No. 786,057. PATENTED MAR. 28, 1905.

W. SHAW.

FIFTH WHEEL.

APPLICATION FILED SEPT. 9, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

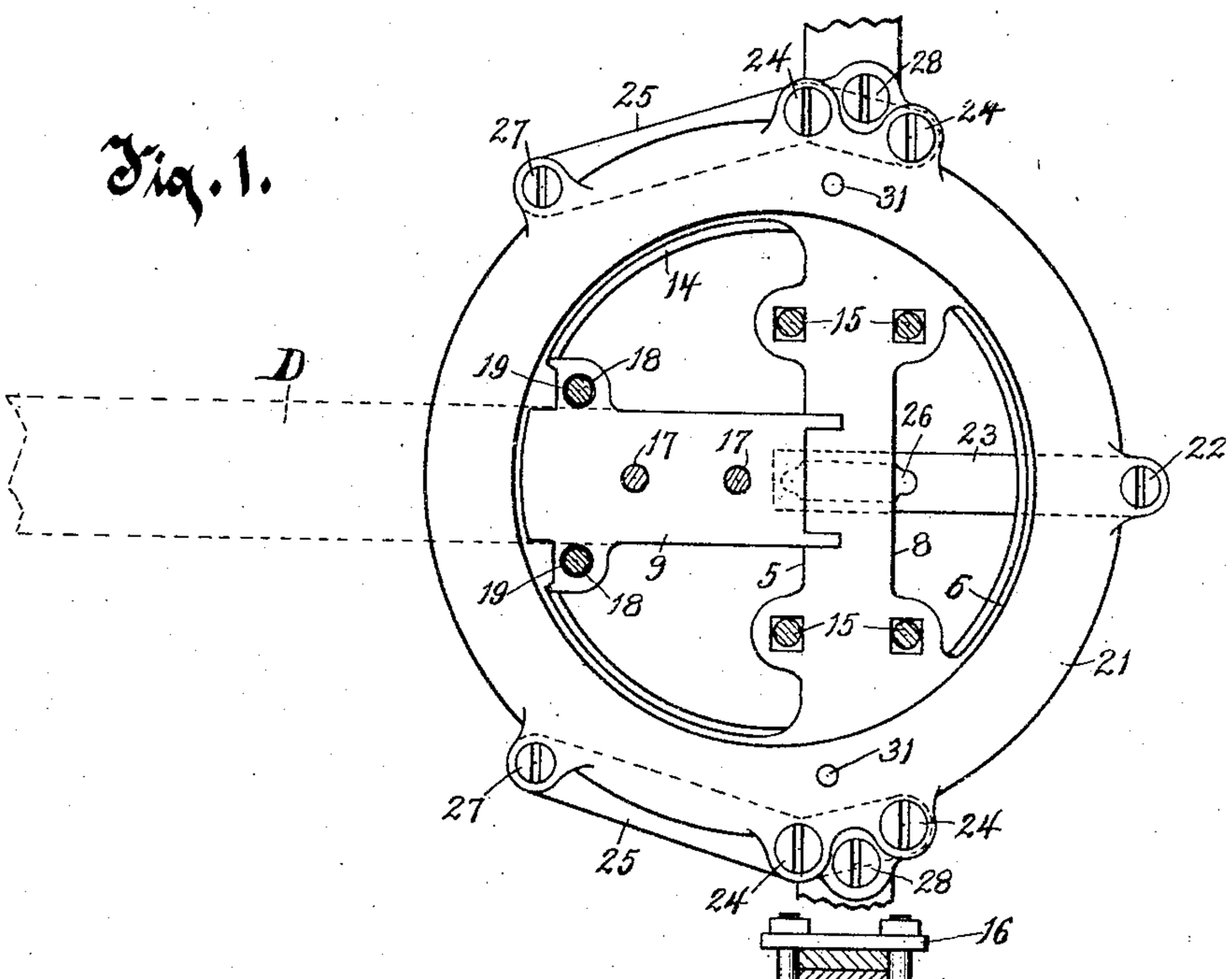


Fig. 2.

