No. 751,877. PATENTED FEB. 9, 1904.

J. SOMMER.

FIFTH WHEEL.

APPLICATION FILED JULY 16, 1902.

NO MODEL.

Fig. 1

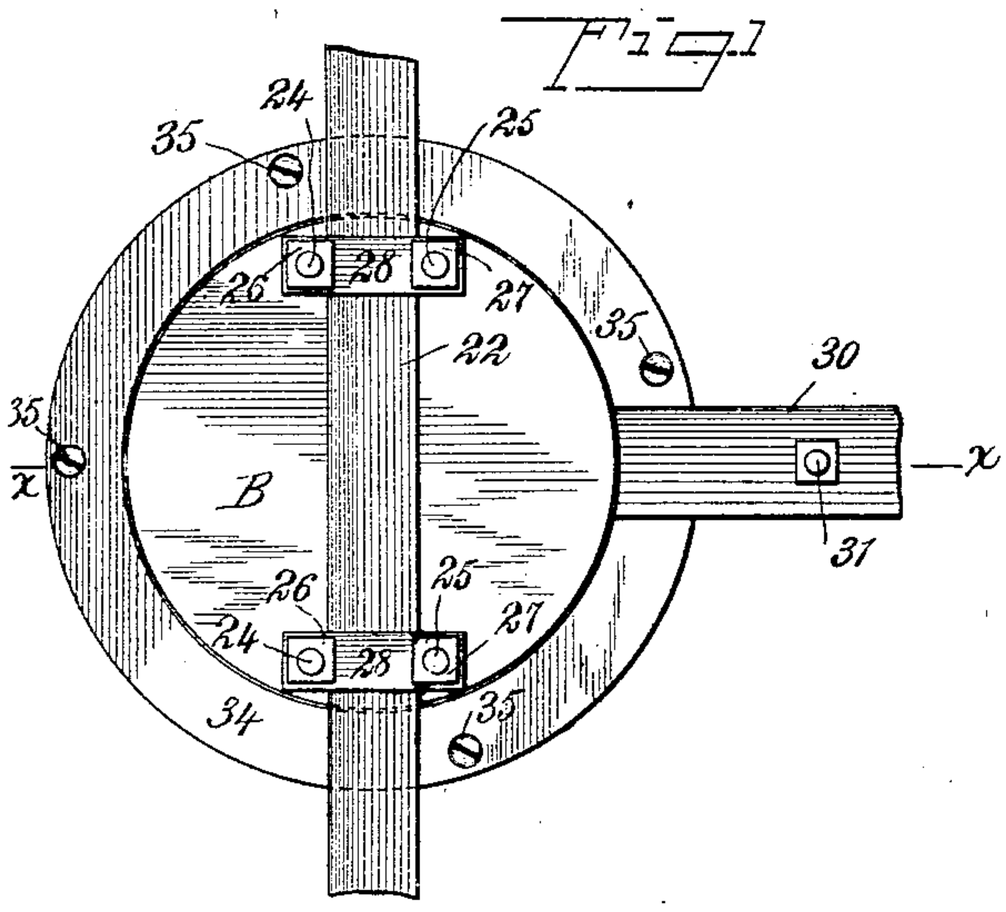
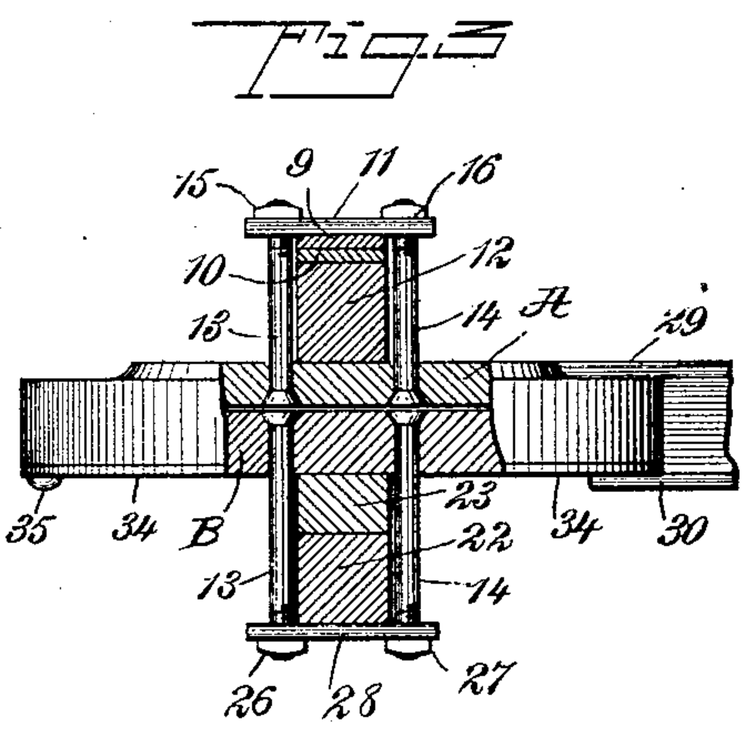


