J. C. HARRIS.

ADJUSTABLE COUPLING.

APPLICATION FILED FEB. 13, 1909.

989,779.

Patented Apr. 18, 1911.

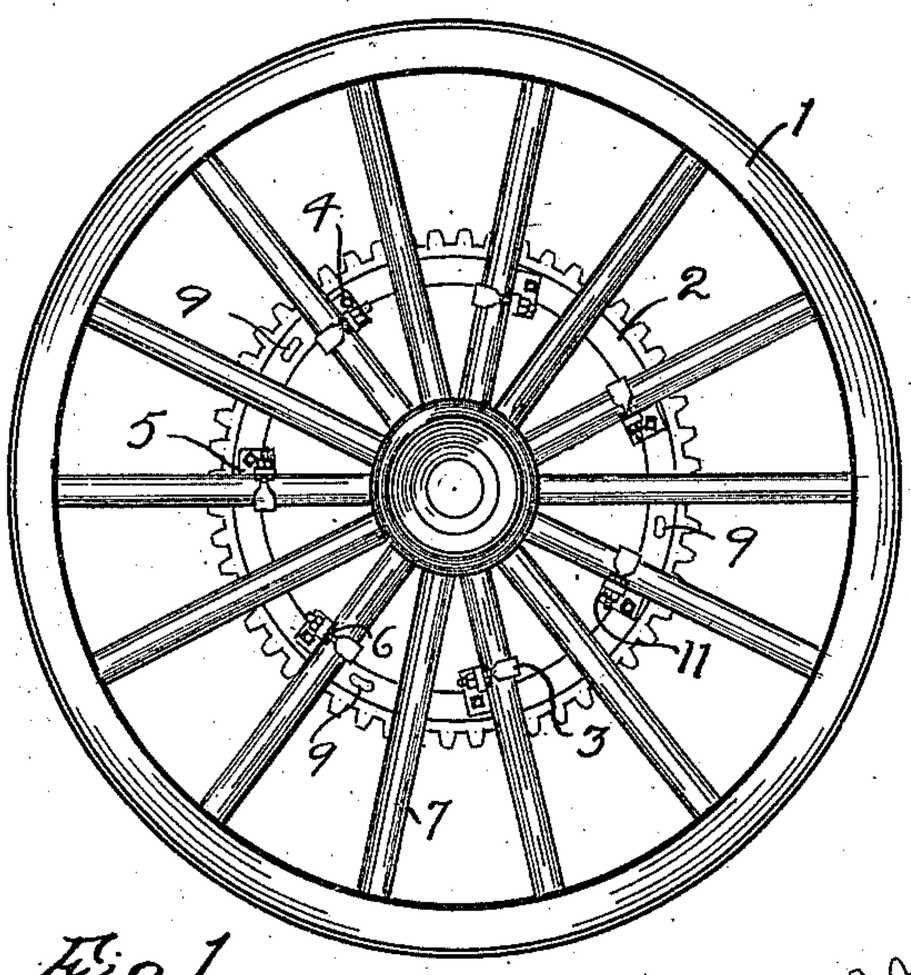


Fig. 1.

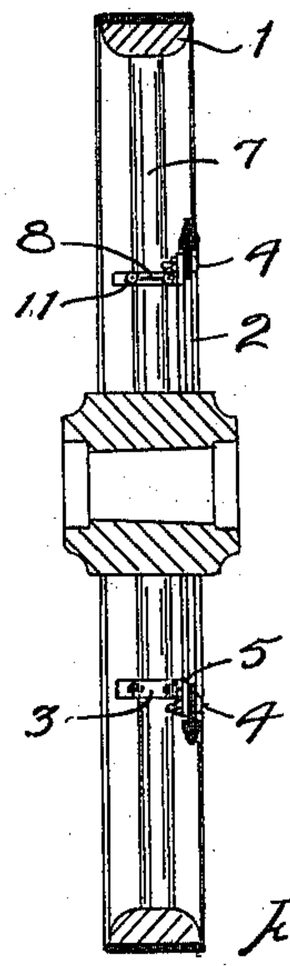


Fig. 2.

