

(No Model.)

C. A. WELLER.
CLUTCH.

No. 524,797.

Patented Aug. 21, 1894.

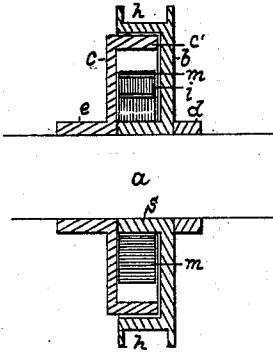


Fig. I

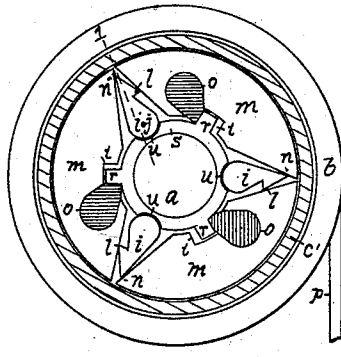


Fig. II

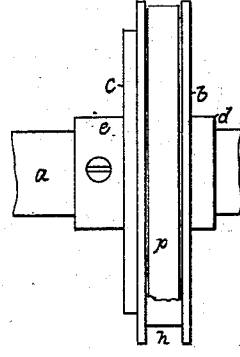


Fig. III

WITNESSES:

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CHESTER A. WELLER, OF SING SING, NEW YORK, ASSIGNOR OF ONE-HALF
TO JOHN GIBNEY, OF SAME PLACE.

CLUTCH.

SPECIFICATION forming part of Letters Patent No. 524,797, dated August 21, 1894.

Application filed August 10, 1891. Serial No. 402,306. (No model.)

To all whom it may concern:

Be it known that I, CHESTER A. WELLER, a citizen of the United States, residing at Sing Sing, in the county of Westchester and State of New York, have invented a new and useful Clutch, of which the following is a specification; and I declare it to be a full and exact description of my invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to friction clutches, and its object is to produce a clutch that is quick, positive, and unyielding in its action, that is reversible, that is applicable wherever a clutch is required, and can be manufactured and sold at a low cost. I attain these objects by the means set forth in the accompanying drawings, in which similar letters refer to similar parts throughout the several views.

Figure I is a transverse section through the center of Fig. II. Fig. II represents the plan of internal construction. Fig. III is an edge view showing the outer appearance of the clutch.

Fig. III represents a form of clutch adapted to sewing machines and similar purposes; but the same construction on a larger scale will be applicable to heavy machinery.

As here illustrated it consists of a pulley with a grooved rim *n*, for an operating strap *p*, and a hub *s* to form a bearing on a shaft, affording an annular space, as shown in Fig. I, to receive the clutch mechanism. Another piece consisting of a hub *e* and rim *c*, has a flange *c'* which enters and runs freely inside the rim *n*. This piece is fastened to the shaft to be rotated, and the other is held against it, although turning freely, by the collar *d*. Thus an annular chamber is formed between the two parts, in which segmental pieces *m* (which I call "grips") lie loosely, as in Fig. II. The outer curved surfaces of the grips conform to the inner surfaces of the rim *c'*. The hub *s* is provided with notches *u*, and with lugs *r*. Levers *i* are inserted between the grips, their large ends fitting the notches *u* in the hub. These levers have a semi-arrow head form at their outer ends. The grips are cut away to receive the lugs *r* and springs *o*, as in Fig. II.

The springs *o* are represented as pieces of rubber, although metallic springs may be employed. Their pressure is against the grips

m and the lugs *r* with just enough force to keep the grips against the rim *c'*. Normally the springs keep the grips *m* and their actuating levers in a lagging position with respect to the rim *c'*, the levers lying with their greater lengths parallel with the broken line *l*.

The action of the clutch is as follows: Turning the piece or casing *b* by means of the strap *p* or otherwise, turns the hub *s*, which puts the levers into play. The slight pressure of the springs is overcome, and the points *n l* of the lever act as prisms to force the grips apart, which tightens them against the rim *c'*, causing it to revolve with the grips. In this action the levers become levers of the first class, of which the ends *i* are the long arms, the outer ends the short arms, and the points *l* the fulcrums.

This clutch may be reversed by turning the several pieces over, in a reverse position from that shown.

In the manufacture of these clutches I do not wish to be confined to the specific shapes and forms of construction herein shown so long as I embody the principles of my invention.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In combination with the casings *b* and *c* forming an annular chamber between them, the case *b* having an inwardly projecting hub provided with notches *u* and lugs *r*, grips *m* notched to receive lugs *r* and recessed to receive springs *o* between said lugs and grips *m*, springs *o*, and levers *i*, which, by means of their fulcrums *l* as herein described, act as prisms to separate the grips *m*, substantially as herein set forth.

2. The combination, substantially as herein described, of casings *c*, *b*, strap *p*, grips *m*, springs *o*, lugs *r* on hub *s*, levers *i* seated in notches in the hub *s* and provided with points *n l*, and shaft *a*.

Signed at Sing Sing, in the county of Westchester and State of New York, this 31st day of July, 1891.

CHESTER A. WELLER.

Witnesses:

EDGAR L. RYDER,
CHARLES WESLEY.