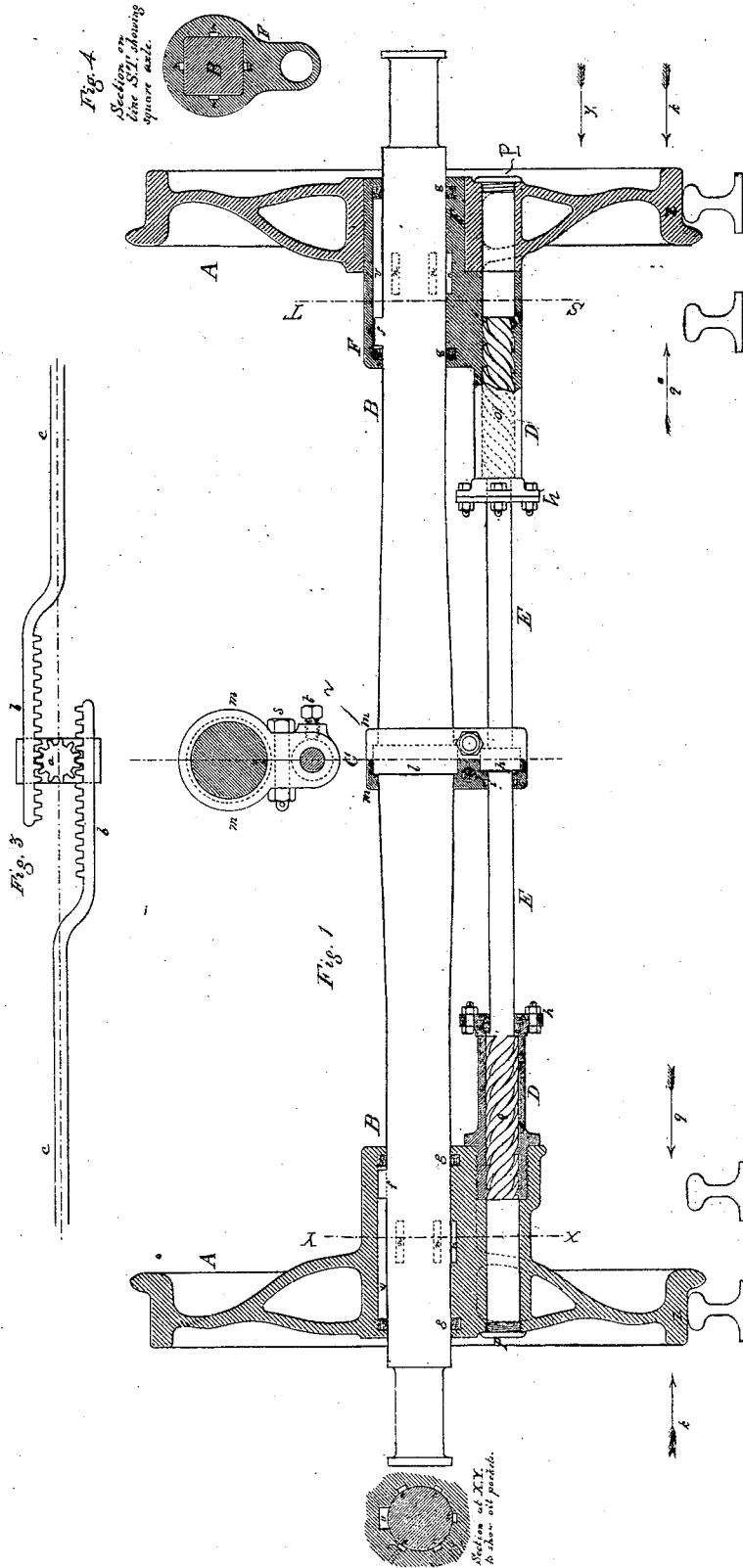


GEORGE SEWELL.

Improvement in Self-Adjusting Car-Wheel Gears.

No. 114,979.

Patented May 16, 1871.



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GEORGE SEWELL, OF BROOKLYN, NEW YORK.

Letters Patent No. 114,979, dated May 16, 1871.

IMPROVEMENT IN SELF-ADJUSTING CAR-WHEEL GEARS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, GEORGE SEWELL, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Self-Adjusting Car-Wheel Gear, so as to provide for car-wheels automatically adjusting themselves to different gauge of track; and I hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawing which forms a part of this specification, in which—

Figure 1 is a sectional view of a car-axle and wheels with my improvement.

Figure 2 is a section on the line X Y of the axle-bearing, showing the oil-pockets.

Figure 3 shows a modification of my invention.

Figure 4 is a section on the line S T of the axle-bearing, showing a square axle.

The object of this invention is to so arrange car-wheels that by simply releasing a locking device the wheels will adjust themselves to a wider or narrower gauge of track, when the two tracks are made to run together, by gradually contracting the broader gauge track to the width of the narrower track.

