No. 767,825. PATENTED AUG. 16, 1904.

M. McINTYRE.

GEAR WHEEL.

APPLICATION FILED MAR. 5, 1904.

NO MODEL.

Fig. 1.

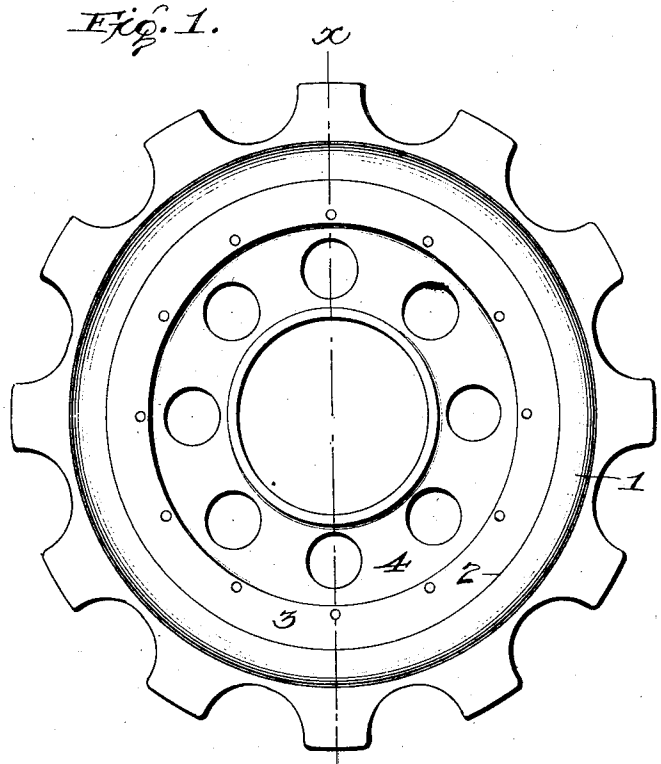


Fig. 2.

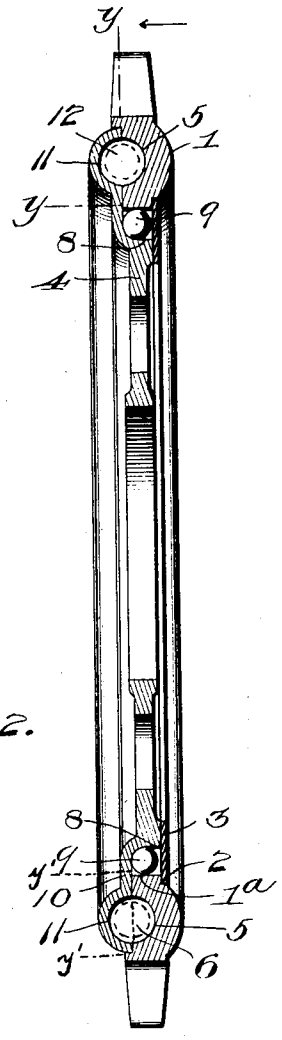
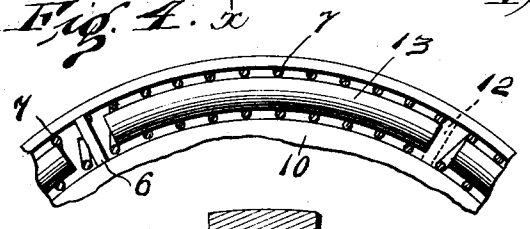


Fig. 4.



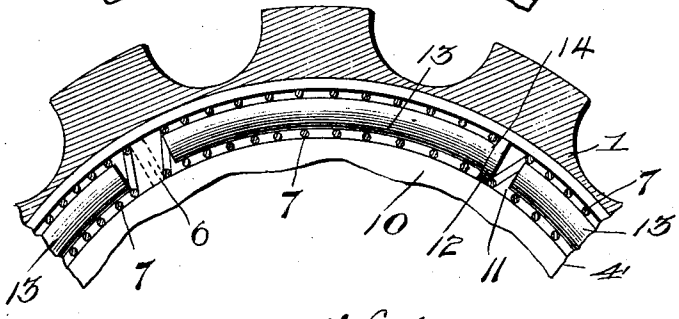


Fig. 3.

WITNESSES:

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No. 767,825.

Patented August 16, 1904.

UNITED STATES PATENT OFFICE.

MILES McINTYRE, OF CANYONVILLE, OREGON.

GEAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 767,825, dated August 16, 1904.

Application filed March 5, 1904. Serial No. 196,737. (No model.)

To all whom it may concern:

Be it known that I, MILES MCINTYRE, a citizen of the United States, residing at Canyonville, in the county of Douglas and State of Oregon, have invented certain new and useful Improvements in Gear-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to gear-wheels.

It has for its object to overcome all jerking motion from being transmitted from the driving to the driven mechanism.

