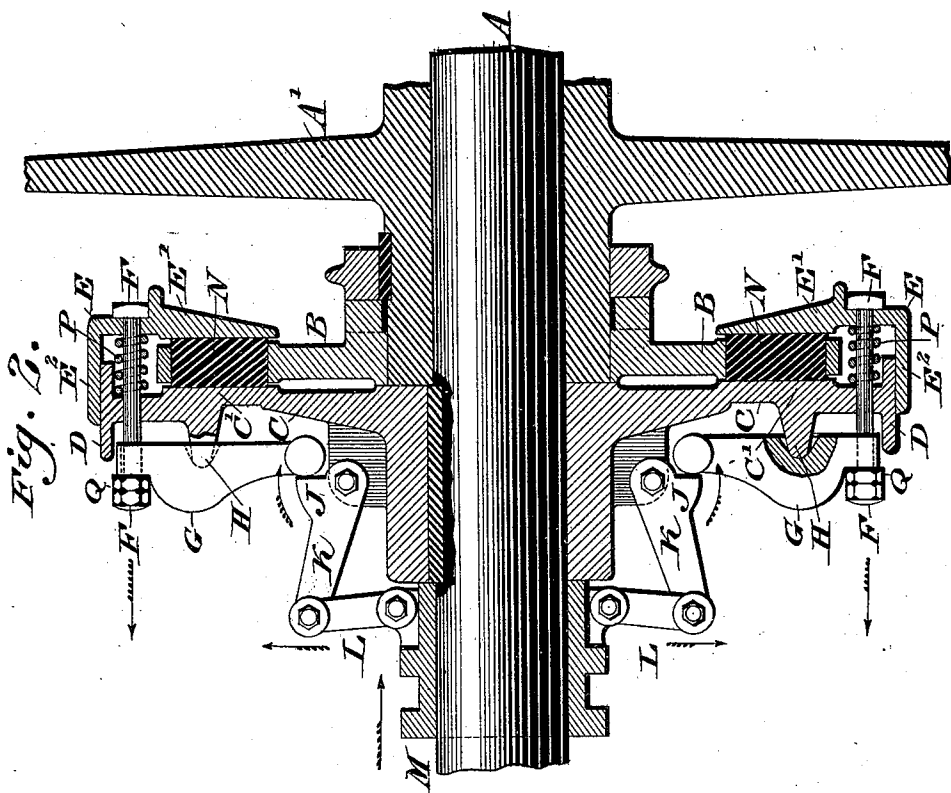
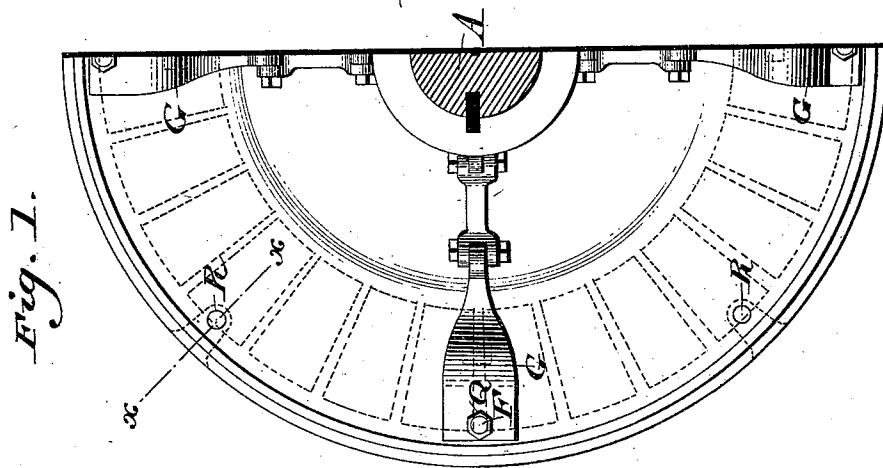


(No Model.)

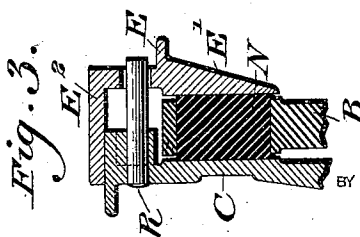
J. W. MOORE & J. A. WHITE.
CLUTCH.

No. 427,344.

Patented May 6, 1890.



WITNESSES:
P. F. Chagles.
L. Douville.



INVENTORS:
John W. Moore.
Joseph Atwood White.
John A. Diederichsen.
BY
ATTORNEY.

UNITED STATES PATENT OFFICE.

JOHN W. MOORE AND JOSEPH ATWOOD WHITE, OF PHILADELPHIA, PENNSYLVANIA.

CLUTCH.

SPECIFICATION forming part of Letters Patent No. 427,344, dated May 6, 1890.

Application filed December 21, 1889. Serial No. 334,523. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. MOORE and JOSEPH ATWOOD WHITE, citizens of the United States, both residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Clutches, which improvement is fully set forth in the following specification and accompanying drawings.

