

(No Model.)

F. SAXON.
COG WHEEL.

No. 487,129.

Patented Nov. 29, 1892.

Fig. 1.

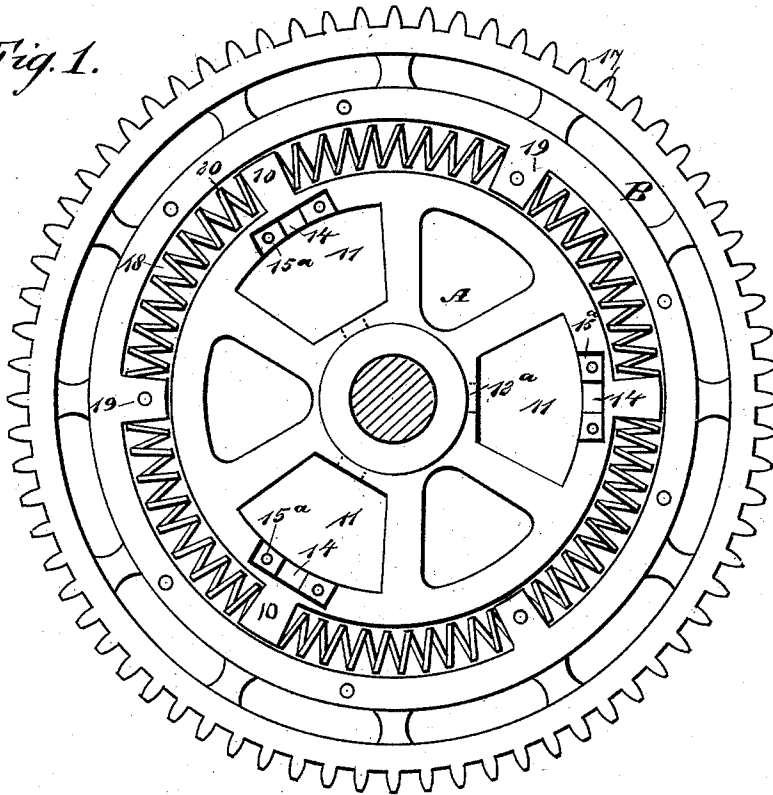


Fig. 2.

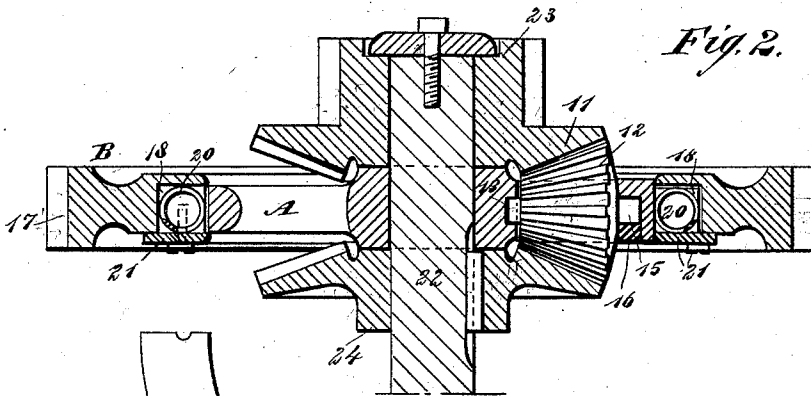
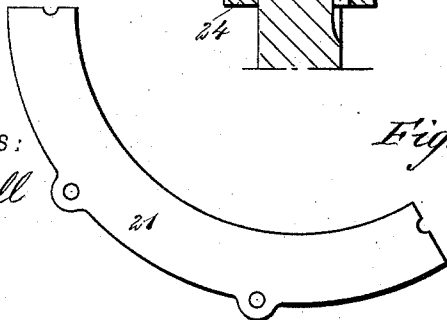


Fig. 3.

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FRANK SAXON, OF WORTHINGTON, MINNESOTA.

COG-WHEEL.

SPECIFICATION forming part of Letters Patent No. 487,129, dated November 29, 1892.

Application filed March 22, 1892. Serial No. 425,940. (No model.)

To all whom it may concern:

Be it known that I, FRANK SAXON, of Worthington, in the county of Nobles and State of Minnesota, have invented a new and useful Improvement in Cog-Wheels, of which the following is a full, clear, and exact description.

