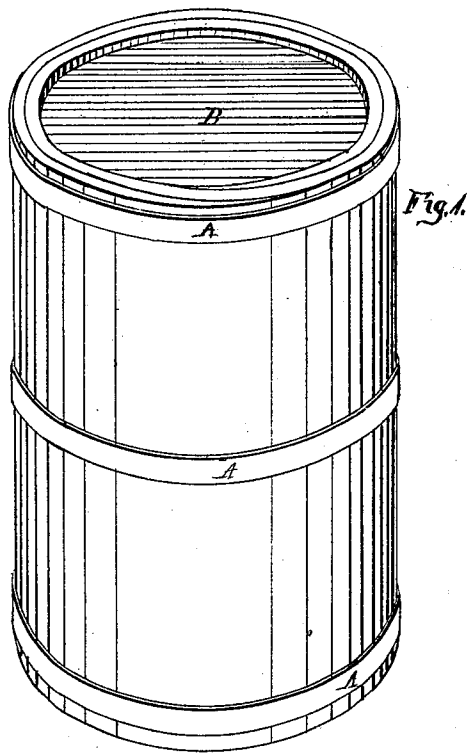


H. Willard,

Barrel.

No 112875.

Patented Mar. 21. 1871.



Witnesses.

Geo. W. Briggs
Chas. C. Simonds



Inventor.

Henderson Willard

UNITED STATES PATENT OFFICE.

HENDERSON WILLARD, OF GRAND RAPIDS, MICHIGAN.

IMPROVEMENT IN BARRELS.

Specification forming part of Letters Patent No. **112,875**, dated March 21, 1871.

I, HENDERSON WILLARD, of Grand Rapids, Michigan, have invented a new and useful Improvement in the Manufacture of Cylindrical Wooden Packages, of which the following is a full and sufficient specification, reference being had to the accompanying drawing.

This improvement consists in forming a wooden cylinder for barrel or other similar package by winding the material of which it is composed on itself two or more times around a form or mandrel until the desired thickness and strength are attained, as hereinafter more fully set forth.

The material for these cylinders is produced by a continuous cut around a solid block or log of wood by suitable machinery now well known in the manufacture of veneering and wood-paper.

The log should be cut as long as the desired package, and from it a sheet of thin lumber should be cut, as above described, long enough to extend two or more times around the package. These sheets may be wrought into cylinders as fast as they are cut from the log, or they may be subsequently steamed and bent around the form.

The advantages of this improvement in the manufacture of barrels, &c., are twofold, viz: First, the material can be more rapidly and cheaply manufactured, and the cylinder more cheaply wrought, than in any other way. Second, an inferior quality of lumber may be used, because the lapping of the coil everywhere covers up the imperfections.

It will be observed that each and every package made after my improvement must have a vertical grain, which strengthens it greatly, as

the tendency to split is abated by the arch which supports the package; and in this particular my improvement differs materially from that of John Potter, of Quincy, Illinois, as shown in his patent of last August, No. 106,504, for tobacco-box, in which the grain extends horizontally around the box, and which he strengthens by extending strips of metal lengthwise the box and across the grain.

Figure 1 is a perspective view of a package, showing my improvement with hoops A and heads B applied in the usual way.

The cylinder is everywhere double, and is composed of a coil extending twice around the package. In many cases I extend the coil more than twice around the package, but never less than twice.

In Letters Patent 103,000, dated May 10, 1870, I have shown and claimed a two-ply package, with a vertical grain, composed of two independent cylinders, so arranged, one in the other, as to break joints.

What I now claim as new, and wish to secure by Letters Patent, is—

A barrel or other similar package constructed as described, in which the cylinder is formed by winding the material on itself two or more times around a form until the desired thickness and strength are attained, and in such a manner that the package shall have a vertical grain, substantially as shown and described, and for the purpose set forth.

HENDERSON WILLARD.

Witnesses:

EDWARD TAGGART,
CHAS. O. SIMONDS.