

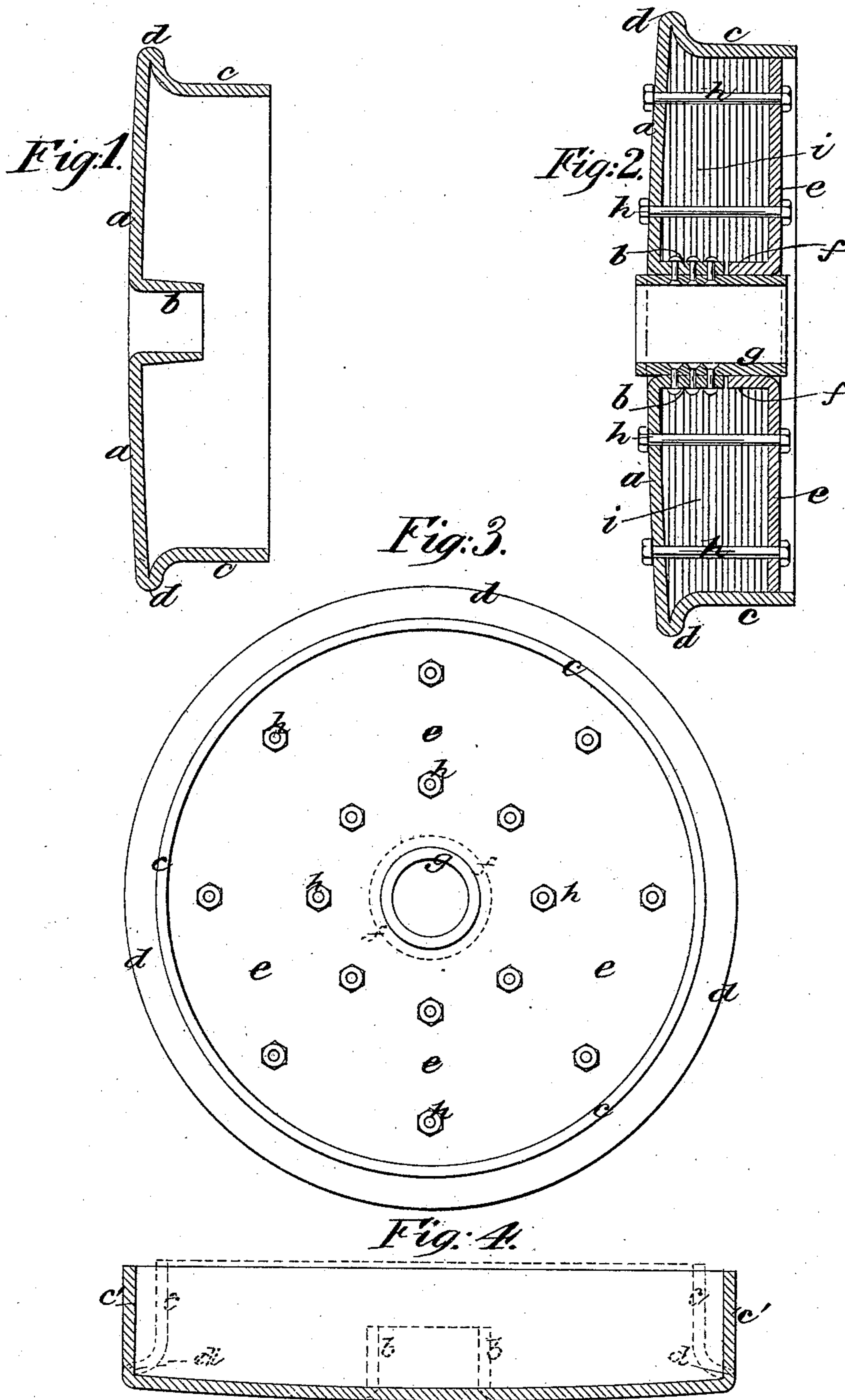
(No Model.)

W. H. BROWN.

CAR WHEEL.

No. 387,209.

Patented Aug. 7, 1888.



Witnesses.
Emil Herter.
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UNITED STATES PATENT OFFICE.

