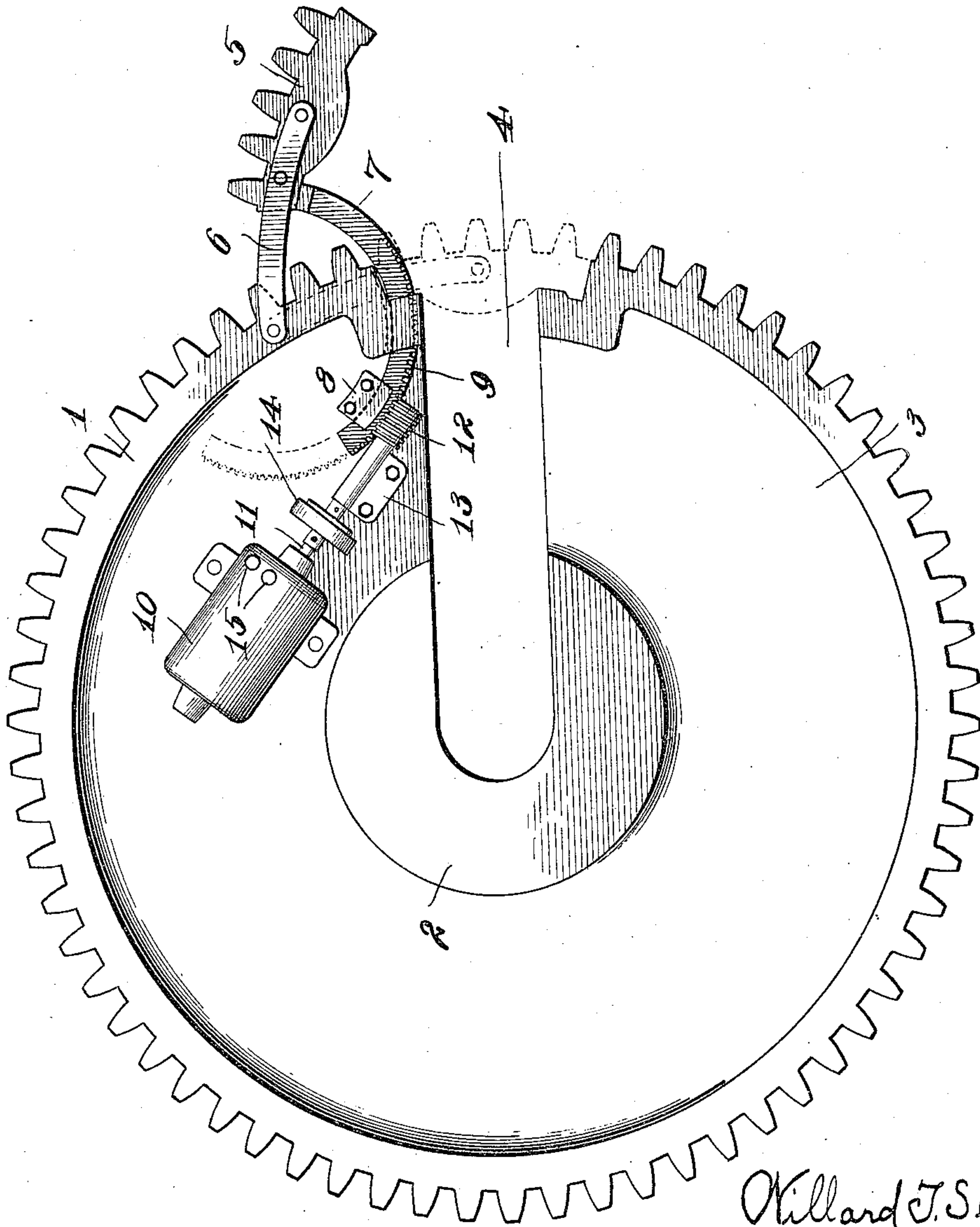


W. T. SEARS.
GAPPED GEAR.
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Patented Nov. 15, 1910.

975,722.



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GAPPED GEAR.

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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 pertains to improvements in gears having radial gaps leading from circumference to center to permit the passing of the shaft or axle radially into the gear. Such gears are used on certain types of car wheel lathes employed in turning car wheels while they are upon their axles.

The present invention relates to an improved system for placing and displacing the patch employed in completing the rim of the gear at the gap, and the invention will be readily understood from the following description taken in connection with the accompanying drawing which is a face view of a gapped gear exemplifying my present invention.

