UNITED STATES PATENT OFFICE.

JOEL B. HAYDEN, OF HEMPSTEAD, NEW YORK.

IMPROVEMENT IN COMPOSITION FOR MOLDED ARTICLES.

Specification forming part of Letters Patent No. **198,884**, dated January 1, 1878; application filed May 8, 1877.

To all whom it may concern:

Be it known that I, JOEL B. HAYDEN, of Hempstead, in the county of Queens and State of New York, have invented an Improvement in Wood Compositions applicable to the manufacture of barrel-heads, and to other purposes; and I do hereby declare that the following is a full, clear, and exact description of the same.

My improved composition is more especially designed for the manufacture of heads for casks or barrels designed to hold and transport kerosene-oil and other petroleum distillates; but it is also applicable to the manufacture of heads for other barrels and kegs, and for use in other industries.

The invention is designed to furnish a composition or material which will not split or crack in any direction, which is impervious to kerosone-oil and other hydrocarbons, and which will therefore prevent the dangerous leaking through the heads of casks employed for the transportation of such fluids, which, in hot weather, frequently gives rise to explosions and fires, and also occasions more or less loss by waste.

The invention consists in a composition made of flexible threads or strips of wood cut from timber longitudinally with the grain thereof, irregularly crossed, incorporated with glue and compacted under pressure, as hereinafter described. For convenience and brevity such flexible threads or strips are, in the description, designated as fibers, but it is to be understood that the natural fiber of wood is not meant by this term.

The wood, preferably that of a tough, strong kind, is first reduced to fibers by planing the same lengthwise of the grain or by other suitable means, the fibers so made resembling those constituting the common material called in commerce "Excelsior," and largely used for stuffing mattresses and cushions.

The fibers so made are arranged to cross each other irregularly in every direction, and upon them is poured liquid glue, either as ordinarily prepared for gluing wood surfaces, or prepared by an admixture of linseed-oil or other waterproofing substance to prevent the action of water upon it after its solidification.

The whole is then placed in a strong cylinder, or other suitable receptacle, and subjected to very heavy pressure, preferably by the use of a hydrostatic press.

The wood fibers are, by this means, brought into very close contact, and nearly the whole of the liquid glue is squeezed out, leaving only a sufficient quantity of said glue to coat the fibers, fill the small interstices, and render said fibers thoroughly adherent.

When the mass has sufficiently solidified it is removed from the press, and it forms a material of remarkable strength and solidity. Such mass may be either pressed in a mold during the process of compacting the same, or first formed in blocks, and subsequently cut or sawed into pieces of suitable form for the purpose intended.

If a hole be bored in a barrel-head made of the said material, and a tapered plug be driven therein, the head will not split; but if sufficient force be applied to a sufficiently hard plug, the head will rupture as readily in one direction as in another.

The fibrous character of the woody basis renders the material very hard to break in any direction.

I am aware that a granular wood basis, concreted with glue under pressure, has formed a composition for door-knobs, drawer-handles, and other articles; but it is too brittle to answer the purposes for which my composition is designed, and I do not claim a wood composition having such a granular wood basis.

I claim—

A new composition or material, made of uniform flexible threads or strips of wood, cut from timber longitudinally with the grain thereof, irregularly crossed, incorporated with glue, and compacted under pressure, substantially as and for the purpose specified.

JOEL B. HAYDEN.

Witnesses:
FRED. HAYNES,
A. GREGORY.