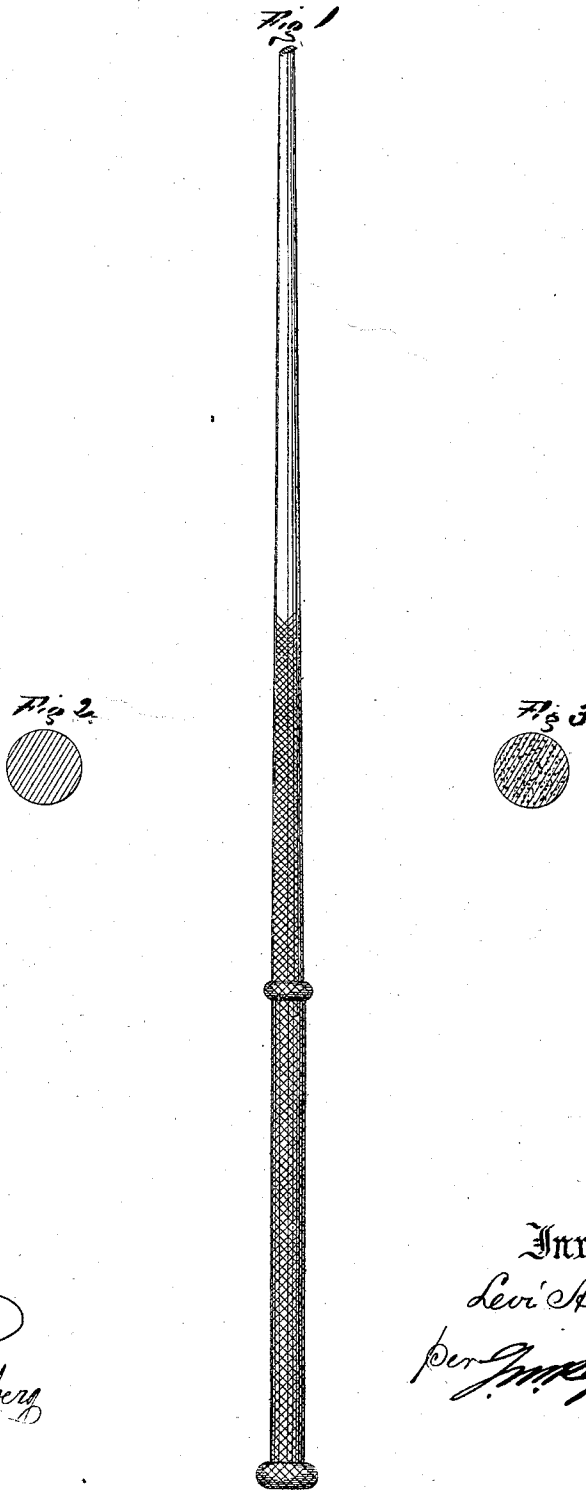


L. HEYWOOD.
Whip-Stocks.

No. 134,802.

Patented Jan. 14, 1873.



Witnesses:

W. L. Mills
A. L. Matzenberg

Inventor:

Levi Heywood.
per J. M. Simpson.
Atty

UNITED STATES PATENT OFFICE.

LEVI HEYWOOD, OF GARDNER, MASSACHUSETTS, ASSIGNOR TO HIMSELF
AND ELIZA T. WATKINS, OF SAME PLACE.

IMPROVEMENT IN WHIP-STOCKS.

Specification forming part of Letters Patent No. **134,802**, dated January 14, 1873.

To all whom it may concern:

Be it known that I, LEVI HEYWOOD, of Gardner, in the county of Worcester and State of Massachusetts, have invented a new and Improved Whip; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

This invention is in the nature of an improvement in the construction of whips, whereby a new and useful article of manufacture is produced; and the invention consists in filling the cells or pores of the wood constituting the whip-stock with an elastic, semi-elastic, or stiff substance, thereby increasing the elasticity, toughness, and strength of the wood.

In the accompanying drawing, Figure 1 is a side elevation of whip with charged stock; Fig. 2, a cross-section of stock uncharged; and Fig. 3, a cross-section of stock charged.

To construct my whip, a piece of wood of any convenient and suitable size and quality—or, if desired, rattan—is selected and placed in a vessel wherein a vacuum has been formed by pumps or otherwise, when steam is admitted to the lower ends of the wood, which drives from its pores the resinous or glutinous substances with which it is filled. (This primary operation may be omitted when rattan and other woods having large and well-defined pores are used.) Into an air-tight receiver of metal is now placed a solution of India rubber or gutta-percha and naphtha or collodion in a fluid state, or any other solution containing a solid elastic substance in suspension. The receiver is now closed and pressure applied in any desirable manner, which forces the solu-

tion into the pores of the wood or rattan; the wood or rattan then being removed from the vessel, it is exposed to artificial heat, which causes the surplus moisture to evaporate, and leaves the pores filled with the elastic solid which it had held in solution.

If the wood has been charged with India rubber or its compounds it is subjected to the usual vulcanizing process, which solidifies the rubber within the wood. The wood being thus charged, it may be cut to the required size and shape of the desired whip-stock, and can then be braided over by machine, the same as is ordinarily done in the manufacture of whips.

It is obvious that the stock may, if desired, be first finished up and afterward charged, as before described. This I have found to be the best way of doing it.

A whip constructed as above described will be found to be exceedingly tough, elastic, and durable, approaching very nearly in point of excellence to a whip having a whale-bone stock, and at the same time being very much cheaper.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, a whip with a wooden stock, when the pores thereof are filled with an elastic solid in the manner described.

2. The process hereinbefore described of rendering whip-stock tough and elastic.

LEVI HEYWOOD.

Witnesses:

FRANCIS RICHARDSON,
CHS. HEYWOOD.