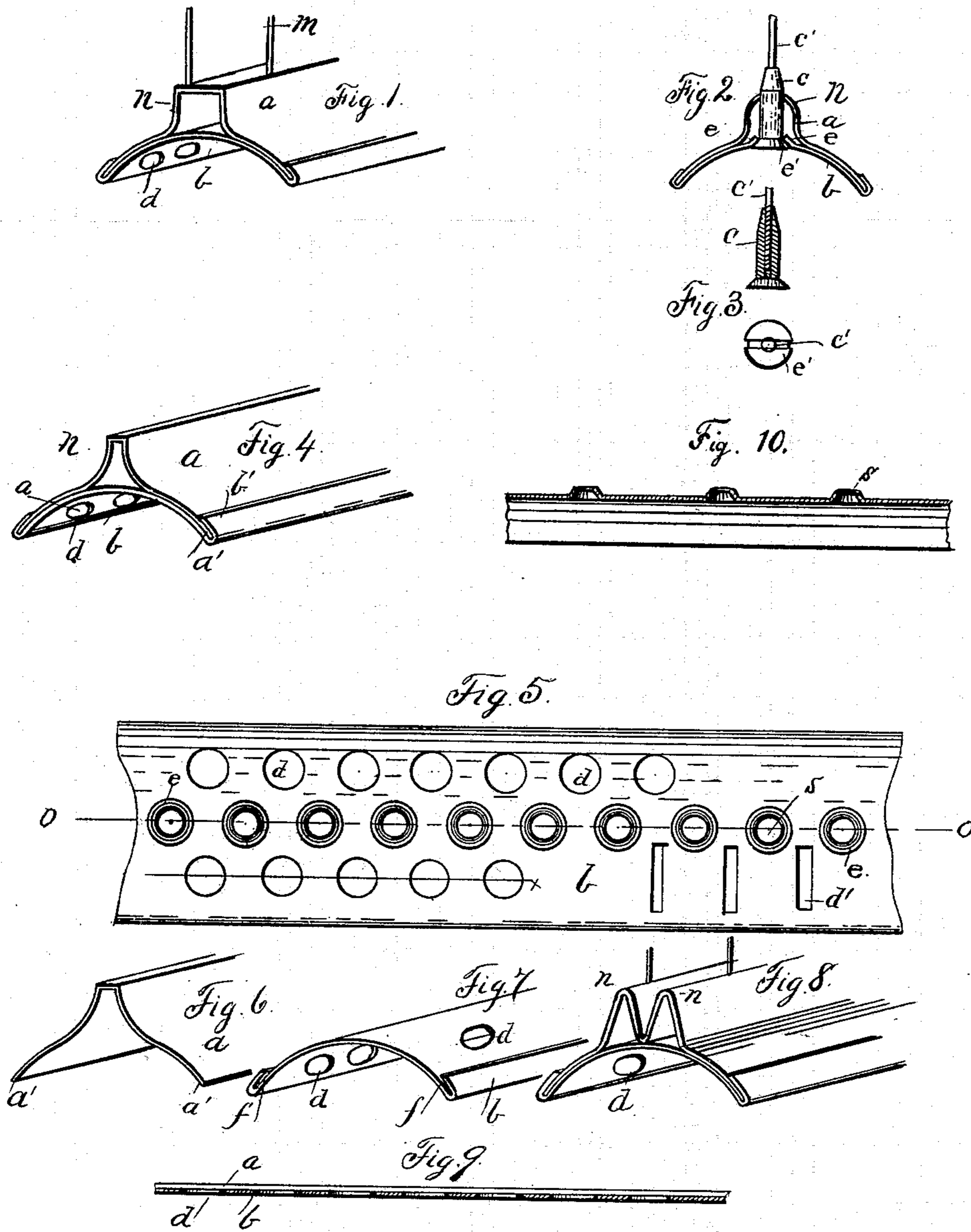


No. 612,171.

Patented Oct. 11, 1898.

I. S. MCGIEHAN.  
BICYCLE WHEEL RIM.  
(Application filed May 19, 1897.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ISAAC S. MCGIEHAN, OF NEW YORK, N. Y.

## BICYCLE-WHEEL RIM.

SPECIFICATION forming part of Letters Patent No. 612,171, dated October 11, 1898.

Application filed May 19, 1897. Serial No. 637,193. (No model.)

*To all whom it may concern:*

Be it known that I, ISAAC S. MCGIEHAN, of the city, county, and State of New York, have invented a new and useful Improvement in Bicycle-Wheel Rims, of which the following is a specification.

This invention relates to metal rims for bicycle-wheels, and has for its object to provide a rim composed of two rim-pieces so formed and joined together as to provide a very light rim that will retain its true circle and be both rigid and strong, as will be hereinafter explained.