The invention consists in a wheel comprising an outer and inner section having two sets of corresponding grooves to receive the coiled springs and ball-bearings, each section having lugs extending into the spring-grooves, against which lugs the ends of the springs abut and sections of arcuately-shaped tubing or rods placed within the springs to limit their compression, and thus prevent breakage and unnecessary wear.

The invention further consists in the construction and combination of parts hereinafter described, and specifically pointed out in the claims concluding this specification.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a side elevation of a wheel made in accordance with my invention, showing its outer surface provided with sprocket-teeth. Fig. 2 is a cross-sectional view taken centrally of Fig. 1 on the line $x\ x$. Fig. 3 is a sectional view on line $y\ y$ of Fig. 2, showing more particularly the lugs and stop-rods; and Fig. 4 is a broken sectional view on the line $y'\ y'$ of Fig. 2, showing more particularly the arrangement of the lugs.

The kind of gear-surface employed does not form any particular feature of my invention, as other gear-surfaces may be used to best suit its application, such as grooving or a surface for a belt or cogs.

Referring more particularly to the drawings, the outer section 1 has its inner surface 1^a a true circle and on one side thereof is provided with a groove 2 for the reception of the edge of the retaining-plate 3, fastened to the inner section 4. On the other side of the outer section a preferably semicircular groove 5 is formed extending around the entire circumference of the said section and having lugs 6 at suitable intervals for the springs 7 to abut against. The inner section 4 has an outer surface 8, corresponding to the inner surface 1^a of the outer section 1, and between these surfaces are placed bearing-balls 9. Said ball-bearings are held in place by an outward extension or flange 10 on the inner section, extending to one side of the bearing-socket and provided with a perfectly semicircular groove 11, supplementing the groove for the spring in the outer section and also provided with lugs 12. The other side of the bearing-chamber is closed, and the two sections of the wheel are held together by the ring-plate 3, which is fastened to the inner section after the several parts are in place. Each spring is placed with one end against one of the lugs on the inner section and the other end against one on the outer section, and internally of the spring is placed an arcuately-shaped rod or tube 13, which is shorter than the spring when the latter is extended and limits the compression of the spring by coming in contact with lugs on each section of the wheel. These rods or tubes may be fast to either section of the wheel, as at 14, or may be loose, the former, however, being preferable, as in that case they do not rattle as the wheel revolves.

It is obvious that the number and length of the springs and their corresponding limiting rods or tubes may be varied at will, and other changes may be made without departing from the spirit or sacrificing the advantages of my invention. I therefore do not limit myself to details shown and described herein, but reserve the right to make such changes as fairly fall within the scope of my invention.

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

1. A gear-wheel comprising an inner section and an outer section, said sections having sup-

plementary grooves, each provided with a lug, a coiled spring housed in said grooves, and having its end abutting against the lugs in the grooves in said sections, means for holding said sections together and means, arranged interiorly of said spring for limiting its compression.

2. A gear-wheel comprising an inner section and an outer section, said sections having supplementary grooves, each provided with a lug, a coiled spring housed in said grooves, and having its ends abutting against the lugs in the grooves in said sections, a rod arranged interiorly of said spring and adapted to limit its compression, and means for holding said sections together.

3. A gear-wheel comprising an inner section and an outer section, said sections having supplementary grooves, each provided with a lug, a coiled spring housed in said grooves, and having its end abutting against the lugs in the grooves in said sections, a rod fixed to the lug in the groove of one of said sections and arranged interiorly of said spring and adapted to limit its compression, and means for holding said sections together.

4. A gear-wheel, comprising an inner section and an outer section, the outer section having a groove, having a lug and conforming to the circumference of said section, the inner section having a flange on one side having a groove registering with, and supplementing, the groove in the outer section and also having a lug, a separable plate on the other side of said inner section to hold the two sections together, a coiled spring in said grooves and having one end abutting against the lug of each section, and means for limiting the compression of said spring.

5. A gear-wheel comprising an inner section and an outer section, the inner section having a detachable plate on one side and a flange, on the other side, having a groove therein, the outer section having a groove on one side for the outer edge of said plate and a groove on the other side registering with, and supplementing, the groove in the flange of the inner section, lugs fixed in each of said supplementary grooves, a coiled spring, in said grooves, having its ends abutting against said lugs and ball-bearings arranged between said outer and inner sections and the flange and plate of said inner section.

6. A gear-wheel comprising an inner section and an outer section, the inner section having a detachable plate on one side and a flange, on the other side, having a groove therein, the outer section having a groove on one side for the outer edge of said plate and a groove on the other side registering with, and supplementing, the grooves in the flange of the inner section, lugs fixed in each of said supplementary grooves, a coiled spring, in said grooves, having its ends abutting against said lugs, means for limiting the compression of said spring, and bearing-balls arranged between said outer and inner sections and the flange and plate of said inner section.

In testimony whereof I affix my signature in presence of two witnesses.

MILES McINTYRE.

Witnesses:
J. R. PICKETT,
WM. R. STOCK.