

G. L. S. KRONFELD.
 DRIVING CONNECTION.
 APPLICATION FILED DEC. 14, 1916.

1,347,907.

Patented July 27, 1920.

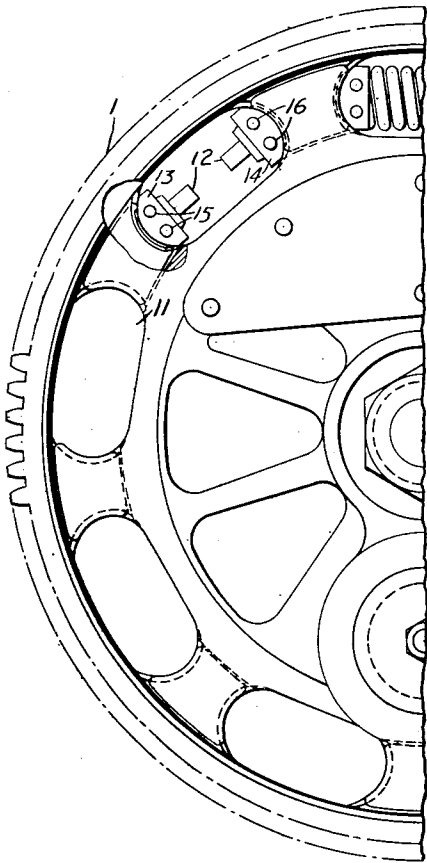


Fig. 1.

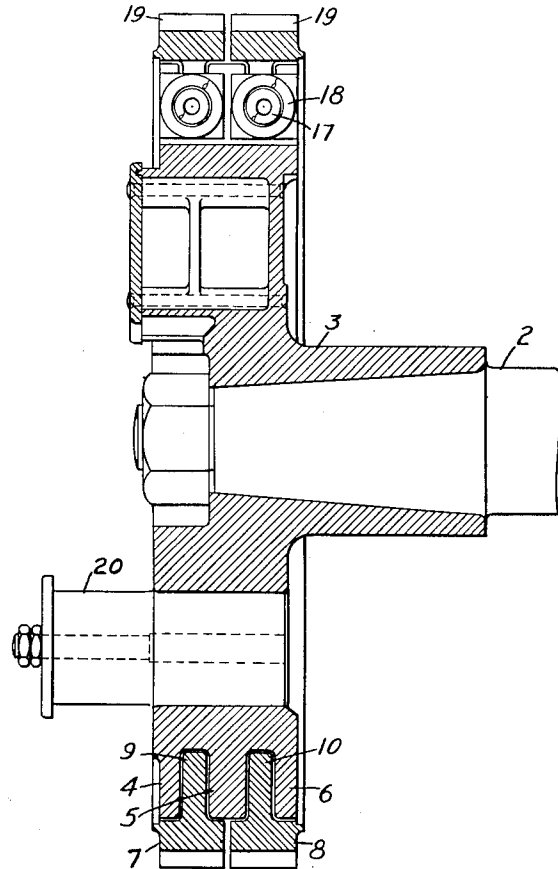


Fig. 2.

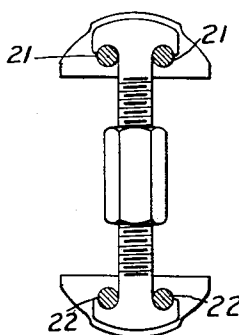


Fig. 4.

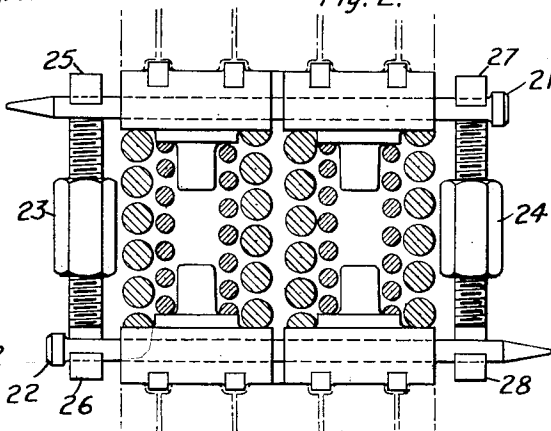


Fig. 3.

WITNESSES:
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GUSTAV L. S. KRONFELD, OF WILKINSBURG, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

DRIVING CONNECTION.

1,347,907.

Specification of Letters Patent. Patented July 27, 1920.

Application filed December 14, 1916. Serial No. 136,885.