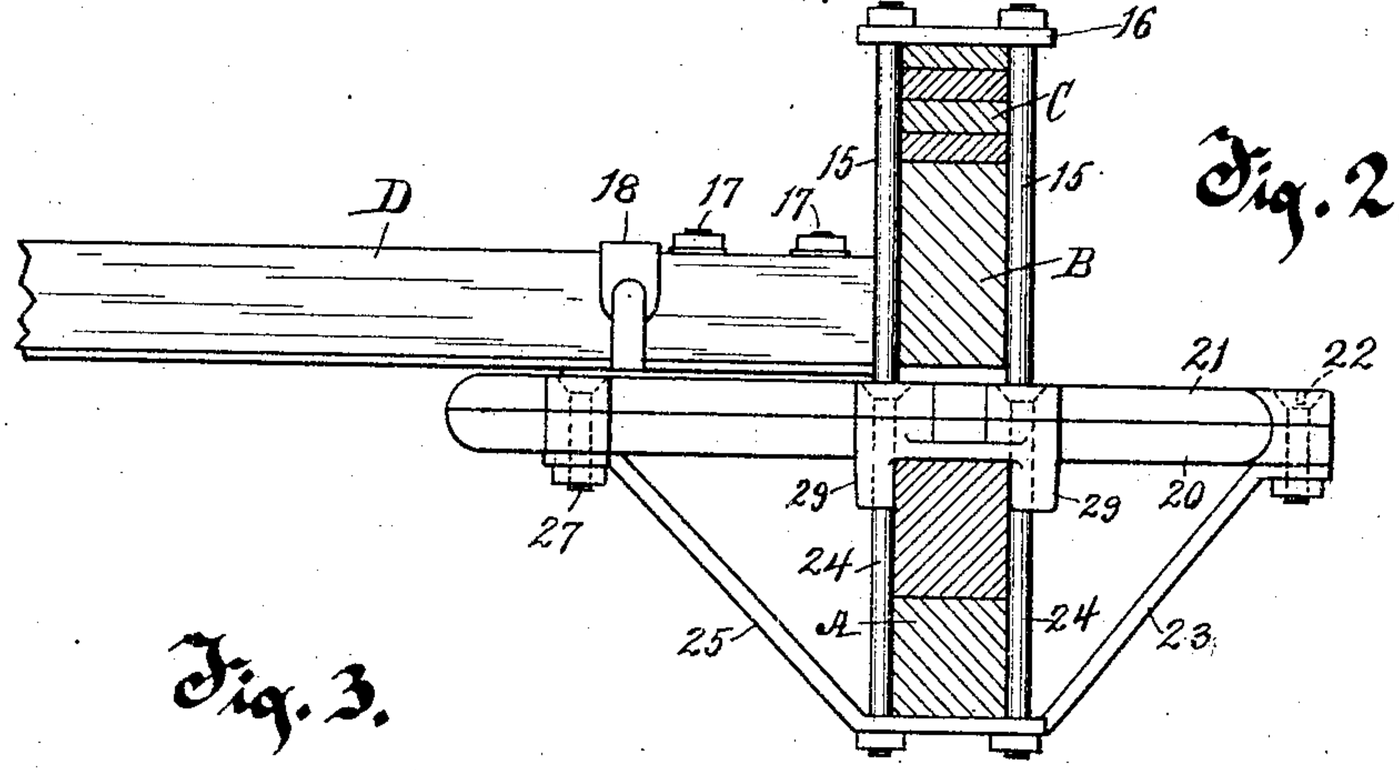
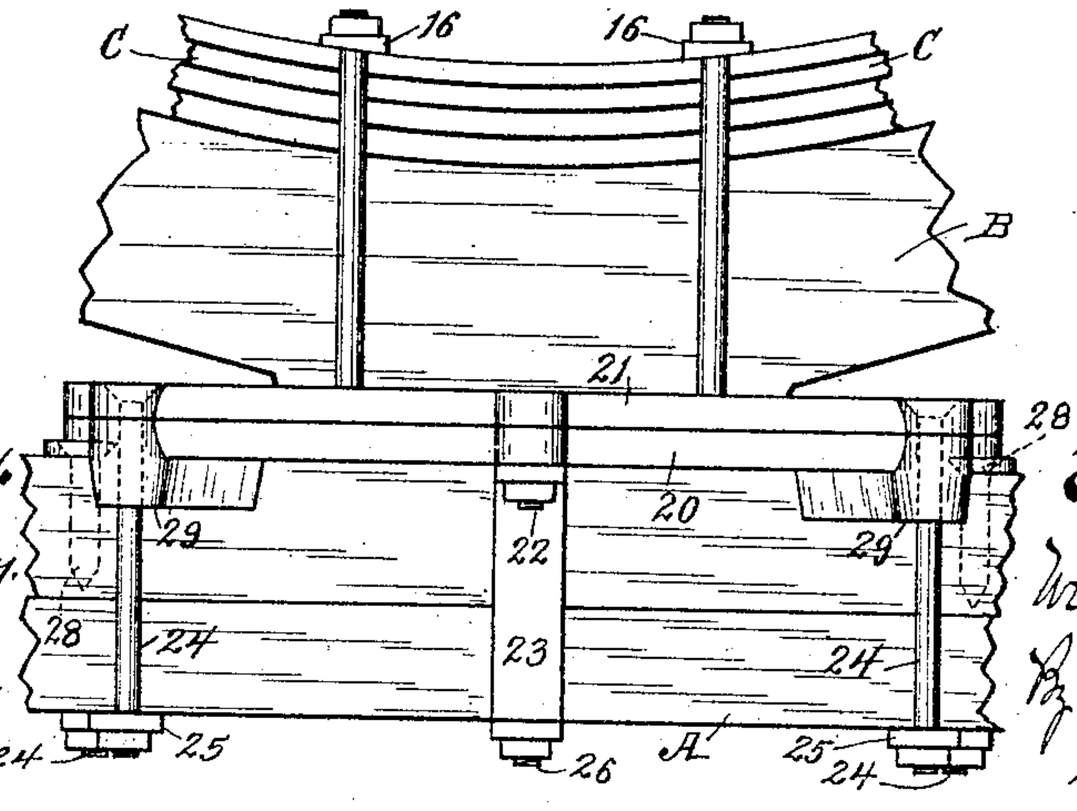


