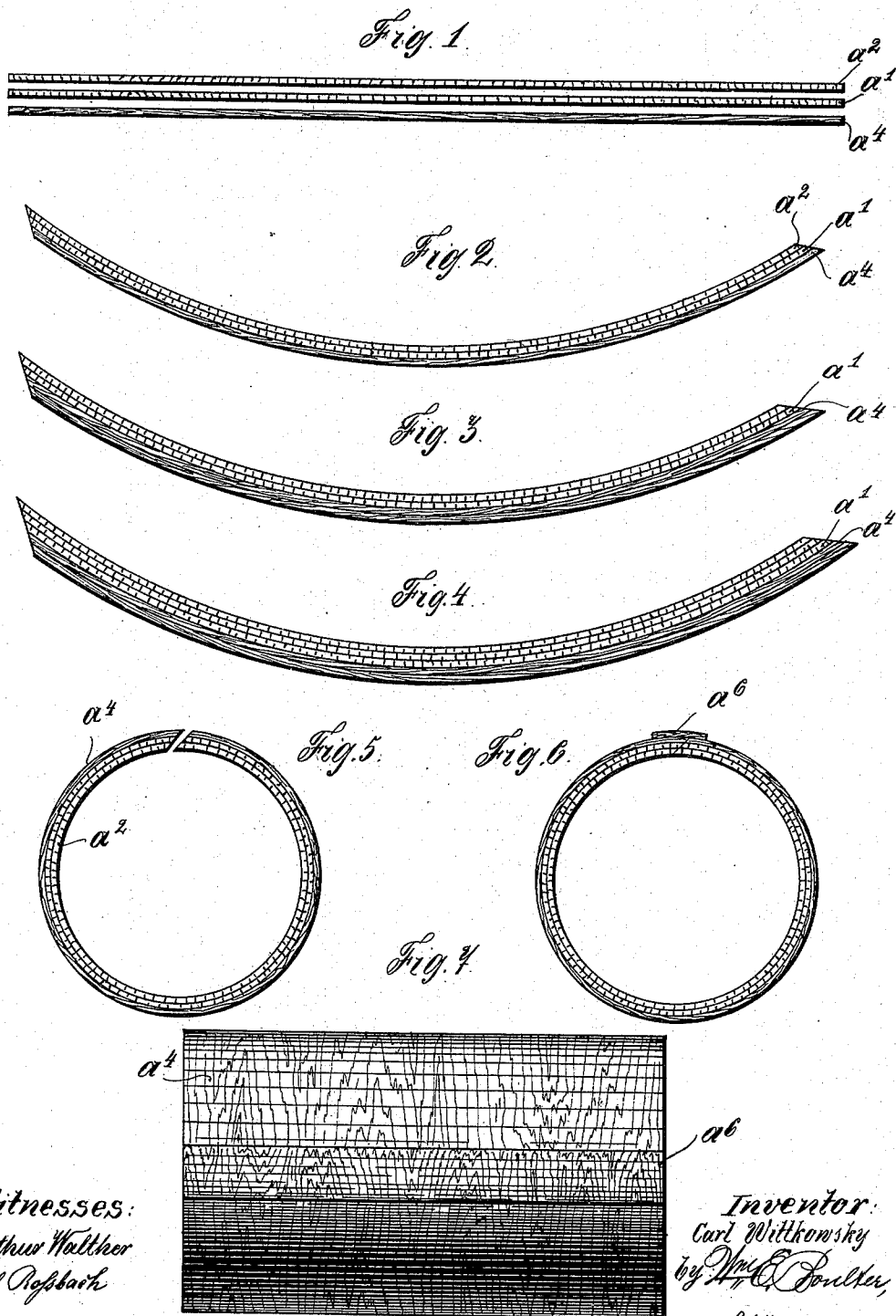


(No Model.)

C. WITTKOWSKY.
WOODEN VESSEL CONSISTING OF VENEERS.

No. 565,655.

Patented Aug. 11, 1896.



Witnesses:
Arthur Walther
Carl Reibach

Inventor:
Carl Wittkowsky
by *Wm. E. Doucker*,
Attorney.

UNITED STATES PATENT OFFICE.

CARL WITTKOWSKY, OF BERLIN, GERMANY.

WOODEN VESSEL CONSISTING OF VENEERS.

SPECIFICATION forming part of Letters Patent No. 565,655, dated August 11, 1896.

Application filed October 5, 1893. Serial No. 487,272. (No model.) Patented in England September 5, 1893, No. 16,713.

