W. T. SEARS.

GAPPED GEAR.

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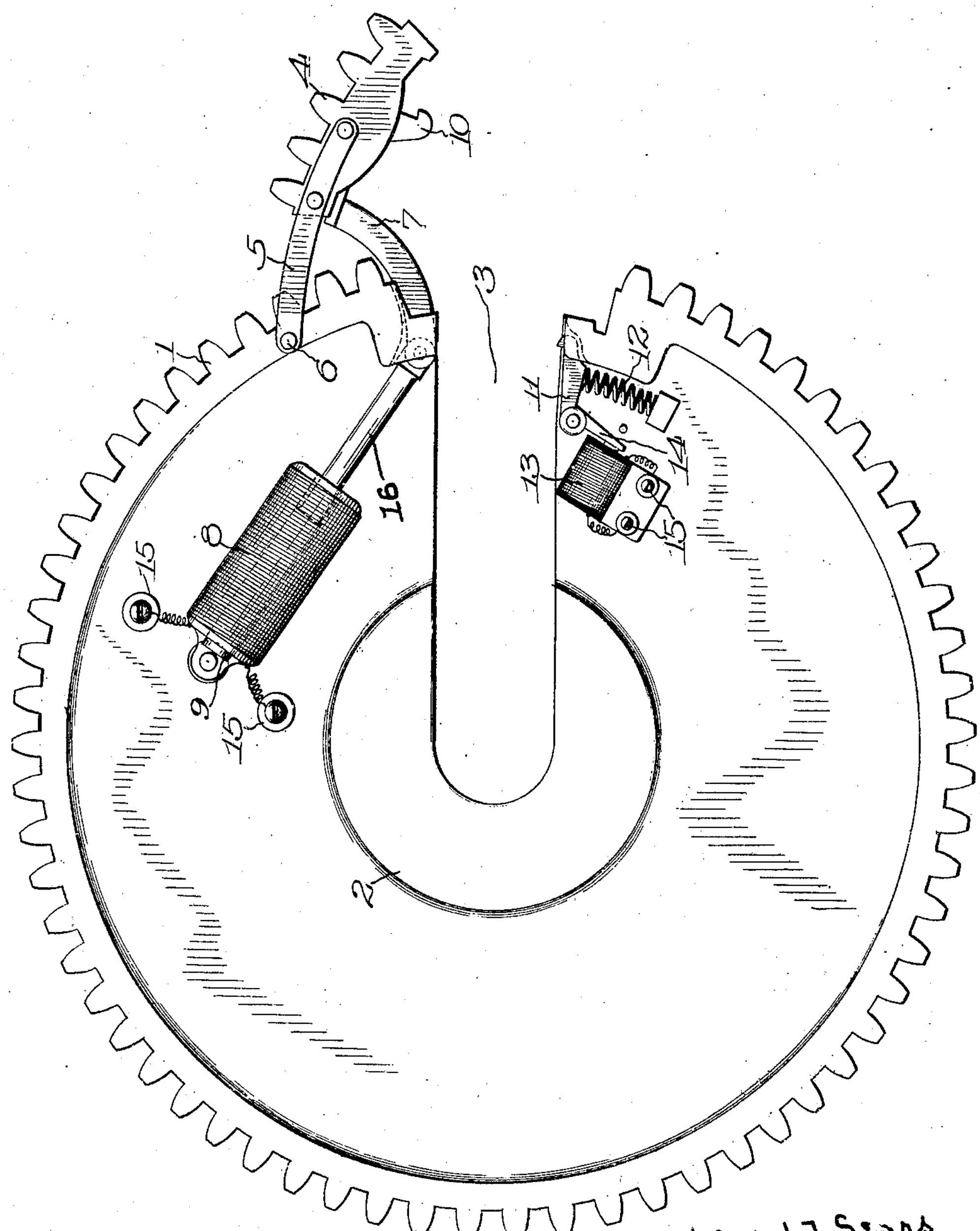

Witnesses:

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GAPPED GEAR.

972,259. Specification of Letters Patent. **Patented Oct. 11, 1910.**

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To all whom it may concern:

Be it known that I, WILLARD T. SEARS, a citizen of the United States, residing at Philadelphia, Philadelphia county, Pennsylvania, have invented certain new and useful Improvements in Gapped Gears, of which the following is a specification.

This invention relates to improvements in the patch-operating mechanism of gears provided with a radial gap extending from the center outwardly to and through the rim, the movable patch serving, when in active position, to bridge the gap in the rim.

The present invention will be readily understood from the following description taken in connection with the accompanying drawing which is a face elevation of a gapped gear exemplifying my invention:

In the drawing:—1, indicates the toothed rim of the gear: 2, the hub of the gear: 3, the gap in the gear: 4, the patch adapted to bridge the gap in the rim: 5, tail-bars projecting from one end of the patch and straddling the rim: 6, a pin uniting the tail-bars to the rim and forming the hinge-pivot for the patch: 7, a segmental arm projecting from the patch inwardly into the gear: 8, a solenoid having its heel pivoted to the gear: 9, the core of the solenoid, its inner end being connected to the segmental arm by means of rod 16: 10, a latch-hook projecting inwardly from the patch: 11, a latch pivoted to the gear at that side of the gap opposite the side to which the patch is hinged, this latch coöperating with latch-hook 10 when the body is in closed position: 12, a spring serving to press the latch to active position: 13, an electro-magnet carried by the gear, 14, the armature of the electro-magnet, the same being formed with or connected to the latch, the illustration showing the armature and the latch in the form of a bell-crank lever: and 15, electrical connectors to permit current to be conveyed to the solenoid and electro-magnet.

The device is illustrated as in condition when current is on and the patch in open position, and sustained in open position by the attractive force of the solenoid. If current be cut off then the patch closes by gravity and the latch automatically engages and holds it closed. When the gap is to be opened then current is to be again applied, whereupon the electro-magnet releases the latch, and the attractive force of the solenoid forces the patch to open position and sustains it there till current is cut off.

In the particular construction illustrated, the core 9 is connected with segmental arm 7 through the medium of rod 16 which is pivoted to the inner end of the segmental arm The connection is thus very simple and direct, but, of course, necessitates the rod being made of non-magnetic material.

I claim:—

1. A gapped gear comprising, a gear-body having a radial gap extending through its rim, a patch to bridge the gap in the rim, a hinge uniting the patch to the gear at one side of the gap, a solenoid carried by the gear, a core for the solenoid, a connection between the core and the patch to cause the endwise movement of the core to move the patch, a spring-latch carried by the gear at the side of the gap opposite the hinge side thereof and adapted to coöperate with the patch when the patch is in closed position, and an electro-magnet carried by the gear and arranged to release the latch, combined substantially as set forth.

2. A gapped gear comprising, a gear-body having a radial gap extending through its rim, a patch to bridge the gap in the rim, a hinge uniting the patch to the gear at that side of the gap which is uppermost when the gap is to be opened, a solenoid carried by the gear, a core for the solenoid, a connection between the core and the patch to cause the endwise movement of the core to move the patch, a spring-latch carried by the gear at the side of the gap opposite the hinge side thereof and adapted to coöperate with the patch when the patch is in closed position, and an electro-magnet carried by the gear and arranged to release the latch, combined substantially as set forth.

3. A gapped gear comprising, a gapped gear-body having a radial gap extending

through its rim, a patch to bridge the gap in the rim, a hinge uniting the patch to the gear at one side of the gap, a solenoid carried by the gear, a core for the solenoid, connections between the core and the patch to cause the endwise movement of the core to move the patch, and means for holding the patch normally in closed position, combined substantially as set forth.

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Witnesses:
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