

No. 694,478.

Patented Mar. 4, 1902.

J. F. HURTIG.

STEERING APPARATUS FOR SELF PROPELLED VEHICLES.

(Application filed Sept. 8, 1901.)

(No Model.)

2 Sheets—Sheet 1.

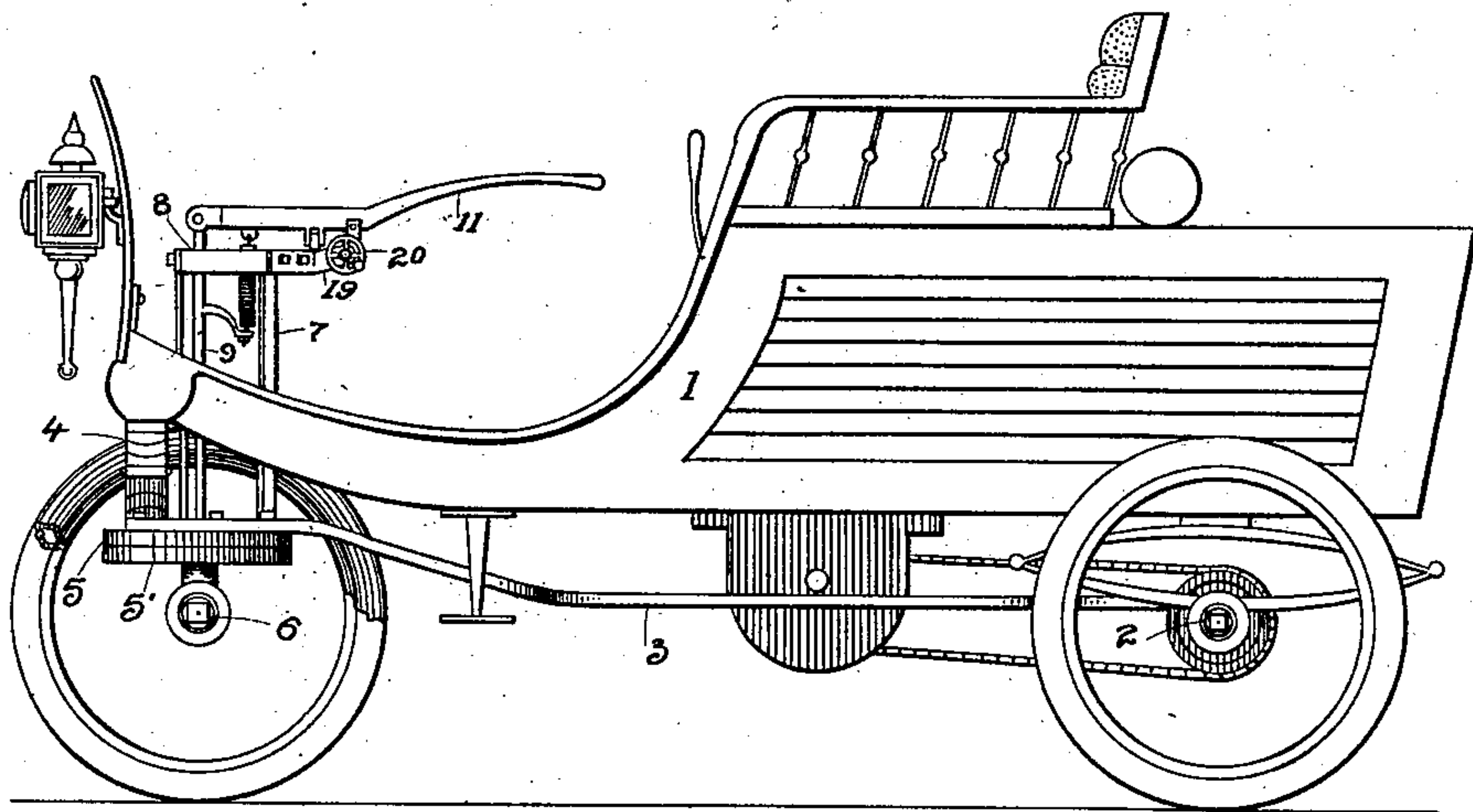


FIG. 1.