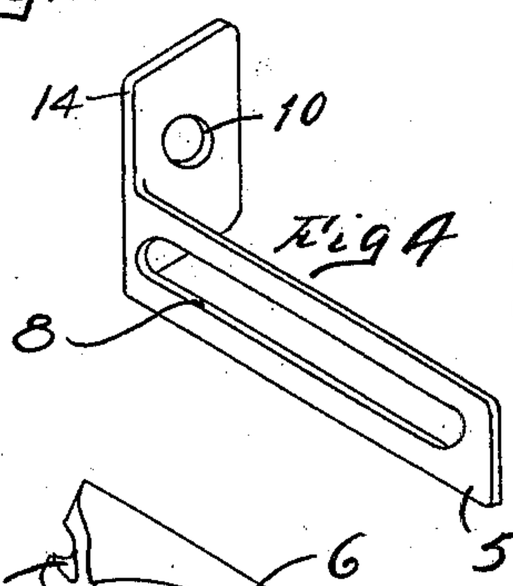


Fig. 4

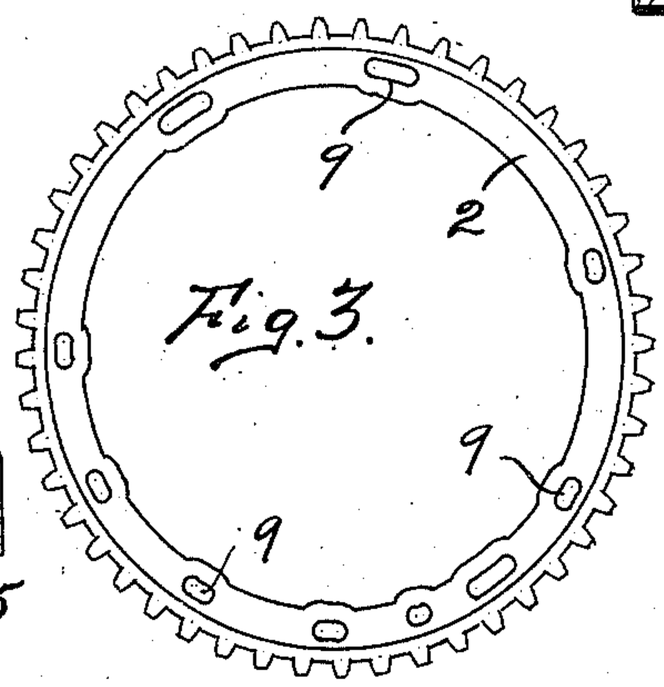


Fig. 3.

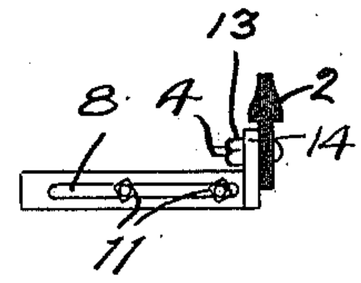


Fig. 7.

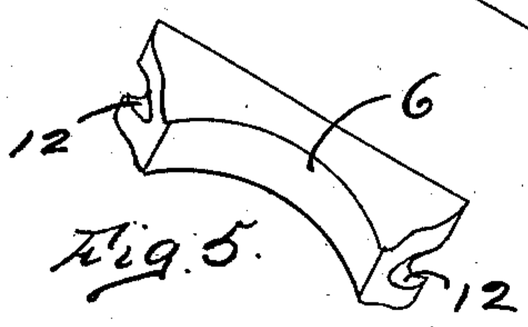
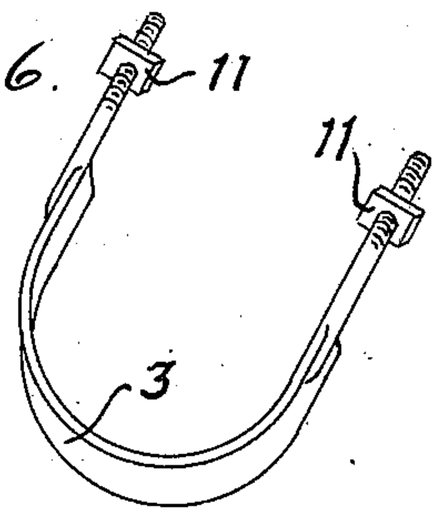


Fig. 5.

