

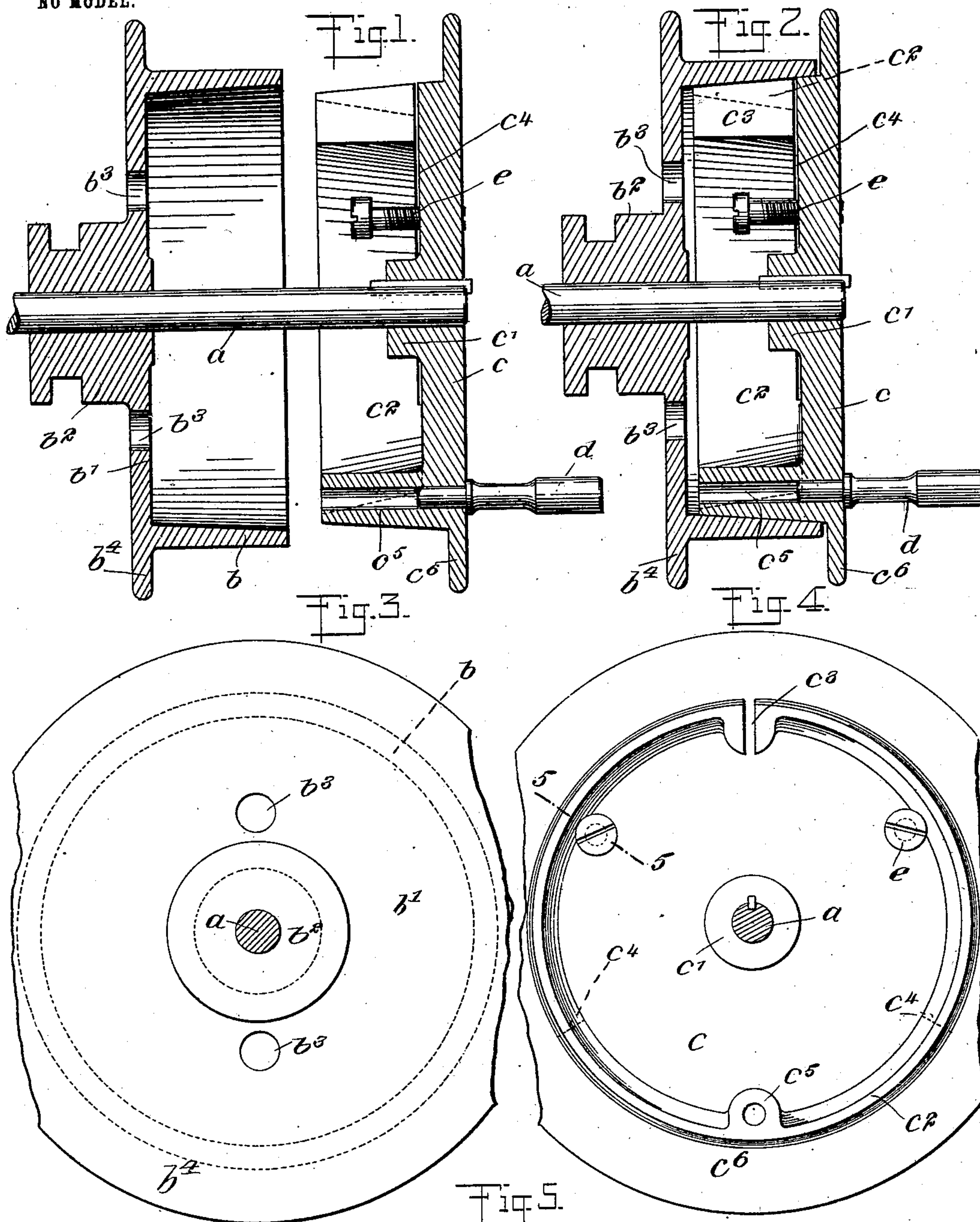
No. 728,622.

PATENTED MAY 19, 1903.

G. W. RUTH.
FRICTION CLUTCH.

APPLICATION FILED FEB. 19, 1902.

NO MODEL.



WITNESSES :

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AUTOMATIC KNITTING MACHINE COMPANY, OF NORRISTOWN, PENN-
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FRICITION-CLUTCH.

SPECIFICATION forming part of Letters Patent No. 728,622, dated May 19, 1903.

Application filed February 19, 1902. Serial No. 94,760. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. RUTH, a citizen of the United States, and a resident of Norristown, in the county of Montgomery and State of Pennsylvania, have invented a new and Improved Friction-Clutch, of which the following is a full, clear, and exact description.

This invention relates to a friction-clutch comprising a fast and a loose section having certain novel devices for connecting them together, so that the loose section may be driven from the fast section.

This specification is a specific description of one form of the invention, while the claims are definitions of the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional view showing the sections of the clutch disengaged. Fig. 2 is a similar view showing the sections engaged. Fig. 3 is an outer side elevation of the loose section. Fig. 4 is an inner side elevation of the fast section, and Fig. 5 is a detail section on the line 5 5 of Fig. 4.

a represents the shaft. The loose section of the pulley comprises a rim b , a web b' , and a hub b^2 . The rim b is flanged at its outer edge, as shown at b^4 , and the web b' is provided with orifices b^3 , which permit the free circulation of air and prevent hindering the movements of the sections toward and from each other. The hub b^2 is adapted to have connected therewith any suitable mechanism for shifting the loose clutch-section axially on the shaft a .

