G. L. ROUSE & M. W. STODDARD.

VEHICLE HUB BAND.

No. 182,605. Patented Sept. 26, 1876.

FIG. 1.

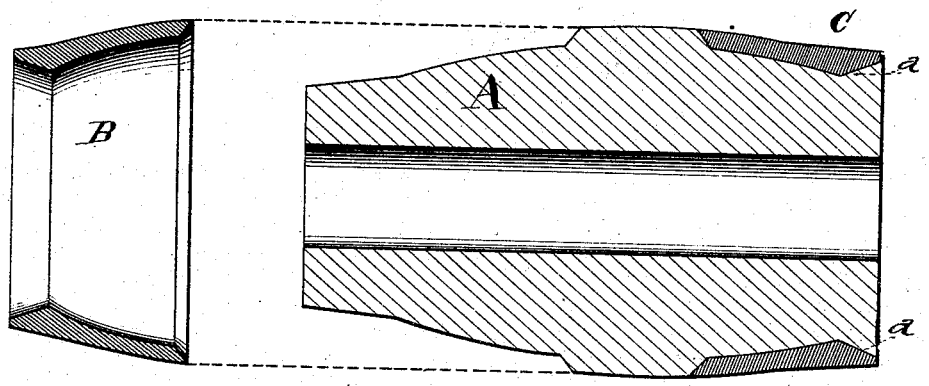



FIG. 2.

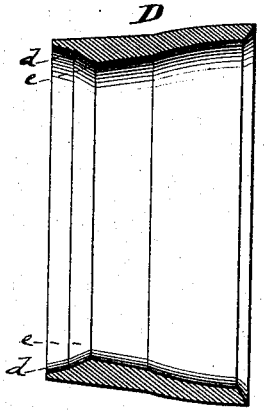



FIG. 3.

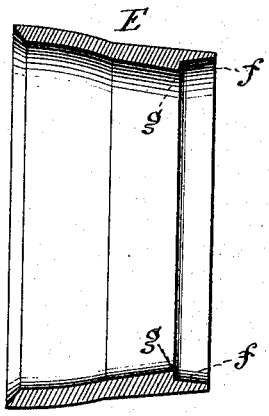
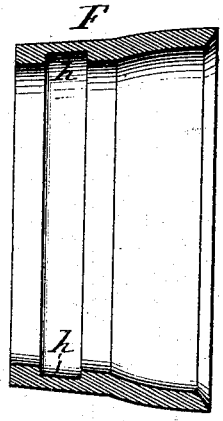



FIG. 4.




Attest.
D. P. Kennedy
Charles Lehmann

Serge L. Rouse &
Marshal W. Stoddard
per Wm. Hubbell Fisher
their
Att'y.

# UNITED STATES PATENT OFFICE.

GEORGE L. ROUSE AND MARSHAL W. STODDARD, OF CINCINNATI, OHIO.

## IMPROVEMENT IN VEHICLE-HUB BANDS.

Specification forming part of Letters Patent No. **182,605**, dated September 26, 1876; application filed August 6, 1875.

*To all whom it may concern:*

Be it known that we, GEORGE L. ROUSE and MARSHAL W. STODDARD, both residents of the city of Cincinnati, Hamilton county, in the State of Ohio, have invented certain new and useful Improvements in Bands for Wheel-Hubs, of which the following is a specification:

Our invention relates to that class of wooden hubs which are mortised or grooved for the reception of the spokes, and which are strengthened by a metallic band or bands, incasing a portion of the periphery of the hub; and our invention consists in a novel construction of a portion of the interior of said band, whereby the natural elasticity of the wood of the hub is made available to retain the band in place on the hub.

A previous invention of ours consists in a wooden wheel-hub, combined with metallic bands extending over the body part of the hub, upon both sides of the spokes, and brought into close proximity with the spokes, but not impinging against the same, the wooden hub adapted to receive the metallic bands flush with the portion of its surface which is left exposed, the said bands being preferably constructed with beveled edges.

Our present improvement consists in constructing the interior of these bands with a recess adapted to allow the wood, after the bands have been pressed onto the hub, to expand and interlock with said recesses in the bands.

We are aware that metallic bands have heretofore been compressed onto wooden hubs, and held in place by entering the wood with inward projections in various ways.

