No. 880,974. PATENTED MAR. 3, 1908.

A. N. CLASSON.

OPERATING MECHANISM FOR MAGNETOS.

APPLICATION FILED OCT. 7, 1907.

Fig. 1.

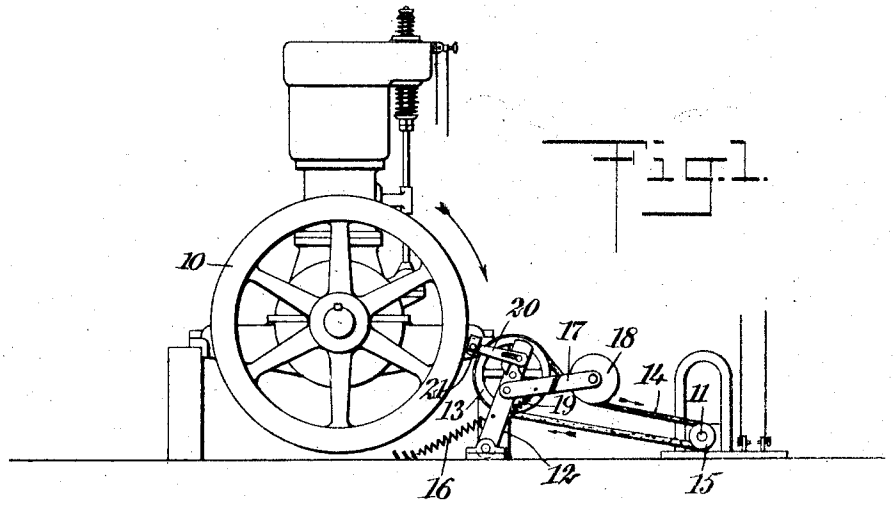
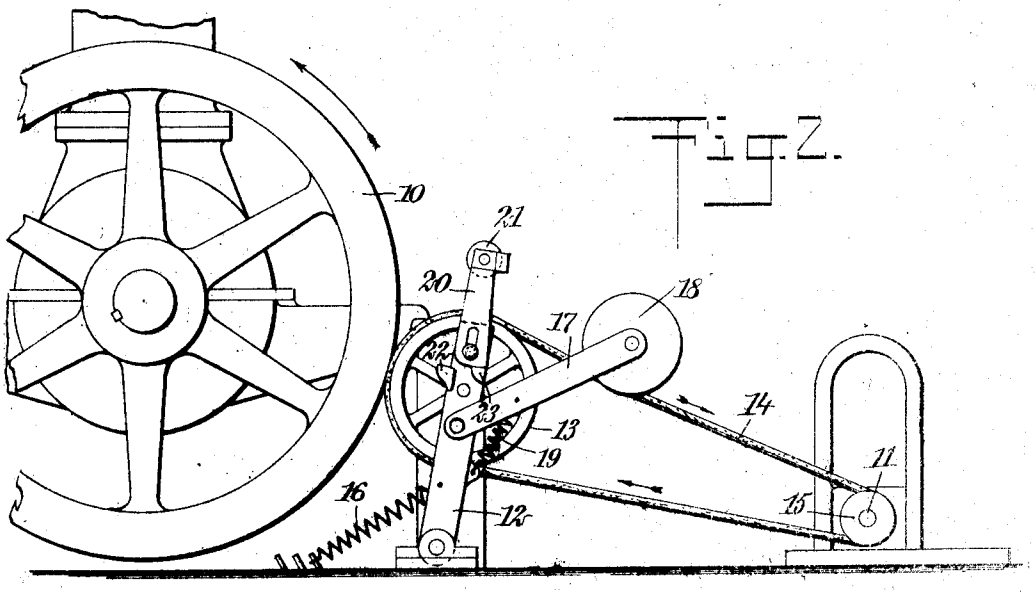


Fig. 2.



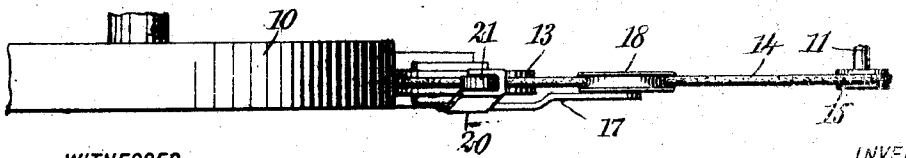


Fig. 3.

WITNESSES

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ALBERT N. CLASSON, OF RUTLAND TOWNSHIP, LASALLE COUNTY, ILLINOIS.

OPERATING MECHANISM FOR MAGNETOS.

No. 880,974. Specification of Letters Patent. Patented March 3, 1908.

Original application filed April 20, 1906, Serial No. 312,800. Divided and this application filed October 7, 1907. Serial No. 396,220.

To all whom it may concern:

Be it known that I, ALBERT N. CLASSON, a citizen of the United States, and a resident of Rutland township, in the county of Lasalle and State of Illinois, have invented a new and Improved Operating Mechanism for Magnetos, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in electrical igniting apparatus for internal combustion engines, and more particularly to the mechanism for driving the magneto by the engine, and continuously in the same direction irrespective of the direction of rotation of the engine. In starting an engine it is often necessary to give the crank shaft a few turns in the reverse direction but this ordinarily involves a rotation of the magneto also in the reverse direction. In my improved construction the magneto may be rotated in the desired direction while the engine is being reversed, and as soon as the engine starts its normal direction of rotation the mechanism automatically operates to continue the rotation of the magneto in the same direction as before.

