

(No Model.)

A. B. KEYES & C. F. COWDREY.
WHEEL RIM.

No. 560,853.

Patented May 26, 1896.

Fig. 1.

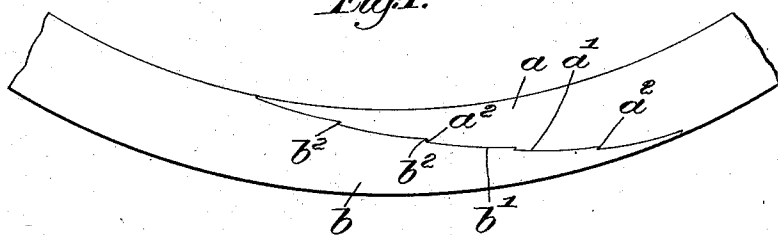


Fig. 2.

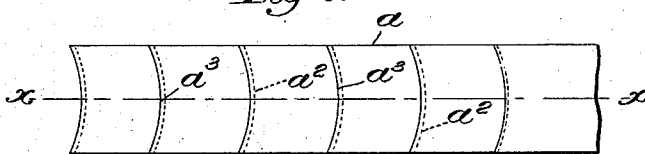


Fig. 3.

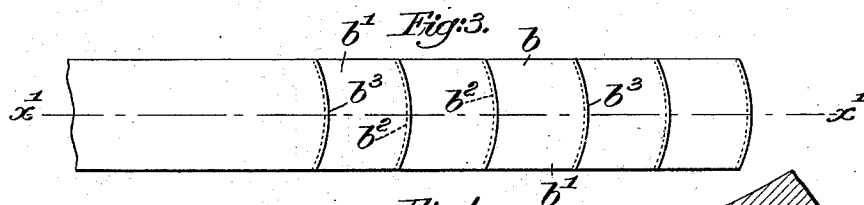


Fig. 4.

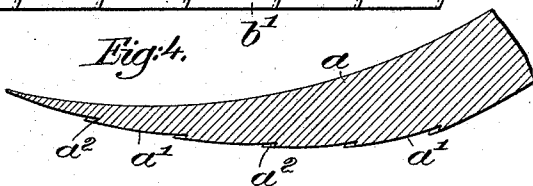


Fig. 5.

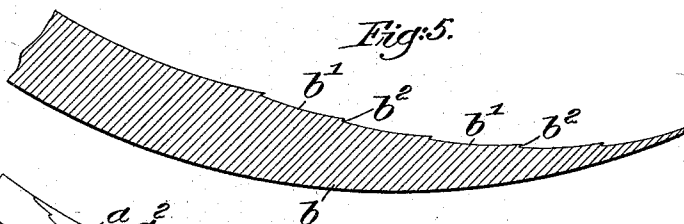
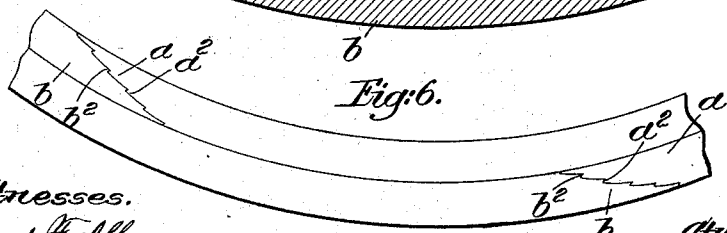


Fig. 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

ATWOOD B. KEYES, OF PRINCETON, AND CHARLES F. COWDREY, OF
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WHEEL-RIM.

SPECIFICATION forming part of Letters Patent No. 560,853, dated May 26, 1896.

Application filed September 3, 1895. Serial No. 561,217. (No model.)