To all whom it may concern:

Be it known that I, CARL WITTKOWSKY, a subject of the King of Prussia, German Emperor, and a resident of Berlin, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in the Manufacture of the Mantle for Wooden Tubes, Vessels, and Barrels consisting of Veneers, (for which a patent has been obtained in Great Britain under No. 16,713, dated September 5, 1893,) of which the following is an exact specification.

My invention refers to wooden tubes, vessels, and barrels in which the mantle is composed of crossed veneers; and my improvements in articles of the said kind relate to manufacturing the cylindrical mantle in such a way that the same is perfectly free of any internal tension. I attain that object in general by causing the veneer-board to curve spontaneously in such a degree that a cylinder results therefrom, and in particular by arranging as well as uniting the veneers for said board in a special manner, so as to cause thereby the subsequent spontaneous curving, as will all be more fully described hereinafter.

In order to make my invention more clear, I refer to the accompanying drawings, in which—

Figure 1 shows three parallel veneers the neighboring surfaces of which are coated with a (waterproof) cementing medium. Fig. 2 shows the same veneers united with each other in a curve, the outer veneer having its grains running along the curve, the two other veneers having them running rectangularly thereto. Fig. 3 shows the preliminarily-curved mantle composed of four veneers, the latter forming two series. Fig. 4 shows the mantle composed of five veneers, also forming two series, the grains of one series running rectangularly to those of the other series. Fig. 5 shows a three-ply mantle after having finished its spontaneous curving. Fig. 6 shows the same mantle closed and finished. Fig. 7 is a side view of the closed and finished mantle.

Before giving the details of my improved method I wish to call attention to the fact that the three, four, or more veneers employed form in either case two series. The grains of

the veneers forming one of said series run all in one direction. The grains of the veneers forming the other of said series run also all in the same direction, but rectangularly to those of the first series. Therefore a crossing proper exists only between the adjacent veneers of the two series, as is clearly to be seen at a' a^4 in Figs. 3 and 4.

In carrying my method into practice I first coat the neighboring surfaces of the veneers to be united (for instance, as a' a^2 a^4 , Fig. 1) with a cementing medium, preferably a waterproof one, and I then unite the same between strongly-heated curved press-cheeks (not shown) the radius of curvature of which is about five times as long as that of the finished mantle. In placing the several veneers one upon the other and into the press care is to be taken that the grains of the outer series of the veneers run along or parallel to the curve. After the three-ply, Fig. 2, or more ply, Figs. 3 and 4, veneer-board is taken out of the press, and is thus freed from any outer pressure, it is left to itself.

While the veneers are exposed between the curved press-cheeks to the action of the heat the cementing medium is liquefied and shortly thereafter solidified; but at the same time the veneers are elongated by the heat, the elongation being the strongest in the outer series of the veneer, as the grains in said series run in the longitudinal direction of the respective veneers. The elongation of the two series proceeds rather slowly, as the latter are under pressure, and the union of them is therefore finished considerably earlier than the said elongation. Owing thereto the inner series is put under a strong tension, which latter causes the preliminarily-curved board to curve farther into a complete cylinder as soon as it is freed from the effects of the pressure and heat. The longitudinal edges of the cylinder, which prior to the spontaneous curvature of the board have been cut oblique, are united by a (if desired, waterproof) cementing medium, and the line of junction is at its outer side covered by a strip a^6 , Figs. 6 and 7, fixed also by the said medium. The mantle proper is now finished and may be provided with either one or two bottoms, so as to turn the cylinder into a vessel or barrel, just as desired. The manner

of securing the bottom or bottoms to the cylinder does not form part of my invention, and I have therefore dispensed with describing the same.

5 Having thus fully described the nature of this invention, what I desire to secure by Letters Patent of the United States is—

The method of producing veneer mantles for tubes, vessels and barrels, consisting in
10 placing a dry veneer or two or more superposed dry veneers coated with a cementing medium, and having their grains running parallel to each other, upon one or more dry
veneers having their grains running cross-
15 wise to those of the former veneers, and being also coated with a cementing medium; simultaneously uniting all the veneers under

pressure and with the application of heat in a curve, the radius of which is about five times as long as that of the finished mantle, 20 in such a way, that the grains of the outer veneer or series of veneers run along the curve; freeing the preliminarily-curved veneer-board thus formed from the pressure, and leaving it to itself until it has sponta- 25 neously farther curved into cylindrical shape, substantially as described.

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

CARL WITTKOWSKY.

Witnesses:

M. WEGENT,

OSCAR KOTTULINSKY.