

A. F. COOPER.
Car-Wheels.

No. 143,560.

Patented Oct. 14, 1873.

Fig. 1.

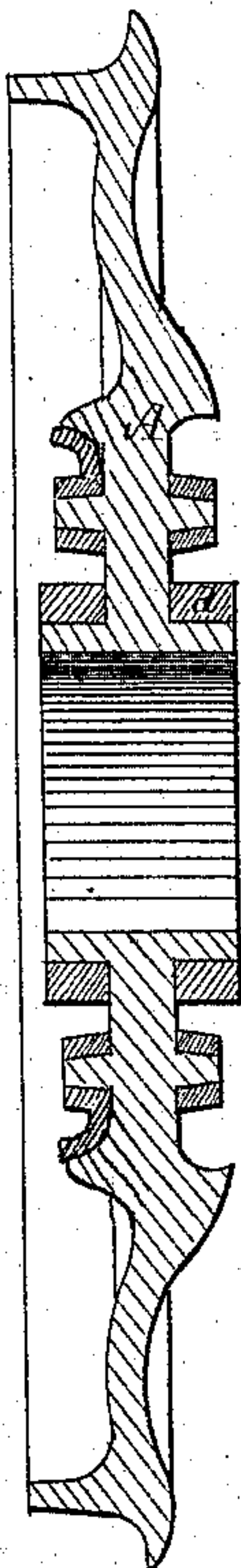


Fig. 4.

