

No. 825,594.

PATENTED JULY 10, 1906.

G. E. FRANQUIST.  
REACH ROD FOR MOTOR VEHICLES.  
APPLICATION FILED AUG. 11, 1905.

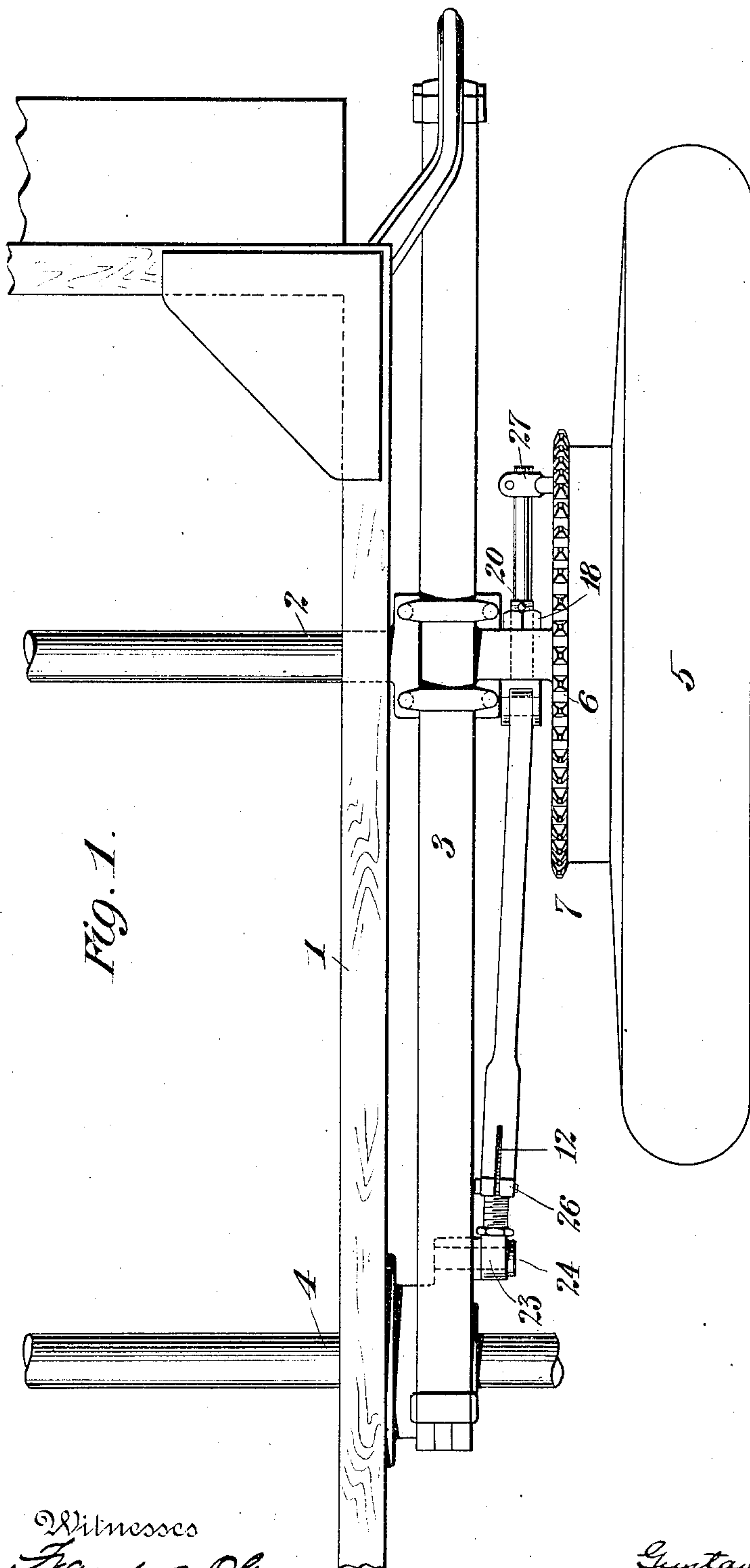


Fig. 1.