Fig. 6.



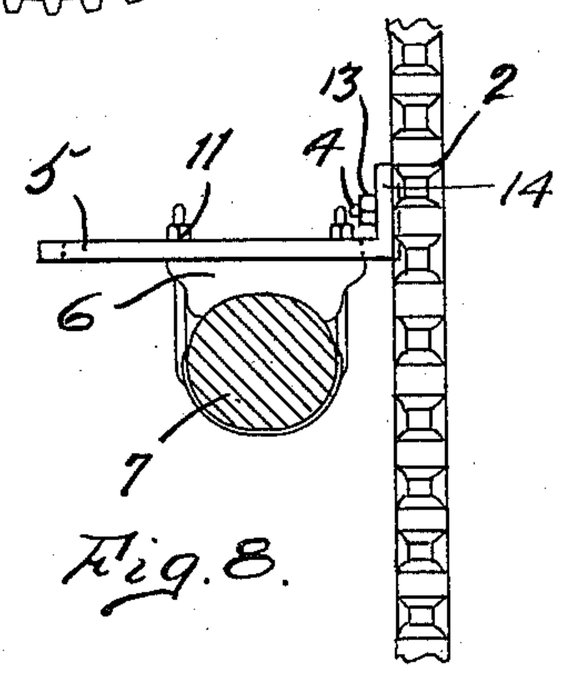


Fig. 8.

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ADJUSTABLE COUPLING.

989,779. Specification of Letters Patent. Patented Apr. 18, 1911.

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To all whom it may concern:

Be it known that I, JOHN C. HARRIS, a citizen of the United States of America, and a resident of Waterloo, Blackhawk county, Iowa, have invented certain new and useful Improvements in Adjustable Couplings, of which the following is a specification.

My invention relates to improvements in adjustable couplings, and the objects of my invention are to provide appropriate, simple and convenient means for detachably coupling and securing a sprocket- or gear-rim to a spoked wheel, for transverse adjustment relative thereto, and also to so form and modify such coupling and the sprocket- or gear-rim that such rim may be readily secured in turn to wheels which differ in the respective number of their spokes. These objects I have accomplished by the means which are hereinafter fully described and claimed, and which are illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of a wagon-wheel having a sprocket- or gear-rim detachably secured thereto by my improved couplings. Fig. 2 is a vertical transverse axial section through said wheel and rim. Fig. 3 is a side elevation of said rim showing the arrangement of its transverse slots to adapt it to be fitted to wheels having different numbers of spokes. Fig. 4 is a perspective view of the slotted spacing body of my improved coupling. Fig. 5 is a perspective view of the spoke seat adapted for longitudinal adjustment along said slotted spacing body. Fig. 6 is a perspective view of the U-bolt used for detachably securing said spoke-seat to said slotted spacing body. Fig. 7 is a detail view, showing the means used to detachably secure said slotted spacing body to a sprocket- or gear-rim. Fig. 8 is a broken detail of a wheel-spoke and a sprocket- or gear-rim, showing the improved coupling in use to adjustably secure them together.

Similar numerals refer to similar parts throughout the several views.

My invention resides both in the modification of the sprocket- or gear-rim, and also in the specific means used for coupling such a rim to a spoked wheel to permit of transversely adjusting the distance of the rim apart from the wheel. It is used in practice, particularly as a component of the driving-mechanism of a manure-spreader, where the sprocket- or gear-rim is secured to and driven by one of the carrying spoked-wheels of the wagon which carries the distributing means, such means being driven by said rim and its accompanying coacting means therefor. As often happens, particularly when the said distributing-means is mounted on a removable box or receptacle, which may be placed at will on any set of wagon running-gear, the spokes in such running-gear wheels may vary in number from the number employed in other carrying-wheels, and it is thus advisable to adapt the coupling-means so that a rim may be secured to either kind of carrying-wheel. I have adapted the sprocket-rim, which is shown in Fig. 3, for that purpose, as follows: The web or inturned flange 2 of the rim is provided with a plurality of transverse orifices or slots 9, of varying lengths and spaced at varying distances apart, such slots affording seats for bolts 4, which pass transversely through them. The number, length, and distance of separation of such slots are calculated in advance to accommodate for adjustably securing the rim to wheels, in turn, having twelve, fourteen or sixteen spokes. If desired, the number, length, and spacing of such slots may be further varied in order to accommodate such rim to be fitted to wheels having still different numbers of spokes, since the principle involved in my invention is not thus departed from. My means for coupling said rim to the spokes 7, in each case, consists of the following coacting elements. The transversely-directed spacing body 5 is longitudinally slotted at 8 throughout nearly its whole length, in order to permit of the rim 2 being brought quite closely to the spokes 7. The said spacing-body has one end flanged at right-angles thereto, such flanged end being widened to provide an extension 14 to one side, and the extension having a bolt-hole 10 to receive the bolt 4, a nut 13 then securing the extension and the rim 2 together.

