

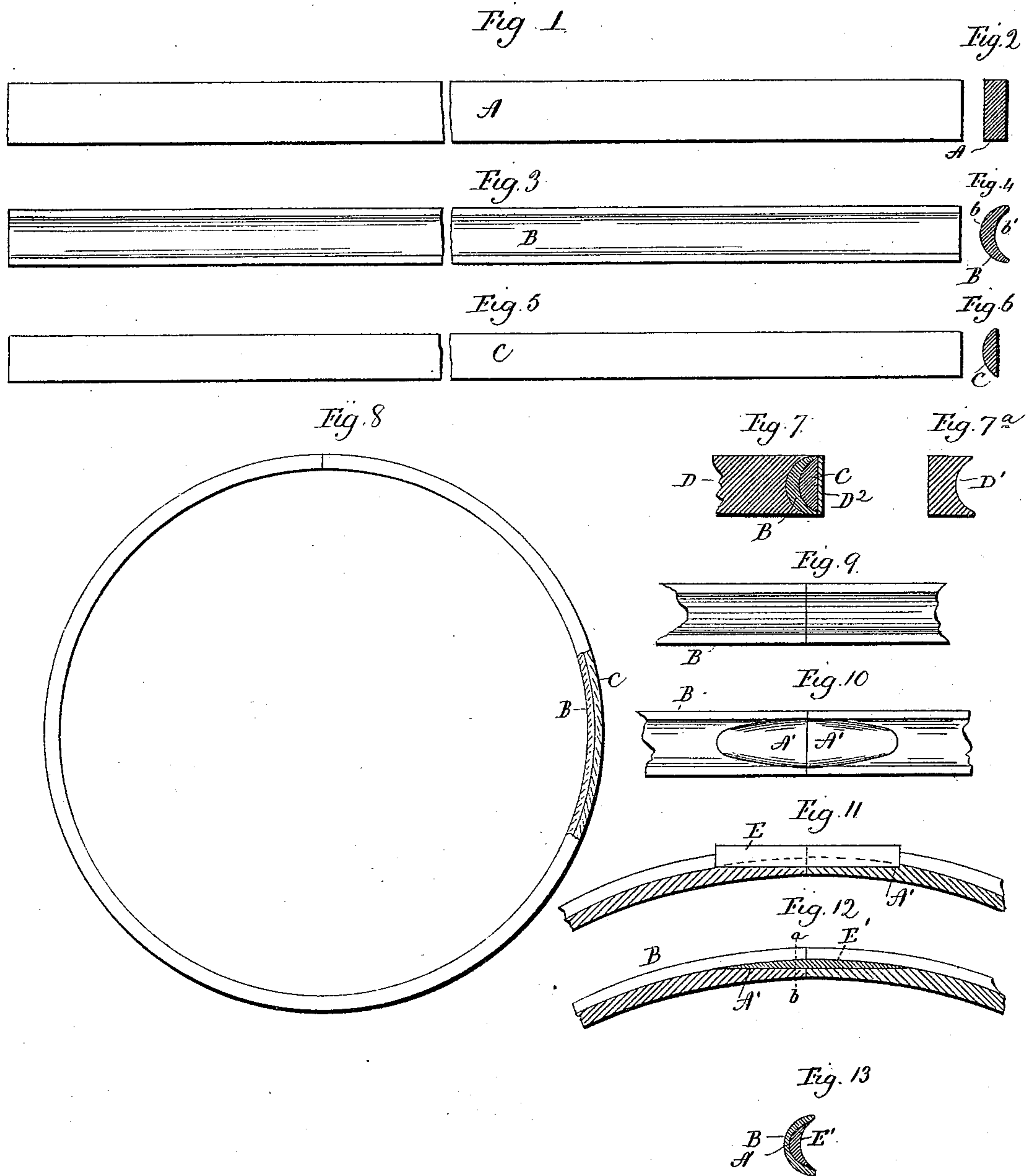
(No Model.)

H. G. SHEPARD.

METHOD OF MAKING WOODEN RIMS FOR BICYCLE WHEELS.

No. 538,541.

Patented Apr. 30, 1895.



Witnesses.

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UNITED STATES PATENT OFFICE.

HARVEY G. SHEPARD, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO H. G. SHEPARD & SONS, OF SAME PLACE.

METHOD OF MAKING WOODEN RIMS FOR BICYCLE-WHEELS.

SPECIFICATION forming part of Letters Patent No. 538,541, dated April 30, 1895.

Application filed December 22, 1894. Serial No. 532,707. (No model.)

To all whom it may concern:

Be it known that I, HARVEY G. SHEPARD, of New Haven, in the county of New Haven and State of Connecticut, have invented a new
5 Improvement in Methods of Making Wooden Rims for Bicycle-Wheels; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a
10 full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan view of a blank rim-strip, such as may be employed in carrying out my
15 improved method; Fig. 2, a view thereof in transverse section; Fig. 3, a plan view of the molded rim-strip; Fig. 4, a view thereof in transverse section; Fig. 5, a plan view of the filling-strip; Fig. 6, a view thereof in trans-
20 verse section; Fig. 7, a view in transverse section showing the filling-strip in place in the concave outer face of the rim-strip, and also showing the metal binding-strip which is employed for holding the filling-strip in place
25 during the operation of coiling; Fig. 8, a view showing the molded rim-strip and the filling-strip after they have been coiled; Fig. 9, a broken plan view showing the abutting ends of the molded rim-strip after the same has
30 been coiled and the filling-strip has been removed; Fig. 10, a similar view showing the said ends after their outer faces have been recessed; Fig. 11, a view in longitudinal section showing the blank joint-piece inserted
35 into the said recesses; Fig. 12, a similar view showing the joint-piece after it has been finished by cutting it away to conform its outer face to the concave outer face of the rim-strip; Fig. 13, a view of the joint-piece and
40 rim-strip on the line *a b* of Fig. 12.