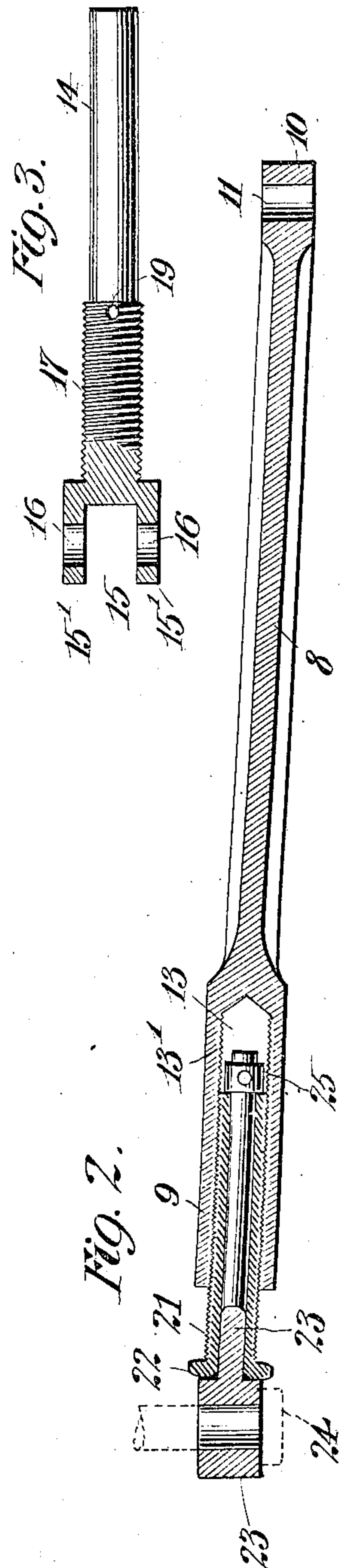


Fig. 2.

Fig. 3.

Witnesses  
Francis O. Brown  
Waldo M. Chapin

Inventor  
Gustave E. Franquist  
By his Attorneys  
Rosenbaum & Lockridge



# UNITED STATES PATENT OFFICE.

GUSTAVE E. FRANQUIST, OF NEW YORK, N. Y.

## REACH-ROD FOR MOTOR-VEHICLES.

No. 825,594.

Specification of Letters Patent.

Patented July 10, 1906.

Application filed August 11, 1905. Serial No. 273,721.

*To all whom it may concern:*

Be it known that I, GUSTAVE E. FRANQUIST, a citizen of the United States, residing at the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Reach-Rods for Motor-Vehicles, of which the following is a full, clear, and exact description.

My invention relates to a construction of reach-rod for motor-vehicles.

In the manufacture of high-power cars which are now used provision must be made for various bending and twisting movements of the various parts. Motor-cars are driven over all grades and conditions of roads, frequently at high speeds, so that very severe strains are imposed upon the parts of the chassis or frame. The chassis is constructed of very highly resilient or elastic steel and itself acts to a certain extent as a vehicle-spring, being continually bent in all directions out of its true shape to withstand the various strains. Accordingly it is important to provide a reach-rod which shall not only accommodate the continuous bending movements of the usual vehicle-springs, but also the bending and twisting movement of the frame or chassis as well.

It is the object of my invention to provide a construction of reach-rod which shall attain the foregoing purposes and which shall be simple and easy to construct and having a minimum number of parts.

With these and other objects in view my invention consists in the construction, combination, location, and arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally particularly pointed out in the appended claims.

Figure 1 is a top plan view of a portion of a motor-vehicle, showing the application of a reach-rod embodying the principles of my invention. Fig. 2 is a longitudinal sectional view of the reach-rod. Fig. 3 is a detail view, partly in section, showing the member by which the reach-rod is attached to the rear axle.

The ordinary construction of reach-rod is pivoted at a point of the rear axle and to a stud upon the motor-vehicle frame, so as to maintain a fixed distance between centers for the driving-chain and at the same time permit a movement of the rear axle with relation

to the frame. It is customary to provide means by which the length of the reach-rod can be adjusted, so that it may be adapted to accommodate different lengths of chain or the wear thereof and otherwise suited to different conditions which arise in practice. My improved reach-rod has both of the above-named features in addition to its characteristics which permit a bending movement of the frame or chassis as a whole.

Referring to the drawings, 1 denotes a motor-vehicle chassis or frame, and 2 indicates the rear axle, which is bolted to the usual vehicle-springs 3. 4 indicates the driving-shaft of the motor-vehicle, which is journaled in bearings in the frame 1, and 5 designates the usual wheels provided with driving-sprockets 6. These parts constitute the ordinary and well-known features of a motor-vehicle and form no part of my present invention.

7 indicates, broadly, the reach-rod, which is formed of several parts or sections. In the preferred form of my invention I employ a bar or forging 8, having an enlarged portion 9 at one end and a slightly-deflected part 10 at the other end thereof. The deflected end 10 is formed with an aperture or eye 11, while the enlarged portion 9 is provided with a slot 12 and drilled with a longitudinal hole 13, which is internally screw-threaded at 13'.