For this purpose the wheels A A are placed on the axle B B so that they can, within certain distances, move nearer to or further from the middle of the axle, and so that the movement of the one wheel must be exactly equal to that of the other, and the adjustment will be made by pressure on the side of the wheels when the locking device is released.

The rod E E has at its middle point a collar, *p*, which fits into a recess, *w*, in the clamp or collar *m m*, which is held at the middle of the axle B B by the collar *l*.

On each end of rod E E are screw-threads O O of equal pitch but in opposite directions—that is, if one is a right-hand screw the other must be a left-hand screw.

The screws O O work in nuts or cases D D, which are secured to the wheels A A, or may be cast with and form part of the car-wheels.

On the inner ends of the nuts D D are boxes *h h* for packing, so as to prevent the escape of oil from spirals or screws O O, and also to prevent the entrance of dust or grit.

In the hubs of the wheels are recesses *g g*, to receive packing, to retain the oil, and to prevent the entrance of dust or grit.

f is a stud forged on or set into axle B B, and working in recess *v* in the hub of wheels A A. This stud prevents the wheels from revolving on the axle B B.

i is a recess for packing, so as to retain oil around collar *p*, and prevent the entrance of dust; and

P is a screw-plug to close the outer end of nuts D D.

The object is to have all the parts well protected, so as to retain the oil and prevent the entrance of

grit or dust to any of the surfaces that move on each other.

Bolt *s* secures the clamp *m m* to the axle B B and keeps it in position laterally.

A set-screw, *t*, serves to bind rod E E and keep it from turning, and thereby hold the wheels to any gauge of track desired. By this arrangement of parts, the spirals O O being of equal pitch and in opposite directions, any movement of either wheel on the axle B B must be followed by like movement of the other wheel in the opposite direction, and when the rod E E is clamped by the set-screw *t* so that it cannot turn the wheels are held firmly in position; but by loosening set-screw *t* the rod E E is free to turn, and all the parts being well lubricated, any pressure on the flanges or sides of the wheels will make them adjust themselves to the track on which they are to roll. The devices are, therefore, self-acting or self-adjusting to the gauge of track.

On the left-hand side of fig. 1 I have shown the hub of wheel A as cast with the wheel, but I prefer to make the wheel as shown on the right-hand side of fig. 1, where the hub or sleeve F F, with screw-socket or nut D, is made independent or separate from wheel A and inserted therein, as shown.

On the inside of sleeve F F are recesses *n n n n* to receive oil. The axle is made square, as shown in fig. 4, and in this case the stud *f* and recess *v* are not required to keep the wheel from turning on the axle.

Another modification of my invention is shown in fig. 3. Instead of the bar E E, screws O O, and sockets D D, to adjust the distance between the wheels, I can use the rack and pinion, as shown in fig. 3. The racks *b b*, toothed wheel *a*, and rods *e e* will perform the same service as the rod E E, with the screws O O and sockets D D—that is to say, the toothed wheel *a* should be pivoted at the point marked *l*, fig. 1, and rods *e e* secured to wheels A A; then by turning the toothed wheel *a* the wheels A A will each be moved an equal distance to or from the middle *l* of the axle B. The racks *b b* must be confined to toothed wheel *a* by any suitable guide or case.

One great advantage of the separate or independent sleeve F F is the saving in repairs. When the tread Z is worn out, as often happens, the wheel may be replaced, while the hub F F and screw-socket D will last for a much longer time.

The following is the method of using my invention:

Suppose that the wheels A A are adjusted to a broad gauge: pressure is brought to bear upon the wheels A A in the direction of the arrows K K, they will approach each other, the rod E E revolving to permit the same. When the pressure ceases the wheels will remain where left.

By reversing the pressure, by inside rails laid for the

purpose where different gauges of the road meet, as shown by arrows *q q*, the wheels *A A* will move in that direction, rod *E E* revolving during the operation. When the pressure ceases the wheels will remain as left; but should pressure be applied to only one wheel at a time, as by the swaying from side to side of the track, as shown by arrow *y*, the wheels will not shift or slide in obedience thereto, as rod *E E* will not revolve, being resisted by the opposite wheel, upon which the pressure is in the wrong direction.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The bar *E*, having right-and-left screws *o o* and collar *p*, in combination with the wheels *A A* having the sockets *D D*, as and for the purpose set forth.

2. The clamps *m m*, with bolt *s*, and recess *w*, in combination with the axle *B* having the collar *l*, and the bar *E* having the collar *p*, as and for the purpose set forth.

3. The sockets *D D*, provided with the packing-boxes *h h* and screw-plugs *P P*, as and for the purpose set forth.

4. The wheel *A*, with hub *B*, and socket *D* having screw-threads as described, so as to combine with the axle and bar *E E*, as set forth.

GEORGE SEWELL.

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