My invention relates to an improvement in cog-wheels, and has for its object to construct either a plain or a compensating cog-wheel in two sections having cushions intervening between them, so that when the wheel is employed to communicate motion suddenly to any portion of the machinery it will not impart to the said parts any sudden or injurious shock; and a further object of the invention is to provide a compensating cog-wheel having the peculiarities above described and especially adapted for use in connection with agricultural engines or road-engines.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of a cog-wheel constructed in accordance with my invention, the cover-plate for the spring-receiving chambers being removed. Fig. 2 is a horizontal section through a compensating cog-wheel embodying the features of the invention, and Fig. 3 is a segment of the cover-plate for the spring-chambers.

The cog-wheel is constructed, primarily, in two sections, an inner section A and an outer section B, one section being peripherally fitted to the other. Upon the periphery of the inner section, which is adapted to be secured to the shaft or to run loosely thereon, a series of spurs or lugs 10 is formed at predetermined intervals apart, and when the cog is to be used as a compensating one this inner section is provided with a series of openings 11, adapted to receive pinions 12, as shown in Fig. 2. When the pinions are to be employed in connection with the cog-wheel, in the base-wall of each opening 11 a socket 12^a is produced, adapted to receive the inner trunnion 13 of

the cog-wheel, and a second socket 14 is produced in one face of the inner section at its periphery adjacent to and in the outer walls of the openings 11. Around this socket a countersink 15^a is made, and in the sockets 14 the outer trunnions 15 of the pinions are located. The countersinks 15^a are adapted to receive blocks 16, which confine the outer trunnions of the pinions in their sockets. The pinions shown in Fig. 2 are beveled pinions, as these are the kind ordinarily employed.

The section B of the wheel upon its periphery is provided with cogs 17, while in one side at the inner wall a series of chambers 18 is produced, the said chambers being divided by lug-like partitions 19. When the two sections are placed in positive contact—that is to say, when the inner wall of the outer section is brought into engagement with the periphery of the inner section of the wheel—the lugs 10 upon the inner section will extend one within each chamber 18 of the outer section, across the central portion thereof, as shown in Fig. 1, the lugs 10 of the inner section being so formed upon the periphery of that section that they will readily enter the chambers. Thus between each two lugs or partitions 19 of the outer section a lug 10 of the inner section is located, and between each lug-like partition of the outer section and each lug 10 of the inner section of the wheel a spring 20 is located in the chambers 18, a sufficient number of springs being employed to fill those portions of the chambers not filled by the lugs. Thus it will be observed that a spring or cushion connection is made between the sections of the wheel and that when the outer section is turned it will not move the inner section until the springs are compressed in the direction of the required movement and to their full extent, and even at that time force will be exerted by the outer section through the medium of the cushion and no sudden shock or jar will be imparted to the shaft with which the wheel is connected or to a meshing wheel. The springs are held in position in the chambers 18 by cover-plates 21, bolted or otherwise secured to the lug-like partitions 19 of the outer section and to the surface of said section near the outer wall of the chambers, as shown at both sides of Fig. 2.

When the wheel is employed as a compensating one, carrying the pinions 12, it may be loosely mounted upon a shaft 22, as shown in Fig. 2, and at one side of the wheel a beveled gear 23 may be loosely mounted upon the shaft, the said beveled gear meshing with the pinions 12 and being driven from any convenient gear or pinion, while at the opposite side of the wheel a beveled gear 24, also meshing with the pinions 12, is secured upon the shaft.

In the operation of such a wheel friction exerted upon the loosely-mounted beveled gear 23 when the cushioned cog-wheel is revolved causes the pinions 12 carried thereby to be also revolved by contact with the loosely-mounted pinion 23, and the pinions will convey motion to the gear 24, secured upon the shaft, and will revolve the latter.

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

1. A compensating cog-wheel comprising an outer section provided with a plurality of chambers, an inner section provided with pinions mounted therein and with lugs projecting into the chambers of the outer section,

and springs in the chambers of the said outer sections between the partitions thereof and the lugs of the inner section, substantially as described.

2. A compensating cog-wheel consisting of an inner section and an outer section, the inner wall of the outer section engaging with the peripheral surface of the inner section, the outer section at its inner wall being provided with chambers separated by partitions, the inner section being provided with lugs entering the chambers of the outer section between their partitions, the inner section being also provided with openings in which pinions are journaled, springs located in the chambers of the outer section, each having bearing against a partition of the chambers and the lug of the inner section contained therein, and a cover-plate adapted to conceal the springs, said plate being attached to the outer section of the wheel, substantially as and for the purpose set forth.

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Witnesses:

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