Fig. 3.



Witnesses.

A. Keeney.

Alma A. Klug.

Inventor.

William Shaw

By Benedict & Morsell

Attorneys.

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2 SHEETS—SHEET 2.

Fig. 4.

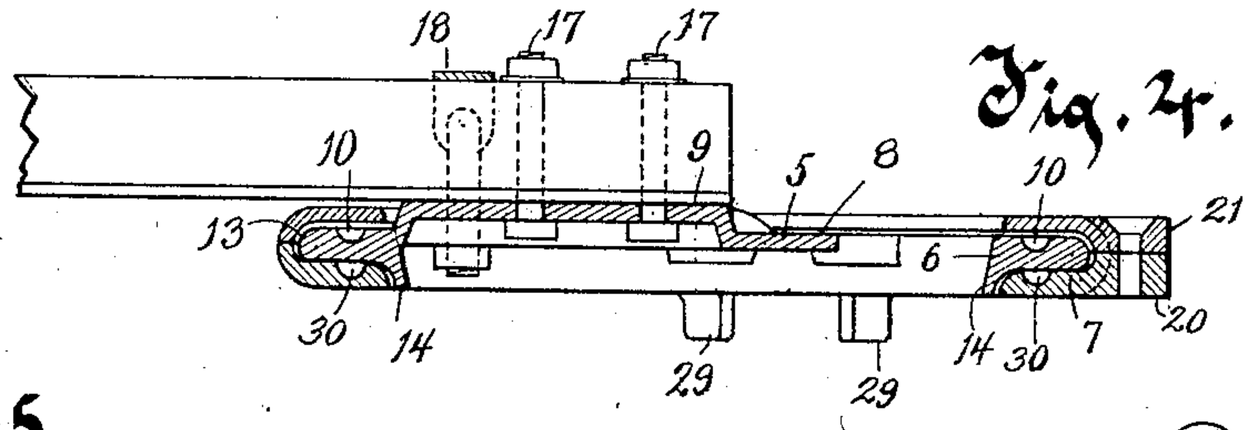


Fig. 5.

