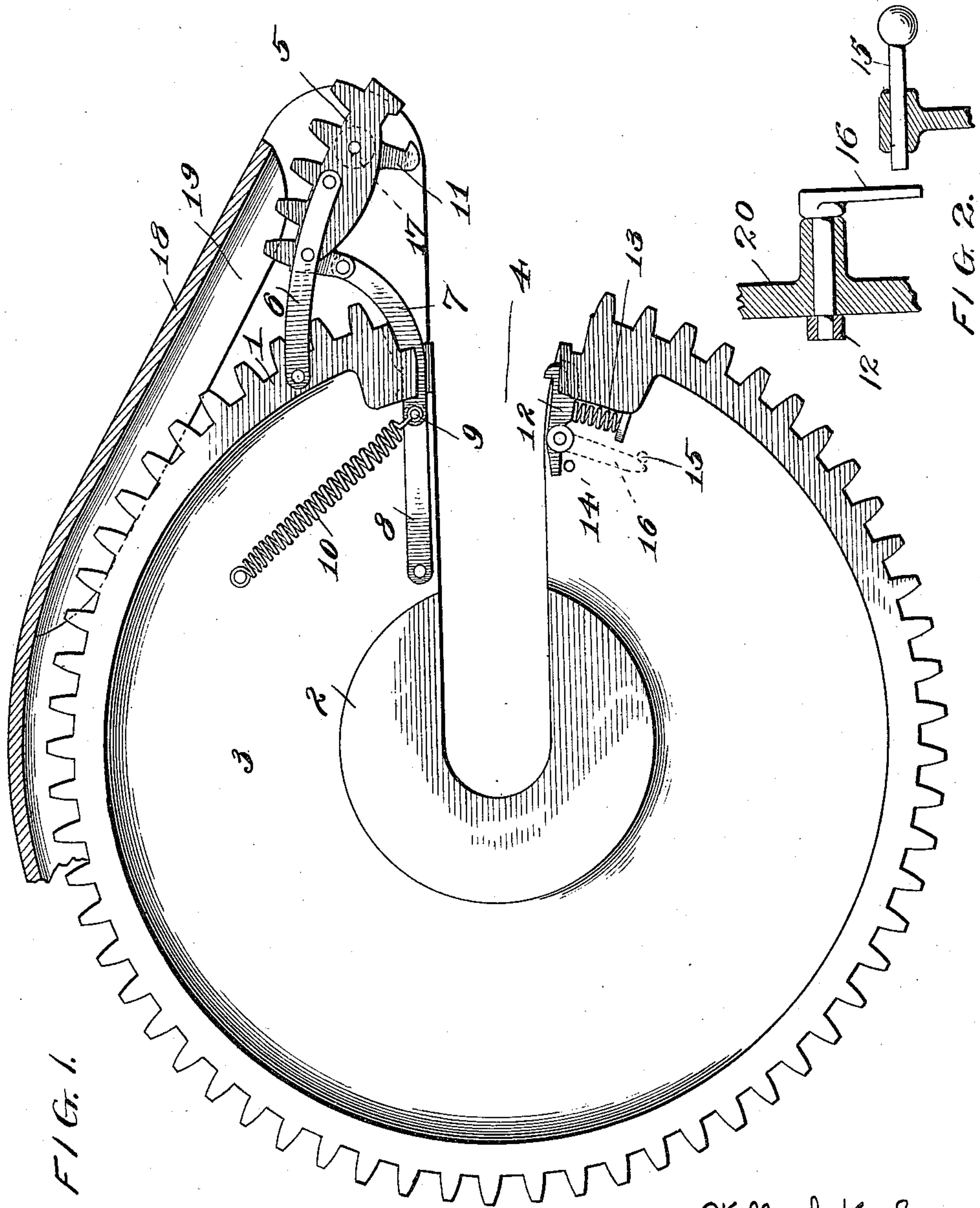


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GAPPED GEAR.  
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Patented Nov. 15, 1910.

975,723.



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Witnesses:

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Att'y



# UNITED STATES PATENT OFFICE.

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## GAPPED GEAR.

975,723.

Specification of Letters Patent.

