

H. A. M. HARRIS.

Feed-Wheel Operating Mechanism.

No. 129,131.

Patented July 16, 1872.

Fig. 1.

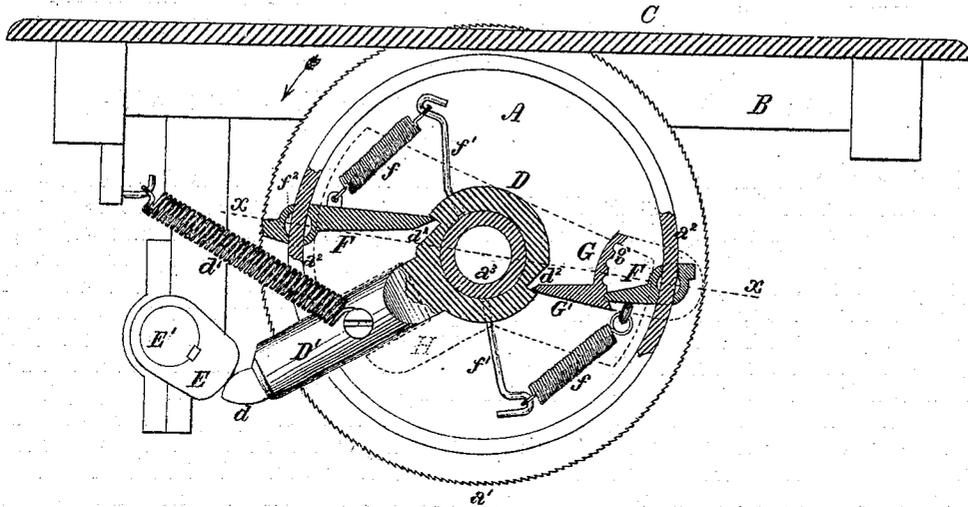


Fig. 3.

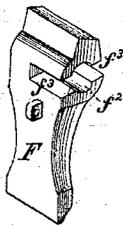


Fig. 4.

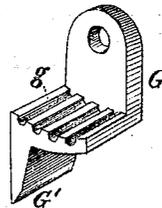
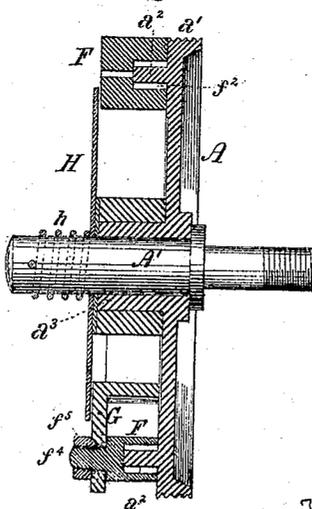


Fig. 2.



Witnesses.

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by his atty
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UNITED STATES PATENT OFFICE.

HARMAN A. M. HARRIS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND THOMAS R. GLENN, OF SAME PLACE.

IMPROVEMENT IN FEED-WHEEL-OPERATING MECHANISMS.

Specification forming part of Letters Patent No. 129,131, dated July 16, 1872.

To all whom it may concern:

Be it known that I, HARMAN A. M. HARRIS, of the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Feed-Mechanism for Sewing-Machines, of which the following is a specification:

My improvements relate to the class of feed mechanism termed "feeds-wheel," in which a serrated-edged wheel having an intermittent rotary motion feeds the fabric to the needle; and the object of my invention is to provide an improved friction-clutch for rotating the feed-wheel, as well as to afford means for compensating wear of the clutch.

In the accompanying drawing, Figure 1 is a view, partly in elevation and partly in section, of a feed-wheel with my improvements attached; Fig. 2, a section through the same at the line $x x$ of Fig. 1; Fig. 3, a view in perspective of a friction-clutch detached; and Fig. 4, a similar view of the compensating-lever.

The feed-wheel A has a serrated rim, a^1 , which feeds the fabric to the needle, and a hollow boss or hub, a^3 , through which a spindle, A' , secured to the table B in proper relation to the cloth-bed C, passes, the feed-wheel being loose upon the spindle A' . A center block, D, provided with a lever-arm, D' , and toe d , is journaled upon the hub a^3 . The lever-arm is operated by a cam, E, on a shaft, E' , properly connected with the driving mechanism of the machine, and is retracted after each stitch by the spring d^1 . The friction-clutches F, which transmit motion from the lever-arm to the feed-wheel, bear against the edges of notches d^2 in the center block D, and are provided with jaws, which embrace a flange, a^2 , on the feed-wheel. Springs f , attached to hooks f^1 on the center block D, serve to keep the clutches F in close contact with the flange a^2 , and carry them around with the lever-arm when it is retracted by the spring d^1 , during which period the wheel remains stationary.

As heretofore constructed a slot has been cut in the clutch, so as to form a jaw, substantially straight, or curved in correspondence

with the rim a^2 . This form of jaw operates successfully when new, but as its surfaces wear by use the slot becomes wider, and the clutch slips upon the flange and fails to carry the wheel round with the lever-arm. My improved clutch is constructed with a circular recess, f^2 , the center of which coincides with the center line of the flange a^2 , and a slot, f^3 , transverse to the circular recess f^2 , and wide enough to fit easily upon the flange a^2 . The wearing surfaces are thus formed at the opposite corners of the intersection of the recess and the slot, and as the clutch wears along the side of the recess the sides of the jaw remain equivalent, and it continues to clamp the flange of the wheel without tendency to slip thereon. A jaw thus formed, moreover, grips the flange more firmly than if provided with single bearing-surfaces only.

The friction-clutches when new are set with a limited amount of lead or advance of the radius which passes through their rear ends, and will be available until worn about a corresponding distance in rear thereof.

In order to utilize the entire circular jaw and compensate for wear thereon, I provide a compensating-lever, G. When the compensating-lever is employed its toe G' bears against the edge of the notch d^2 of the center block D, and the clutch F is formed with a threaded stem, f^4 , concentric with the recess f^2 , and is secured to the compensating-lever by a nut, f^5 , its free end resting in one of a series of grooves, g , formed in the compensating-lever. As the clutch wears the nut may be slackened and the clutch moved back into another groove, thereby correspondingly varying its inclination with a radial line, and compensating for the wear upon the circular jaw. By this means the whole surface of the jaw may be made available and the durability of the clutch consequently increased.

To prevent displacement of the clutches from the flange I provide a plate, H, which rests upon the spindle A' , and is held up against the clutches by the spring h , which serves to maintain the parts in proper relation without excessive friction.

I claim as my invention—

1. The combination, with a feed-wheel for sewing-machines, of a friction-clutch, the jaws of which are formed with a circular recess and a transverse slot, substantially as set forth.
2. The combination, with a feed-wheel for sewing-machines, of a friction-clutch and compensating-lever, substantially as set forth.

In testimony whereof I have hereunto subscribed my name.

H. A. M. HARRIS.

Witnesses:

J. SNOWDEN BELL,
JNO. H. HOGAN.