

UNITED STATES PATENT OFFICE.

JOHN M. BATCHELDER, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVED VESSEL FOR HOLDING PETROLEUM.

Specification forming part of Letters Patent No. 46,206, dated February 7, 1865.

To all whom it may concern:

Be it known that I, JOHN M. BATCHELDER, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Vessels for Containing Petroleum and other Oils; and I do hereby declare that the following is a full and exact description of the same.

The object of my invention is to prevent petroleum, kerosene, and other similar liquids from penetrating wooden or other porous vessels in which they are contained, the infiltration and leakage which occurs when the liquid is in direct contact with the interior surface of the vessel being prevented by a coat or lining which covers the wood and fills the joints and crevices. A solution of glue or gelatine has commonly been used for the above-named purpose, but it is liable to various objections. The coating thus made does not adhere uniformly to the wood, and when the barrels or other vessels are handled the glue-coat is broken, the oil comes in contact with the wood at various points, and the lining is rapidly removed.

In order that perfect adhesion to the wood of the containing-vessel may be secured, it is necessary that the applied liquid be of the nature of a paint having some "body" or thickness. This paint or composition I make as follows: One hundred pounds of glue is softened in cold water, the quantity of water to be used depending upon the quality of the glue, an inferior kind not absorbing so much water as glue of good quality. The softened glue is then placed in a suitable vessel and heat applied until it is dissolved. About twenty-five pounds of pulverized bones is then added (this powder being as fine as it can conveniently be made) and well incorporated with the solution of glue. Bones contain about twenty-eight per cent. of gelatine, five per cent. of other animal matter, and sixty-seven per cent. of phosphate of lime, carbonate of lime, and other earths. The bone-dust, thoroughly incorporated with the solution of glue, forms a paint which, when hot, is of about the consistence of cream, and the fine particles, which constitute the solid parts of the composition, are each composed of twenty-eight per cent. of gelatine, so that in addition to the glue that has been previously dissolved, as hereinbefore

stated, I obtain a paint the body of which is about one-third gelatine and affords additional resistance to the solvent action of petroleum, kerosene, and similar oils.

By the word "body" in the sense here used I mean the solid parts, which are capable of being separated from the composition by washing in hot water. In addition to the advantage of employing a thicker coat upon the wood than can be obtained with the common solution of glue heretofore used, the fine particles, which are uniformly diffused through the composition, are lodged in all the cavities and interstices of the wood and in the joints of the staves, and thus present a mechanical obstacle to the escape of the contained liquids, while at the same time the chemical or insoluble properties of the gelatine in the bone-dust resist the action of the solvents.

The composition may be applied to tank or open vessels with a common paint-brush; but for lining barrels and close vessels one or more gallons may be poured in, the bung closed, and the barrel shaken until the interior surface is coated. The excess that does not adhere is then poured off.

Instead of the bone-dust, I sometimes use other fine powders or earths—viz., whiting, kaolin, heavy spar, or such other substances as will, when incorporated with a solution of glue, give a body to it and form a paint which has in part all the qualities of the compound just above mentioned.

The proportion of powdered or pulverized material that is mixed with the solution of glue may be varied according to the quality of the glue and absorbent nature of the pulverized substance used.

The bone-dust sometimes contains oleaginous substances, and when this is the case sufficient soda or other alkali must be mixed with it to neutralize the oils, so that the powder may mix readily with the glue solution.

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

A barrel or other vessel having a lining or interior coat formed substantially as herein described, and for the purpose specified.

JOHN M. BATCHELDER. [L. s.]

In presence of—

FRANKLIN HUNT,
FRANK DODGE.