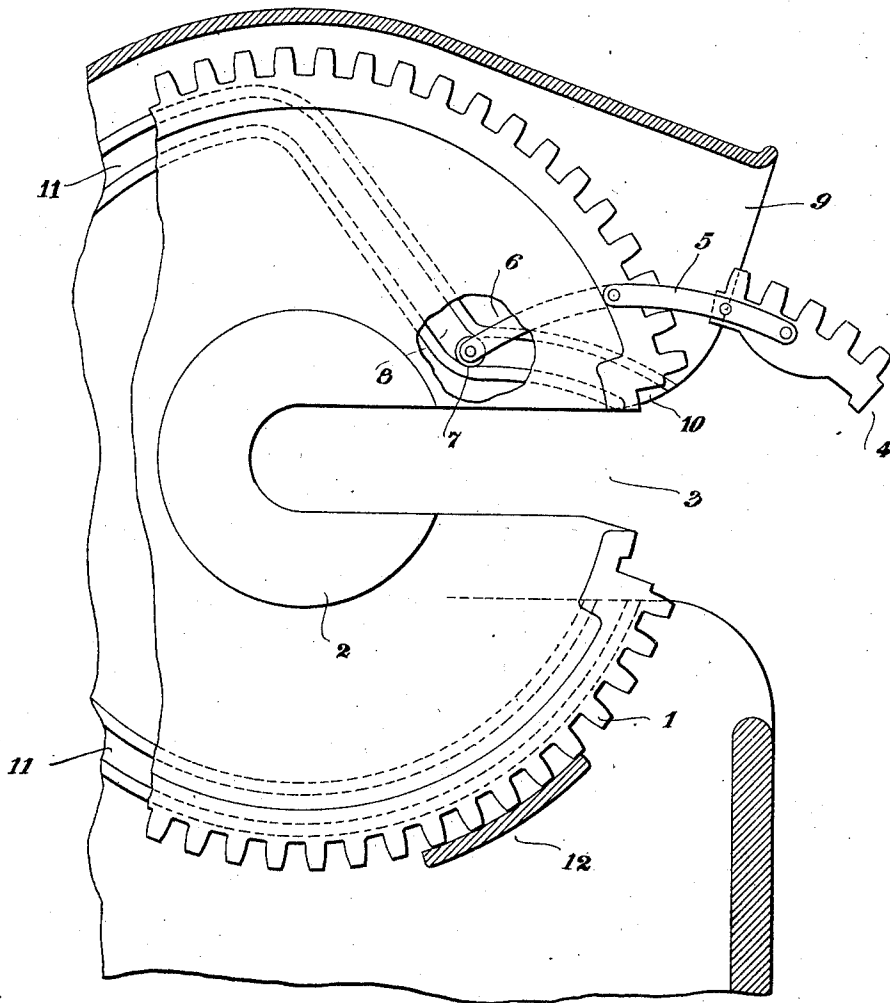


W. T. SEARS.
GAPPED GEAR.
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972,260.

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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 the patch-operating mechanism for a gear having a radial gap extending from the center of the gear out through the rim, the purpose of the patch being to bridge the gap in the rim.

Gapped gears are frequently employed on car wheel lathes designed to turn car wheels while fast on their axles, the work being driven by means of a radially gapped hollow spindle on the axle between the wheels, a gapped gear being formed with or secured to the spindle.

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 comprising my invention.

