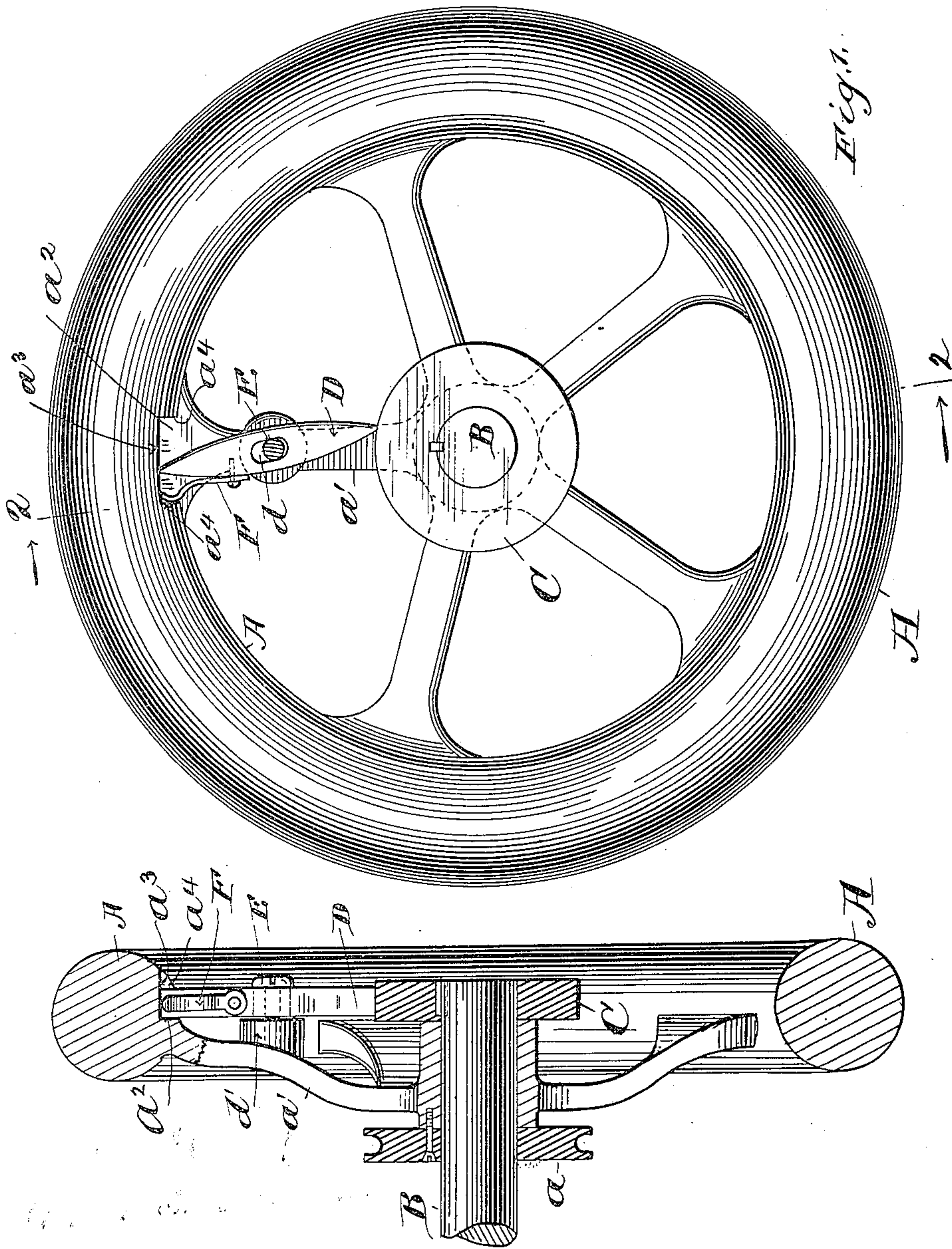
No. 670,205.

Patented Mar. 19, 1901.

P. I. MERKOOLYEFF.
CLUTCH.

(Application filed July 28, 1900.)

(No Model.)



WITNESSES
C. W. Benjamin
M. Manning.

Fig. 2.
INVENTOR
Phillip I. Merkooleyeff.
by T. F. Bourne
his ATTY

UNITED STATES PATENT OFFICE.

PHILLIPP I. MERKOOLYEFF, OF NEW YORK, N. Y.

CLUTCH.

SPECIFICATION forming part of Letters Patent No. 670,205, dated March 19, 1901.

Application filed July 28, 1900. Serial No. 25,103. (No model.)

To all whom it may concern:

Be it known that I, PHILLIPP I. MERKOOLYEFF, a subject of the Czar of Russia, residing in New York city, borough of Manhattan, State of New York, have invented certain new and useful Improvements in Clutches, of which the following is a specification.