14 denotes a pivot bearing or support for the reach-rod 7, which I shall term the "axle-pivot" member. I form this part with a forked or bifurcated end 15, having openings 16 to register with the eye 11, previously described.

17 indicates a threaded portion upon the rod 14, which screws through a correspondingly-threaded hole in the axle 2, a lock-nut 18 being afterward screwed into place to hold the pivot member in position upon the axle.

19 indicates a hole through which an ordinary cotter-pin 20 may be passed to insure the lock-nut 18 against working loose.

An important feature of my invention lies in the way in which the deflected end 10 of the reach-rod 8 fits the forked end 15 of the axle-pivot member.

In carrying out my invention I form the width between the arms 15' of the fork 15 substantially greater than the width of the deflected end 10, in practice amounting to about one-sixteenth of an inch, and I employ a pin to engage the opening 16 and the eye 11,



which shall be loose in one or the other of the parts, so that the reach-rod can have a certain amount of lateral and swiveling movement, as well as up-and-down movement, with relation to the axle. At the enlarged end 9 of the reach-rod I arrange a threaded sleeve 21, which is of a form to engage the screw-threads 13'.

22 indicates a head upon the threaded sleeve, by which it may be screwed into and out of the reach-rod.

23 indicates an arm, which is rockably supported on a stud 24, projecting from the vehicle-frame. The rocking arm 23 is circular in section throughout the greater part of its length and is of a diameter adapted to engage the longitudinal opening in the threaded sleeve 21.

25 indicates a head which may be secured upon the arm 23 after the sleeve 21 has been assembled thereon, so as to hold the sleeve in place.

In carrying out my invention I arrange the parts so that a relative movement may occur between the sleeve 21 and the arm 23, and for this purpose I form the members of metals which give an efficient bearing-surface, and in practice I make the sleeve 21 of phosphor-bronze and the arm 23 of steel, although it is obvious that other materials could be used. The arm 23 engages the sleeve quite tightly in practice; but under the great strains to which the parts are subjected a relative movement is always possible.

In practice the device is assembled into proper relation, after which a clamping-band 26 is bolted around the part 9, so as to bind the same firmly to the sleeve 21. An additional feature of my invention relates to the tail of the member 14, which may be used as an anchor for the usual brake-band, as at 27, if desired.

What I claim is—

1. In a motor-vehicle, an axle-pivot member having a forked end, a bar having an eye adapted to be loosely inclosed by said forked end so as to permit a slight lateral movement, a pin connecting said parts, and a swivel con-

nection to the frame or chassis of said vehicle at the other end of said bar.

2. In a motor-vehicle, an axle-pivot member, a rod pivoted thereto and having a longitudinal cavity or hole drilled in its opposite end, a sleeve longitudinally adjustable within said hole, and an arm swiveled in said sleeve and pivoted to the chassis or frame of the vehicle.

3. In a motor-vehicle, an axle-pivot member, a rod pivoted thereto and having a longitudinal cavity or hole formed in its opposite end, an antifriction metal sleeve longitudinally adjustable within said hole, and an arm swiveled in said sleeve and pivoted to the chassis or frame of the vehicle.

4. In a motor-vehicle, an axle-pivot member a rod pivoted thereto and having a longitudinal cavity or hole formed in its opposite end, an antifriction metal sleeve longitudinally adjustable within said hole, and an arm having a head swiveled in said sleeve and pivoted to the chassis or frame of the vehicle.

5. In a motor-vehicle, an axle-pivot member, a rod pivoted thereto and having a longitudinal cavity or hole formed in its opposite end and having a longitudinally-slotted wall, a clamping-ring surrounding said end, a sleeve longitudinally adjustable within said hole and an arm swiveled in said sleeve and pivoted to the chassis or frame of the vehicle.

6. In a motor-vehicle, an axle-pivot member having a forked end, a rod pivoted to said forked end and having free lateral movement therein and having a longitudinal threaded cavity or hole formed in its opposite end, a sleeve of antifriction metal engaging said threaded hole, means for clamping said sleeve said hole, and an arm having a head pivoted to the chassis or frame of the vehicle and swiveled in said sleeve.

In witness whereof I subscribe my signature in the presence of two witnesses.

GUSTAVE E. FRANQUIST.

Witnesses:

FRANK S. OBER,  
ALFRED W. PROCTOR.