My invention relates to an improved method of making wooden rims for bicycle-wheels, the object being to produce at a comparatively low cost for manufacture, a rim of superior
45 strength and durability.

With these ends in view, my invention consists in a method comprising certain steps which will be hereinafter recited and pointed out in the claims.

50 In carrying out my invention, I first take a

blank strip A, of suitable length, and size in cross-section, and mold the same in a molding-machine of any approved construction for producing the molded-strip B, which, as seen in Fig. 4, has a convex inner face *b*, and a
55 concave outer face *b'*. I do not, however, limit myself to molding the strip in the exact form shown, as both its inner and outer faces may be varied in shape, though the inner face of the strip will always be convex in general
60 form, and the outer face concave. Within the long concavity *b'* which extends throughout the length of the strip, I place a filling strip C, corresponding to the length of the molded
65 strip B, and to the blank strip A, having its inner face convexed to conform to the concave outer face of the molded strip, and having its outer face made flat, and so as to be flush with the outer edges of the molded strip, when in
70 place therein, as shown in Fig. 7. The molded and filling strips thus combined, are then subjected to a coiling operation, which is effected in any suitable machine, such, for instance, as shown in the application made by me under
75 date of May 14, 1894, and serially numbered 511,161, patented January 29, 1895, No. 533,236. I do not limit myself to using that particular coiling or bending apparatus, but it is well adapted for the carrying out of my
80 invention. Whether I use that apparatus or not, I shall preferably employ a coiling form D, having its outer periphery recessed to conform to the convex inner face *b* of the molded strip; such a form as indicated in Fig. 7. I
85 shall also, by preference, preparatory to coiling the two strips, bend them upon a segmental bending form D' from which they will be drawn directly onto the main coiling form, D, and which is shown in cross-section in
90 Fig. 7^a. After the coiling operation has been completed, the filling strip is removed from the concaved outer face of the molded strip, the ends of which are then in abutment, as shown in Fig. 9.

It will be understood that the filling strip
95 is used over and over, and that its function is to prevent the molded strip from "buckling" or splitting during the operation of coiling, at which time the filling strip is held in place in the molded strip by means of the long
100

sheet-metal binding strip D², employed in coiling, and indicated in cross section in Fig. 7. After the molded strip has been coiled, its ends are joined in any suitable manner, but preferably as shown in Figs. 10 to 13 inclusive. In joining the ends of the strip as shown in those figures, each end of the strip has a tapering recess A' formed in it, as shown in Fig. 10, these recesses aligning with each other, being deepest at their outer ends, and gradually tapering both in depth and width as they extend inward, and until they merge into the bottom of the concavity b' in the outer face of the strip. A blank joint-piece E, is then placed over the abutting ends of the molded and coiled strip, its lower face being conformed in curvature to the recesses A' A', which it fills. This blank joint piece is firmly glued into the recesses, and after the glue has dried, it is worked down, as shown in Figs. 12 and 13, until its outer surface exactly coincides with the concave outer face of the strip. The finished joint-piece E' therefore is concavo-convex in cross section, thickest at its middle portion, and tapers in thickness and width from its center each way to its ends.

It will be seen that a bicycle-rim produced in accordance with my improved method, is molded before it is coiled, and before its ends are joined, whereas ordinarily the blank strip is coiled, after which its abutting ends are joined, after which the molding is done. Obviously the molding may be done to greater advantage when the stock is in the strip, than after it has been coiled.

It will be understood, of course, that I do not limit myself to any particular instrumentalities for carrying out my improved method, although those shown in my application previously referred to are well adapted thereto. Nor do I limit myself to molding the strip exactly in the form shown, nor to employing the joint shown and described, although that joint I prefer to use. I would therefore, have it understood that I do not limit myself to

the exact construction set forth, but hold myself at liberty to make such changes as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A method of making wooden rims for bicycle-wheels, consisting in first molding the rim-strip into concavo-convex or substantially concavo-convex cross section, then filling the concave outer face of the strip with a long filling strip, then combining the said rim and filling strips with a sheet-metal binding strap which engages with the flat outer face of the filling strip, then coiling the combined rim and filling strips and strap upon a form which is recessed to receive the convexed inner face of the rim-strip, then removing the filling strip from the rim strip and joining the ends of the latter, substantially as described.

2. A method of making wooden rims for bicycle wheels, consisting in molding the rim strip into concavo-convex or substantially concavo-convex cross section, then filling its concaved outer face with a filling strip, then combining the said rim and filling strips with a sheet-metal strap which is placed against the flat outer face of the filling strip, then coiling the rim and filling strips and strap, then removing the filling strip from the coiled rim strip, then forming recesses in the ends of the rim strip so as to extend below the concavity in the outer face thereof, then joining the said ends by the insertion of a joint-piece into the said recesses, and then cutting away the joint-piece to conform to the concaved outer face of the strip, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HARVEY G. SHEPARD.

Witnesses:

FRED C. EARLE,
GEO. D. SEYMOUR.