To all whom it may concern:

Be it known that I, GUSTAV L. S. KRONFELD, a subject of the King of England, and a resident of Wilkesburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Driving Connections, of which the following is a specification.

My invention relates to resilient gear wheels and particularly to gear wheels which are provided with removable resilient connectors between the driving and driven parts thereof.

One object of my invention is to provide a gear wheel of the above-indicated character which shall be simple and rugged in construction and adapted to be assembled and dismantled with facility.

Another object of my invention is to provide a gear wheel of the above-indicated character, having resilient connectors between the driving and the driven parts, with means which shall enable the resilient connectors to be removed for repair with ease and facility.

A further object of my invention is to provide a resilient gear wheel with means for mounting and dismantling the resilient connectors which shall be simple in construction and, in no way, interfere with the operation of the gear wheel when the connectors are in position.

More specifically, my invention embodies an improved means for installing or removing the spring connectors of a gear wheel provided with a hub member having radial projections extending therefrom, a rim member having radial projections and pockets for said connectors formed between said projections. The means for removing the spring connectors embodies a plurality of pins which are inserted in holes extending through the spring seats of said connectors and turn buckles which engage the pins projecting from said spring seats. Thus, by operating the turn buckles, the spring seats are drawn together and the springs compressed that are contained therebetween, whereby the spring connectors may be removed from, or inserted in, the pockets formed in the resilient gear wheel.

In gear wheels of the resilient type, which are now in service, the means for removing the spring connectors from between the hub and rim members comprises lugs which pro-

ject from the spring seats beyond the face of the gear wheel or a special attachment for effecting the removal of the spring connectors which necessitates the cutting away of a portion of the bearings for the spring seats of the connectors.

In a gear wheel constructed in accordance with my invention, the means for removing the connectors from the gear wheel may be completely removed from the gear wheel when the connectors are in position, and the bearings for the spring seats are in no way altered or weakened.

In the accompanying drawing illustrating my invention, Figure 1 is a side elevational view of a portion of a gear wheel constructed in accordance with my invention; Fig. 2 is a sectional view of the gear wheel illustrated in Fig. 1; Fig. 3 is an elevational view of two spring connectors and the means for removing the same from the gear wheel; and Fig. 4 is an end view of the parts illustrated in Fig. 3.

Referring to the accompanying drawing, a gear wheel 1 mounted on a shaft 2 embodies a hub member 3, having a plurality of radial projections 4, 5 and 6 extending therefrom, and two rim members 7 and 8, which are provided with radial projections 9 and 10 that register with the radial projections 4, 5 and 6, extend from the hub member 3. Openings 11 are thus formed through the gear wheel, in each of which are inserted two spring connectors 12. Each of the spring connectors embodies spring seats 13 and 14 having holes 15 and 16 extending therethrough for a purpose to be described later and two helical springs 17 and 18 which are disposed between the two spring seats 13 and 14. The rim members 7 and 8 are provided with a plurality of gear teeth 19 and the hub member is provided with a crank pin 20.

The foregoing description of hub and rim members and their resilient connecting devices is believed to be sufficiently clear for the purposes of the present case but, reference may be had, for a more complete description of the gear wheel illustrated in this application to Patent No. 1,258,639, issued March 5, 1918, to George M. Eaton and assigned to the Westinghouse Electric & Manufacturing Company.

In case it is desired to dismantle the gear wheel and to remove the spring connectors

from their positions between the hub and rim members, pins 21 and 22 are driven through the holes 15 and 16 of the spring seats to insure proper alinement of the same and to constitute a portion of the means whereby removal of the spring connectors from the gear wheel may be effected. When the spring seats have been properly alined relatively to each other by means of the pins 21 and 22, two turn buckles 23 and 24, having end portions 25 and 26 and 27 and 28, are connected to the end portions of the pins 21 and 22 which project beyond the connectors 12. The turn buckles 23 and 24 may then be operated to draw the spring seats 13 and 14 together and compress the springs 17 and 18, in order that ready removal of the connectors 12 from the pocket 11 formed between the radial projections of the hub and rim members may be effected.

In assembling the spring connectors in position in the gear wheel, the spring seats of two connectors are first alined by means of the pins 21 and 22 and then the springs 17 and 18, disposed between the spring seats, are compressed by means of the turn buckles 23 and 24 until the connectors may be freely disposed within the pocket 11 between the hub and rim members. When the connectors are in proper position between the hub and rim members, the turn buckles 23 and 24 are removed and then the pins 22 and 23 withdrawn from the holes 15 and 16 in the spring seats 13 and 14.