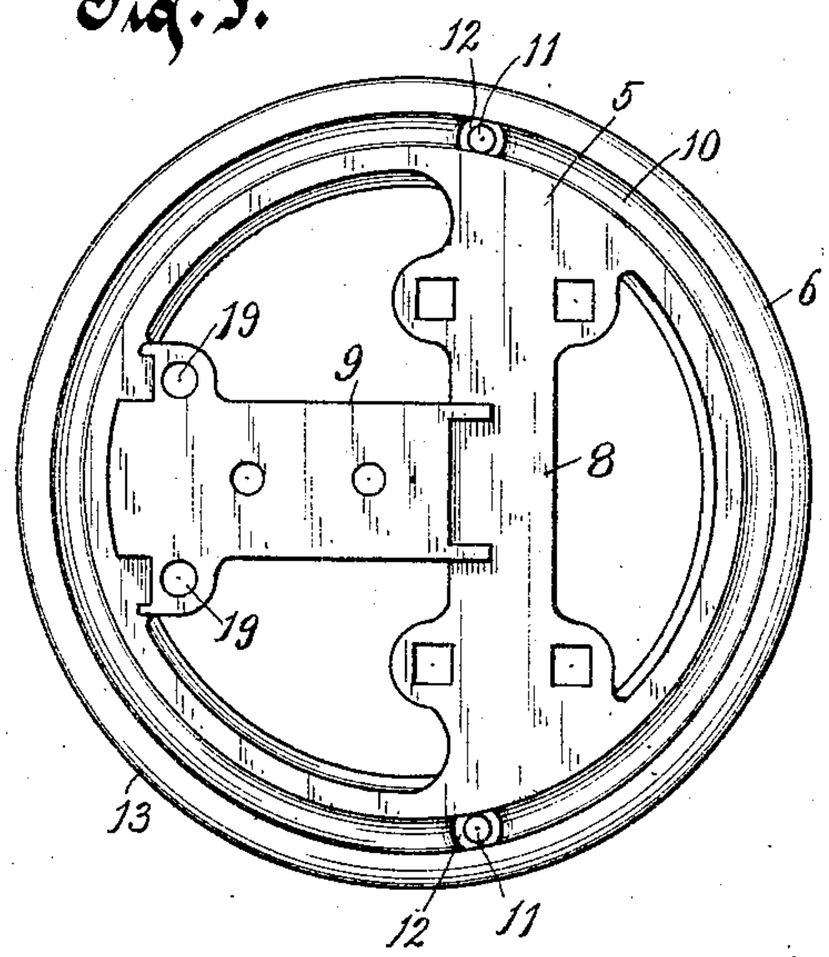
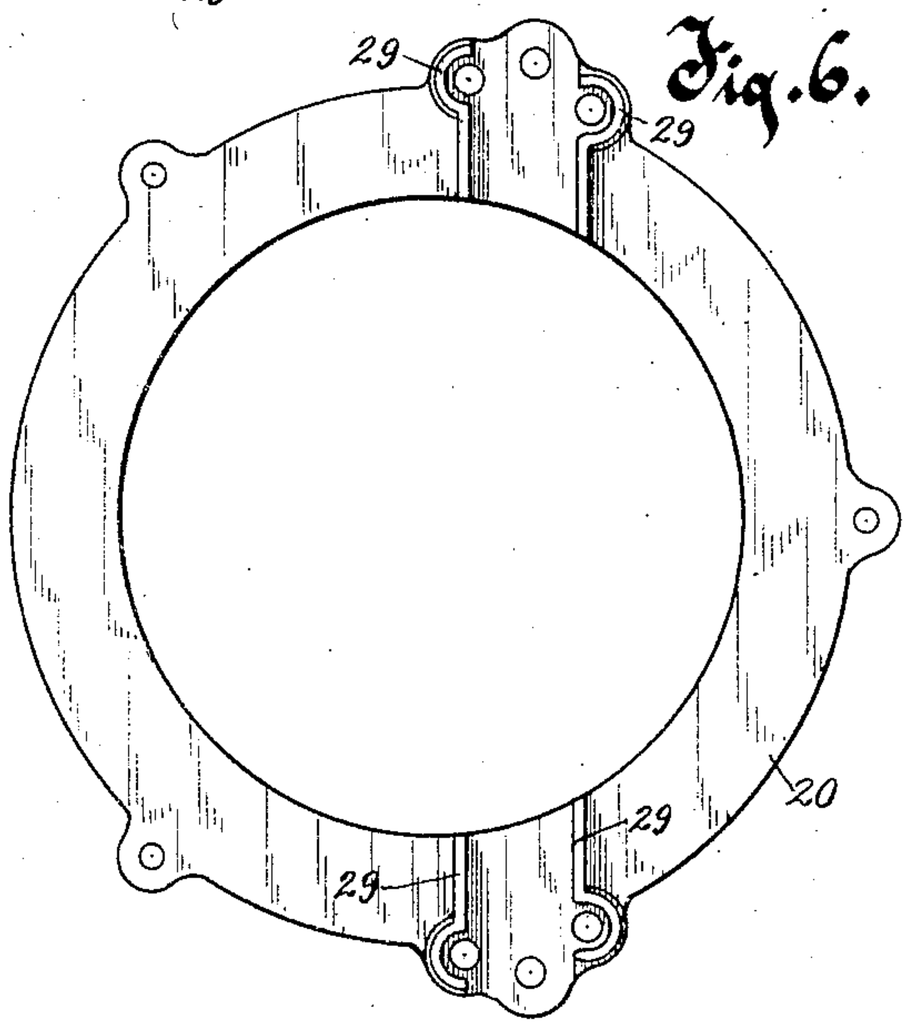