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 figures, and in which

Figure 1 is a front elevation of a conventional internal combustion engine showing my invention applied thereto, and illustrating the parts in the positions they occupy when the engine is being reversed; Fig. 2 is an enlarged elevation similar to a portion of Fig. 1, but showing the parts in the position occupied during the normal running of the machine; and Fig. 3 is a top plan view of the operating mechanism.

My improved operating mechanism is adapted for use in connection with any type of internal combustion engine for operating the magneto of the igniting system, and is also adapted for use in operating other devices than magnetos.

The specific mechanism illustrated is that previously disclosed in my application, Serial No. 312,800, filed April 20, 1906, of which this application is a division.

The operating mechanism is mounted adjacent the engine or upon the engine frame and serves to transmit motion from the fly wheel 10 of the engine to the armature shaft 11 of the magneto. Adjacent the fly wheel there is mounted an arm 12 pivoted at one end and having a pulley 13 pivoted thereon and rotatable in the same plane as the drive wheel of the engine. A belt 14 engages with this pulley and with a pulley 15 on the magneto armature shaft, and the arm 12 is normally so disposed that this belt frictionally engages with the periphery of the drive wheel to be operated by the latter. The belt is held against the drive wheel with the desired amount of pressure by the action of a spring 16 engaging with the arm 12 and tending to move the latter toward the drive wheel. Pivoted on the arm 12 is a second arm 17 carrying a belt-tightening pulley 18 held in engagement with the belt by a coil spring 19. Thus, the arm 12 may be moved upon its pivot without loosening the belt or varying the tension thereof.

Pivoted to the arm 12, adjacent its outer end, I provide an extension arm 20 bearing a roller 21 lying in the same plane as the pulley 13. The arm 20 is pivoted above the center of the pulley and is of such a length that when said arm extends in the same general direction as the arm 12, the pulley 13 and roller 21 will be spaced apart as shown in Fig. 2, but when the arm 20 is moved to a position substantially at right angles to the arm 12, the roller 21 will engage with the outer surface of the belt and with the engine fly wheel 10 intermediate said drive wheel and the pulley 13, as shown in Fig. 1. The movement of the arm 20 is limited by suitable stops 22 and 23, so that the arm cannot swing to the right from the position shown in Fig. 2 and cannot descend to a lower position than that shown in Fig. 1.

In the operation of my improved mechanism the parts normally occupy the positions shown in Fig. 2, and the fly wheel 10 and the belt 14 travel in the directions indicated by the arrows, and the magneto is continuously rotated in one direction. Should the arm 20 accidentally fall to the position illustrated in Fig. 1, the upward movement of the adjacent surface of the fly wheel will keep the roller 21 from interfering with the frictional engagement of the belt 14 and the fly wheel.

If it is desirable to rotate the engine in the reverse direction either in starting or in the operation thereof, the arm 20 is lowered to the position shown in Fig. 1; the roller 21 wedges between the fly wheel and the pulley

13 and acts as an idler to cause them both to rotate in the same direction. The downward movement of the adjacent surface of the fly wheel retains the roller 21 in position so long as the rotation is kept up. If the direction of rotation of the engine is changed, the upward movement of the fly wheel automatically throws the roller 21 out of operation.

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

1. The combination of an internal combustion engine, an ignition system therefor including a magneto, gearing for driving said magneto, and an intermediate gear member capable of being set in action as a part of said gearing to continue the normal operation of the magneto upon the reversal of the engine.

2. The combination of a rotatable member, a magneto, gearing for rotating said magneto from said member, and an intermediate gear member movable into position to form a part of said gearing and automatically movable out of operation upon a change in the direction of rotation of the member.

3. The combination of a rotatable member, a magneto, and means for driving the magneto from the member, said means including a friction member adapted to engage with said member for driving the magneto when the member rotates in one direction and a spacing roller adapted for insertion between said members to transmit motion when the member rotates in the opposite direction.

4. The combination of an internal combustion engine, a magneto, and means for driving the magneto from the engine, said means comprising a friction pulley normally operated by frictional engagement with a rotating part of the engine, and a spacing roller adapted for insertion between said pulley and said rotating part for transmitting motion when the engine is rotated in the opposite direction.

5. The combination of an internal combustion engine, a magneto, and means for driving the magneto from the engine, said means comprising a pivoted arm, a pulley mounted thereon, a belt frictionally engaging with a rotating part of the engine and with a rotating part of said magneto, a second arm pivoted to the first-mentioned arm, and a spacing roller carried by said last-mentioned arm and movable into a position in engagement with said belt and said rotating part of the engine.

6. The combination of a driving member adapted for rotation in either direction, a driven member adapted for rotation in but one direction, and means for operatively connecting them for rotating the driven member in one direction, irrespective of the direction of rotation of said driving member, said means including a belt frictionally engaging with the driving member and with said driven member and a roller movable into position intermediate said belt and one of said members to transmit motion when said driving member is rotating in one direction, and movable to an inoperative position when said driving member is rotating in the other direction.

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

ALBERT N. CLASSON.

Witnesses:

F. T. JENKINS,

NELLIE J. HORTON.