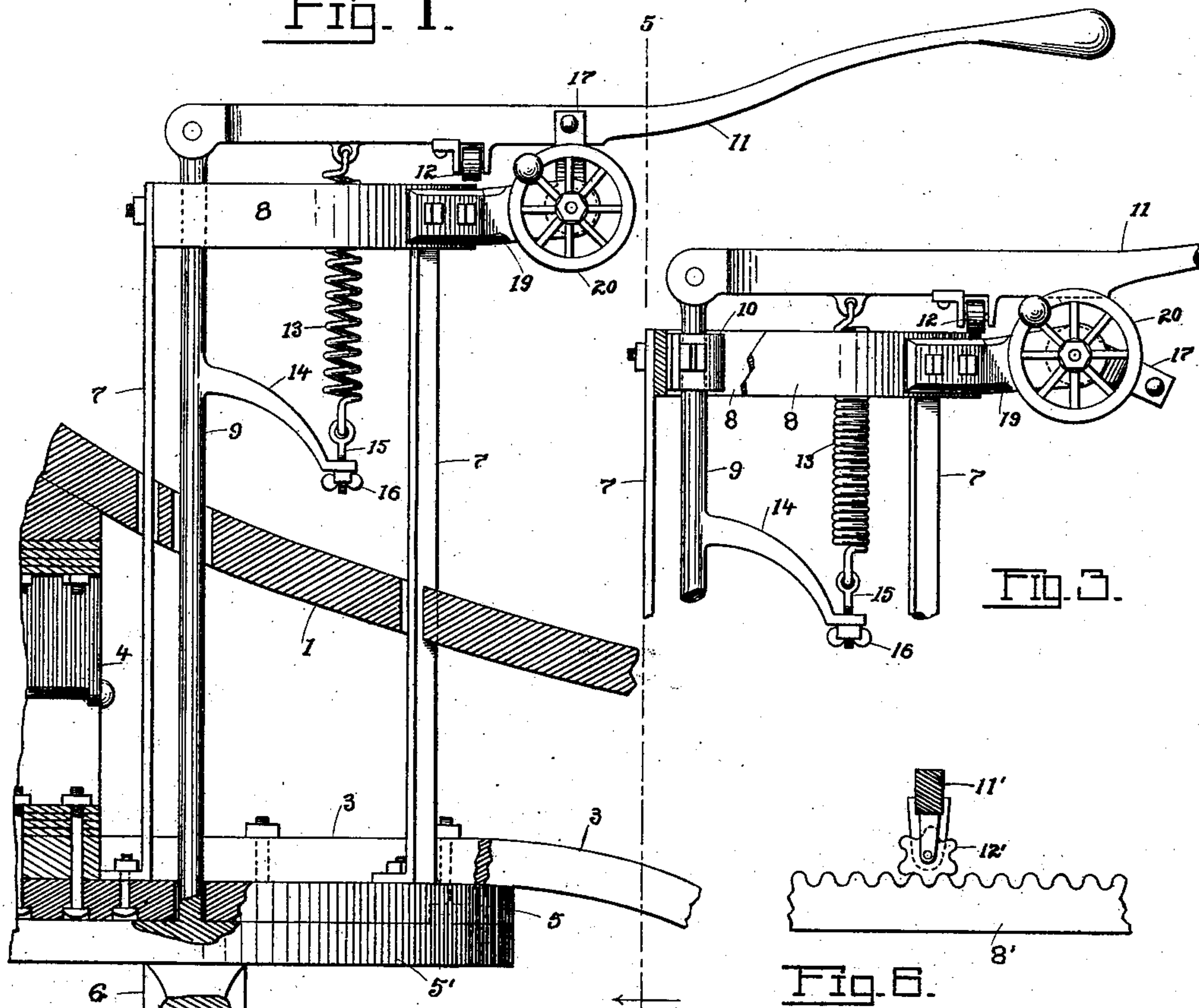


FIG. 2.

FIG. 3.

Witnesses
Chas. J. Hawley
G. L. Buehler

By his Attorney

Inventor
John F. Hurtig
Ernest S. Brown

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J. F. HURTIG.

STEERING APPARATUS FOR SELF PROPELLED VEHICLES.

(Application filed Sept. 6, 1901.)

(No Model.)