Variations in the structure and arrangement and location of parts may be made without departing from the spirit and scope of my invention, and such modifications are intended to be covered by the appended claims.

I claim as my invention:

1. In a resilient gear wheel having a hub and a rim member, the combination with springs and spring seats interposed between said members, said seats having holes therethrough, of a plurality of pins projected through said holes in said spring seats, and turn buckles adapted to engage said pins, when in position, to compress said springs.

2. In a resilient gear wheel having a hub and a rim member, the combination with springs and spring seats interposed between said members, said spring seats having transverse holes extending therethrough, of a plurality of pins projected through the holes in said spring seats, and turn buckles adapted to engage said pins, when in position, to compress said springs, whereby the springs and spring seats may be mounted in or dismounted from, position between said hub and rim members.

3. In a resilient gear wheel having hub

and rim members, the combination with springs and spring seats interposed between said members, said springs and spring seats being disposed in two adjacent rows and the spring seats having transverse holes extending therethrough, of a plurality of pins adapted to be projected through the holes in said spring seats for alining the spring seats in the various rows, and turn buckles adapted to engage said pins, when in position, whereby the springs may be compressed.

4. In a resilient gear wheel, the combination with spring seats and springs disposed therebetween, said spring seats having transverse holes extending therethrough, of a plurality of pins adapted to be projected through the holes in said spring seats, and turn buckles for engaging said pins, when in position, to compress said springs, whereby the springs and spring seats may be mounted in pockets in the gear wheel.

5. In a resilient gear wheel, the combination with spring seats and springs disposed therebetween, each of said spring seats having a plurality of transverse holes extending therethrough, of a plurality of pins adapted to project through the holes in the spring seats, and turn buckles engaging said pins for simultaneously compressing a number of said springs, whereby a plurality of said springs and spring seats may be inserted in pockets in the gear wheel.

6. In a gear wheel, the combination with two spring seats and a spring inserted therebetween, said spring seats having holes extending transversely therethrough, of a plurality of pins adapted to be inserted in the holes extending through said spring seats, and turn buckles having end portions which are adapted to fit over said pins, whereby the spring may be compressed and inserted in position.

7. In a resilient gear wheel, the combination with two spring seats and a spring inserted therebetween, each of said spring seats having a plurality of holes extending transversely therethrough, of a plurality of pins inserted in the holes in said spring seats and projecting from the sides thereof, and turn buckles having end portions which engage said projecting pins, whereby the springs may be compressed and the spring and spring seats inserted in the gear wheel.

8. In a resilient gear wheel, the combination with a hub member having radial projections extending therefrom, a rim member having projections extending therefrom which register with said hub projections, of springs and spring seats inserted in the openings between said projections, a plurality of pins adapted to be projected through said spring seats, and turn buckles for engaging said pins to compress the

springs and remove the springs and the spring seats from engagement with said hub and rim members.

9. In a resilient gear wheel having a hub and a rear member, and projections extending from said members and registering with each other so as to form pockets in said gear, the combination with springs and spring seats adapted to be united in said pockets to resiliently connect said hub and rim members, of means for connecting said spring seats together and for compressing said springs, whereby the springs and the spring seats may be removed from the pockets in the gear wheel.

10. In a resilient gear wheel having a hub and a rim member and projections extending from said members and registering with each other so as to form pockets in the gear wheel, the combination with springs and spring seats adapted to be inserted in said pockets for resiliently joining said hub and rim members, of means comprising removable pins projecting from said spring seats, and turn buckles engaging said pins for compressing said springs, whereby the springs and the spring seats may be removed from the pockets in the gear wheel.

11. In a resilient driving connection, the combination with a hub member, of a rim

member, and devices for resiliently connecting said members, each device comprising a pair of spring seats and a spring therebetween, said seats having holes extending therethrough, removable pins adapted to extend through said holes and to project from the sides of said seats, whereby the projecting ends of said pins may be engaged by a suitable tool for removing and replacing said devices.

12. In a resilient driving connection, the combination with a hub member, a rim member and devices for resiliently connecting said members, each device comprising a pair of spring seats and a spring therebetween, said seats having a plurality of openings therethrough, of means for removing said resilient connecting devices comprising pins adapted to be inserted in the openings in said spring seats and to project laterally therefrom, and turnbuckles adapted to be connected to the projecting ends of said pins to draw the said ends toward each other and compress the spring intermediate the seats and thereby permit removing and replacing the said springs and spring seats.

In testimony whereof, I have hereunto subscribed my name this 29th day of November 1916.

GUSTAV L. S. KRONFELD.