No. 791,275. PATENTED MAY 30, 1905.

H. M. LOFTON.

STEERING GEAR.

APPLICATION FILED OCT. 29, 1904.

Fig. 1

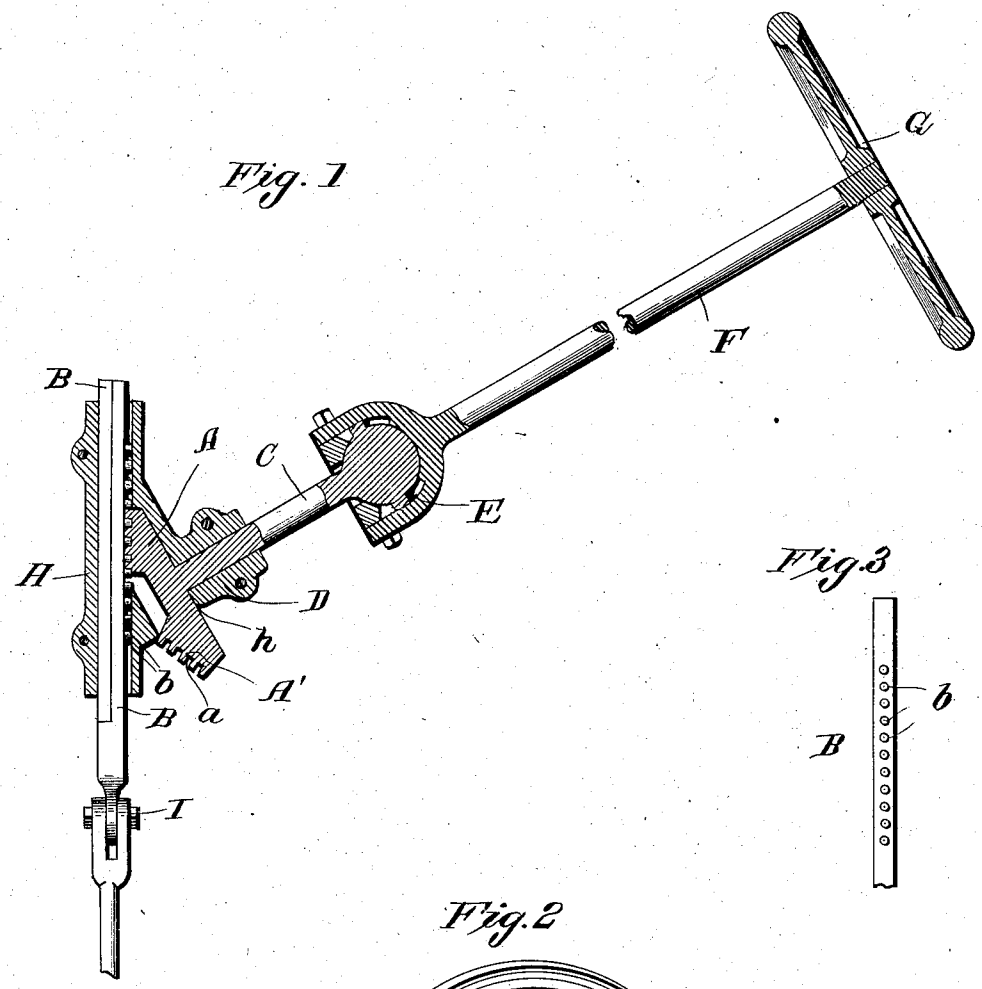
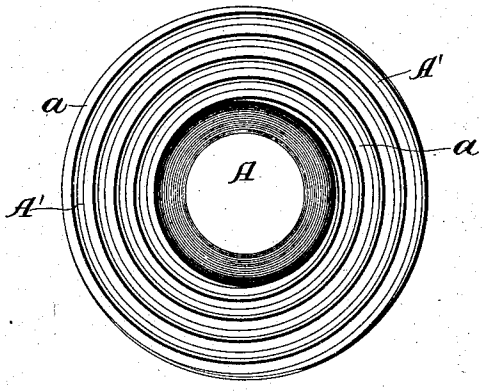


Fig. 3

Fig. 2



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No. 791,275. Patented May 30, 1905.

UNITED STATES PATENT OFFICE.

