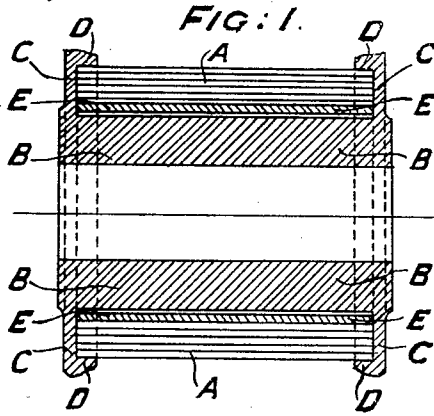
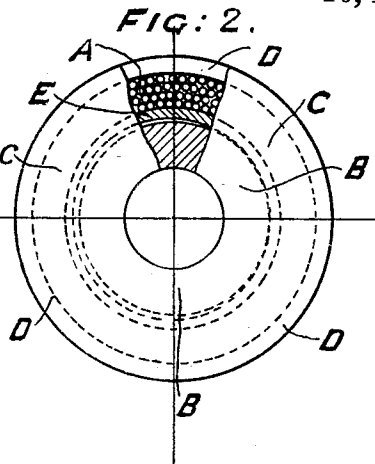
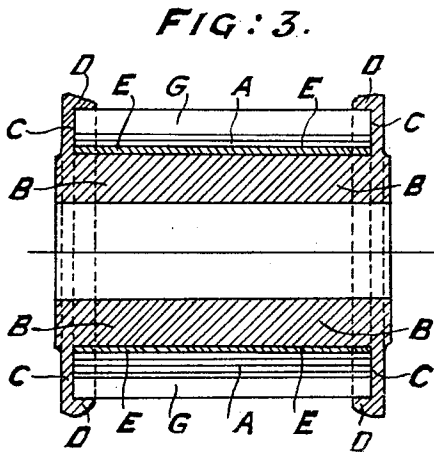
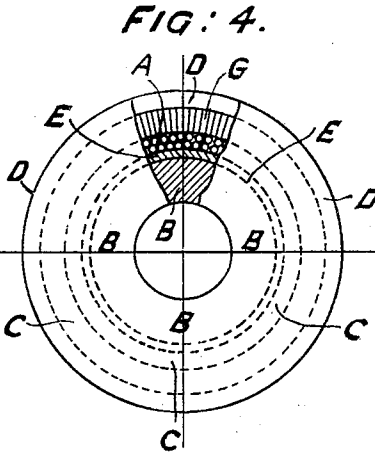
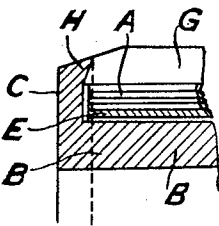
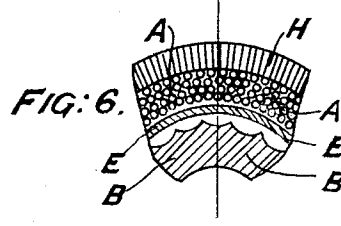
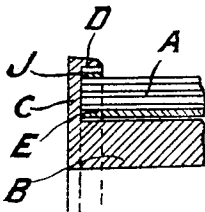
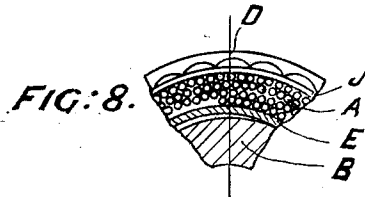


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GEARING.

APPLICATION FILED MAY 21, 1920.

1,403,430.

Patented Jan. 10, 1922.



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GEARING.

1,403,430.

Specification of Letters Patent.

Patented Jan. 10, 1922.

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To all whom it may concern:

Be it known that I, ALEXANDER FRASER MACKAY, a subject of the King of Great Britain and Ireland, and a resident of Glasgow, Scotland, have invented new and useful Improvements in a Novel Form of Gearing, of which the following is the specification.

