(No Model.) 2 Sheets—Sheet 1.

S. ELLIOTT.

WOODEN RIM, BAND, &c.

No. 529,112. Patented Nov. 13, 1894.

Fig. 1.

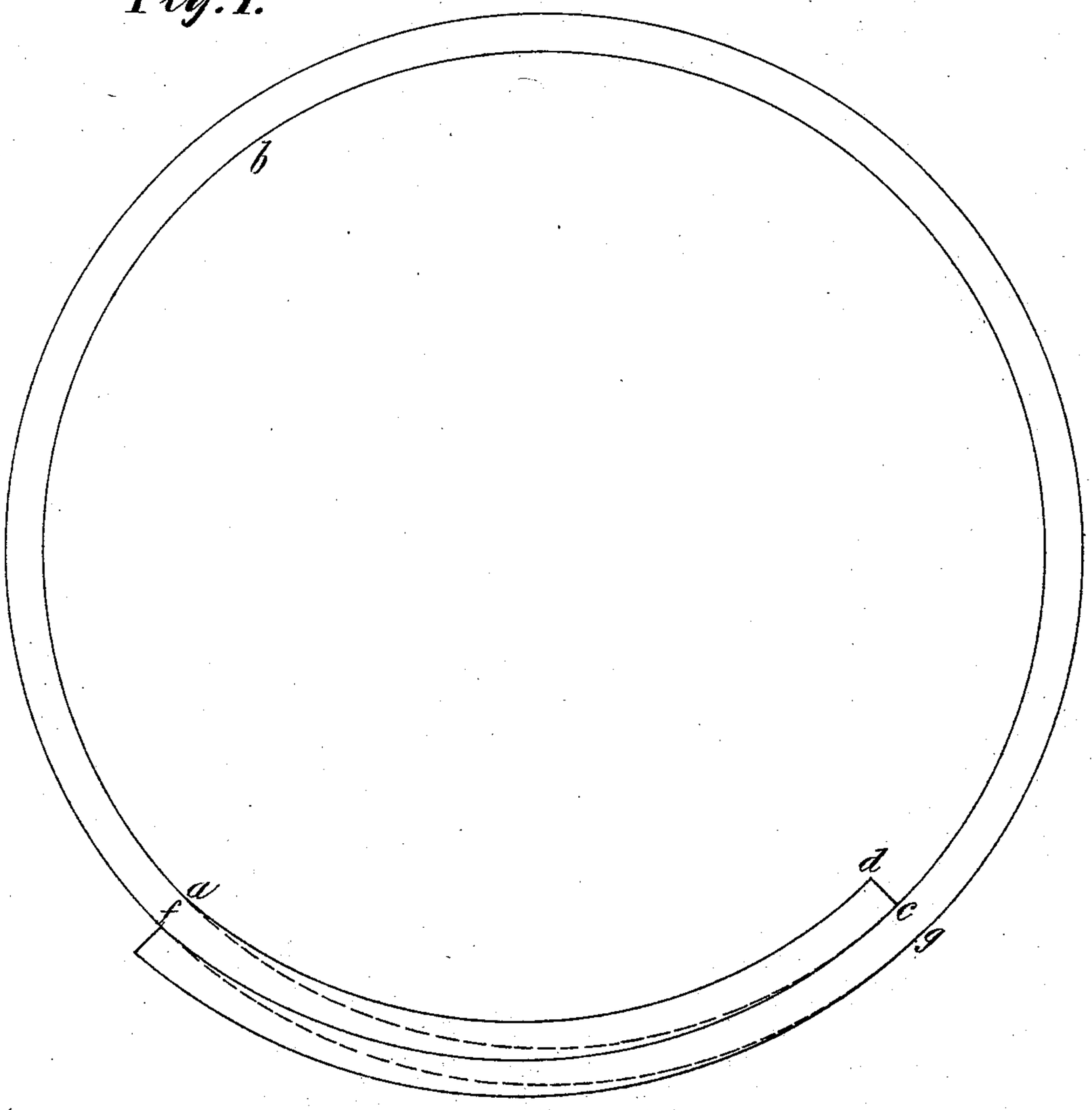
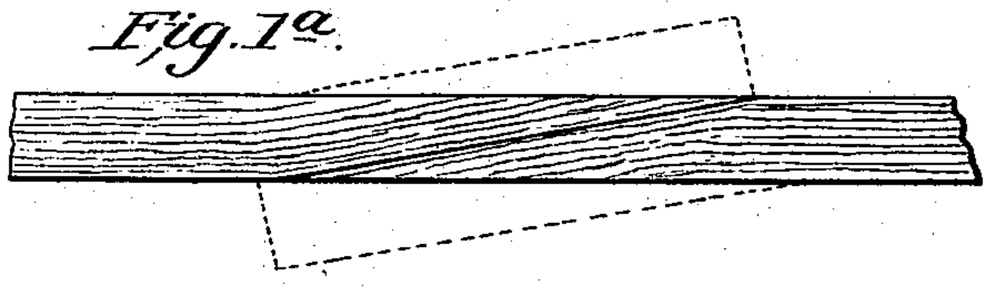


