E. WATERS.

WATER-TIGHT JOINTS FOR ROOFS, &c.

No. 187,740. Patented Feb. 27, 1877.

Fig. 1.

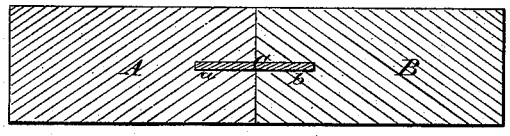
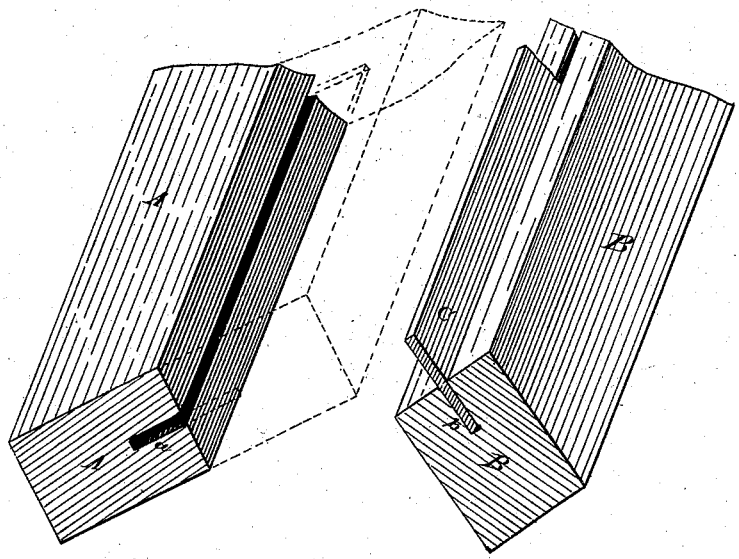


Fig. 2.



Attest:

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Inventor:

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Atty's.

UNITED STATES PATENT OFFICE.

ELISHA WATERS, OF TROY, NEW YORK.

IMPROVEMENT IN WATER-TIGHT JOINTS FOR ROOFS, &c.

Specification forming part of Letters Patent No. **187,740**, dated February 27, 1877; application filed August 14, 1876.

To all whom it may concern:

Be it known that I, ELISHA WATERS, of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Water-Tight Joints or Packing; and do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

The object of this invention is to produce a perfectly water-tight joint for weatherboarding; the roofs of dwellings; the hulks, decks, or bulk-heads of vessels; tanks; cisterns; sewer-floors, or, in fact, applicable to and useful for all other purposes where it is desired to obtain a reliable water-tight joint, that will not be injuriously affected by heat, frost, moisture, or shrinkage. This I obtain by the use of a strip of paper or paper board, chemically prepared or otherwise.

I have found by experiment that the chemically-prepared paper known as "vulcanized fiber," the process of manufacture of which is described in the Letters Patent of the United States No. 113,454, dated April 4, 1871, and No. 114,880, dated May 16, 1871, is admirably adapted for this purpose; but paper prepared in any different manner, or without any preparation at all, may also be used, all paper possessing the quality of swelling by moisture, so as to increase in bulk, this being the principle on which I construct my improved water-tight joint.

In the drawing hereto annexed, A and B are two adjacent staves or planks, each of which has a longitudinal groove sawed into the edge, as shown at *a* and *b*. C is a strip or tongue of "vulcanized fiber" or paper, which is inserted into the sawed groove in one of the boards or planks, after which these are driven closely together.

As vulcanized fiber is insoluble in water, but will swell on becoming wet, it will readily be seen that, should any water find its way between the joints containing this tongue of fiber, it will cause this to swell, and thus arrest its further progress.

Ordinary straw board or paper may also be used with advantage, because it will swell when moist, and, being closely confined within the grooves *a* and *b*, it cannot become dissolved.

The different kinds of fiber or paper to be used will depend upon the character of the article in which they are used. Thus, in the construction of boats or articles that are continually immersed in water, the so-called "vulcanized fiber" will be preferable, while for weatherboarding, the roofs of dwellings, sewer-floors, car-roofs, &c., ordinary paper, which is considerably cheaper, will answer every purpose.

I am aware that pieces of board or staves have been similarly united before by strips of sheet metal or wood, or by an inherent part of one of the planks fitting into a corresponding groove in the adjacent plank; but by neither of these methods is a perfectly-reliable water-tight joint produced.

My improved joint, being formed of elastic material, will fit closely into the grooves, even if the planks should shrink, and as it is not injuriously affected by heat, it may be used with advantage in the construction of roofs, or for other purposes where it is exposed to the rays of the sun.

The proper thickness of the joint may be obtained by pasting or compressing sheets of paper or fiber together, and then cutting the strips in the proper widths therefrom.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

A water-tight joint or packing for roofs, weatherboarding, staves, or similar purposes, consisting of a strip of paper, paper board, or vulcanized fiber, in combination with the planks or staves A and B, to be united, the latter having longitudinal grooves *a* and *b* for the insertion of the paper or vulcanized fiber, substantially in the manner and for the purpose hereinbefore set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ELISHA WATERS.

Witnesses:

F. P. LANG,

T. J. WHITEHEAD.