A saddle-shaped block 6 is used to fit one of the sides of a spoke 7, as a seat therefor, its opposite flat edge contacting with one of

the slotted faces of the spacing body 5, and its ends having recesses 12 to receive the threaded members of the U-bolt 3 detachably, while such members after the bolt has been looped over a spoke 7 and said seat-block are passed through the slot 8 and then detachably and adjustably secured to the spacing-body 5 by nuts 11.

As stated the slot 8 affords means whereby, the distance between the spoke and the rim 2 may be varied at pleasure, to transversely separate them from each other for the particular use necessary. When the rim is adjusted in distance from the spokes so as to rest as close thereto as possible, the sidewise extension 14 of the spacing-body 5 becomes useful by affording room for the bolt 4 and its nut 13, to one side of the nearest U-bolt nut 11, preventing interference in the manipulation of the nuts. The close fit between the rim and spokes thereby occasioned, permits of the use of either a sprocket-wheel or gear-wheel in coöperation with such rim, located within the bounds of the wheel-tire, and thus in a manure-spreader, space is gained between the opposite carrying-wheels for a wagon-box of relatively large width, or for the location of other mechanisms therebetween. The wheel shown in Fig. 1 has fourteen spokes, and it is evident that the rim shown in Fig. 3 may be adjusted to fit wheels having either twelve, fourteen or sixteen spokes, the numbers most commonly used, by coupling to alternate spokes, without difficulty.

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

1. The combination with a spoked carrying-wheel and a sprocket- or gear-rim, of a longitudinally-slotted spacing-body having one end projected at an angle therefrom, means for detachably securing the projected end of said body to said rim, a block having a seat for one side of a spoke of said carrying-wheel and formed for sliding adjustment along said spacing-body, and a U-bolt engaging said spoke and seat-block and secured detachably and adjustably in the longitudinal slot of said spacing-body.

2. The combination with a spoked wheel and a sprocket- or gear-rim, of a spacing-body having one end projected at an angle thereto and widened to extend sidewise thereto, said rim and the extended part of said projection having registering orifices, means inserted in said orifices adapted to detachably secure said spacing-body and rim together, and a clip engaging a spoke of said wheel and secured to said spacing-body for longitudinal adjustment therealong.

3. The combination with a spoked wheel and a sprocket- or gear-rim, of a spacing-body having one end projected at an angle thereto, such body being longitudinally-slotted to about the plane of said projection, means for detachably securing said projection to said rim, a seat-block for a spoke of said wheel movably engaged with one side of said slotted body, and means inserted in said slot for detachably securing said spoke to said spacing-body.

4. The combination with a spoked wheel and a sprocket- or gear-rim, of clips adapted to engage certain spokes of said wheel, a spacing-body, longitudinally-slotted throughout its length and located adjacent to each of said clips, seat-blocks located between the spokes and the spacing-bodies, means for securing each clip detachably and adjustably over its adjacent spoke and seat-block and in the slot of the adjacent spacing-body, each spacing-body having one end projected therefrom at an angle thereto, each projection having an orificed extension to one side of the main spacing-body, said rim having a plurality of orifices therein and thereabout variously spaced apart, said clips having their ends inserted in certain ones of the orifices in said rim and in the orifices of the projections on said spacing-bodies, and means adapted to detachably secure said clips to said rim.