Fig. 1a.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

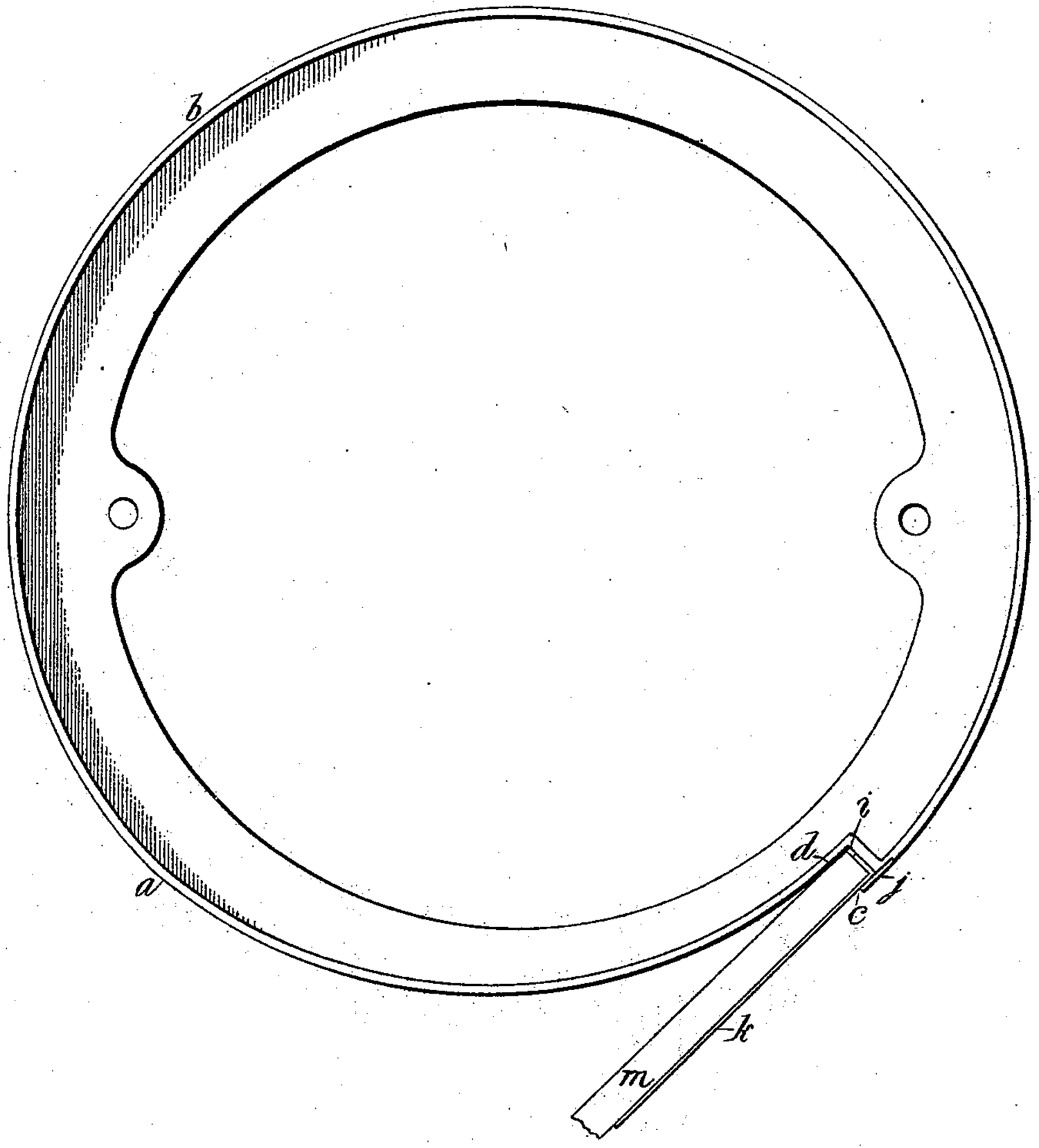
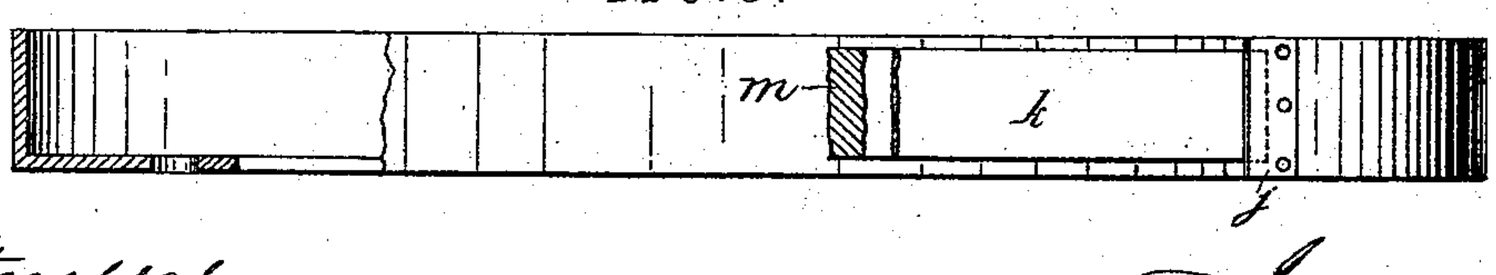