HERBERT M. LOFTON, OF ATLANTA, GEORGIA, ASSIGNOR TO NATIONAL INVESTMENT COMPANY, OF SAVANNAH, GEORGIA, A CORPORATION OF GEORGIA.

STEERING-GEAR.

SPECIFICATION forming part of Letters Patent No. 791,275, dated May 30, 1905.

Application filed October 29, 1904. Serial No. 230,507.

To all whom it may concern:

Be it known that I, HERBERT M. LOFTON, a citizen of the United States, and a resident of Atlanta, in the county of Fulton and State of Georgia, have made certain new and useful Improvements in Steering-Gear, of which the following is a specification.

My invention is an improvement in steering-gear especially intended for use on automobiles; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a sectional elevation of my improvement. Fig. 2 is a face view of the steering-wheel, and Fig. 3 is a detail face view of the rack-bar.

As shown, the steering-wheel A is geared with the rack-bar B and has its shaft C supported in suitable bearings at D and connected at E by universal joint with the handle-bar F, which may be provided with the wheel G or other suitable means by which it may be conveniently turned. The shaft C and axis of the steering-wheel A lie at an incline to the direction of length of the rack-bar B, and the face A′ of the steering-wheel is made conical, so that when set at an incline such as described it will coincide with the rack-bar B, with which it meshes.

The rack-bar B is movable longitudinally in suitable guides H, is connected at I in any suitable manner with the steering-wheels of the automobile, and is provided on its face with a series of rack-teeth *b*, which are meshed by the spiral rib *a* on the conical face of the steering-wheel. By fitting the conical face of the steering-wheel to coincide with the direction of length of the rack-bar B and by fitting it in its bearings D, which are integral with the guide H for the rack-bar, I am able to mesh every convolution of the spiral with the rack-bar in the use of the invention, as best shown in Fig. 1, so that the maximum strength of the gearing is secured, and there is no possibility of any sudden jars or shocks of the rack-bar moving the steering-wheel in either direction at any time, and the rack-bar is held immovably except when it is positively operated by the spiral rib on the conical face of the steering-wheel. This is an important feature in automobile construction, because by it I am able to avoid any and all of the accidents which result from a sudden jar acting upon the handle of the steering-gear, as the steering-wheel locks positively with the rack-bar, so the latter cannot move to any extent in either direction except when positively operated in such direction by the manipulation of the steering-wheel. Manifestly, by turning the steering-wheel in either direction the rack-bar may be moved in one direction or the other, as desired.

It will be noticed that the bracket in which are provided the guide H for the rack-bar and the bearing D for the steering-wheel is recessed at *h* to receive the steering-wheel and hold the same firmly in mesh with the rack-bar which it operates.

It will be noticed that the spiral rib *a* of the steering-wheel encircles the axis of said wheel and gradually departs therefrom from its inner toward its outer end.

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

1. In a steering-gear for automobiles the combination of the bracket having a guide for the rack-bar, a bearing for the shaft of the steering-wheel and a recess for said steering-wheel, said recess communicating with the guide for the rack-bar, the rack-bar movable longitudinally in said guide and having a series of teeth on its side which communicates with the recess for the steering-wheel, the steering-wheel having its shaft journaled in the bearing of the bracket and arranged at an inclination to the direction of length of the rack-bar, the said steering-wheel having its face made conical and provided on said conical face with a spiral rib forming a tooth whose several convolutions are meshed with the teeth of the rack-bar, and means for turning the steering-wheel, substantially as set forth.

2. In a steering-gear the combination of the longitudinally-movable rack-bar having a series of rack-teeth, and the steering-wheel having its axis arranged at an inclination to the direction of the rack-bar and having a conical

face and a spiral rib on said conical face and having its several convolutions meshing with the teeth of the rack-bar substantially as set forth.

3. In a steering-gear a bracket having a guide for the rack-bar and a bearing for the shaft of the steering-wheel, the rack-bar movable longitudinally in said guide and having a series of rack-teeth, and the steering-wheel having a conical face and a spiral rib thereon whose several convolutions are meshed with the teeth of the rack-bar, substantially as set forth.

4. The combination in a steering-gear of the longitudinally-movable rack-bar and the steering-wheel having upon its face a spiral rib whose several convolutions are meshed with the teeth of the rack-bar, the said spiral rib encircling the axis of the steering-wheel and departing therefrom from its inner toward its outer end, substantially as set forth.

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Witnesses:
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