Fig. 6.



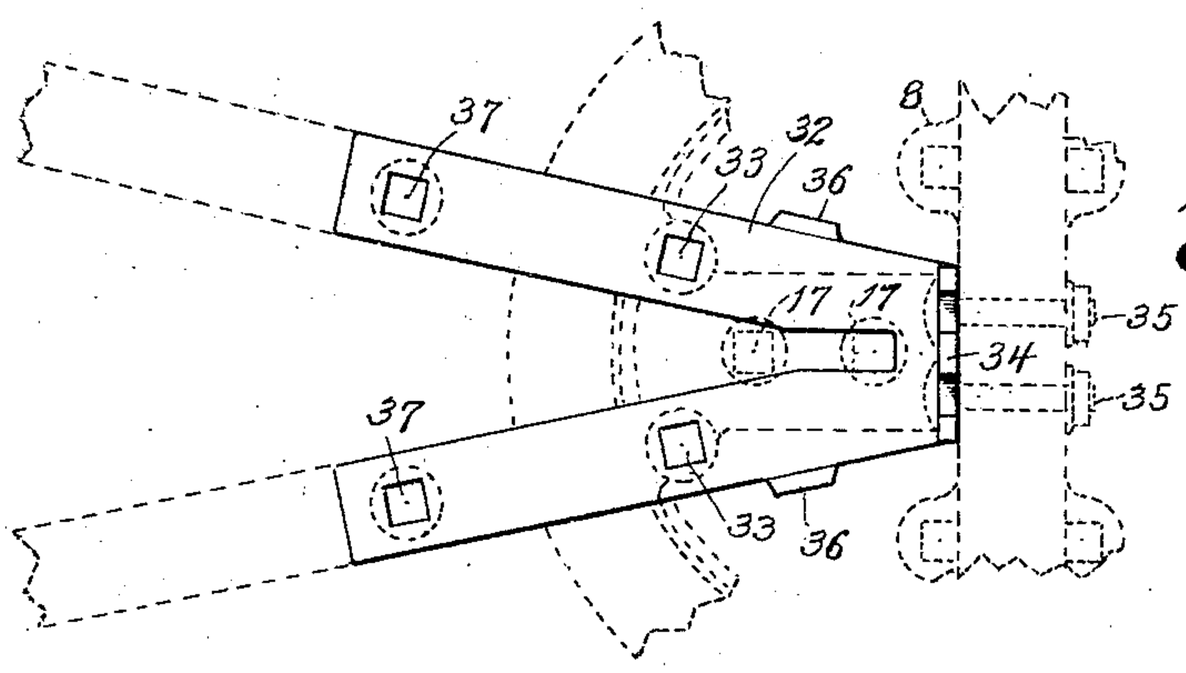
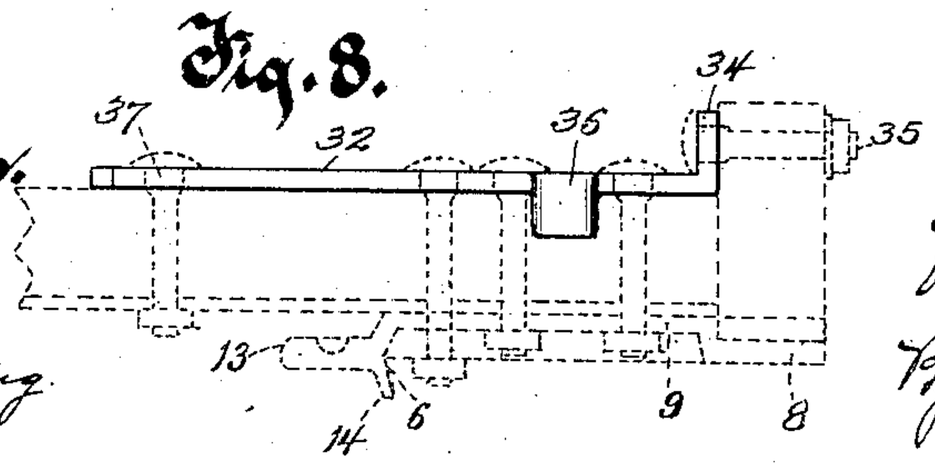


Fig. 7.

