J. P. Gates.

Clutch.

No. 82,703. Patented Oct. 6, 1868.

Fig 1.

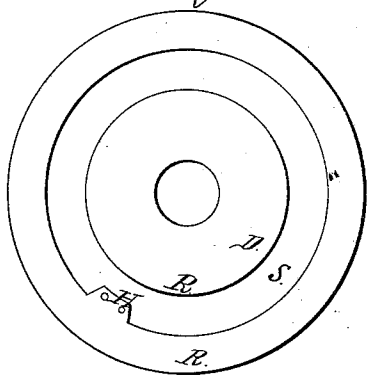


Fig 2.

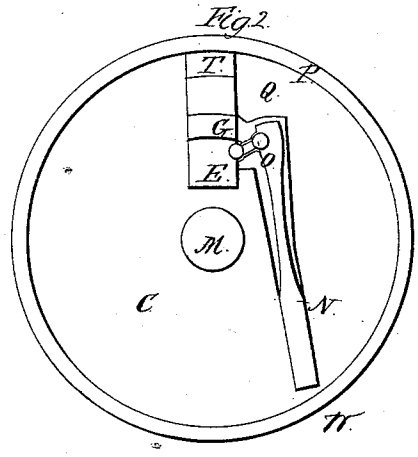


Fig 3.

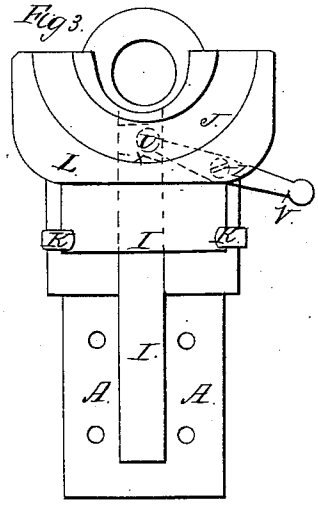
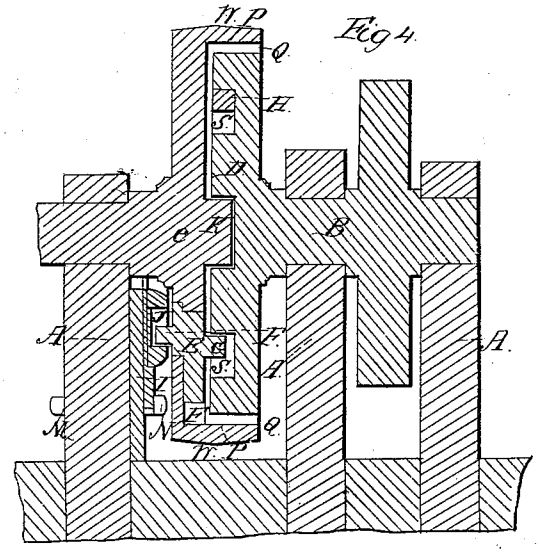


Fig 4.



Witnesses
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JOSEPH P. GATES, OF LINCOLN, ILLINOIS.

Letters Patent No. 82,703, *dated October* 6, 1868.

IMPROVEMENT IN SHAFT-COUPLING.

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

TO WHOM IT MAY CONCERN:

Be it known that I, JOSEPH P. GATES, of Lincoln, in the county of Logan, and State of Illinois, have invented a new and useful Improvement in Adjustable Shaft-Couplings; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification.

Figure 1 is an inside face view of the disk D, showing the annular channel S, and the stop, H.

Figure 2 is a similar view of the disk C, showing the shuttle-key E, the spring N, and the oscillating stud O, in position.

Figure 3 is a plan view of the cam L, showing the semi-annular channel J, arm I, and the lever V, fulcrumed upon the stud Z.

Figure 4 is a section of the coupling when in place, taken through the axis of the shafts B and K, upon the lines X X, in figs. 1, 2, and 3.

The object of this invention is to obtain an intermittent motion, especially adapted to shaft-couplings, by the use of which a convenient and substantial method of coupling and uncoupling shafts is obtained while the same are in motion, without the trouble and delay consequent on being obliged to stop the driving-power while coupling or uncoupling the line of shafts.

To enable those skilled in the art to manufacture my device, and use the same, I will now proceed to name the various parts, and describe its operation, premising, however, that in the drawings like parts are represented by like letters in each figure.

A are posts or hangers, supporting the shafts B and K, upon which are placed the disks C and D, the disk C being so placed upon the shaft K as to allow the end thereof to project through said disk, and find a bearing in a corresponding opening in the centre of the disk D, which is secured upon the end of the shaft B. A shuttle-key or slide, E, is attached in any suitable manner to the inner face of the disk C, and is provided with right and left-hand studs, F and G. The stop, H, is rigidly attached to the disk D, projecting from the plain face, R, of said disk, into the annular channel S.

I is an arm, operated by the lever V, which is fulcrumed upon the stud Z, and provided with a head, U, which operates within the semi-annular channel J, (in the face of the cam L,) and also within the recess X, in the arm I, by means of which the cam L is operated. This arm I is held in position, when in place, by the cleats M, when the device is fully set up.

The spring, N, acts upon the oscillating stud O, which is designed to hold the shuttle-key or slide in any desired position. The disk C is provided with a projecting flange or rim, P, forming a recess upon the inner face of said disk, within which the disk D operates. The periphery, W, of the disk C, may be used as a pulley, if desired.

When all the above parts are in position, as shown in fig. 4, power may be applied to the shaft K, when both shafts will revolve freely, the shaft B being compelled to rotate by the stud F engaging with the stop, H. Should it be desired to allow the shaft B to remain at rest while motion is required from the shaft K, depress the end of the lever V, thereby elevating its head, U, and, with it, the cam L, when the stud F on the slide E will be disengaged from the stop, H, when the stud will rotate in the channel S. To couple the two shafts together, so that motion will be communicated from one to the other, elevate the outer end of the lever V, thereby depressing its head, U, and, with it, the cam L, and the stud F on the slide E is thereby engaged by the lower rim of the groove or channel J, of the cam L, thereby shifting the slide E towards the periphery of the plates, carrying with it one end of the stud F, and placing it in such an angle with the line of the slide so that under the pressure of the spring, N, it is held in that position, and so that the stud G, in its enlarged sweep, engages with the stop, H, thereby completing the coupling, and communicating motion from the shaft K to the shaft B.

To uncouple the shafts, return the end of the lever V to its original position, and it will, by reversing the movement of the parts just described, release the stop, H, from the stud F, and thereby complete the uncoupling.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The disks D and C, secured to proper shafts, with the slide or shuttle-key E, in relation to the channels S and J, and recess Q, or their equivalents, when constructed and operating substantially as and for the purposes set forth.

2. The disk C, having its shaft, K, protruding inwardly, in combination with the disk D, having an opening in its inner face, which opening forms a bearing for shaft K, substantially as and for the purposes set forth.

3. The shuttle-key or slide E, with its studs F and G, or their equivalents, for the purposes shown.

4. The spring, N, in connection with the oscillating stud O and slide E, or their equivalents, when operating substantially for the purposes set forth.

5. The cam L, with its semi-annular channel J, arm I, lever V, head U, or their equivalents, when arranged and operating substantially as and for the purposes shown.

6. The combination of all the above-mentioned parts and their attachments, when constructed, arranged, and operating substantially as and for the purposes herein set forth and described.

JOSEPH P. GATES.

Witnesses:

TIMOTHY T. BEACH,

JOSEPH REAM.