

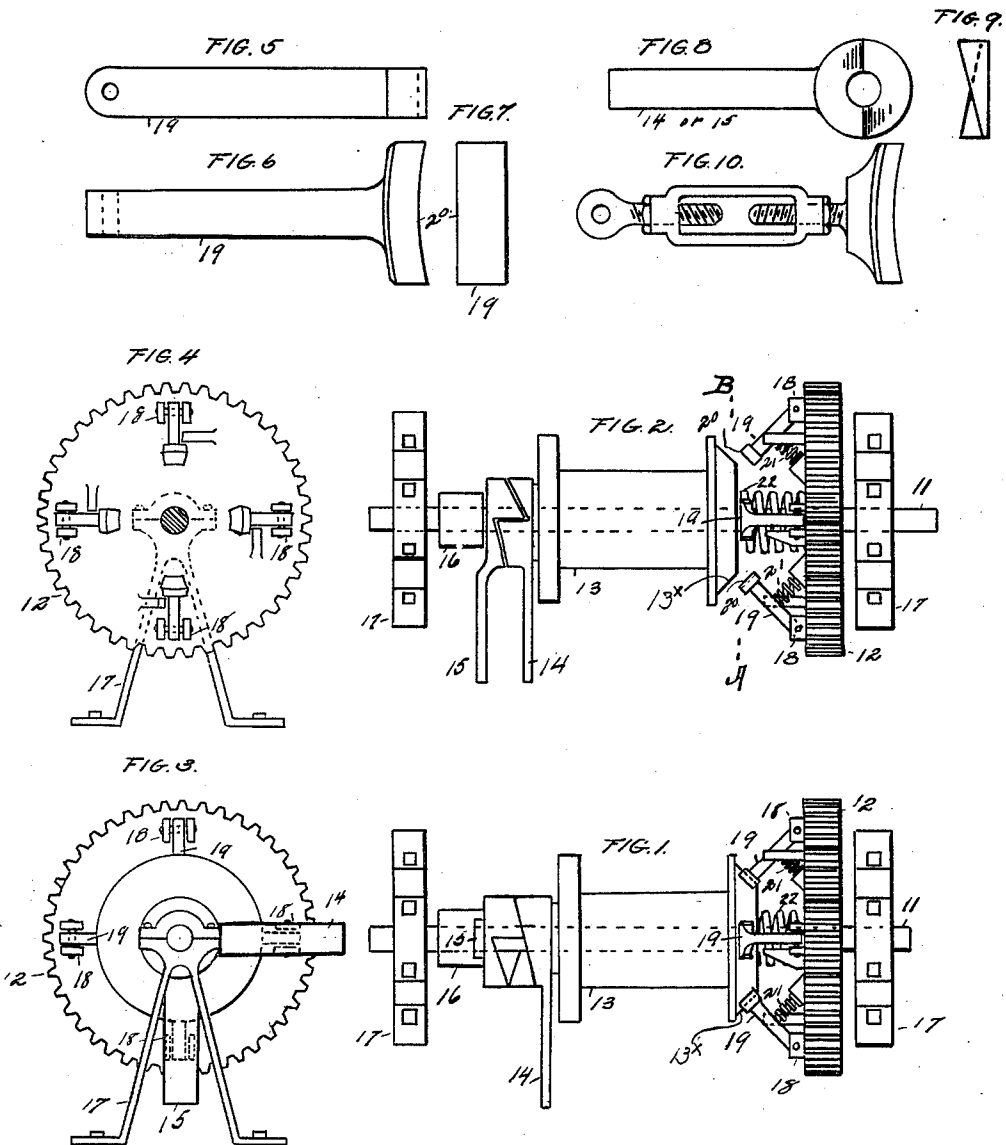
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Patented Sept. 4, 1900.

J. L. TAYLOR.
FRICTION CLUTCH.

(Application filed Apr. 16, 1900.)

(No Model.)



WITNESSES:

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JAMES L. TAYLOR, OF ROYAL CENTRE, INDIANA.

FRICTION-CLUTCH.

SPECIFICATION forming part of Letters Patent No. 657,185, dated September 4, 1900.

Application filed April 16, 1900. Serial No. 12,998. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. TAYLOR, a citizen of the United States, residing at Royal Centre, in the county of Cass and State of Indiana, have invented certain new and useful Improvements in Friction-Clutches; and I do hereby declare the following to be a clear, full, and exact description of the invention, such as will enable others skilled in the art pertaining to the same to use and to make the same.