In the drawing:—1, indicates the toothed rim of the gear; 2, the gear hub; 3, the web of the gear or its equivalent arms if the gear be of armed instead of webbed type; 4, the gap, leading radially from the circumference to the center of the gear; 5, the patch adapted, when in place, to fill the gap at the rim and complete the toothed rim; 6, tail-bars extending from one end of the gap and straddling the rim at one side of the gap and fitted to the rim, so that the patch is hinged to the rim, in a not unusual manner; 7, a segmental arm reaching inwardly from the patch and inwardly beyond the gap in the rim; 8, a bearing to give support to the segmental arm at a point within the rim; 9, worm-teeth formed on the segmental arm; 10, a rotary motor, preferably electric, mounted on the gear; 11, the motor shaft; 12, a worm having threads engaging the teeth of the segmental arm; 13, a bearing for the worm shaft, disposed in line with the motor shaft; 14, a clutch coupling the worm-shaft and the motor shaft; and 15, typifying connectors through which current may be carried to the motor.

In the drawing the patch is out of the gap, leaving the gap open, and it is locked in open position by the engagement of the worm with the segmental arms current being applied to the motor, through connectors 15, causes the motor to turn in the proper

direction, the rotation of the worm causes the patch to be drawn home into the gap in the rim, in an obvious manner, and when the patch is clear home the slipping of friction-coupling 14 avoids the necessity for the instant stoppage of the motor.

When the gap is to be opened, then current is to be applied to the motor to turn the motor in reverse direction, whereupon the patch is forced out of the gap and supported as before, the friction-coupling slipping if necessary.

In the use of gapped gears in car wheel lathes, the gap requires to be opened and closed only when the gap is in one certain position, generally the position indicated in the drawing, and under such circumstances the connectors 15 for the current will occupy a definite position when the gap is to be opened or closed, thus avoiding the necessity for electrical connections to operate the motor when the gear is in varying angular positions.

I claim:

1. A gapped gear comprising, a gear-body having a gap extending through its rim and inwardly therefrom, a displaceable patch completing the rim at the gap, a motor carried by the gear, and transmitting connections between the motor and the patch to cause the motor to move the patch into and out of the gap in the rim, combined substantially as set forth.

2. A gapped gear comprising, a gear-body having a gap extending through its rim and inwardly therefrom, a displaceable patch hinged to and completing the rim at the gap, a motor carried by the gear, and transmitting connections between the motor and the patch to cause the motor to move the patch into and out of the gap in the rim, combined substantially as set forth.

3. A gapped gear comprising, a gear-body having a gap extending through its rim and inwardly therefrom, a displaceable patch completing the rim at the gap, a rotary motor carried by the gear, and transmitting connections between the motor and the patch to cause the motor to move the patch into and out of the gap in the rim, combined substantially as set forth.

4. A gapped gear comprising, a gear-body having a gap extending through its rim and inwardly therefrom, a displaceable patch completing the rim at the gap, an electric

motor carried by the gear, and transmitting connections between the motor and the patch to cause the motor to move the patch into and out of the gap in the rim, combined
5 substantially as set forth.

5. A gapped gear comprising, a gear-body having a gap extending through its rim and inwardly therefrom, a displaceable patch completing the rim at the gap, a motor car-
10 ried by the gear, transmitting connections between the motor and the patch to cause the motor to move the patch into and out of the gap in the rim, and a friction coupling included in said transmitting connections,
15 combined substantially as set forth.

6. A gapped gear comprising, a gear-body having a gap extending through its rim and inwardly therefrom, a patch hinged to and completing the rim at the gap, a rotary
20 motor carried by the gear, a worm connected with the motor shaft, and a toothed segmental arm projecting inwardly from the patch and engaging the worm, combined substantially as set forth.

7. A gapped gear comprising, a gear-body 25 having a gap extending through its rim and inwardly therefrom, a patch hinged to and completing the rim at the gap, a rotary motor carried by the gear, a worm connected with the motor shaft, a toothed segmental
30 arm projecting inwardly from the patch and engaging the worm, and a friction-coupling interposed between the motor and the worm, combined substantially as set forth.

8. A gapped gear comprising, a gear-body 35 having a gap extending through its rim and inwardly therefrom, a displaceable patch permanently supported by the gear and completing the rim at the gap, and worm mechanism carried by the gear and connect-
40 ed with the patch to move the patch into and out of the gap in the rim and to lock the patch in open or closed position, combined substantially as set forth.

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Witnesses:

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