Our invention is distinguished from all such known modes of securing the bands. We press the metallic bands endwise onto the hub, slightly compressing the wood in this action, since the interior capacity of the bands is made somewhat smaller than the hub, and then allow the wood to expand into the recesses in the bands.

In the accompanying drawings, making a part of these specifications, Figure 1 represents a longitudinal central section of a wooden hub, and two bands constructed upon the principle of our invention, one band being in position on the rear of the hub, and the other band separate from and in front of the hub, ready to be driven onto the latter. Figs. 2, 3, and 4 each shows a hub-band, illustrating one mode of constructing the hub in accordance with the principle of our invention.

A, Fig. 1, represents a wooden hub; B, the band upon the front portion of the body of the hub; C, the band already fitted upon the rear portion of the body of the hub.

The particular mode in which our invention is carried out in these bands is by the formation of a bevel, *a*, on the inner corner of the outer edge of the band. In pressing the band onto the wooden hub, there is a compression of the hub under the band. The diameter of the hub under the band is by the compression reduced some three thirty-seconds of an inch to three-eighths of an inch, according to the size of the hub. In good sound wood, suitable for hubs, this compression does not wholly destroy the elasticity of the wood, and the bevel of the band or bands is made in order that the compressed wood may resume its original dimensions to the extent of filling up the space between the bevel of the band and the dotted line *b* at the base of the bevel, when it is evident the band will be held in its place by the wood which has filled said space.

It is evident that various forms and modes of construction may be adopted, which shall each take advantage of the elasticity of the hub, to retain the band on the hub. For example, in Fig. 2 the band D has a double bevel, *d e*, at the inner portion of its outer edge; and in Fig. 3 the band E, instead of being beveled at the inner corner of its outer edge, is provided with a recess, *f*, provided with a shoulder, *g*, and in Fig. 4, in the band F, the bevel at the front edge is dispensed with, and in lieu of such bevel a groove or channel, *h*, is provided.

It is evident from these modes given that the shape and size of the bevel or recess groove, for enabling the elasticity of the wood to act in retaining the band on the hub, may be greatly varied and the principle of our invention retained. In all shapes given to the band for this purpose the object is accomplished when the wood has opportunity to so expand after the band has been driven on the hub that

it shall present a portion of itself as an obstacle to the band slipping off.

Excepting the devices for retaining the band upon the hub, it will be observed that the bands B C D E F are all broad and of sufficient extent to incase the body part of the hub almost to the spokes, thus securing the body part of the hub (in front of and also behind the spokes) against any liability to split.

The exterior wood of the hub is cut away to receive these bands and to bring them flush with the wood of the hub which is left exposed. The inner corner of the rear edges of each band are preferably beveled at *m*, and the surface of the wood of the hub is also adapted to receive this bevel, as shown. This bevel on the wood adjacent to said bevel prevents any parting between the rear edge of the band and the wood of the hub.

Where the rear or spoke edge of the bands is cut off squarely, as indicated by dotted line *n*, the wood of the hub as it expands or contracts with exposure to moisture and heat is liable to withdraw somewhat from the inner or spoke edge of the bands, and leave a seam or crack, which not only affects unfavorably the appearance of the wheel, but lessens the effectiveness of the bands. This difficulty is obviated by the bevel on the band and the wood. (Shown at *m*.)

We do not claim, broadly, the mode of retaining a metallic band on a wooden core by first compressing the wood in driving the band and then allowing a portion of the wooden core to expand into an enlarged portion of the band. Our invention consists simply in so constructing metallic hub-bands, such as now used for wooden hubs, as to enable us to take advantage of this known principle.

What we claim as new, and desire to secure by Letters Patent, is—

1. A metallic band for strengthening a wooden hub on either side of the spokes, made somewhat smaller than the natural size of the hub, and provided with an interior recess, with which a corresponding portion of the hub interlocks by the expansion of the compressed wood after the band has been forced on, substantially as specified.

2. A metallic band for strengthening a wooden hub on either side of the spokes, made somewhat smaller than the natural size of the hub, and having its bore or aperture made flaring at the exterior end, with which flaring end a corresponding portion of the hub interlocks by the expansion of the compressed wood after the band has been forced on, substantially as specified.

GEO. L. ROUSE.
M. W. STODDARD.

Attest:
AUGUSTUS HAVEN,
D. P. KENNEDY.