In the drawing:—1, indicates the rim of the gear: 2, the hub of the gear: 3, the gap: 4, the patch adapted, when in working position, to complete the rim across the gap: 5, tail-bars projecting from the patch and straddling the rim and pivoted to the rim at one side of the gap, whereby the patch becomes hinged to the rim: 6, an inward prolongation of one of the tail-bars, this prolongation forming a lever by means of which the patch may be oscillated upon its hinge-pivot: 7, a roller projecting out sideways from the end of lever 6: 8, a cam fixedly supported alongside the gear and having a groove adapted to be engaged by the roller 7, this cam surrounding the axis of the gear except where interrupted by the gap: 9, the gapped gear-guard usually employed in connection with gapped gears in car wheel lathes, one wall of this gear guard being in the present instance employed as a support for cam 8: 10, the throat of the cam groove, at the upper side of the gap: 11, a concentric portion of the cam-groove extending throughout the major portion of the length of the cam-groove, the cam proper being at a point somewhat above the throat and being carried inwardly from the main circle of the cam: and 12, a rigidly supported shoe a proper distance below the gap

and presenting a concave surface near the periphery of the gear.

The drawing shows the patch as in open position and supported in that position by the cam acting on the lever. When the gear is started into motion in non-clockwise direction the patch falls to place by gravity and bridges the gap, the form of the cam permitting the patch to go to closed position, and forcing it to do so in case gravity is not sufficient. After the patch has reached its closed position the roller travels around in the concentric portion of the groove of the cam, and when the roller passes upward through the gap in the cam it enters the throat of the cam-groove and the cam at once proceeds to move the patch into the open position shown, at which point the gear should, of course, be brought to rest.

While the roller is passing upward through the gap in the cam-groove the patch is unsupported and might tend to fall from the gap in the rim and put the roller in such position that it could not properly enter the throat of the cam groove. Such undesired action is prevented by the presence of shoe 12 which sustains the patch in closed position in the gap of the rim while the roller is moving up across the gap in the cam and until the roller has properly entered the throat of the cam groove.

When the gear is turning continuously in non-clockwise direction the gap in the rim will be automatically opened as the gap in the gear comes to the horizontal at the right of the axis of the gear, and will be automatically closed as the gear turns further, the opening and closing motion of the patch occurring at each turn of the gear. This continual opening and closing of the gap is neither useful nor harmful but it is deemed preferable, on the score of simplicity, to the removing of the cam-proper portion of the cam-groove so as to keep it out of action except when its effect is desired.

I claim:—

1. A gapped gear comprising, a gear-body having a gap extending from its center outwardly to and through its rim, a displaceable patch adapted to bridge the gap in the rim, a hinge uniting the patch to the gear, means for normally retaining the patch in the gap of the rim, a cam fixedly supported at one side of the gear, and connections between the patch and the cam whereby the

cam forces the patch to open position when the gap in the gear is in proper angular position, combined substantially as set forth.

2. A gapped gear comprising, a gear-body
5 having a gap extending from its center outwardly to and through its rim, a displaceable patch adapted to bridge the gap in the rim, a hinge uniting the patch to the gear, a cam fixedly supported at one side of the
10 gear, connections between the patch and the cam whereby the cam forces the patch to open position when the gap in the gear is in proper angular position, and a concentric
15 prolongation of the cam to serve in holding the patch to closed position, combined substantially as set forth.

3. A gapped gear comprising, a gear-body having a gap extending from its center outwardly to and through its rim, a displaceable patch adapted to bridge the gap in the
20 rim, a hinge uniting the patch to the gear, means for normally retaining the patch in the gap of the rim, a cam fixedly supported at one side of the gear, and a lever projecting inwardly from the patch and having a
25 projection to engage the cam so that the cam

will force the patch to open position when the gap in the gear is in proper angular position, combined substantially as set forth.

4. A gapped gear comprising, a gear-body
30 having a gap extending from its center outwardly to and through its rim, a displaceable patch adapted to bridge the gap in the rim, a hinge uniting the patch to the gear, a fixed gapped cam surrounding the axis of
35 the gear and having a concentric portion and a deflected portion, a lever projecting from the patch and engaging the cam in such manner that the deflected portion of the cam will force the patch to open position
40 when the gap in the gear is in proper angular position and close and retain the patch in closed position at other times, and a fixed shoe to be engaged by the patch while the
45 cam-engaging portion of the lever is crossing the gap in the cam, combined substantially as set forth.

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