

W. H. Brown,
Friction Clutch.

N^o 51,134.

Fig: I Patented Nov. 28, 1865.

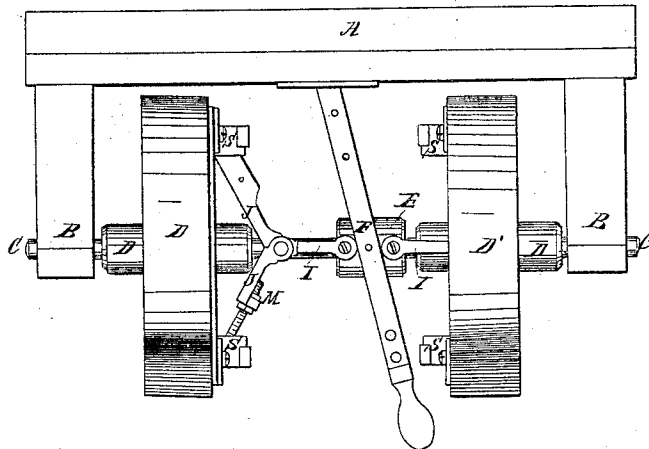


Fig: 2.

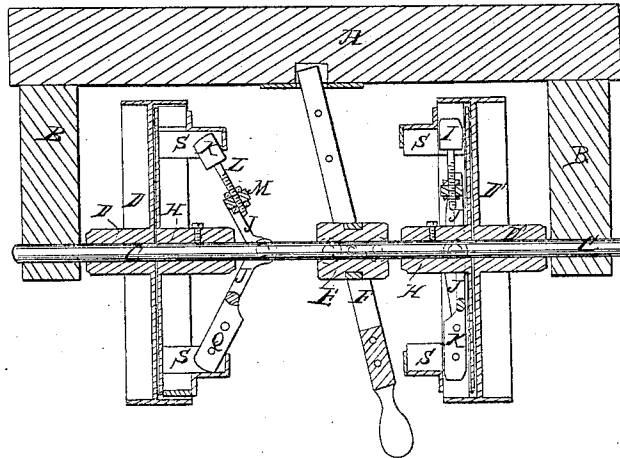
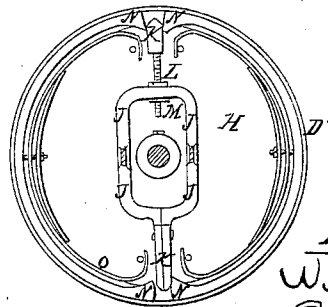
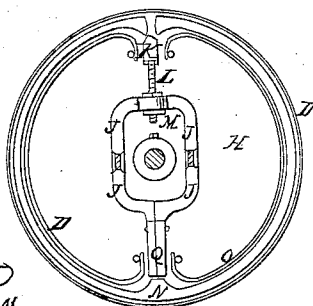


Fig: 3

Fig: 4



Witnesses:

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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN FRICTION-CLUTCHES.

Specification forming part of Letters Patent No. 51,134, dated November 28, 1865.

To all whom it may concern:

Be it known that I, WILLIAM H. BROWN, of the city and county of Worcester, in the State of Massachusetts, have invented a new and useful Friction-Clutch; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation. Fig. 2 is a longitudinal vertical axial section. Fig. 3 is an end elevation of one of the pulleys with its inner expanding ring. Fig. 4 is an end elevation of one of the pulleys with its inner sectional expanding ring.

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

This invention consists in a method of constructing and operating two clutch-pulleys, arranged in the manner usual in screw-engines, with a single shipper to operate each clutch alternately.

In order that others skilled in the art to which my invention appertains may be enabled to fully understand and use the same, I will proceed to describe its construction and operation.

A is a beam, and B B two hangers or pedestals depending from A and supporting the shaft C, on which are two loose pulleys, D D', and two hubs, H H, with circular disks, which are fast to the shaft, so as to revolve with it. A sleeve or collar, E, is capable of slipping longitudinally on the shaft as it is pushed by the shipping-lever F, which is pinned to a ring, G, which rotates in an annular groove on the sleeve E as the latter rotates, as is presently to be described.

At each end of the sleeve E are links I I, which connect to the pivotal point of stirrup-shaped toggles J J, which terminate in blocks K K, Fig. 4, or K Q, Fig. 3, whose purpose is to spread open the ring N, Fig. 3, or segments N N, Fig. 4, and expand it or them against the inner side of the rim of the loose pulley, so as to cause the latter to rotate with the shaft.

In Fig. 3 the expanding ring is shown as consisting of one piece, and one end, Q, of the toggle bears upon the boss in the center of the circular expansible piece, while the wedge-block K of the other end of the toggle, whose screw-shank is adjustable in the nuts M, is forced be-

tween the open ends of the rings, so as to cause it, when the sleeve E is pressed toward that pulley, to expand against the latter and make it revolve with the shaft.

In Fig. 4 the expanding ring is divided into segments, which are secured by springs and screws, or in any other suitable manner, to the rim O, so that when the expanding mechanism is withdrawing the segments will be drawn from contact with the pulley.

In Fig. 4 one of the terminations of the toggles is a wedge-block, K, similar to that in Fig. 3, already described, and is adjustable by means of the screw L and nut M, while the other block is made divided and is adjusted by means of packing between the jaws of the block, so as to increase its width, and consequently its capability of expanding the segments.

When in their contracted state the rings, sectional or otherwise, rest upon the rims O, which are secured to the face-plate H', which constitutes a flange on the hub H and revolves with it.

By the cross connection between the two systems of toggles the sleeve is caused to rotate without being secured on the shaft by feather or otherwise, and the toggles having a certain independence of motion, as being pivoted on the ends of the links I, will bring an equal pressure upon each side and expand the ring evenly, so as to cause it to press more perfectly and continuously against the whole inner periphery in the rim of the pulley.

The plates S form extended guides for the blocks K or Q when withdrawn from contact with the expansible ring or segments.

Whether the elastic ring N be intact or divided, it has sufficient elasticity, or else is provided with springs, so that it will contract onto the rim O when it is freed by the withdrawal of the expanding blocks K Q.

The arrangement of the toggles prevents any inequality which would tend to crowd the pulley to one side of the shaft.

I do not intend by the above description to confine myself to the duplicate arrangement, as a single friction-clutch may be used for communicating motion from one portion of machinery to another.

Having thus fully, clearly, and exactly described the nature, construction, and operation of my invention, the following is what I claim

as new herein and desire to secure by Letters Patent:

1. The combination of the detached elastic segments with the wedge-block, substantially as and for the purpose described.

2. Making the wedges which force the segments against the rim of the pulley the medium of coupling it with the core.

3. The combination of the sleeve E, the links, and toggle-joints, with their terminal wedges,

and the expanding segments or rings, substantially as described.

4. The combination of the links I I with the toggles J J, substantially as and for the purpose described.

WM. H. BROWN.

Witnesses:

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WM. RICE.