J. J. GRANT.

Friction-Clutches.

No. 142,227. Patented August 26, 1873.

Fig. 1.

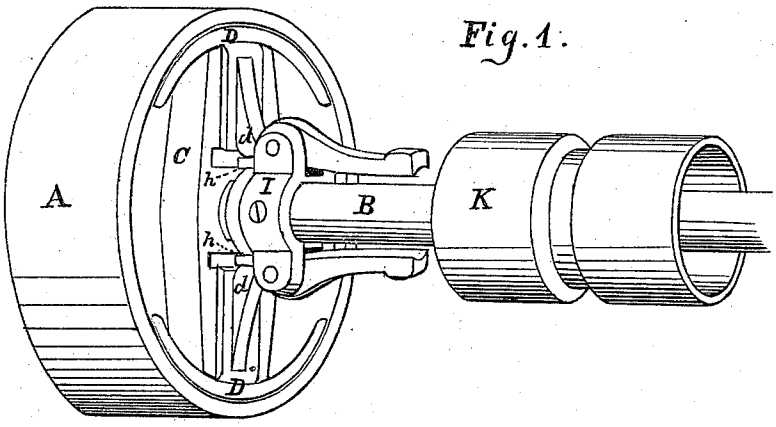


Fig. 5.

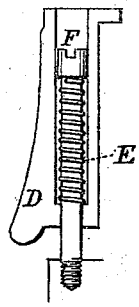


Fig. 2.

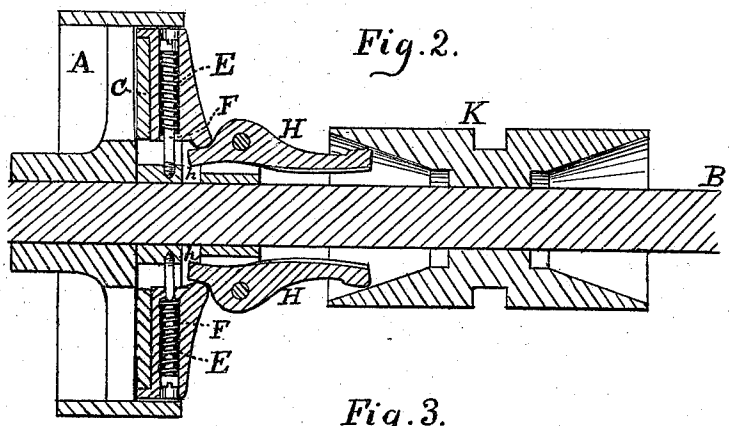


Fig. 3.

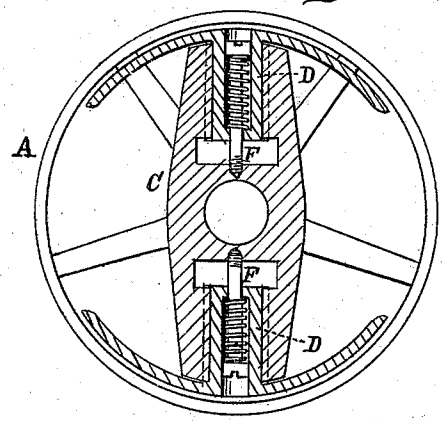
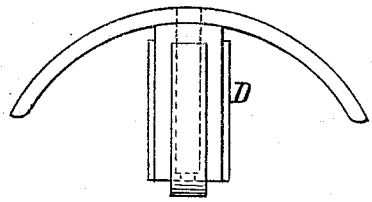


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN J. GRANT, OF GREENFIELD, MASSACHUSETTS.

IMPROVEMENT IN FRICTION-CLUTCHES.

Specification forming part of Letters Patent No. **142,227**, dated August 26, 1873; application filed April 23, 1873.

To all whom it may concern:

Be it known that I, JOHN J. GRANT, of Greenfield, county of Franklin and State of Massachusetts, have invented an Improved Friction-Clutch. The following description, taken in connection with the accompanying plate of drawings hereinafter referred to, forms a full and exact specification, wherein are set forth the nature and principles of the invention, by which the same may be distinguished from others of a similar class, together with such parts thereof as are claimed as new and are desired to be secured by Letters Patent of the United States.

My invention relates to that class of mechanical appliances known as friction-clutches; and the nature thereof consists in certain novel combinations of the parts of the same, hereinafter described.

In the accompanying plate of drawings, which illustrate my invention and form a part of the specification thereof, Figure 1 is a perspective view, showing the various parts of the mechanism combined together for operation. Fig. 2 is a sectional view taken vertically and longitudinally through the shaft. Fig. 3 is a sectional view taken transversely through the collar, in which are arranged the drivers or segments. Fig. 4 is a view of one of the drivers or segments detached. Fig. 5 illustrates the spring.

The construction, operation, and relative arrangement of the component parts of the invention are as follows: In the drawings referred to, A designates the pulley, which is fitted to run loosely upon the shaft B. Upon and rigidly attached to the said shaft is the collar or carrier C, to which are fitted the segmental friction-drivers D, which slide in grooves cut for their reception. The said friction-drivers are retained in position and prevented from flying outward by means of the spiral springs E, which are fitted in recesses of cylindrical shape cut for their reception, and the screw-bolts F, which compress and control the said spiral springs. It will be observed that by this construction the spring is entirely out of the way and concealed from view. The said friction-drivers, which are so arranged as to slide in or out for the purpose of breaking or establishing the frictional connection between the pulley and the shaft, are operated by means of the levers H, which have their fulcrums in the carrier or collar I. The said carrier is secured to shaft B by a set-screw, in such a manner that its distance from the collar C may be regulated at pleasure, and the length of the short arms *h h* of the levers thereby adjusted. By this construction any inconvenience which may arise from the wearing away of those portions of the levers which press against the projections *d* on the driver D will be entirely obviated. The levers are actuated by the clutch K, which is fitted loosely upon the shaft B. The interior beveled edges of the said clutch, when slid toward the pulley, press against the outer rounded ends of the levers, and force them inward toward the shaft and give a corresponding outward action to the inner ends of the levers *h h*. By this construction the levers are covered and protected by the clutch, so that in case the band slips from the pulley it will not be caught or broken.

It is obvious that, when the said clutch is moved away from the levers, the springs will cause the frictional drivers to resume their normal position.

I am aware that levers operated by a clutch have been heretofore pivoted to the carrier, upon which segmental friction drivers have been arranged; but I believe the combination herein described, of levers having their fulcrums in a collar capable of longitudinal adjustment, with friction-drivers arranged upon another and separate collar or carrier, is a new and meritorious invention. I am also convinced that, although drivers have been operated by springs of various kinds, the peculiar and advantageous arrangement herein described, whereby the spring is entirely concealed and protected, is a novel and valuable improvement.

Having thus described the construction and operation of my invention, I therefore claim and desire to secure by Letters Patent—

1. In combination with the segmental friction-drivers D, sliding in grooves cut for their

reception in the collar C, the spiral springs E, arranged in a recess cut for their reception in the said drivers, and the screw-bolts F, all operating together as and for the purposes described.

2. The shaft B, adjustable collar I, levers H, clutch K, drivers D, provided with projections *d*, collar C, and pulley A, all combined and operating as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 10th day of April, 1873.

JOHN J. GRANT. [L. S.]

Witnesses:
L. L. LUCY,
WENDELL T. DAVIS.