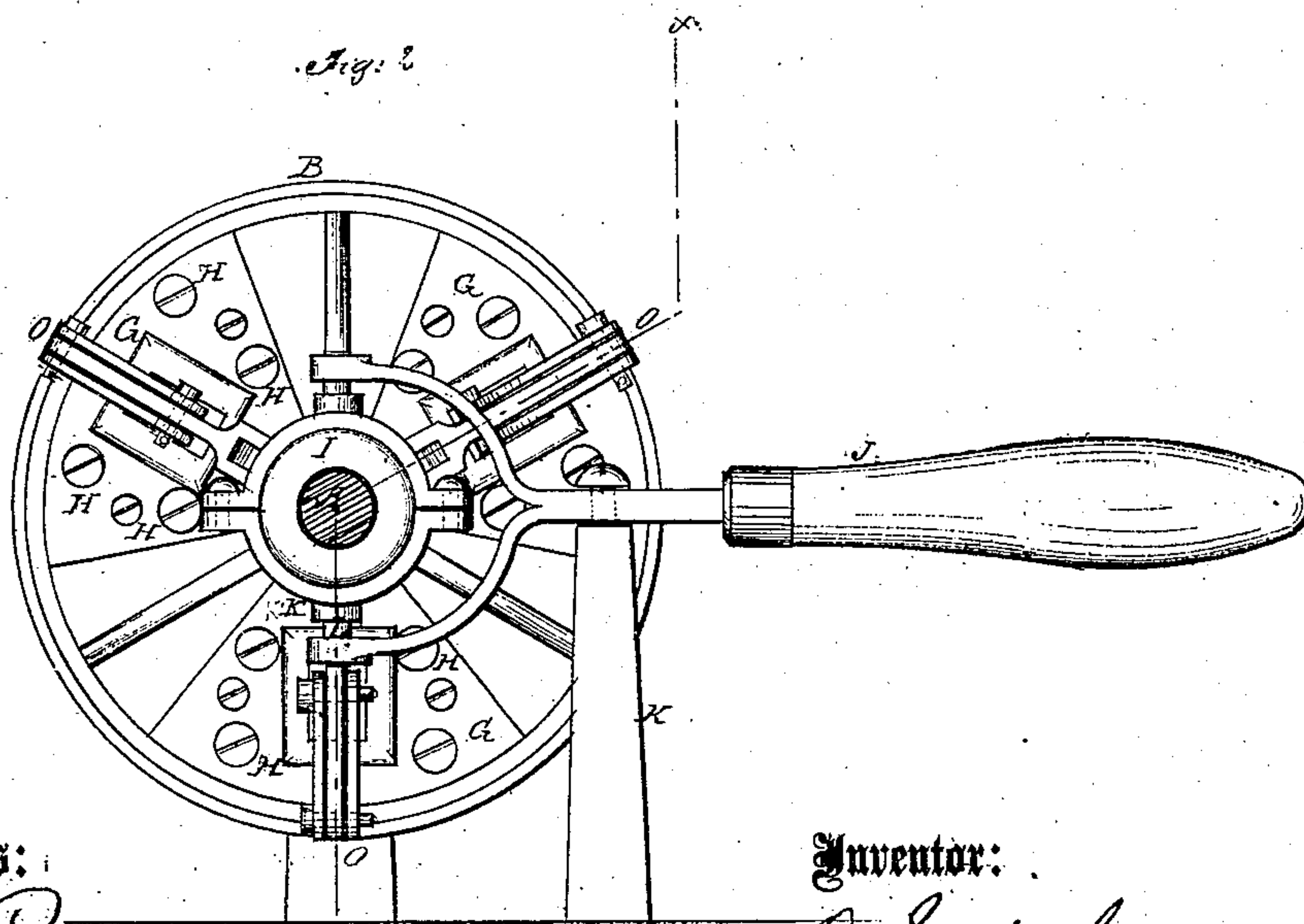
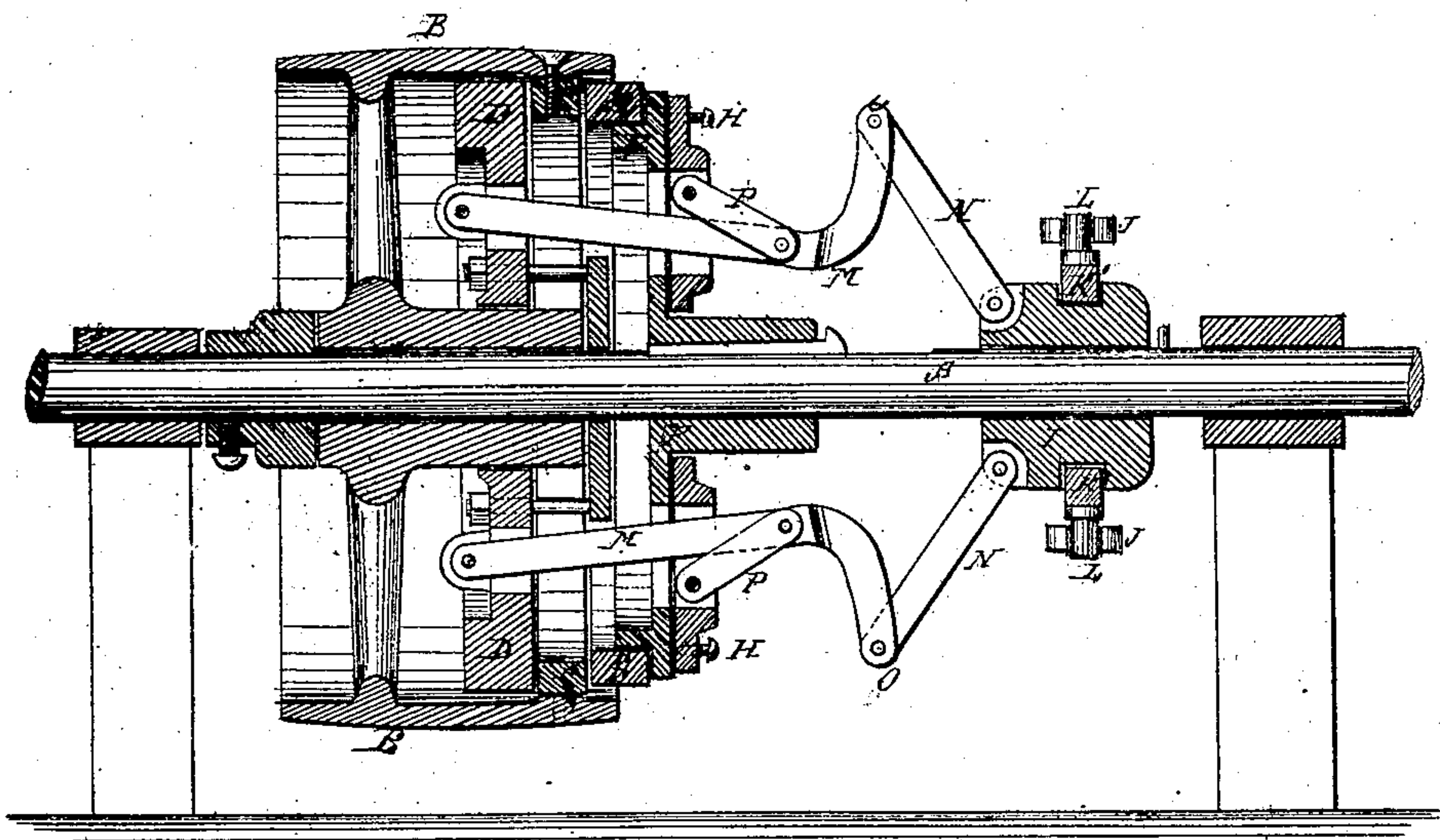