The invention has for its object a novel form of gearing a member of which is more particularly adapted to engage with a toothed member of substantially ordinary form. The improved form of gearing is simple in construction and silent in operation, and while, not offering the absolute ratio of speeds afforded by ordinary toothed gearing, is substantially positive in action.

The engaging members of a wheel (or a rack) made according to the invention consist of a series of coacting integers consisting of comparatively thin strips or blades set radially on their edges about the periphery of the wheel (or equivalently in a rack) and transversely to it. The coacting integers are arranged closely adjacent to one another and rest at their inner edges upon a resilient member extending around the periphery of the wheel in such wise that an inward pressure on one blade is transmitted by it as an outward pressure on the other blades. The ends of the blades are supported in place by any convenient form of housing, limiting their outwards and endwise movements.

Alternatively, instead of thin strips or blades a number of rollers of comparatively small diameter may be used. These rollers are arranged in a channel formed about the periphery of the wheel with their axes parallel with the axis of the wheel. The channel is of a width at least equal to the width of the roller and of such radial depth as to accommodate radially two or more rollers—that is to say, there is about the periphery of the wheel an annular layer of rollers preferably at least two deep. The rollers are retained by inturned lips at the peripheries of the side walls. The retaining edges of these lips may be cylindrical, or may be waved, or of shallow corrugated form.

Again, combinations of strips and rollers may be used.

The resilient member or body upon which the rollers or the inner ends of the strips

rest consists of an annulus of rubber or other yielding or resilient material.

In operation, and when in engagement with a wheel having teeth of ordinary form, the blades or rollers are successively pressed in practically to the contour of the spaces between the teeth of the engaging wheel, and thus there are formed as the wheels revolve in effect teeth conforming exactly to those of the engaging wheel and effectively taking the drive.

A series of four illustrative examples of the carrying out of the invention is shown on an accompanying sheet of explanatory drawings, Figures 1 and 2 being respectively a longitudinal sectional elevation and a sectional end elevation of one example, Figures 3 and 4 like views of the second example, Figures 5 and 6 like views in part of the third example and Figures 7 and 8 like views in part of the fourth example.

In the example shown in Figures 1 and 2 a series A of rollers of comparatively small diameter are arranged about the periphery of a wheel hub B having flanges C at its ends, with inturned lips D thereon which retain the rollers which rest upon an annulus E of rubber or other resilient material around the hub. The rollers are worked into position and the few final ones are inserted through an aperture (not shown) in one of the flanges C which is finally closed by a plug.

In the example shown in Figures 3 and 4 a series A of rollers and also a series G of comparatively thin strips or blades set radially are used, the strips or blades resting upon the rollers which in turn rest upon the resilient annulus E. The parts are retained in position by inturned lips D on the flanges C as before.

The example shown in Figures 5 and 6 only differs from that last described in that the strips G are angled at their ends and are retained by counterpart angled faces H on the flanges C, the shroud-like obstruction at the ends of the wheel is thus avoided. Also, the surface of the hub B is corrugated longitudinally.

In the example shown in Figures 7 and 8 the inner faces of the inturned lips D of the flanges C are corrugated and there are inserted between them and the rollers A

rings J of rubber or other resilient material.

It is to be understood that in the claims the term "coacting integers" covers such in the form of strips or blades or in the form of their equivalents, that is to say, rollers or a combination of strips or blades and rollers.

What I claim is:—

1. A form of gearing consisting of an element such as a wheel hub, a series of co-acting integers, about the periphery thereof and normally affording a substantially continuous cylindrical surface, a resilient bed upon which the coacting integers rest, and means for retaining the parts in position

with freedom of displacement, however, to accommodate the teeth of a meshing gear wheel, as set forth.

2. In the form of gearing forming the subject-matter of claim 1 hereof, intumed lips or flanges on the hub, the inner faces of which are waved or corrugated and resilient rings between these faces and the adjacent faces of the coacting integers, as set forth.

In testimony whereof I have signed my name to this specification.

ALEXANDER FRASER MACKAY.