Fig. 3



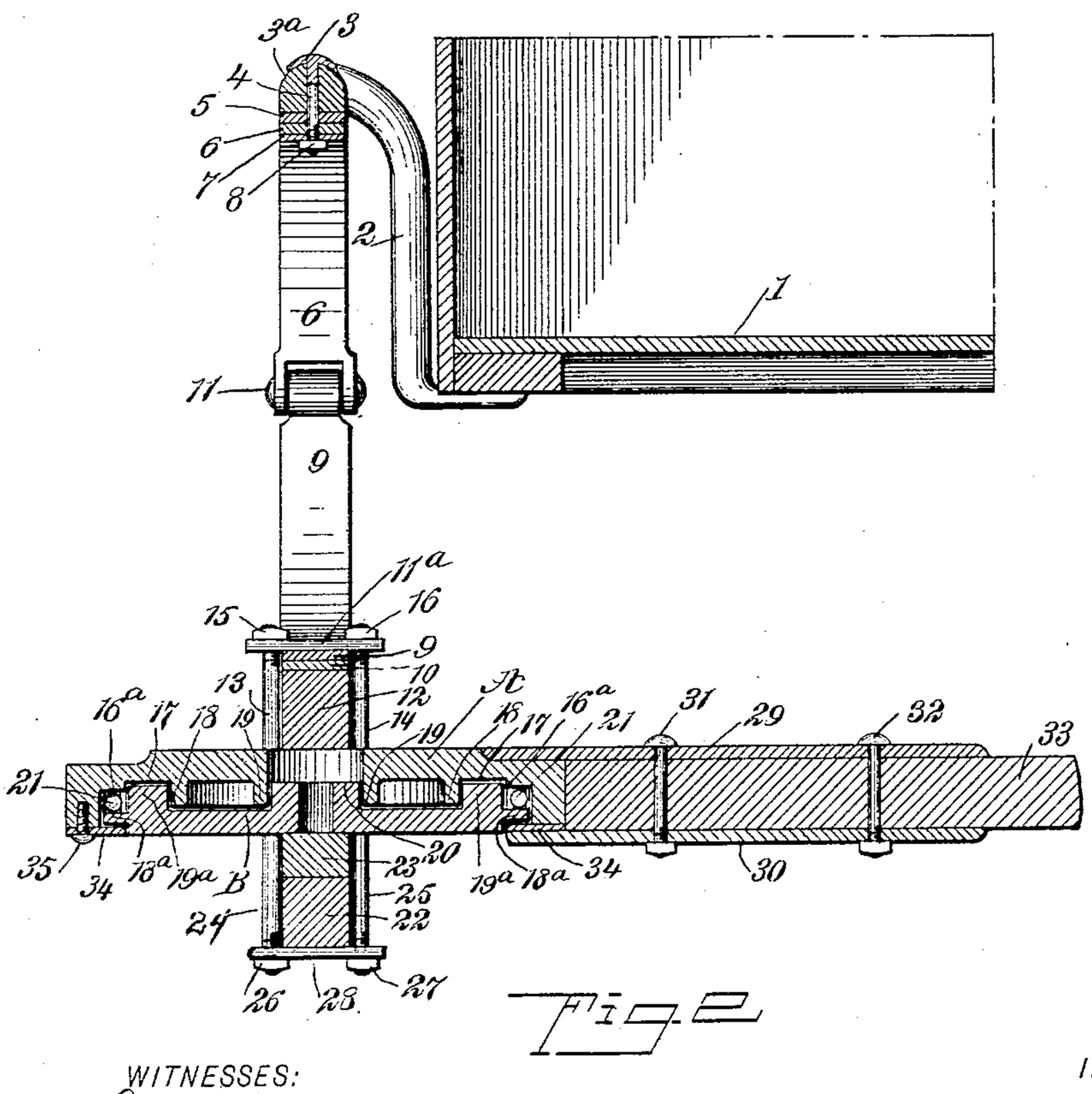


Fig. 2

WITNESSES:

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No. 751,877. Patented February 9, 1904.

UNITED STATES PATENT OFFICE.

JACOB SOMMER, OF KEARNEY, NEBRASKA, ASSIGNOR OF ONE-HALF TO HORACE F. CARSON, OF FREMONT, NEBRASKA.

FIFTH-WHEEL.

SPECIFICATION forming part of Letters Patent No. 751,877, dated February 9, 1904.