Fig. 3.



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UNITED STATES PATENT OFFICE.

STERLING ELLIOTT, OF NEWTON, MASSACHUSETTS, ASSIGNOR TO THE POPE MANUFACTURING COMPANY, OF HARTFORD, CONNECTICUT, AND PORTLAND, MAINE.

WOODEN RIM, BAND, &c.

SPECIFICATION forming part of Letters Patent No. 529,112, dated November 13, 1894.

Application filed January 16, 1894. Serial No. 497 032. (No model.)

To all whom it may concern:

Be it known that I, STERLING ELLIOTT, a citizen of the United States, and a resident of Newton, county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Wooden Rims, Bands, &c., of which the following is a specification, reference being had to the accompanying drawings, forming part hereof.

This invention relates to wooden rims, bands, &c., and is especially adapted for the rims of velocipede wheels, and has for its object to obtain better surfaces for the lap joints, and a firmer and more adherent union of the strips at such joints, and stronger and more durable rims than have heretofore been obtained.

Wooden rims or bands have heretofore been made from a suitable strip or strips having the grain of wood running in a longitudinal direction therethrough by bending said strips to circular form and providing lap joints for the ends of said strip or strips by cutting off the wood obliquely across the grain and then uniting the cut and lapping surfaces by glue or other suitable adhesive material, and these lapping surfaces having been cut on a bevel across the grain have had the ends of the grain exposed along said surfaces and have been porous and have therefore absorbed into the rim the glue or other adhesive material used in securing the laps together, and this exposure of the edges of the grain at the lapping surfaces has therefore materially interfered with the proper union of the surfaces.

According to my invention the lapping surfaces are in a direction parallel with the grain of the wood so that the ends of the grain are not exposed at said surfaces, and this is accomplished with a strip having the grain running longitudinally therethrough and therefore having the desired arrangement of the grain for producing a strong rim or band. These strips are bent to circular form and caused to overlap, but the overlapping surfaces are not cut off obliquely as heretofore, but, on the contrary, the overlapping parts of the strip are bent so that the plane of the overlapping surfaces will occupy a diagonal position in the rim and the outer and inner peripheral surfaces of the overlapping parts and the other exterior surfaces at said joint, if not already properly shaped, are shaved off or cut away or otherwise shaped so as to produce the desired contour of the rim at the lap The overlapping surfaces are caused to adhere by glue or other suitable adhesive material.

The accompanying drawings illustrate an embodiment of my invention.