The fast section of the clutch comprises a main portion or web c , the hub c' of which is keyed or otherwise fastened to the shaft a . The web c carries an annular flange or rim c^2 , the outer face of which is slightly beveled, as shown. This flange or rim c^2 is adapted to be received within the rim b when the parts are in the position shown in Fig. 2, and for this purpose the inner face of the rim b is beveled to correspond with the bevel of the rim c^2 .

c^6 indicates a peripheral flange on the fast section of the clutch and corresponding with the flange b^4 .

The rim c^2 is formed with a yielding portion which is engaged by the rim b , and when this engagement is firmly effected the yielding part of the rim c securely connects the two parts of the clutch together, thus causing the loose section to turn with the fast section. A belt runs around the outer surface of the rim b of the loose section of the clutch.

The rim c^2 may be constructed with the yielding portions in any desired manner. I prefer, however, to form the ring integral with the web or body c and afterward to split the rim across its width longitudinally of the axis of the clutch, as indicated at the point c^3 , and longitudinally of the rim transversely of the axis of the clutch, as indicated at c^4 . Referring now to Fig. 4, it will be seen that the rim c^2 at each side of the slit c^3 has a yielding arm-like portion not directly connected with the body or web c . The indirect connection of these yielding arms or portions of the rim c is effected through the medium of the part of the rim which is left integral with the web c . The rim c^2 may be thickened and orificed at the point c^5 , and this orifice may be arranged to carry a handle d for the manual driving of the pulley, if desired. The inner faces of the yielding portions of the rim c^2 are constructed beveled, as shown best in Fig. 5, and against these beveled surfaces bear screws e , which when moved outward engage their heads against the beveled surfaces of the rim c^2 and spread apart the yielding portions of said rim.

The two parts of the clutch may be used as a pulley, if desired, in which case the belt turns around the outer face of the rim b , and when it is desired to drive the loose section of the clutch this section is moved laterally, so that the rim b incloses the rim c^2 , and the belt is then held between the flanges b^4 and c^6 . Previously the screws should have been adjusted so that the inward movement of the yielding parts of the rim c^2 will be limited, thus to insure firmly engaging the two rims together.

The parts of the clutch may thereby be locked rigidly together, and one part may be driven from the other.

Various changes in the form, proportions, and minor details of my invention may be resorted to without departing from the spirit and scope of my invention. Hence I consider myself entitled to all such variations as may lie within the scope of my claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a friction-clutch, the combination with the shaft, of a clutch-section comprising a web or main portion having an annular flange or rim thereon, said rim being formed integral with the said clutch-section and being split across its width longitudinally of the axis of the clutch and being partly separated from the web or main portion of the said clutch-section on a line longitudinally of the rim and transversely of the axis of the clutch, thus forming two yielding arm-like portions, and a second clutch-section having a rim adapted to inclose the rim of the first-named section to connect the two clutch-sections together, said rims being respectively externally and internally tapered, and the said flange or web of the first-named clutch-section having a thickened portion integral with the main portion of the said clutch-section and orificed in a direction parallel with the shaft, for the purpose specified.

2. In a friction-clutch, the combination with the shaft, of a clutch-section, comprising a web or main portion with an annular flange or rim thereon, said rim being formed integral with the clutch-section and being split across its width longitudinally of the axis of the pulley, and being partly separated from the web or main portion of the said clutch-section on a line longitudinally of the rim and transversely of the axis of the clutch, thus forming two yielding arm-like portions, and a second clutch-section having a rim adapted to inclose the rim of the first-named section, to connect the two sections together, said sections being respectively externally

and internally tapered, and being relatively movable longitudinally of the shaft to engage or disengage each other.

3. In a friction-clutch, the combination with the shaft, of a clutch-section, comprising a web or main portion with an annular flange or rim thereon, said rim being formed integral with the clutch-section and being split across its width longitudinally of the axis of the pulley, and being partly separated from the web or main portion of the said clutch-section on a line longitudinally of the rim and transversely of the axis of the clutch, thus forming two yielding arm-like portions, a second clutch-section having a rim adapted to inclose the rim of the first-named section, to connect the two sections together, said sections being respectively externally and internally tapered, and being relatively movable longitudinally of the shaft to engage or disengage each other, the said arm-like portions having beveled inner faces, and means working in the web or main portion of the first-named clutch-section in line approximately parallel with the shaft and bearing against the said beveled faces, for the purpose specified.

4. In a friction-clutch, the combination with the shaft, of a clutch-section comprising a web or main portion having two yielding arms or arm-like portions carried thereon and curved approximately concentrically to the shaft, the free ends of the arms lying adjacent to each other, and said arms lying against the side of the said web and being tapered on their outer faces, and a second clutch-section having an internally-tapered rim to receive the arms of the first section, said sections being relatively axially movable on the shaft to engage or disengage each other.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE W. RUTH.

Witnesses:

MAHLON B. RUTH,
WILLIAM D. FITZGERALD.