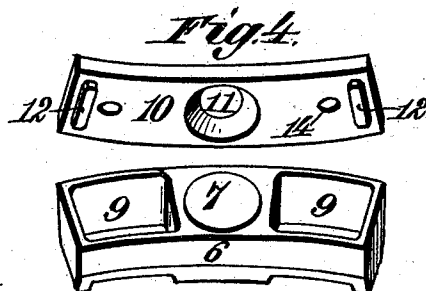
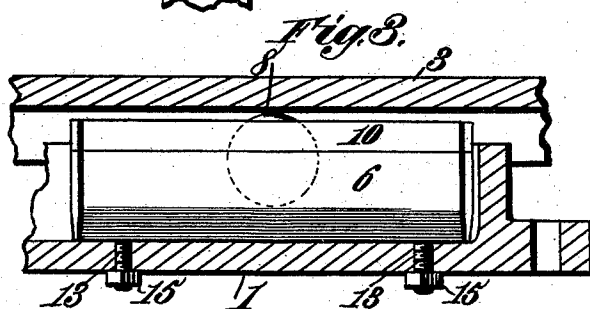
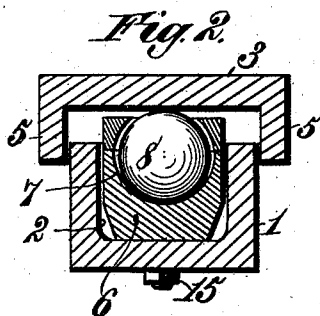
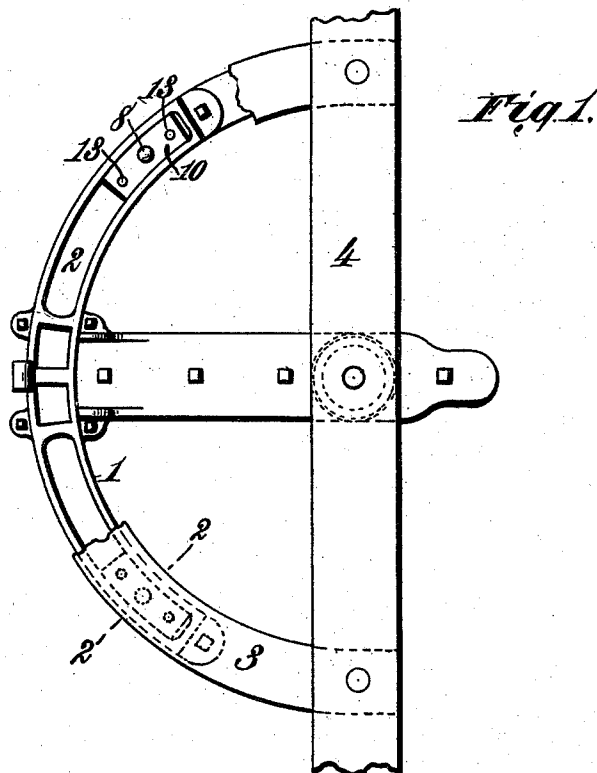


(No Model.)

W. F. KRAMER.
FIFTH WHEEL FOR VEHICLES.

No. 585,581.

Patented June 29, 1897.



Witnesses.
Robert Garrett
John A. Burr

Inventor.
William F. Kramer
By *James L. Norris*
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM F. KRAMER, OF DAYTON, OHIO.

FIFTH-WHEEL FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 585,581, dated June 29, 1897.

Application filed October 15, 1896. Serial No. 608,942. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. KRAMER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented new and useful Improvements in Fifth-Wheels for Vehicles, of which the following is a specification.

This invention relates to fifth-wheels for vehicles, and is in the nature of an improvement on the fifth-wheel for which Letters Patent of the United States were granted to W. F. Kramer and C. F. Weinman on the 25th day of September, 1894, No. 526,494. In said Letters Patent is shown a fifth-wheel comprising a lower grooved segment and an upper flanged segment movable thereon, a plurality of anti-friction-balls being arranged between said segments to form a rolling bearing for the segments. Experience has demonstrated that owing to the balls rolling back and forth in the grooved segment out of their proper respective places a swinging motion is imparted to the vehicle; and it is the object of the present invention to provide a fifth-wheel possessing all the advantages inherent in the fifth-wheel shown and described in said Letters Patent, but in which the disagreeable and objectionable swinging motion alluded to is avoided.

It is a further object of my invention to provide improved bearings or housings for the anti-friction-balls capable of being readily removed when worn and replaced by new ones.

To these ends my invention consists in the features and in the construction, arrangement, or combination of parts hereinafter fully described, and specifically pointed out in the claims following the description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a plan view of my improved fifth-wheel, a portion of the upper segment being broken away. Fig. 2 is a transverse section taken on the line 2 2 of Fig. 1. Fig. 3 is a longitudinal sectional view of the upper and lower segments, the ball-housing being shown in elevation; and Fig. 4 is a detail perspective view of the housing removed.