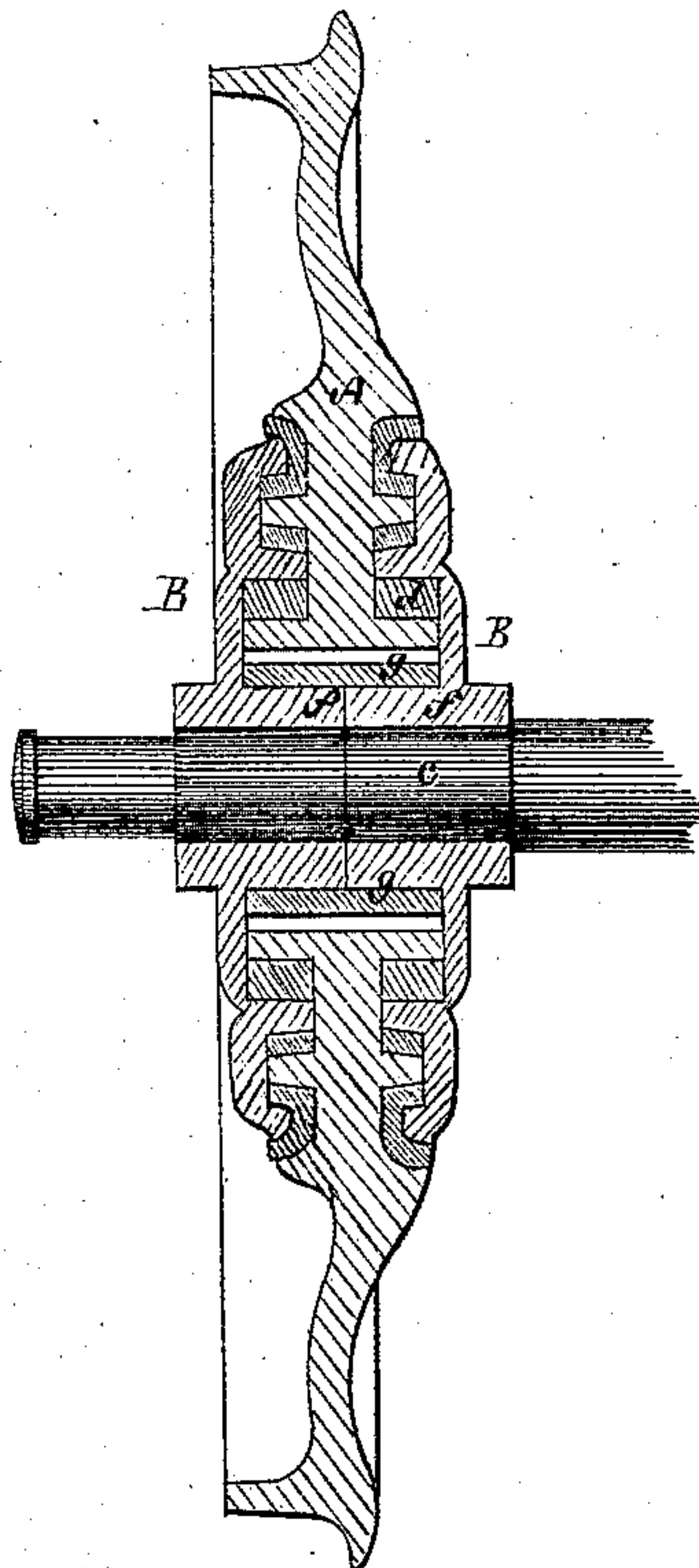


Fig. 2.