In the accompanying drawings, which form a part of this specification, my invention is fully illustrated, with similar letters of reference to indicate corresponding parts, as follows:

Figure 1 represents a transverse vertical section showing the outer rim-piece *b* and inner rim-piece *a* joined together, the inner rim-piece *a* being provided with a broad inwardly-projecting web, as *n*, which I sometimes employ when it is desired to alternate the spokes *m*. Fig. 2 represents a similar section with a half-round inwardly-projecting web provided on the inner rim-piece *a*, also showing the tension-nut *c* in place to illustrate the manner in which the strain of the spokes is taken up on the outer rim-piece *b*. Fig. 3 represents a vertical section and head view of the tension-nut *c*. Fig. 4 represents a section, partly perspective view, of my improved rim, showing a different form of inwardly-projecting web *n*, also two of the perforations or holes *d* in the outer rim-piece *b*, showing the solid portion of the inner rim-piece *a* through the perforations. Fig. 5 represents a face view of the outer rim-piece *b*, showing the center row of countersunk holes through which the tension-nut *c* passes to secure the spokes, also the holes or perforations *d*, which rest against the solid portion of the inner rim-piece *a*. This figure also represents a slot-perforation, as *d'*, which might be employed to create a better resistance to the slip of the tire on the rim. Fig. 6 represents the inner rim-piece *a* separate from the outer rim-piece *b*. Fig. 7 represents the outer rim-piece *b* separate from the inner rim-piece *a*, also showing the perforations *d* and lips *f*,

which are formed over the edges *a'* of the inner rim-piece *a*. Fig. 8 represents a section, partly perspective, showing a double inwardly-projecting web, as *n n*, which I usually employ when a very rigid strong rim is desired. Fig. 9 represents a longitudinal section through the line *x x*, Fig. 5, showing the manner in which the perforations *d* in the outer rim-piece *b* are covered by the inner rim-piece *a*. Fig. 10 represents a longitudinal section through the lines *o o*, Fig. 5, showing the manner in which the metal surrounding the central row of spoke-holes *s* is raised to provide the countersunk surface for the heads of the tension-nuts to take their strain against.

I am aware that bicycle-wheel rims have been constructed of pieces of metal folded together; but in all such rims the spokes are secured to the inner rim-piece *a*, and the edges of the inner rim-piece *a* are folded over the outer rim-piece *b* to hold it in place, and the strain thus brought upon the two pieces is a separating strain, which undoubtedly makes the rim very weak, while with my invention the effect is right the reverse. The spokes pass through the inwardly-projecting web *n* on the inner rim-piece *a* and are secured to and take their strain wholly upon the outer rim-piece *b*, the edges of which are folded over the edges *a'* on the inner rim-piece *a* to hold them in place and keep them from separating. Thus the outer rim-piece *b* has a strain of an inward direction, caused by the tension of the spokes, while the inner rim-piece, being stiffened by its inwardly-projecting web *n*, acts as a brace against the inward strain of the outer rim-piece *b*, and the two are held firmly together, thus utilizing the strain brought upon the two pieces to make the rim rigid and strong, and it thereby becomes very substantial and also retains its true form.

The perforations in the outer rim-piece *b* are provided for the purpose of allowing that portion of the rubber tire which rests against the perforations to be forced within the same by the pressure of air within the tire. The portion of the tire which sinks into the perforations go just as deep as the thickness of the outer rim-piece *b* and then back up against

the outer rim-piece *a*. These perforations form a very effective grip for the tire and at the same time lighten the rim.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is as follows:

1. A bicycle-wheel rim consisting of two laminated concentrically-arranged rim-sections that are perforated by the spokes of the wheel, to the outer one of which said spokes are secured and the inner one of which is adapted to reinforce said outer section, substantially as described.

2. A bicycle-wheel rim consisting of two laminated concentrically-arranged rim-sections that are perforated by the spokes of the wheel and to the outer one of which said spokes are secured, said outer section having its edge portions rebent over the edge portions of the inner section so as to clasp said inner section, and the inner section being adapted to reinforce said outer section, substantially as described.

3. A bicycle-wheel rim consisting of two thin, concentrically-arranged and laminated rim-sections that are penetrated by the spokes of the wheel and to the outer one of which said spokes are connected, said outer section having its edge portions rebent over the edge portions of the inner section and said inner section being provided with a narrow and continuous centrally-disposed rib or ribs also penetrated by the spokes of the wheel, said sections being suitably formed to present a concavity for the reception of the tire, substantially as described.

4. A bicycle-wheel rim consisting of two thin, concentrically-arranged and laminated rim-sections that are penetrated by the spokes of the wheel and to the outer one of which said spokes are connected, said outer section having its edge portions rebent over the edge portions of the inner section and said inner section being provided with a centrally-dis-

posed and continuous rib or corrugation also penetrated by, and approximating in width the width of the connecting-heads of, the spokes, said sections being suitably formed to present a concavity for the reception of the tire, substantially as described.

5. A bicycle-wheel rim consisting of two thin, concentrically arranged and laminated rim-sections that are penetrated by the spokes of the wheel and to the outer one of which said spokes are connected, said outer section having its edge portions rebent over the edge portions of the inner section and said inner section being provided with narrow centrally-disposed and continuous ribs alternately penetrated by the spokes of the wheel, said sections being suitably formed to present a concavity for the reception of the tire, substantially as described.

6. A bicycle-wheel rim consisting of two thin, concentrically-arranged and laminated rim-sections that are penetrated by the spokes of the wheel and to the outer one of which said spokes are connected, said outer section having its edge portions rebent over the edge portions of the inner section and being provided on its tread-surface with elongated and transversely-extending slots, and said inner section being provided with centrally-disposed and continuous ribs or corrugations alternately penetrated by, and approximating in width the width of the connecting-heads of, said spokes, said sections being suitably formed to present a concavity for the reception of the tire, substantially as described.

In testimony that I claim the foregoing improvement in bicycle-wheel rims, as above described, I have hereunto set my hand this 18th day of May, 1897.

ISAAC S. MCGIEHAN.

Witnesses:

C. L. MALCOLM,  
J. H. BELL.