Referring to the drawings, the numeral 1 indicates the lower segment of the fifth-wheel

longitudinally channeled or grooved, as at 2, and adapted to be clipped to the spring on the front axle in the manner shown and described in the said Letters Patent to Kramer and Weinman.

The numeral 3 indicates the flanged upper segment, bolted at its opposite ends to the bolster 4, which is fixed to the body of the vehicle in the usual manner. The upper segment 3 is arranged over and registers with the lower segment 1, and its flanges 5 embrace the opposite edges of said segment 1 to aid in maintaining said segments in operative relation one to the other. Arranged in each end of the grooved lower segment 1 is a ball housing or bearing 6, curved longitudinally on the arc of a circle corresponding to the curvature of the lower segment and properly shaped in cross-section to snugly fit the groove 2 in said segment.

The housing or bearing 6 is provided with a semicircular socket 7, in which rests an anti-friction-ball 8, and is provided on each side of the socket with apertures 9, which extend entirely through the housing or bearing, as most clearly shown in Fig. 4. A cover 10 is fitted on the housing or bearing 6, and is provided with a circular aperture 11, through which the ball 8 slightly protrudes.

Formed on the under side of the cover 10 are two lugs or ribs 12, which project into the apertures 9 in the ball housing or bearing and abut the ends of the latter and prevent any lateral or longitudinal movement of the cover. The cover 10 is fixed in place on the ball housing or bearing, and the latter is securely held in place in the grooved segment 1 by bolts 13, which pass through bolt-holes 14 in the cover, through the apertures 9 in the housing or bearing, and through suitable apertures in the bottom of the segment 1, and have tapped over their threaded ends nuts 15. The anti-friction-balls are thus held to their seats in the sockets and the housings or bearings are held fixed in their seats in the grooved segment. The upper segment 3 rests on the tops of the balls 8 with its flanges 5 embracing the edges of the lower segment 1.

In the act of turning, the anti-friction-balls furnish a rolling bearing between the segments, reducing the friction to a minimum

in a well-known manner. Owing, however, to the housings or bearings being fixed in the grooved segments, the balls are prevented from rolling back and forth in the grooved segment out of their proper respective places, whereby a firm invariable bearing or support is provided for the upper segment supporting the vehicle-body and the latter held even and steady without having any swinging movement imparted to it, as it otherwise would if the balls were free to roll back and forth in the grooved segment.

Should the housings or bearings become worn, they may be very readily removed by taking out the bolts 13 and new housings or bearings substituted, thus prolonging the life of the fifth-wheel indefinitely.

I have shown and described the housings or bearings as attached to the lower segment, but it will be readily apparent to those skilled in the art that the parts may be reversed and the housings or bearings be attached to the upper segment and the antifriction-balls have a rolling contact with the lower segment. I have shown but a single antifriction-ball arranged in each housing or bearing, but it will be understood that each housing or bearing may be provided with a plurality of antifriction-balls without departing from the spirit of my invention.

Having described my invention, what I claim is—

1. The combination with upper and lower segments, one of which is constructed with a groove, of a curved ball-housing inserted into the grooved segment and provided with a ball-socket, means for securing said curved ball-housing in a fixed position in the groove, and a ball seated in the ball-socket, substantially as and for the purposes described.

2. In a fifth-wheel, the combination with the upper and lower segments, of an antifriction-ball housing or bearing interposed between said segments and removably affixed to one of them, and antifriction-balls seated in sockets in said housings or bearings and

having a rolling contact with the other segment, substantially as described.

3. In a fifth-wheel, the combination with the grooved segment 1 and the flanged segment 3, of the antifriction-ball housings or bearings 6 removably fixed in the opposite ends of said grooved segment and provided with semicircular sockets 7, and antifriction-balls 8 arranged in said sockets and having a rolling contact with the segment 3, substantially as described.

4. In a fifth-wheel, the combination with the grooved segment 1 and the flanged segment 3, of the antifriction-ball housings or bearings 6 arranged in the opposite ends of the grooved segment and provided with semicircular sockets 7, antifriction-balls 8 seated in said sockets, covers 10 for said housings or bearings having circular apertures 11 through which the antifriction-balls protrude, and means for removably affixing said housings or bearings to said grooved segment, substantially as described.

5. In a fifth-wheel, the combination with the grooved segment 1 and the flanged segment 3, of the antifriction-ball housings or bearings 6 arranged in the opposite grooved ends of the segment 1 and provided with semicircular sockets 7 and apertures 9, antifriction-balls 8 seated in said sockets, covers 10 arranged on said housings or bearings and having circular apertures through which the antifriction-balls protrude to contact with the segment 3, and provided on their under sides with ribs 12 which abut the ends of the housings or bearings, and bolts 13 removably securing the housings or bearings and their covers to the segment 1, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM F. KRAMER.

Witnesses:

CLEMENT L. BAUMANN,
GEORGE W. BRUNETTE.