O. LULL.
FRICTION CLUTCH.

No. 103,634.

Patented May 31, 1870.



Witnesses:

Chas. A. Wade
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United States Patent Office.

ORRIN LULL, OF ROCHESTER, NEW YORK.

Letters Patent No. 103,634, dated May 31, 1870.

IMPROVED FRICTION-CLUTCH.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, ORRIN LULL, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Friction-Clutch; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

The object of this invention is to provide suitable means for throwing in and out of gear, various kinds of machinery by means of friction; and

It consists in moving laterally, (by means of proper connection,) a friction-disk, so that an annular ring, attached to the pulley or gear-wheel, is gripped for forming the connection or throwing machinery into gear, as will be hereinafter more fully described.

In the accompanying drawing—

Figure 1 is a longitudinal section through fig. 2, on the line *x-x*.

Figure 2 is an end view, looking at fig. 1 from the right.

Similar letters of reference indicate corresponding parts.

A is the shaft.

B is a pulley, arranged to revolve on, and independently of the shaft, except when clutched.

C is an annular disk or ring, attached to the inside of the rim of the pulley by means of screws, or in any other suitable manner.

D is an interior disk and E is an outer stationary disk. The disk D is made to approach and gripe the fast ring or disk C, and thereby produce the friction necessary to carry and revolve the pulley with the shaft.

The friction-disks D and E are connected with the disk F, which is firmly keyed to the shaft by bars and links.

The triangular-shaped plates G (seen in fig. 2) are attached to the disk F by means of screws. There are adjusting-screws in these plates G, by means of which the position of the friction-disks is varied, and the wear caused by the contact is compensated for.

I is a hub, which revolves with the shaft, and which is made to slide thereon back and forth by means of the forked lever J.

This lever has its fulcrum on the stand K, and is connected with the hub by means of a band, K',

placed in a groove in the hub, which is constructed in two parts, like one eccentric band, but having lugs, L, on its opposite sides, with which the forked lever engages, as seen in fig. 2.

The inner friction-disk D is connected with the sliding-hub by the curved bar M and straight bar N, as seen in fig. 1.

The bar M is pivoted to the disk D, and the bar N to the hub; the two are pivoted or jointed together at O.

The outer friction-disk, F, is connected with the curved bar M by the link P, by pivots at both ends.

These links P are placed at an angle with the bars M; and, it will be seen that, if the outer ends of the bars M are raised or thrown from the shaft, the result will be to draw the friction-disk D toward and in contact with the ring C, and to also draw the ring (and consequently the pulley) against the friction-disk E, thus producing friction upon both sides of the ring C; sufficient to carry along the pulley with all the force required.

The friction-disks are so adjusted that a slight movement of the hub on the shaft produces the desired effect.

The pulley is instantaneously clutched and carried along, and as quickly released and allowed to revolve on the shaft, or remain at rest. The purchase obtained by this arrangement is very great, the application of power being upon the principle of the "knuckle-joint" connection, the tendency being to force the link P to a line parallel with the bar M.

The advantages of this arrangement are many, and must be obvious to all who are acquainted with the operation of suddenly coupling or uncoupling machinery.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The ring C, friction-disks D and E, the connecting-bars M and N, and the link P, when arranged to operate in combination with a pulley or gear-wheel, substantially as and for the purposes described.

2. A friction-clutch, where the friction is produced by a lateral movement of friction-disks on opposite flat surfaces, substantially in the manner described.

Witnesses:

N. A. STONE,

B. D. MCALPINE.

ORRIN LULL.