Fig. 8.



Witnesses.
C. H. Kinney.
Alma A. Kling.

Inventor.
William Shaw
By Benedict & Morsell
Attorneys.

No. 786,057. Patented March 28, 1905.

UNITED STATES PATENT OFFICE.

WILLIAM SHAW, OF WEST ALLIS, WISCONSIN.

FIFTH-WHEEL.

SPECIFICATION forming part of Letters Patent No. 786,057, dated March 28, 1905.

Application filed September 9, 1904. Serial No. 223,833.

To all whom it may concern:

Be it known that I, WILLIAM SHAW, residing in West Allis, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Fifth-Wheels, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention relates to improvements in the construction of a fifth-wheel for vehicles, in and by which advantages in the form and simplicity of the construction are obtained which have not heretofore been had, and in and by which improvements strength and enduring qualities, combined with ease and reliability in operation and absence of undue and unequal wear, are secured that have not heretofore been obtained.

The invention consists of the construction, its parts, and combinations of parts, as herein described and claimed, or the equivalents thereof.

In the drawings, Figure 1 is a plan of my improved wheel. Fig. 2 is a side view of the improved wheel in connection with the axle-bolster and reach of the vehicle, the axle and bolster being shown in cross-section. Fig. 3 is a front view of the improved wheel in place and connected to the axle and bolster, of which fragments only are shown. Fig. 4 is a central section of the fifth-wheel vertically from front to rear, in connection with a fragment of a reach, to which the circle-plate is secured. Fig. 5 is a top view of the circle-plate. Fig. 6 is an under view of the lower member of the circle-way; and Figs. 7 and 8 illustrate a form of reach tie-plate, in connection with related parts of the vehicle shown in dotted lines, to illustrate a device adapted to be employed with a double reach in connection with my improved fifth-wheel.

With my improved fifth-wheel no king-bolt is employed. Also the construction is such that no bolt is so located or employed that it is exposed to wear by the movement of the parts on each other in use. The fifth-wheel is provided with means for lubricating it sufficiently and advantageously, while the device is practically dust-proof and noiseless.

My improved fifth-wheel is adapted to be used with a vehicle structure of any of the forms in common use, and I have shown it in connection with a front axle A, which may be of two members, the lower one being of steel and the upper one of wood, with a bolster B, springs C, and a reach D of one of many forms in common use.

My improved wheel embodies in a general way a circle-plate 5, the outer annular portion of which forms a circle 6, and a circle-way 7, in which the circle is received and travels rotatively back and forth oscillatingly in the manner of the movement of fifth-wheels. The circle-plate 5 may be an integral complete plate without open or unfilled spaces; but advisably the circle-plate includes the outer circle 6, the transverse bolster-bar 8, and the reach-bar 9, extending from the bolster-bar centrally to the circle, the plate being an integral structure of metal. The circle 5 is provided with an annular groove 10 in its upper surface adapted to receive oil therein as a lubricant, and at one or more points in this groove and advisedly at two substantially opposite points on the circle there is an aperture 11 through the plate in the groove adapted to allow oil in the groove 10 to pass through the plate to the lower surface thereof into a groove in the circle-way, hereinafter described. To prevent the groove 10 from being entirely drained of oil therein, the apertures 11 are protected by an encircling low wall 12, extending from the bottom of the groove upwardly about half the height of the groove, so that oil in the groove 10 in order to pass through the aperture 11 must flow over this wall or dam 12 into the aperture. The outer peripheral edge of the circle 6 is advisably rounded at 13 in cross-section, as shown in Fig. 4, and the circle is provided with a downwardly-projecting annular flange 14, adapted to fit loosely against the edge of the circle-way, hereinafter described, and serving as a dust-excluder.