This invention relates to certain new and useful improvements in friction-clutches; and it has for its objects, among others, to provide an improved form of friction-clutch which shall be simple, efficient, and durable, easy to repair, and not liable to get out of order.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a plan view of my improvement with the parts in operative position. Fig. 2 is a similar view with the parts in inoperative position. Fig. 3 is an end view of Fig. 1. Fig. 4 is a cross-section on the line A B of Fig. 2. Fig. 5 is a detail, in edge elevation, of the friction-arm. Fig. 6 is a plan thereof. Fig. 7 is an end elevation of said arm. Fig. 8 is a detail view of the clutch-lever. Fig. 9 is an end view thereof. Fig. 10 shows a modified form of friction-arm.

Like numerals of reference indicate like parts throughout the several views in which they appear.

Referring now to the details of the drawings, 12 designates a spur-gear which is fast upon the shaft 11, mounted in position in bearings in the hangers 17.

16 is a collar rigidly affixed to the shaft, or it may be integral therewith, while 13 is a drum revolubly mounted upon said shaft and capable of longitudinal movement thereon. This drum has at one end a beveled or convex friction surface or portion 13^x, as seen in Figs. 1 and 2, for a purpose which will soon be made apparent.

Between the collar 16 and the adjacent end

of the drum are revolubly mounted on the shaft the levers 14 and 15, the adjacent faces of which are inclined or tapered, as seen clearly in Figs. 1, 2, and 9.

The spur-gear 12 is provided with lugs 18 on the face adjacent the end of the drum, as seen in the different views, and pivotally mounted in these lugs or ears are the friction-arms 19, the free ends of which are provided with concave surfaces 20 to conform to the contour of the convex surface or portion on the adjacent end of the drum.

21 are springs disposed between the friction-arms and the inner face of the spur-gear, as seen in Figs. 1 and 2, and are for the purpose of maintaining the concave friction-surface at the free ends of the arms at a suitable angle with relation to the gear, so as to enable the friction-arms to meet the convex surface of the drum when the drum and arms are brought together. A spring 22, disposed around the shaft between the spur-gear and the adjacent end of the drum, serves to retract the drum to its normal position when the levers are brought into the position in which they are seen in Fig. 2.

In Fig. 10 I have shown a modified form of friction-arm, which is rendered adjustable by means of the turnbuckle. This will serve to compensate for wear or to allow of the necessary adjustment when first setting up the clutch.

The operation will be apparent. With the parts in the position shown in Fig. 2 the clutch is out of gear; but when it is desired to bring the drum into operation the levers 14 and 15 are moved so as to bring them at substantially right angles to each other. The cam or tapered faces riding one upon the other will force the drum toward the spur-gear, and the frictional contact of the convex surface of the drum and the concave surfaces of the ends of the friction-arms will serve to effectually clutch the drum to the gear, so that the former will be revolved. The springs 21 will allow of any slight adjustment necessary in the operation of the parts.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. The combination with a spur-gear, its

shaft, a drum, means revolubly mounted on the drum-shaft for moving the drum endwise of friction-arms pivotally mounted on said spur-gear, and springs interposed between 5 the face of the gear and said arms to hold them at the desired angle relatively to the face of the gear, as set forth.

2. The combination with a drum, its shaft, and means revolubly mounted on said shaft 10 for moving the drum lengthwise thereon a spur-gear, of friction-arms pivotally connected therewith at one end and their other ends concaved, and springs acting on the said arms to hold them normally at an angle to the face 15 of the gear, as set forth.

3. The combination with a shaft and a gear fast thereon, of a drum revolubly mounted on the shaft and having a convex friction-surface at the end adjacent the gear, means 20 on the drum-shaft for moving it lengthwise of its shaft and spring-held friction-arms mounted on the gear and having concaved outer ends, as set forth.

4. The combination with a shaft and a gear fast thereon arms pivotally mounted on said 25 gear and springs for holding them at an angle to the gear, of a drum revolubly mounted on the shaft and provided with a friction-surface adjacent the gear, and means for moving the drum lengthwise of the shaft, as set 30 forth.

5. The combination with a shaft having a collar fast thereon, of a drum revolubly mounted on the shaft and having at one end a friction-surface, a spur-gear fast on the 35 shaft pivotally-mounted spring-held friction-arms carried by said gear, a spring interposed between the gear and drum, and levers revolubly mounted on the shaft between the said drum and collar and having tapered ad- 40 jacent faces, substantially as and for the purpose specified.

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Witnesses:

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