Our invention consists of a clutch formed of a section fixed to a shaft, a sliding sleeve, a section loose on said shaft, and a system of levers for operating the sleeve, whereby the sections or parts may be quickly and effectively coupled or clutched, as will be hereinafter set forth.

It also consists of pieces or facings of material inserted in the loose section for increasing the frictional contact of the other parts therewith.

It also consists of other novel features, as will be hereinafter fully set forth.

Figure 1 represents a partial face view and partial sectional view of a clutch embodying our invention. Fig. 2 represents a longitudinal section thereof. Fig. 3 represents a section of a portion on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a shaft, on which is loosely fitted the pulley A', to the hub of which is secured the section B of the clutch.

C designates a section which is keyed or otherwise secured to the shaft A, and is of greater diameter than the section B, and has a peripheral rim D, on which is freely fitted one limb of an angular sleeve E, the other limb of which encircles the side of the section B near the periphery thereof. Passing through the side limb of the sleeve E and the section C near the periphery thereof are sliding bolts F, whose heads bear against said limb and whose opposite ends are engaged by levers G, the fulcrum whereof are on lugs or projections H on the side of the section C. The heel ends of the levers G are engaged by the shoulders J of levers K, the latter being pivoted or mounted on the hub portion of the section C and pivoted to links L, which are pivoted or mounted on the sliding collar M of the chuck.

Inserted into the section B near the periphery thereof are segments N, of wood or other suitable material, the same having their sides or faces projecting outside of the said section, so as to come in contact with the side limb E' of the sleeve E and the portion C' of the section C, said portion projecting somewhat from the inner face of said section C, forming a contact-face for the segments N.

Encircling the bolts F in the space between the sleeve E and peripheries of the sections B C are springs P, which bear against the limb E' of said sleeve and the side of the section C, the tendency of said springs being to separate said sleeve from the section B.

The operation is as follows: When it is desired to close the clutch, the collar M is moved, in the present case to the right. As the links L follow the motions of the sleeve, their tendency is to move the outer ends of the levers K in the direction from the sleeve, whereby the shoulders J at the inner ends of said levers are pressed against the inner ends of the levers G, the latter then turning on their axes or fulcrum, so that their outer ends draw the bolts F in the direction of the arrow, the heads of the bolts being in contact with the outer face of the limb E' of the sleeve E, as has been stated. Consequently said sleeve is pressed against the facings N, and the latter is clamped between said sleeve and the section C and the section B, whereby the two sections are forcibly clamped together or coupled. The inserted pieces N increase the frictional contact of the sleeve E with the section B, the result of which is evident.

It is evident that when the collar M is operated in reverse direction the lever G is released, whereby the springs P, which have been compressed, are then operated, so as to separate the sleeve E from the section B, whereby the clutch is opened or uncoupled.

In the motions of the sleeve E the peripheral rim E' of the same is guided on the peripheral rim D of the section C.

The bolts F carry nuts Q for adjusting the position of the sleeve E.

Secured to the periphery of the section C and passing freely through the side of the sleeve E intermediate of the levers G are pins R, which serve to guide said sleeve in its move-

ments to and from the section B and also connect said sleeve and section C, so that they rotate together.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A fixed section, in combination with a movable section, a sliding sleeve which is adapted to engage with the movable section, bolts which connect the sleeve with the fixed section, the levers G K, and the links L, substantially as described.

2. A clutch having a fixed section and a movable sleeve, bolts connected with the sleeve, the levers G K, mounted on said section and engaging with each other and the former with said bolts, the sliding collar M, and the pivoted links L, connected with said collar and with the levers K, the parts named being combined substantially as described.

3. In a clutch having a fixed section C and a movable section B, a sliding sleeve E, the pivotal levers G and K, for closing the sections, both mounted on the section C, and the levers K having shoulders J, which engage with the heels of the levers G, substantially as described.

4. The section B, with a projecting facing N, the sleeve E, and section C, said sleeve hav-

ing a limb E', which is adapted to engage with one side of the facing N, and said section C having a projecting bearing-surface C', which is adapted to engage with the other side of said facing, and the levers G K and links L, the parts named being combined substantially as described.

5. The sections B C and sleeve E, in combination with bolts F, connecting the section C and said sleeve E, the levers K, the links L, the levers G, operating on projecting fulera, said levers being in connection with said bolts for closing said sleeve against the section C, and the spring P, for separating the same, substantially as described.

6. The stationary section C and movable sleeve E, in combination with the guide-pins R, which are secured to the section C and pass freely through the said sleeve E, and the bolts F, substantially as described.

7. The sections B C, sleeve E, bolts F, springs P, collar M, and links L, in combination with compound levers, substantially as described.

JOHN W. MOORE.

JOSEPH ATWOOD WHITE.

Witnesses:

JOHN A. WIEDERSHEIM,

SHELTON A. HIBBS.