To all whom it may concern:

Be it known that we, ATWOOD B. KEYES, of Princeton, and CHARLES F. COWDREY, of Fitchburg, county of Worcester, State of Massachusetts, have invented an Improvement in Wheel-Rims, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object the production of a rim for bicycles or other vehicles wherein the joint will not separate under pressure either in the direction of the plane of the wheel or transversely thereto. Wooden
15 rims, especially those made for bicycles, are frequently made of one or more strips of wood or fibrous material, the ends of each strip being overlapped and secured by glue or other fastenings to form a joint; but in practice it
20 has been found that there is always such a strain upon the joint as will tend to separate the lapped ends. This is so whether the rim be made of one or a plurality of strips, and is a cause of great annoyance to makers and
25 users of such wheels. Glue or cement is most commonly used to secure the lapped ends together, and of course any loosening of the cement permits the joint to separate. There is no means of preventing lateral separation,
30 and in wheels under tension the lapped ends of the strip frequently creep one over the other, destroying the integrity of the joint.

Our invention overcomes all of the foregoing objections without increasing the weight of the rim, and not only prevents the creeping or lifting of the ends of the strip at the joint, but also prevents any lateral play of the parts.

40 In accordance therewith our invention consists in a wheel-rim the construction of which will be hereinafter fully described in the specification, and particularly pointed out in the claims.

Figure 1, in side elevation, represents a sufficient portion of a single-strip wheel-rim to be understood with our invention embodied therein. Fig. 2 is an under side view of the inner lap shown in Fig. 1. Fig. 3 is a top view of the engaging-face of the cooperating lap.
50 Fig. 4 is a longitudinal section taken on the line $x x$, Fig. 2. Fig. 5 is a similar view on

the line $x' x'$, Fig. 3; and Fig. 6 is a side elevation of a portion of a rim composed of a plurality of concentric strips, the joint of each lap being shown.

55 In carrying out our invention the ends of the strip are preferably made tapering, as at a and b , and the faces of each are cut across transversely to form a series of steps or lips a' and b' , respectively. The transverse edges
60 $a^2 b^2$ of the steps are undercut, as shown, and the said edges of the steps on one lap, as a , are concaved, as at a^3 , while the steps of the other lap are convex correspondingly at b^3 ,
65 as clearly shown in Figs. 2 and 3, respectively. By this construction when the two laps are brought together the convex edges of one set of steps fit closely into the concave edges of the other set of steps, and the undercut edges of one set extend beneath or hooks
70 into the edges of the other set, so that the joint cannot separate in the direction of the plane of the wheel when the latter is under tension. So closely and tightly will the joint
75 hold when thus made that glue or other fastenings may be entirely dispensed with. It will be obvious that the laps cannot creep toward each other, and as the strips are made with the grain running lengthwise the strain exerted upon the joint comes in the direction
80 of most resistance of the strip, avoiding splitting when the strip is made of wood. When the rim is dressed down to the proper dimensions, the last step of each lap is reduced in
85 thickness to form a neat finish; but sufficient thickness is retained to permit the last step of one lap to engage or hook into the first step of the other lap. By making the edges of one set of steps concave and the other set convex
90 the two parts of the joint are absolutely prevented from moving transversely and the joint so constructed is held from separation in all directions, while the rim will be as flexible at the joint as at any other point.

Our invention is not restricted to the precise construction herein shown and described, as the same may be modified or altered without departing from the spirit and scope of our invention.

We claim—

1. A wheel-rim composed of a strip of fibrous material the overlapping ends thereof being

oppositely tapered, the said ends being provided with a series of transverse lips, the edges of which on one end are convex and on the other end concave, whereby the lips on
5 the two ends engage and prevent lateral separation of the joint, substantially as described.

2. A wheel-rim consisting of one or more strips of fibrous material, the overlapping ends of each strip being oppositely tapered
10 and provided with a series of undercut transverse lips, the edges of the lips on one end being convex and the edges of the lips on the

other end concave, whereby one lap is hooked into the other and separation of the joint is prevented, substantially as described. 15

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ATWOOD B. KEYES.
CHARLES F. COWDREY.

Witnesses:

JOHN C. EDWARDS,
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