2 Sheets—Sheet 2.

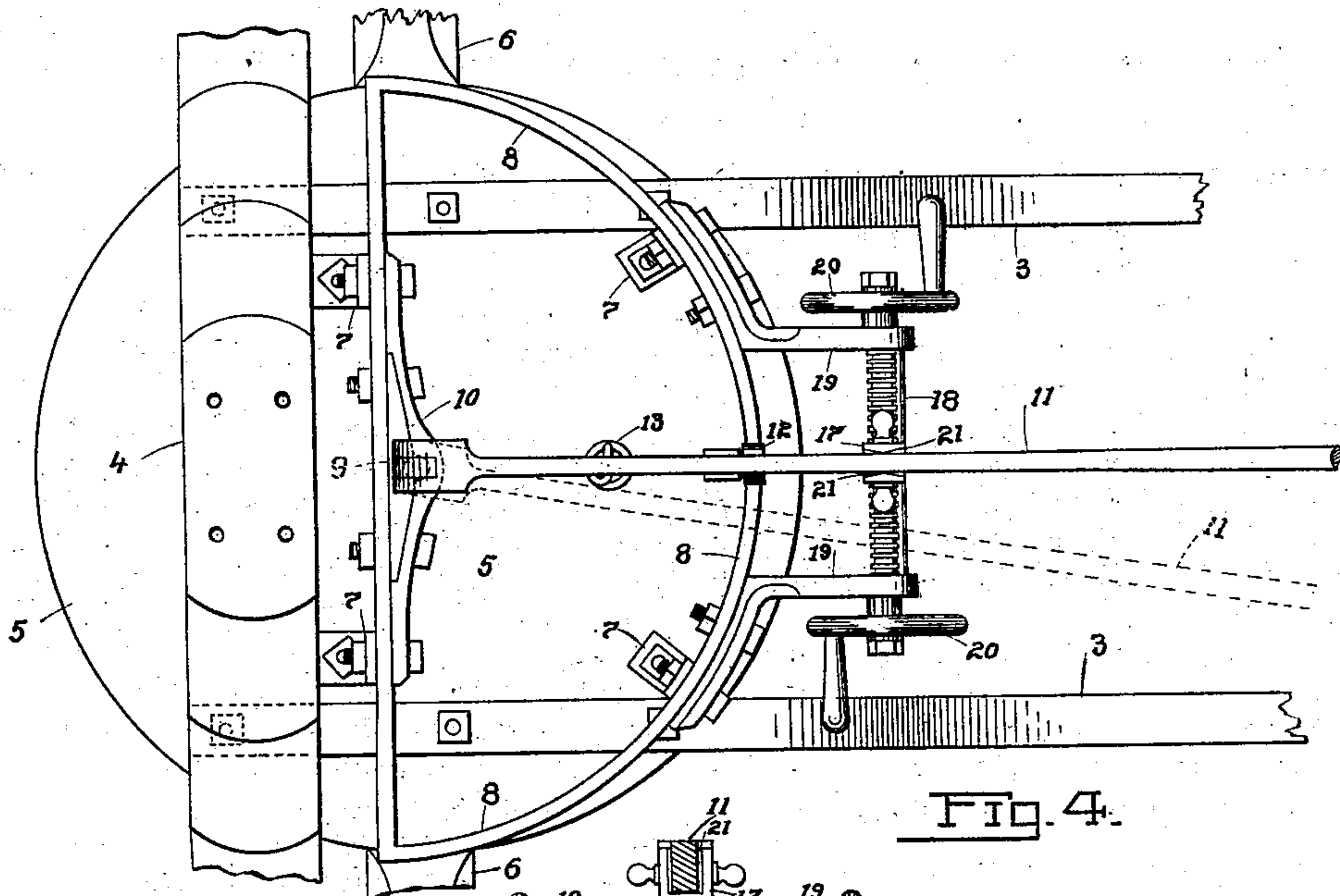


FIG. 4.