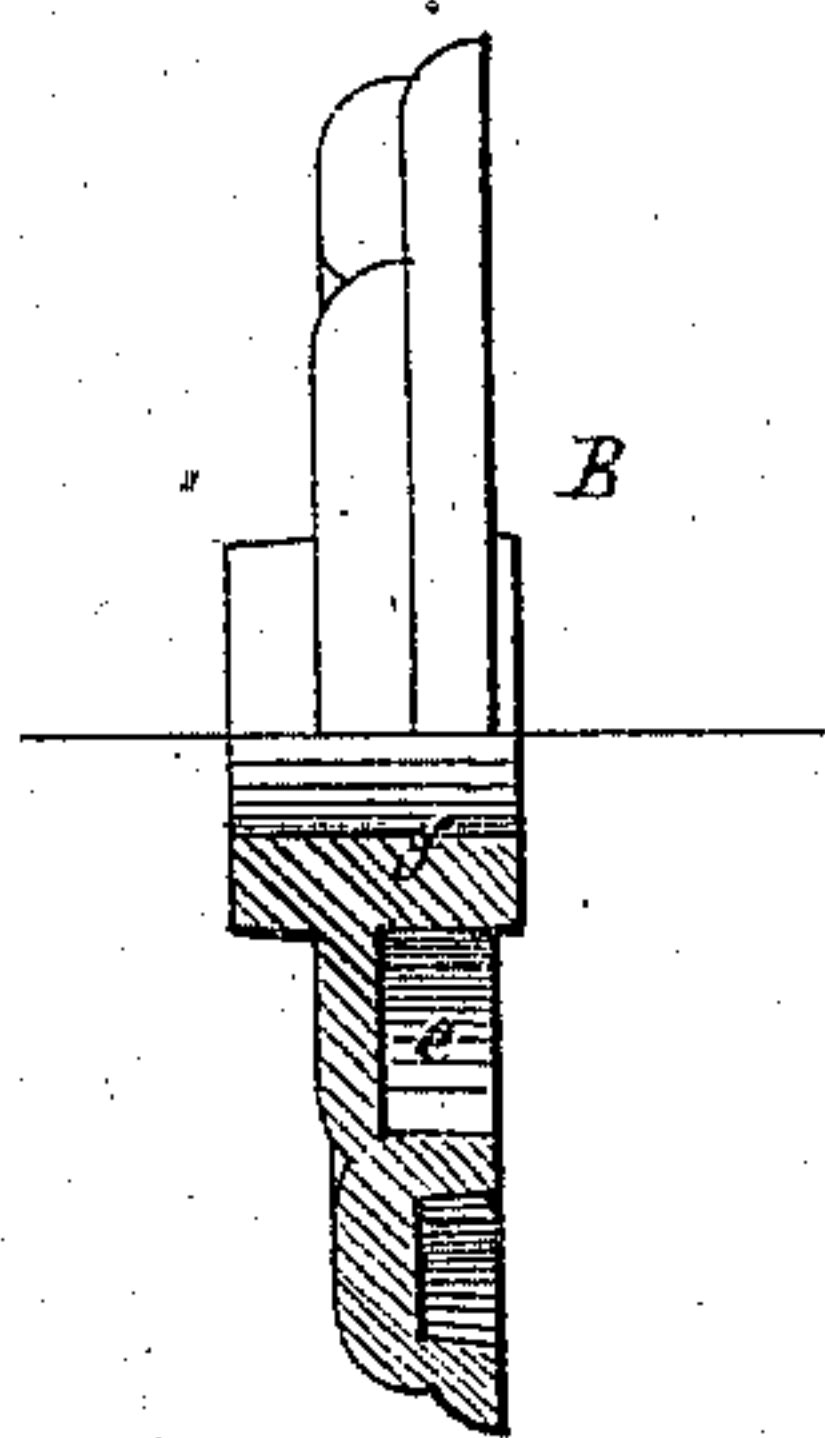
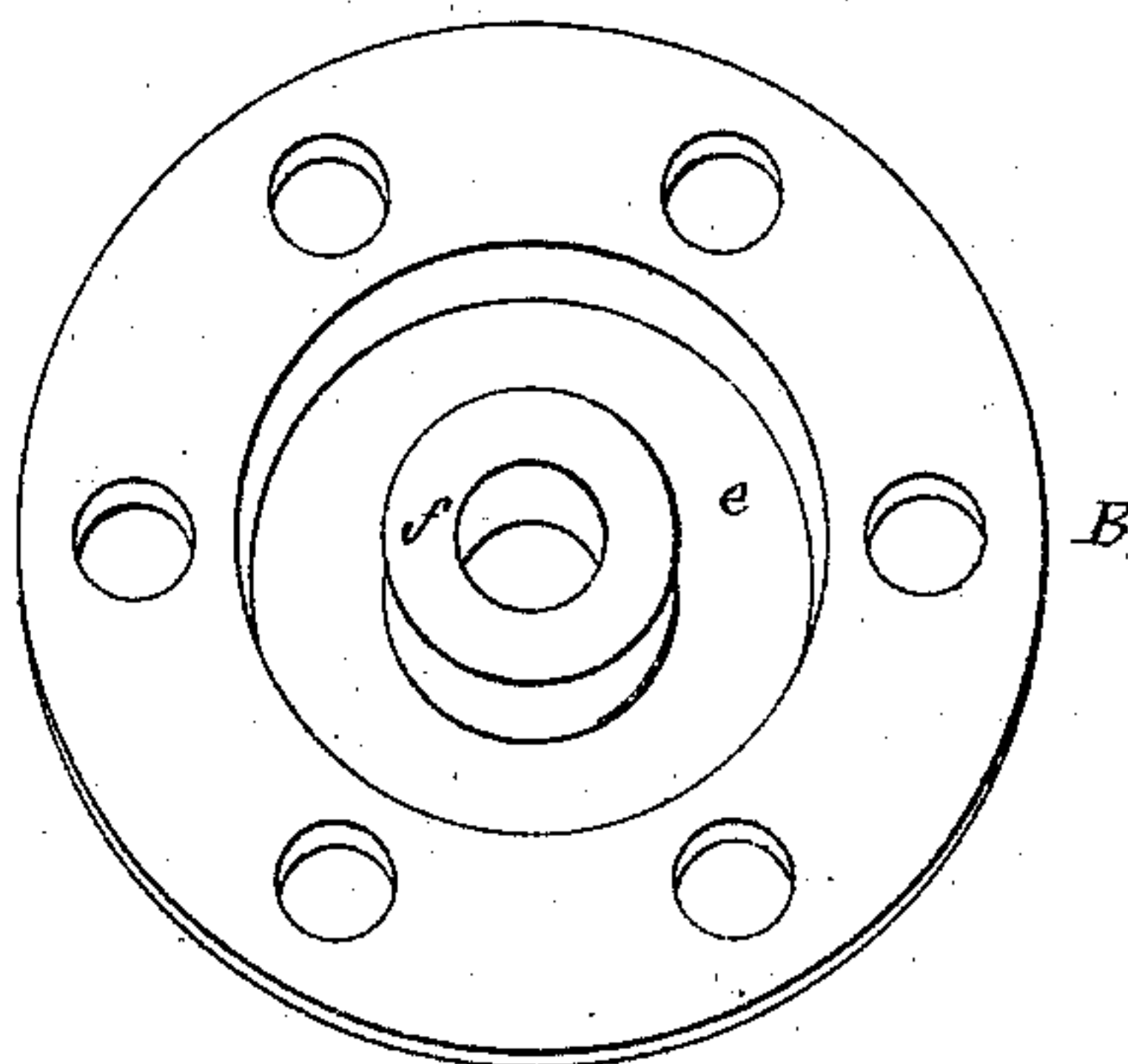


Fig. 3.



