

W. GOODMAN.

Car Wheel.

No. 110,563.

Patented Dec. 27, 1870.

Fig: 1.

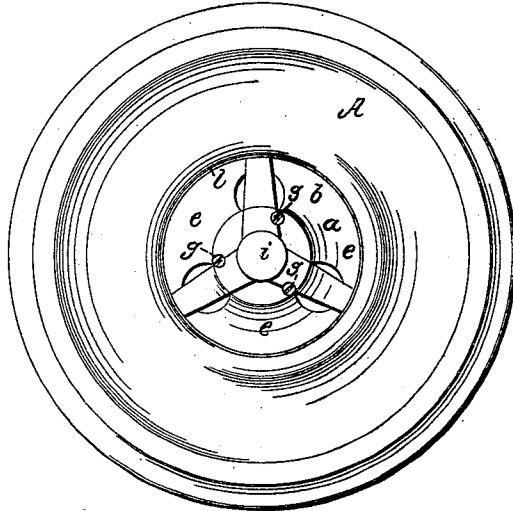


Fig: 2.

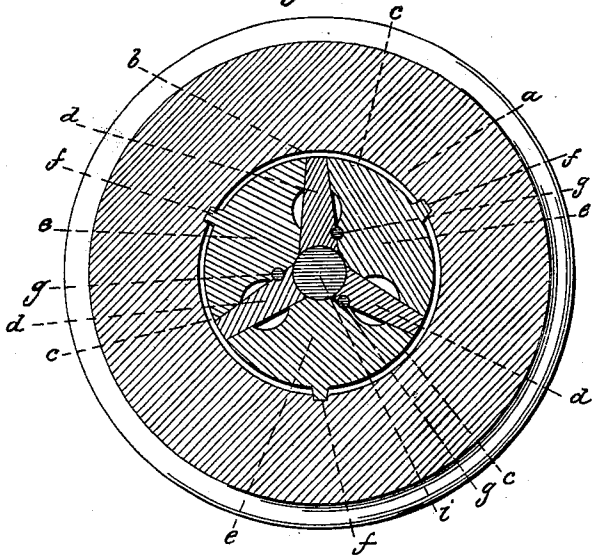
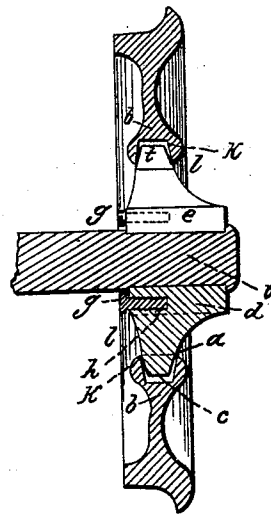


Fig: 3.



Witnesses:  
Geo A. Downing  
Edward Griffiths.

William Goodman.  
by his Attorney  
Frederick Curtis.

# United States Patent Office.

WILLIAM GOODMAN, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 110,563, dated December 27, 1870.

## IMPROVEMENT IN CAR-WHEELS.

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

To all to whom these presents shall come:

Be it known that I, WILLIAM GOODMAN, a subject of the Kingdom of Great Britain, but at present residing in Boston, in the county of Suffolk and State of Massachusetts, have made an invention of certain Improvements in Elastic-Bearing Car-Wheels; and do hereby declare the following to be a full, clear, and exact description thereof, due reference being had to the accompanying drawing making part of this specification, and in which—

Figure 1 represents a broad face elevation;

Figure 2, a vertical and longitudinal, and

Figure 3 a vertical and transverse section of a car-wheel provided with my invention.

It is within my knowledge that various plans are now in existence, and in fact in use, to combine with a car-wheel an elastic bearing between itself and its axle, and this device, while adding to this class of inventions, possesses simplicity, strength, and great durability, combined with effective operation, the purpose in originating such invention having been to avoid the complexity of parts and liability to derangement and injury now common to others of like character.

In my present invention the elastic material is interposed at a convenient point between the axle-bearing and the rim of the wheel, by which the concussions, thrusts, and strains upon a railway car are greatly modified and the comfort of the traveler greatly enhanced.

In carrying out this invention I produce a car-wheel, A, of cast-iron, in the ordinary manner, with the exception that its journal-receiving orifice or bearing *a* is enlarged to about three times the usual size.

The inner boundary or periphery of this opening is channeled or grooved as shown at *b*, and in such groove I deposit a ring, *c*, of India rubber or other equivalent substance possessing the desired elasticity.

In pursuance of my invention I produce three or more segmental blocks, *e e e*, of metal or other suitable material, the combined width of such blocks being sufficient to occupy the inner circumference of the orifice *a*, with the exception of that occupied by a series of tapering keys, *d d d*, which are forcibly inserted between every two adjacent segmental blocks.

The radial length of the blocks and keys is such as

to produce an opening at the center of the wheel for reception of the axle-journal *i*, as shown in the drawing.

Each segmental block *e* is provided with a spur or teat, *f*, to pass through the elastic band or ring *c*, and extend a short distance into the metal of the wheel, for the purpose of insuring the proper position of such blocks and of the ring, and prevent rotation of either under the torsive strain to which they will be subjected.

In constructing a wheel according to my present invention a band or ring, *c*, of India rubber or its equivalent, is deposited within the bottom of the annular groove *b*, and extending throughout the length of the same. Next the segmental blocks are inserted in place, as shown in the drawing, and the keys *d* driven tightly between them, this last act serving to produce a solid and durable union of the parts, the whole being bound together by bolts or pins *g g g*, which, as represented in the drawing, are driven into holes *h*, &c., bored between each block and one of its adjacent keys.

The orifice *i* is then to be bored out concentric with the circumference of the wheel and finished.

I have found in practice that the value of my invention is enhanced by prolonging the width of the elastic band *c* or producing it with sides *k k*, which extend outwardly between the walls of the channel *b* and the sides of each block *e*. In this case each block should be formed with a raised ledge, *l*, to insure the proper fixture of the sides of the elastic band.

### Claim.

I claim—

The general combination and arrangement of the elastic band *c*, the segmental blocks *e e e*, and key-pieces *d d d*, the latter-mentioned blocks and keys being confined together by the bolts or pins *g g g*, and the whole operating in connection with the annular groove *b* of the body of the wheel to produce results before stated.

WILLIAM GOODMAN.

Witnesses:

FRED. CURTIS,  
EDW. GRIFFITH.