WILLIAM HENRY BROWN, OF JERSEY CITY, NEW JERSEY, ASSIGNOR, BY
MESNE ASSIGNMENTS, TO THE BROWN'S SEAMLESS METAL COMPANY,
OF NEW JERSEY.

CAR-WHEEL.

SPECIFICATION forming part of Letters Patent No. 387,209, dated August 7, 1888.

Application filed September 9, 1886. Serial No. 213,051. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY BROWN, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Railway-Wheels, of which the following is a specification, reference being had to the accompanying drawings.

10 The invention relates to railway-wheels which are composed principally of two disks or circular plates of wrought-iron or steel, one of which forms one side or face of the wheel, together with the whole of the flange and tread
15 and a portion of the hub, and the other of which forms the other side or face and another portion of the hub.

The improvement consists in the novel construction of these plates or wheel-sections and
20 the novel combination with them of a hub-bushing and an interposed filling of wood, paper, or other material, as hereinafter described and claimed.

Figure 1 in the accompanying drawings represents an axial section of that one of the said
25 disks, plates, or wheel-sections which constitutes one side or face, the tread, the flange, and a portion of the hub of a wheel constructed according to my invention. Fig. 2 represents
30 an axial section of the complete wheel. Fig. 3 is a side view corresponding with Fig. 2. Fig. 4 is a sectional diagram illustrating the method of producing the disk or wheel-section shown in Fig. 1.

35 Similar letters of reference designate corresponding parts in the several figures.

The disk or wheel-section shown in Fig. 1 is made from a flat disk or circular plate of steel or wrought-iron of sufficiently larger diameter than the intended diameter of the
40 wheel outside of the flange. This disk is heated, and then, by means of a plunger and die or other suitable means, has its edges turned in to bring it to the cup or shallow cylindrical form shown in Fig. 4, the external diameter of the rim or turned-in part *c* being equal to the intended external diameter of the flange *d*. A hole is then punched in the center of the disk or plate, and the metal is turned in-

ward around the said hole, as indicated in 50 Fig. 4 by dotted outline, by means of a plunger and die or other suitable means to form an internal tubular projection, *b*, half the length of the hub. The next and final operation is to contract the rim *c'*, as indicated in dotted out- 55 line in Fig. 4, to produce the tread *c*, such contraction extending to within a suitable distance of the disk *a* to produce the doubled flange *d*. This contraction of the rim may be performed by pressing in a die or by rolling 60 or spinning while the metal is in a sufficiently heated state. The other disk or wheel-section, *e f*, of the wheel (shown in Figs. 2 and 3) consists of a disk or circular plate, *e*, of wrought-iron or steel, in the central portion of 65 which is a hole, from which the metal is turned inward to form an internal tubular projection, *f*, which corresponds with the hub portion *b* of the other section and forms the other half of the length of the hub. The outer circum- 70 ference of the disk *e* fits snugly within the interior of the rim or tread portion *c* comprised in the other wheel-section.

The two wheel-sections *a b c d* and *e f* have inserted tightly within their correspond- 75 ing hub portions *b* and *f* a lining tube or bush, *g*. This tube may be secured to one of the sections by riveting, or may be secured in either or both sections by shrinking the portions *b f* upon it, or may be screwed into both 80 sections. When a long hub is desired, this tube or bush *g* may be longer than the hub portions *b* and *f*.

The cavity formed between the disks *a e* around the hub portions *b f* and within the 85 rim or tread *c* is filled in with wood, paper, or any other light but solid material, and is represented in Fig. 2 as filled with wood or paper-board in the form of disks *i i*, which are compressed tightly between the disks *a e* 90 by means of screw-bolts *h h*, which pass through both disks.

A wheel thus constructed has the merit of lightness in proportion to its strength. It is elastic and not likely to be broken either by 95 shocks or by expansion and contraction, and is almost noiseless. Such a wheel is, moreover, capable of being produced very cheaply.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the two principal wheel-sections *a b c d* and *e f* the filling *i* the bush-
5 ing *g*, and the clamping-bolts *h*, one of the said sections consisting of a disk, *a*, tread *c*, flange *d*, and central tubular projection, *b*, and the other of a disk, *e*, having a central tubular projection, *g*, the said bushing fitting

both of the said tubular projections and the 10 clamping-bolts clamping the filling between the disks *a c*, all substantially as herein described.

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Witnesses:

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