Application filed July 16, 1902. Serial No. 115,817. (No model.)

To all whom it may concern:

Be it known that I, JACOB SOMMER, a citizen of the United States, and a resident of Kearney, in the county of Buffalo and State of Nebraska, have invented a new and Improved Fifth-Wheel, of which the following is a full, clear, and exact description.

My invention relates to fifth-wheels for vehicles, my object more particularly being to produce a strong and compact fifth-wheel provided with both ball and slide bearings and having certain advantages hereinafter described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is an inverted plan or bottom view of my fifth-wheel. Fig. 2 is a central section upon the line *x x* of Fig. 1, showing also a part of the vehicle-body; and Fig. 3 is a side elevation of the fifth-wheel, showing the same as partly broken away.

The vehicle-bed 1 is provided with brackets 2, said brackets having bearing-shoes 3 and secured by means of bolts 4, preferably integral with said shoes, upon the bearing-block 3ª, and a vehicle-spring consisting of leaves 5 6. The lower end of the bolt passes through a clamping-plate 7 and is engaged by the nut 8 substantially in the usual manner. The springs, consisting of the leaves 5 6 and also the leaves 9 10, are connected by bolts 11 in the usual manner. A clamping-plate 11ª secures the bottom leaves of the spring upon a block 12. This clamping-plate is engaged by longitudinal bolts 13 14, provided with nuts 15 16, as shown more particularly in Figs. 2 and 3.

The fifth-wheel proper consists of the upper plate A and the lower plate B, said lower plate being movable relatively to said upper plate. The upper plate is provided with divers annular surfaces 16ª 17 18 19, and the lower plate is provided with the somewhat similar surfaces 18ª 19ª 20. These annular surfaces constitute channels or grooves in one member, which channels or grooves are engaged by annular beads in the other member, so that the channels of one plate engage the beads of the other plate. In other words, the beads and channels mutually intermesh and serve as guides for each other, whereby the lower plate is maintained in a predetermined relation relative to the upper plate, and yet is allowed to move freely. No king-bolt is necessary, the several concentric channels and beads affording all the apparatus necessary to maintain the parts in proper relation.

Between the surface 16ª of the upper plate and the surface 18ª of the lower plate are disposed a number of rolling bodies 21, such as balls or analogous devices, for the purpose of alleviating friction. The surfaces 16ª and 18ª, together with the vertical walls immediately adjacent thereto, constitute a ball-race. Immediately below the lower plate and in contact therewith is a block 23, and below this block is the axle 22. The axle 22 and block 23 are secured rigidly upon the lower plate by means of the bolts 24 25 and the clamping-plates 28, nuts 26 27 engaging the ends of the bolts 24 25 where the same pass through the clamping-plate 28. To the upper plate A is secured a longitudinal strip 29, to which is connected another strip 30 by means of bolts 31 32, which pass directly through the stringer 33.

An annular collar 34 is secured, by means of screws 35, upon the upper plate A and serves to retain the lower plate B in the position indicated in Fig. 2. By removing the screws 35 the lower and upper plates may be separated. The strip 30 is secured rigidly to the annular collar 34, so that the upper strip 29, stringer 33, strip 30, and the annular collar 34 are all rigidly secured together and have normally no movement relative to each other, whereas the lower plate B is free to move relatively to said parts considered as a whole.

The bearing-surfaces presented by the annular bead 19ª against the annular channel 17 and by the annular beads 18 19 against the bottom of the large annular channel surrounding the bead 20 serve as bearing-surfaces and also as guides. The rolling bodies 21, incased as they are in an annular ball-race, act after the manner of the balls in a ball-bearing. The parts being detachable of course the roll-

ing bodies 21 may be taken out at will. In this event only the sliding surfaces of the fifth-wheel are used. If, however, the balls are retained, the pressure is partly upon the balls and partly upon the sliding surfaces.

It will therefore be observed that I have produced a simple, strong, and efficient fifth wheel and that the same is unable to readily come apart.

My invention does away with several parts ordinarily used.

The use of my fifth-wheel prevents rattling and also prevents the entrance of dust.

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

In a fifth-wheel, the combination of a pair of flat plates of general circular form adapted to mate each other, one of said plates being provided with an annular bearing-groove and with an annular collar detachably secured to said plate and bounding said groove, the other of said plates being provided upon its opposite faces with annular bearing-grooves in alinement with each other, one of said last-mentioned grooves being mated by a portion of said annular collar, the other of said last-mentioned grooves being disposed opposite the groove of the other plate, and a plurality of rolling bodies disposed between said plates and engaged by the respective last-mentioned grooves of said pair of flat plates.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JACOB SOMMER.

Witnesses:

JACOB KANZLER,

DAN MORRIS.