Figure 1 shows a single strip of wood that has been bent to the desired shape. Fig. 1ª shows an improved lap joint embodying my invention, the direction of the grain of the wood being indicated in this figure. Fig. 2 is a plan view of a former and Fig. 3 is a side elevation of the same partly in section.

In carrying my invention into practice I have used formers such as shown in Figs. 2 and 3, the contour or cross section of the outer surface of each of such formers being circular for the larger portion of the circumference, about three-fourths in the drawings, to wit, the part *a b c*, and in the remaining part (from *a* to *d*) being of a spiral shape. This cross section of the former corresponds to the inner line of the rim as shown in Fig. 1, except that a small pocket, from *d* to *i*, Fig. 2, covered by a gripping plate *j* is formed for gripping and holding one end of the strip *m* which is to be bent or curved and to have its ends united to form the band or rim, and a slight allowance is made for a steel band *k*, which hooks over the end of the strip *m* and embraces its outer periphery as the strip is bent around the former. The strip of wood is steamed or otherwise treated to make it more pliable and is then bent around the former so as to be of substantially the shape shown by the full lines in Fig. 1, and is suitably clamped upon the former and allowed to dry or set. The arrangement of the grain of wood in the overlapping portions at the lap joint will then be as illustrated in Fig. 1ª, in which figure for greater clearness a straight lap joint is shown, that is to say the grain of the wood will be

substantially parallel to the oblique line of juncture of the two ends constituting the lap joint and in the particular construction shown in Fig. 1, this oblique line will be a spiral line and the grain of the wood in the overlapping portions will extend in substantially spiral lines.

After the rim has set and has been removed from the former I have partly shaped the inner periphery of the inner overlapping part and the outer periphery of the outer overlapping part, and have at this or a subsequent stage of the operations cut off the portion or end of the strip that was held in the pocket of the former. The overlapping surfaces are then united by glue or other suitable adhesive material and clamped or held together until the adhesive material has set or become dry. It is now only necessary to complete the shaping of the exterior surfaces of the overlapping parts to concentric circular or other desired form and of the rim as a whole if necessary.

The dotted lines in Fig. 1 running from *a* to *c* and from *f* to *g* show the shape of the rim at the lapping portion and these lines are in continuation of the circumferences of the inner and outer peripheries of the rim.

The procedure may be modified by partially or wholly shaping the portions that will lap of the strips of wood before bending them into the form shown, or by uniting the lapping surfaces by adhesive material before any shaping of the exterior surfaces at said lap joint, and for some purposes it may not be desired to shape the lapping parts to concentric circular form. It is evident that shorter strips of wood may be employed so that two or three, or more, lap joints may be made in one rim, and this latter modification might be especially desirable in making very large rims.

While I have herein used the terms rims and bands and have described the embodiment of my invention when applied to such articles, it will of course be understood that my invention may be used in hoops or other curved, bent or straight articles in which it is desired to unite the ends of a strip or strips of wood with a lap joint.

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

1. The method of forming a lap joint of the ends of a strip or strips of wood having the grain running longitudinally therethrough which consists in bending the lapping portions so that their surfaces meet on a plane extending obliquely across the joint and uniting these surfaces by adhesive material, substantially as set forth.

2. The method of forming a lap joint of the ends of a strip or strips of wood having the grain running longitudinally therethrough which consists in bending the lapping portions so that their surfaces meet on a plane extending obliquely across the joint uniting these surfaces by adhesive material, and cutting or shaving the exterior surfaces of these lapping parts so as to form surfaces continuous with the adjacent portions of the strip or strips, substantially as set forth.

3. A wooden article having one or more lap joints with the surfaces meeting at said lap joints on a plane extending obliquely across the joint and united by adhesive material, in which article the grain of the wood extends longitudinally except at the lap joints where it is parallel to the oblique overlapping surfaces, substantially as set forth.

4. A circular wooden rim or band having a lap joint in which the surfaces meet in a spirally curved plane extending obliquely across the joint and in which the grain of the wood in the overlapping portions is parallel to said oblique curved plane and the inner and outer peripheries of the lapping parts are finished to circular form, substantially as set forth.

This specification signed and witnessed this 13th day of January, A. D. 1894.

STERLING ELLIOTT.

In presence of—
HENRY D. WILLIAMS,
E. M. TAYLOR.