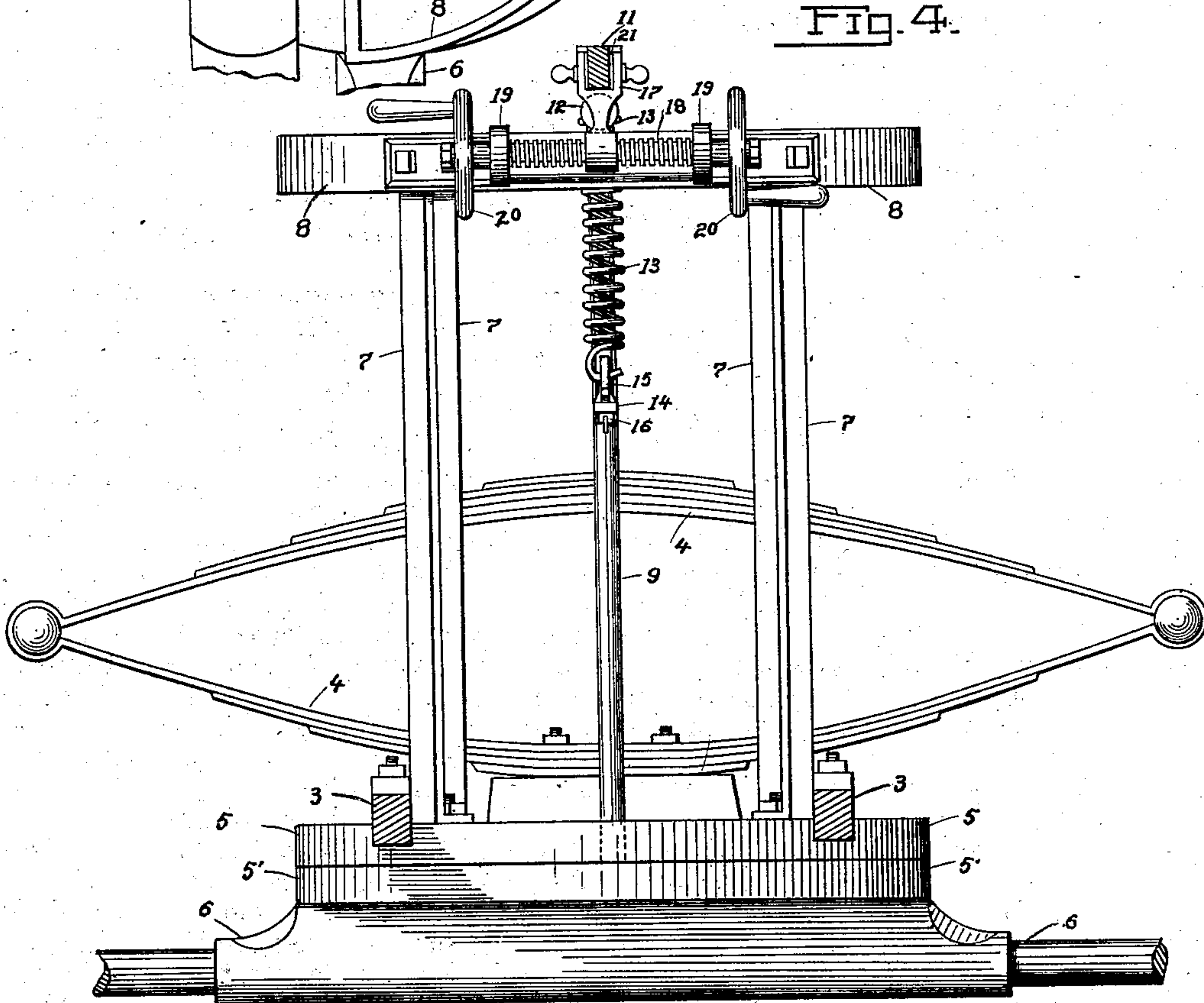


FIG. 5.

Witnesses
Phil. J. Nawn
G. L. Belfry

By his Attorney

Inventor
John F. Hurtig
Emil Starek

UNITED STATES PATENT OFFICE.

JOHN F. HURTIG, OF ST. LOUIS, MISSOURI.

STEERING APPARATUS FOR SELF-PROPELLED VEHICLES.

SPECIFICATION forming part of Letters Patent No. 694,478, dated March 4, 1902.

Application filed September 6, 1901. Serial No. 74,528. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. HURTIG, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Steering Apparatus for Self-Propelled Vehicles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in steering apparatus for self-propelled vehicles; and it consists in the novel arrangement and combination of parts more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a side elevation of an automobile having my invention applied thereto. Fig. 2 is a detached side elevation of the steering apparatus, parts of the wagon-body being shown in section. Fig. 3 is a similar view of the upper portion thereof, showing the fork which is mounted on the adjusting-screw disengaged from the main steering-lever. Fig. 4 is a top plan of the device. Fig. 5 is a vertical section on line 5 5 of Fig. 2, and Fig. 6 is an elevation of a section of a modified form of track for the steering-lever.

The object of my invention is to construct a steering apparatus for self-propelled vehicles which shall be under perfect control of the operator, one capable of accurate adjustment, one which is unaffected by the roughness or character of road passed over or by the jarring incident thereto, and one possessing further and other advantages better apparent from a detailed description of the invention, which is as follows:

Referring to the drawings, 1 represents the body of the vehicle, 2 the rear axle, and 3 the coupling-pole. The front of the body 1 is supported by springs 4, which rest upon the upper stationary disk 5 of the fifth-wheel, the lower or rotatable disk 5' of the fifth-wheel being coupled to the front truck or axle 6. Secured to the stationary disk 5 and passing freely through the body of the wagon and extending a suitable distance above the floor thereof is a frame 7, whose upper end carries a semicircular track 8. The steering-rod 9,

whose lower end is rigidly secured to the rotatable disk 5', passes freely through the disk 5 and through a suitable bearing or bracket 10, which supports the upper portion thereof. The upper end of the steering-rod has pivotally secured thereto (to swing in a vertical plane) the steering-lever 11, to the under side of which is mounted a roller 12, adapted to run along the track 8 of the frame, the contact being assured by a spring 13, connected, respectively, to the lever and to a lug or arm 14, cast with the steering-rod. The lower end of the spring is coupled directly to a screw-bolt 15, passed through the lug 14, the screw-threaded end of the bolt being provided with a wing-nut 16, by which the tension of the spring may be adjusted. To turn the rod 9, and thus turn the front truck, the operator simply swings the lever 11 in a horizontal plane, (see dotted position, Fig. 4,) the roller 12 under the circumstances traveling on the track 8.

For very fine adjustments of the lever 11 I engage the latter with a fork 17, mounted on a screw 18, which is supported between brackets 19, cast with or secured to the face of the track 8, the opposite ends of the screw being provided with hand disks or wheels 20, by which the operator may impart rotation thereto in either direction. Of course during the rotation of the screw 18 the fork will travel along the same and carry the lever 11 with it. To better allow for the swinging motion of the lever under the circumstances and prevent binding of the latter against the arms of the fork, I bevel the inner faces of the fork, leaving a single contact edge between such face 21 and the adjacent surface of the lever. (See Figs. 4 and 5.) By referring to Fig. 2 it will be seen that an engagement of the fork 17 with the lever 11 raises the lever sufficiently to remove the roller 12 off the track. This arrangement is essential to insure against any possible disengagement between the fork and lever, the spring 13 constantly drawing down on the lever to retain the same within the fork and preventing accidental displacement of the latter. Under those circumstances of course the screw 18 supports not only the full weight of the steer-

ing-lever, but is subjected to the full pressure exerted by the action of the spring. To steer the vehicle under ordinary circumstances, the fork 17 is thrown out of engagement. (See Fig. 3.)

While I have shown a track with a plane edge, the latter may be scalloped, as shown in the modification 8' in Fig. 6, in which event I employ a corresponding pinion 12' as a substitute for the cylindrical roller 12 shown in the main construction.

Having described my invention, what I claim is—

1. A steering apparatus for vehicles comprising a lower rotatable disk, a rigid frame mounted above the same, a steering-rod secured at one end to the disk and passing loosely through the frame, a lever pivoted to the steering-rod, a curved track about which said lever can ride during the horizontal oscillation thereof, and a spring for drawing the lever firmly to the track, substantially as set forth.

2. A steering apparatus for vehicles comprising a lower rotatable disk, a rigid frame mounted above the same, a steering-rod secured at one end to the disk and passing loosely through the frame, a lever pivoted to the steering-rod, a roller on said lever, a curved track for said roller, and a spring for drawing the lever firmly to the track, substantially as set forth.

3. A steering apparatus for vehicles comprising a lower rotatable disk, a rigid frame mounted above the same, a steering-rod secured at one end to the disk and passing loosely through the frame, a lever pivoted to the rod, a roller on said lever, a curved track for the roller, a spring drawing down the lever against the track, an adjusting-screw mounted in proximity to the lever, and a fork

movable along said screw and adapted to be coupled to the lever, substantially as set forth.

4. In a steering apparatus for vehicles, a horizontally-swinging steering-lever, intermediate connections between one end of the same and the front truck, a horizontally-disposed adjusting-screw, a fork mounted on said screw and adapted to embrace the lever, the engaging faces of the fork being beveled, substantially as set forth.

5. A steering apparatus for vehicles comprising a lower rotatable disk secured to the truck of the wagon, an upper stationary disk secured to the coupling-pole of the wagon, a frame mounted on the stationary disk, a steering-rod passing loosely through the frame and through the stationary disk and having its lower end secured to the rotatable disk, a curved track on said frame, a lever pivoted to the steering-rod, a roller mounted on the lever and engaging said track, a spring having one end coupled to the lever, a lug on the steering-rod to which the opposite end of the spring is secured, and means for adjusting the tension of the spring, substantially as set forth.

6. In a steering apparatus for vehicles, a horizontally-swinging steering-lever, intermediate connections between one end of the same and the wagon-truck, a rigid frame mounted above the truck, a curved track carried by the frame, the lever being adapted to ride along said track, and means for positively holding the lever against the track, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN F. HURTIG.

Witnesses:

EMIL STAREK,
G. L. BELFRY.