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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 in which—

Figure 1 is a face view of a gapped gear exemplifying my present invention, and Fig. 2 a vertical section of the latch.

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 patch 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, an inwardly reaching toggle-bar having its outer end pivoted to the patch: 8, a toggle-bar connected with the first toggle bar and having its inner end pivoted to the web of the gear: 9, the central pivot of the toggle: 10, a spring tending to straighten the toggle and move the patch to outward open position and hold it there: 11, a latch-hook on the patch: 12, a latch pivoted to the gear in position to have the latch-hook engage it and to be held there when the latch is in closed position: 13, a spring urging the latch to latching position: 14, a stop to limit the movement of the latch to useful latching position: 15, a pin fixedly supported alongside the gear but adapted for movement endwise to and from the gear: 16, an arm carried by the latch and adapted, as the gear turns in counter-clockwise direc-

tion, to have its outer face engage pin 15, if the pin is shifted endwise into the path of the arm in such manner as to rock the latch to unlocking position: 17, a projection from one side of the patch and preferably taking the form of an anti-friction roller: 18, a gear guard extending over the gear: 19, a cam-rib fixedly supported alongside the gear in position to have roller 17 engage its under surface as the gear turns in counter-clockwise direction, the form of the inner surface of the cam-rib being such that after the gear starts to turn from the position shown in the drawing the roller will engage the cam-rib and the patch be moved to closed position: 20 the web of the gear: and 21 a fixed support, alongside the gear, for pin 15.

The drawing shows the gap horizontally, this being the position in which it is desired that the gap be open, and the patch is shown out of the gap and held in that position by spring 10.

When the gear starts to turn in counter-clockwise direction, roller 17 will shortly engage cam-rib 19 and the patch will be forced to closed position in the gap of the rim, and latch-hook 11 will engage latch 12 and the patch will be locked in place. When it is desired that the patch be opened then pin 15 is to be shifted endwise to be in the path of latch-arm 16 and, as the gap comes up to horizontal position, the latch-arm will strike the pin and the latch be released, whereupon spring 10 will promptly open the patch and the patch will stay open so long as the gear is at rest.

I claim:—

1. A gapped gear comprising, a gear-body having a gap extending through its rim and inwardly therefrom, a displaceable patch supported by the gear and adapted to bridge the gap in the rim, a spring carried by the gear and connected to the patch and adapted to put the patch into open position, a cam supported near the gear, a projection from the patch to engage the cam and cause the patch to be forced to closed position as the gear rotates, and latching mechanism to lock the patch in closed position, 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 supported by the gear and adapted to bridge the gap in the rim, a spring carried by the



gear and connected to the patch and adapted to put the patch into open position, a cam supported near the gear, a projection from the patch to engage the cam and cause  
5 the patch to be forced to closed position as the gear rotates, latching mechanism carried by the gear to lock the patch in closed position, and a projection disposed in the path of a part of the latching mechanism and  
10 adapted to disengage the latch as the gear rotates, 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  
15 hinged to the gear and adapted to bridge the gap in the rim, a toggle connected to the patch and extending inwardly therefrom and connected to the gear in such manner as to be in flexed condition when the patch  
20 is in closed position, a spring carried by the gear and connected with the toggle and tending to straighten it and to open the patch, a cam supported near the gear, a projection from the patch to engage the cam  
25 and cause the patch to be forced to closed position as the gear rotates, and latching

mechanism to lock the patch in closed position, combined substantially as set forth.

4. A gapped gear comprising, a gear-body having a gap extending through its rim and  
30 inwardly therefrom, a displaceable patch hinged to the gear and adapted to bridge the gap in the rim, a toggle connected to the patch and extending inwardly therefrom and connected to the gear in such manner  
35 as to be in flexed condition when the patch is in closed position a spring carried by the gear and connected with the toggle and tending to straighten it and to open the patch, a cam supported near the gear, a projection  
40 from the patch to engage the cam and cause the patch to be forced to closed position as the gear rotates, a latching mechanism to lock the patch in closed position, and a projection supported near the gear in the path  
45 of a part of the latching mechanism to release the latch as the gear rotates, combined substantially as set forth.

WILLARD T. SEARS.

Witnesses:

LUTIE HALE,  
GEO. JOHNSON.