Witnesses.
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ALMOND F. COOPER, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN CAR-WHEELS.

Specification forming part of Letters Patent No. 143,560, dated October 14, 1873; application filed April 7, 1873.

To all whom it may concern:

Be it known that I, ALMOND F. COOPER, of Cambridge, in the State of Massachusetts, have invented a new and useful Improvement in the Construction of that Class of Railroad-Car Wheels known as Elastic Car-Wheels, for improvement in which patents were issued to me February 15, 1870, No. 99,851, and May 31, 1870, No. 103,573, of which the following, taken in connection with the annexed drawings, is a full, clear and exact description:

The car-wheel referred to is made of cast-iron in three pieces, the main portion of which is the web and rim or tread of the wheel, of which a longitudinal sectional view is given, Figure 1. The other two pieces constitute the hub of the wheel, and are both alike, and are placed on and cover the center on each side of the web of the wheel, the axle passing through the center of these hub-pieces, they being so fitted and forced onto the axle that, when forced to its place, the axle forms in relation to these hub-pieces, and the wheel or bolt holding them securely in their place in relation to the web and rim of the wheel, and supporting it equally on both sides and in all directions. A longitudinal sectional view of one of these pieces is given in Fig. 2. Fig. 3 is a perspective view of the inner side of one of these hub-pieces. Fig. 4 is a longitudinal sectional view of the whole wheel, shown in its place on the axle, with its elastic packing and the improvement here described shown.

The present invention provides a new method of confining the two hub-pieces and the web of the wheel (with the elastic packing interposed between them, as described in my former patents referred to) together in their proper relative positions, while they are bored out and fitted and driven onto the axle. When driven onto the axle, the inner ends of the two hub-pieces meet in the hole through the web of the wheel, while the flanges on them embrace and support the web. On the inner side of these hub-pieces a circular cavity, *e*, is cast in them, leaving inside this cavity a sufficient thickness of iron for the strength required for the hub. These circular cavities would be of a depth, in each hub-piece, of an inch or thereabout, and a width of three-quarters of an inch; a flat ring of wrought-iron, of a width nearly equal to the depth of the circular cavities in both the hub-pieces,

and of a thickness sufficient to give it the requisite strength, but in no case so thick that the inner edge of the web of the wheel will come in contact with it, or rest nearer to it than about one-half an inch. The inside diameter of this ring is just such that it can, with heavy pressure when cold, or with a less pressure when heated, be driven onto the projecting inner ends of the hub in the circular cavity in the hub-pieces described. When the wheel is put together, this wrought-iron ring is placed, heated, (so as to expand it or not, as may be desired,) between the two hub-pieces, in the hole in the web, in such position that, when the two hub-pieces are forced up to the web of the wheel, this ring will enter the circular cavities in the two hub-pieces alike, encircling and firmly uniting by pressure with the two inner projections of the hub-pieces, and securely holding them together in position to, and embracing and supporting the web of, the wheel. If this ring is driven into its place cold, rubber elastic packing may be interposed between it and the inner edge of the web of the wheel.

Heretofore several bolts, passing through the two hub-pieces and the web of the wheel through holes in the web made somewhat larger than the bolts, have been used to confine the several pieces or parts of the wheel together, the heads of the bolts appearing on one side of the wheel and the screw and nut on the other.

My method of confining the several pieces of the wheel together, as herein described, is in all respects better and cheaper, and makes a much better looking wheel than those held together with bolts, as above described.

In the drawing, *A* is the web of the wheel. *B B* are the hub-pieces. *C* is the axle. *d* is the elastic rubber packing. *e* is the circular cavity in the hub-pieces. *f* is the inner projection of the hub. *g* is the flat wrought-iron ring.

I claim as new—

In combination with the web and hub-pieces of an elastic packed car-wheel, the wrought-iron ring, applied substantially as described, for the purpose specified.

ALMOND F. COOPER.

Witnesses:

THOS. CLARK,

CHS. HOUGHTON.