The object of my invention is to provide improved means for locking a wheel and shaft together for rotation in one direction and for permitting free independent relative rotation of the parts in the opposite direction; and to this end I provide a shaft, a wheel adapted to rotate independently thereof, and a locking-piece adapted to connect or disconnect the shaft and wheel, according to the direction of rotation of the parts.

The invention further consists in the novel details of improvement that will be more fully hereinafter set forth and then pointed out in claims.

Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a side elevation of a wheel embodying my invention, and Fig. 2 is a cross-section substantially on the lines 2-2 in Fig. 1.

In the accompanying drawings, in which similar letters of reference indicate corresponding parts in the views, the letter A indicates a suitable wheel which is mounted to rotate freely upon a shaft B, that may be journaled in suitable bearings, and the wheel A may be provided with a pulley a or other suitable means for transmitting or receiving power. To the shaft B is suitably secured a disk C by a key or otherwise, and D is a locking-piece interposed between the wheel A and the disk C and adapted to simultaneously bear upon said parts. The locking-piece D is supported by the wheel and is shown provided with a slot d , that receives a pivot or the like E, that is shown secured to a spoke a' , a bearing-piece d' being shown interposed between the spoke and the head of the pivot E to maintain the locking-piece D in proper position. The slot d is of greater length than the diameter of the pivot E, so that the locking-piece D may have longitudinal play. The locking-piece D at one end is adapted to bear upon the disk C and at its other end against the wheel A, and the length of the locking-piece D is greater than the shortest

distance between the disk C and the part of the wheel against which the locking-piece D operates, so that the locking-piece will normally stand at an acute angle to the radius of the wheel.

By preference the pivot E is located midway between the ends of the locking-piece D, so as to overcome the tendency of the locking-piece to rotate on its pivot as it is carried around with the wheel, and the elongated slot d permits the locking-piece D to adjust itself between the disk C and the wheel in accordance with the amount of wear that may occur at the ends of the locking-piece.

I have shown the inner surface of the rim of the wheel provided with a notch a^2 , the bottom wall a^3 of which is preferably made on a plane that is parallel to a tangent of the wheel, the notch forming abutments a^4 , that can limit the rotary motion of the locking-piece D.

F is a spring interposed between the locking-piece D and the wheel to maintain the locking-piece in its normal position. Said spring is shown secured to the locking-piece D and bearing against a shoulder or abutment a^4 , whereby the locking-piece D is normally held simultaneously against the disk C and the wall a^3 .

If the wheel A is rotated to the right in Fig. 1 the locking-piece D will be jammed between the disk C and the wheel, whereby the shaft B will be rotated with the wheel; but if the wheel rotates in the reverse direction the locking-piece D will tilt on its pivot, so that the wheel will rotate independently of the shaft. Likewise if the shaft is rotated to the left in Fig. 1 the locking-piece will cause the wheel to rotate with the shaft, and if the shaft is rotated in the reverse direction the disk C will rotate independently of the wheel. Thus either the shaft or the wheel, through the medium of the locking-piece, can rotate the other, and either can rotate independently in an opposite direction.

It is evident that as the disk C is practically an extension of the shaft B the locking-piece D could bear directly upon the shaft, the shaft being of suitable diameter for the purpose.

Having now described my invention, what I claim is—

1. The combination of a shaft having an annular bearing-surface, a wheel rotative independently thereof and provided with a tangentially-disposed bearing-surface opposed to said annular bearing-surface, and a locking-piece interposed between them and of greater length than the shortest distance between the said bearing-surfaces, and means for maintaining the locking-piece upon the wheel to rotate therewith, substantially as described.

2. The combination of a shaft, a wheel rotative independently thereof, a locking-piece interposed between them and pivotally carried by the wheel one end operating with the wheel and the other end with the shaft, and means for normally maintaining the locking-piece in position at an angle to the radius of the wheel, substantially as described.

3. The combination of a shaft, a wheel provided with a bearing-surface facing the shaft and extending in a plane parallel to a tangent of the wheel, and a locking-piece interposed between the shaft and said bearing-surface and adapted to bear at one end against said surface and at its other end to connect with the shaft and means to maintain said locking-

piece normally at any angle to the radius of the wheel, substantially as described.

4. The combination of a shaft provided with a disk, a wheel rotative independently of the shaft, and a locking-piece pivotally supported by the wheel and adapted to have longitudinal play on its pivot and of greater length than the shortest distance between the disk and the part of the wheel upon which the locking-piece acts, one end of the locking-piece operating against the wheel and the other end against the shaft or an interposed disk, as described.

5. The combination of a shaft provided with a disk, a wheel provided with a notch opposed to the disk, a locking-piece having one end bearing upon the disk and the other end bearing against the inner wall of the notch, and a spring bearing against one wall of the notch and also against the locking-piece to maintain the locking-piece in the normal position, substantially as described.

PH. I. MERKOOLYEFF.

Witnesses:

T. F. BOURNE,
M. MANNING.