The bolster B rests on the top of the circle-plate on and along the bar 8 and with the springs C is secured to the circle-plate conveniently by means of bolts 15 15 and tie-straps 16, thereby securing the circle-plate rigidly to the bolster. The reach D rests on the bar 9, which is raised above the surface

of the circle 6, so as to support the reach above the circle-way, and the reach is secured to the circle conveniently by bolts 17 and by a clip 18 about the reach, the legs of the clip passing through apertures 19 19 therefor in the reach-bar. The bolster-bar 8, and consequently the bolster thereon, are located advisably a little in front of the parallel diametric line of the circle, thus providing for a slight lateral throw of the axle with reference to the reach and bolster when the circle travels forward and back in the circle-way.

The circle-way in which the circle 6 is held and travels consists of a lower annular member 20 and an upper complementary annular member 21. These two members are constructed of metal and are secured to each other and to the axle A by a front bolt 22 and the brace 23 and by the side bolts 24 and braces 25. The lower rear end of the brace 23 is secured to the axle A conveniently by a clip 26, and the rear upper ends of the braces 25 are secured to the circle-way by bolts 27. Screws 28, passing through the lower member 20 of the circle-way and turning into the wood member of the axle, are advisably employed. Also advisably flanges 29 29 are provided projecting downwardly from the under surface of the circle-way member 20 along and adapted to fit against the sides of the axle A, thereby aiding in securing the circle-way member securely to the axle.

The lower and upper members 20 21, forming the circle-way, are so formed that when put together and secured to each other on the axle there is formed an annular recess or way in which the circle 6 is received and travels revolubly, the circle being substantially entirely within the circle-way and the flange 14 on the circle fitting close to the edge of the member, whereby the structure, so far as the movable joint formed by the circle and the circle-way is concerned, is practically dust-excluding.

The lower member 20 of the circle-way is provided with an annular groove 30, adapted to receive oil therein for a lubricant. The oil for this purpose is fed into the groove 30 through the apertures 11 by overflow from the groove 10 in the circle. Oil is fed to the groove in the circle through holes 31 in the upper member 21 of the circle-way. These holes are so located in the member 21 that they are directly under and in a general way covered by the overhanging bolster when the axle is substantially at a right angle to the reach and body of the vehicle, thus to a measurable extent excluding dust therefrom. By turning the axle to an oblique angle to the bolster these holes become readily accessible for introducing oil through them to the groove in the circle.

In Figs. 7 and 8 a furcate reach-plate 32 is shown which may be used with my improved wheel in connection with a double reach. This reach-plate is provided with apertures for bolts 33 33, that may be inserted therethrough and through the registering apertures 19 19 in the circle-plate in the place of the legs of the clip 18, used in the other form of structure. This reach-plate 32 is also provided with a terminal flange 34, disposed to fit against the rear surface of the bolster and take bolts 35 through it and through the bolster and also with flanges 36 36, arranged to bear against the exterior lateral surfaces of the members of the double reach and prevent their separation laterally. Also other bolts, 37, may be employed to additionally secure the reach members to the plate 32.

What I claim as my invention is—

1. In a fifth-wheel, a circle-way comprising substantially flat upper and lower opposite and complementary circle-way members in a generally annular form, each member being recessed in its inner edge adjacent and opposite to the recess in the other member forming when secured together an annular channel or circle-way between the two members and above and below the plane of their junction, means securing the two members together, means for securing the thus united circle-way members to an axle, a circle having a peripheral horizontal marginal rim fitting into the circle-way, a downwardly-projecting annular flange at a distance from and of less diameter than the aforesaid peripheral marginal rim fitting to the inner edge of the lower member of the circle-way, and an elevated radial portion for receiving the reach thereon and securing it thereto above the plane of the circle and the circle-way.

2. In combination in a fifth-wheel, a circle provided with an annular oil-groove in its upper surface, means for securing the circle to a bolster, upper and lower members together forming a circle-way adapted to receive the circle therein revolubly the lower member being provided in its upper circle-way surface with an annular oil-holding groove, and means for securing the upper and lower members to each other and to an axle.

3. In combination in a fifth-wheel, a circle provided with an annular oil-groove in its upper surface and with oil-feed holes and dams in the groove, means for securing the circle to a bolster, upper and lower members together forming a circle-way adapted to receive the circle therein revolubly the lower member being provided in its upper circle-way surface with an annular oil-holding groove and the upper member with oil-feed holes, and means for securing the upper and lower members to each other and to an axle.

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

WILLIAM SHAW.

Witnesses:
C. T. BENEDICT,
ALMA A. KLUG.