5. In combination, a spoked vehicle-wheel, a driven member mounted adjacent thereto and adjustably connected to spokes in said vehicle-wheel by means of slotted bodies and U-bolts passing around said spokes and through said slotted bodies in a laterally-adjustable manner.

6. In combination, a spoked vehicle-wheel, a driving- sprocket- or gear-rim, said rim being attached to spokes of said vehicle-wheel by means of longitudinally-slotted members, each member being adjustably attached to one of said spokes by means of a U-bolt passed about the latter with its members passing through the longitudinal slot in said slotted body, and means for adjustably fastening said U-bolt to said slotted body.

7. In combination, a supporting vehicle-wheel, a gear- or sprocket-rim attached to certain of the spokes of said supporting wheel by means of U-bolts, each of the latter passing about one of said spokes, a longitudinally-slotted connecting-member located adjacent to each of said bolts and extending therefrom to said gear- or sprocket- rim, said U-bolt secured to said connecting-member in its longitudinal slot for longitudinal adjustment therealong, and said connecting-member being fastened to said sprocket-rim in a manner to permit of close adjustment of the said spokes to said rim.

8. In combination, a supporting vehicle-wheel, a gear- or sprocket-rim attached to spokes of said supporting wheel by means of spacing-members, said spacing-members being longitudinally-slotted, each of said mem-

bers being offset at the rim-connecting end thereof for connection to said rim, and said spokes being clamped to said connecting- or spacing-members at any desired point within the length of the slot in each of the latter.

9. In combination, a rotatable body, another body concentric therewith and located adjacent thereto, a plurality of spacing- and connecting-bodies between said first- and second-mentioned bodies and connected detachably to both, and adapted to adjustably space them apart transversely, each of said spacing-bodies having an offset foot or projection extending sidewise from it at a right angle for connection to said second-mentioned body to permit of any desired adjustment between the first- and second- mentioned bodies.

10. In combination, a rotatable spoked wheel, a sprocket- or gear-rim mounted adjacent to one face thereof and concentric therewith, and detachable connections between certain spokes of said wheel and said rim each consisting of a spacing-bar detachably connected to said rim and a projection detachably extending from one of said spokes, longitudinally-adjustable along and detachably secured to said spacing-bar.

11. In combination, a rotatable, spoked wheel, a sprocket- or gear-rim mounted adjacent to one face thereof and concentric therewith, and connections between certain spokes of said wheel and said rim each consisting of a spacing-bar connected to said rim and extending by one side of said spokes, and means surrounding each spoke and connecting with, and longitudinally-adjustable along, said spacing-bar.

12. In combination, a vehicle-wheel, a sprocket- or gear-rim attached to said vehicle-wheel by means of spacing bodies, said bodies being firmly fastened to said rim and also fastened to said vehicle-wheel by threaded bolts passing through said bodies at right angles to said members, and located substantially parallel with the adjacent plane surface of said rim.

13. In combination, a vehicle-wheel, a sprocket- or gear-rim attached to said vehicle-wheel by means of spacing bodies, said bodies being firmly fastened to said rim, and also fastened to said vehicle-wheel by threaded bolts passing through said bodies at right angles to said members, said bolts being located substantially parallel with the adjacent plane surface of said rim, and said bolts being adjustable longitudinally along said connecting-members.

14. In combination, a vehicle-wheel, a sprocket- or gear-rim attached to said vehicle-wheel by means of connecting-members, said members being fastened to said vehicle-wheel by means of threaded bolts passing through said members at right angles thereto, said connecting-members also being fastened to said gear-rim by bolts passing through said rim and through an offset portion of said connecting members, otherwise than in a plane with said first-mentioned threaded bolts.

15. In combination, a sprocket- or gear-rim with projecting members for connection with the spokes of a vehicle-wheel, a spoked vehicle-wheel, certain of the spokes of the latter being connected to said members by means of threaded bolts which bolts are adjustable longitudinally along said members, said connecting members also being secured to said rim by means of bolts passed through right-angled offset portions on said connecting-members, through which portions said last-mentioned bolts may pass without being in line with the first-mentioned spoke-bolts.

Signed at Waterloo, Iowa, this 27th day of January 1909.

JOHN C. HARRIS.

Witnesses:
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E. D. STOVER.