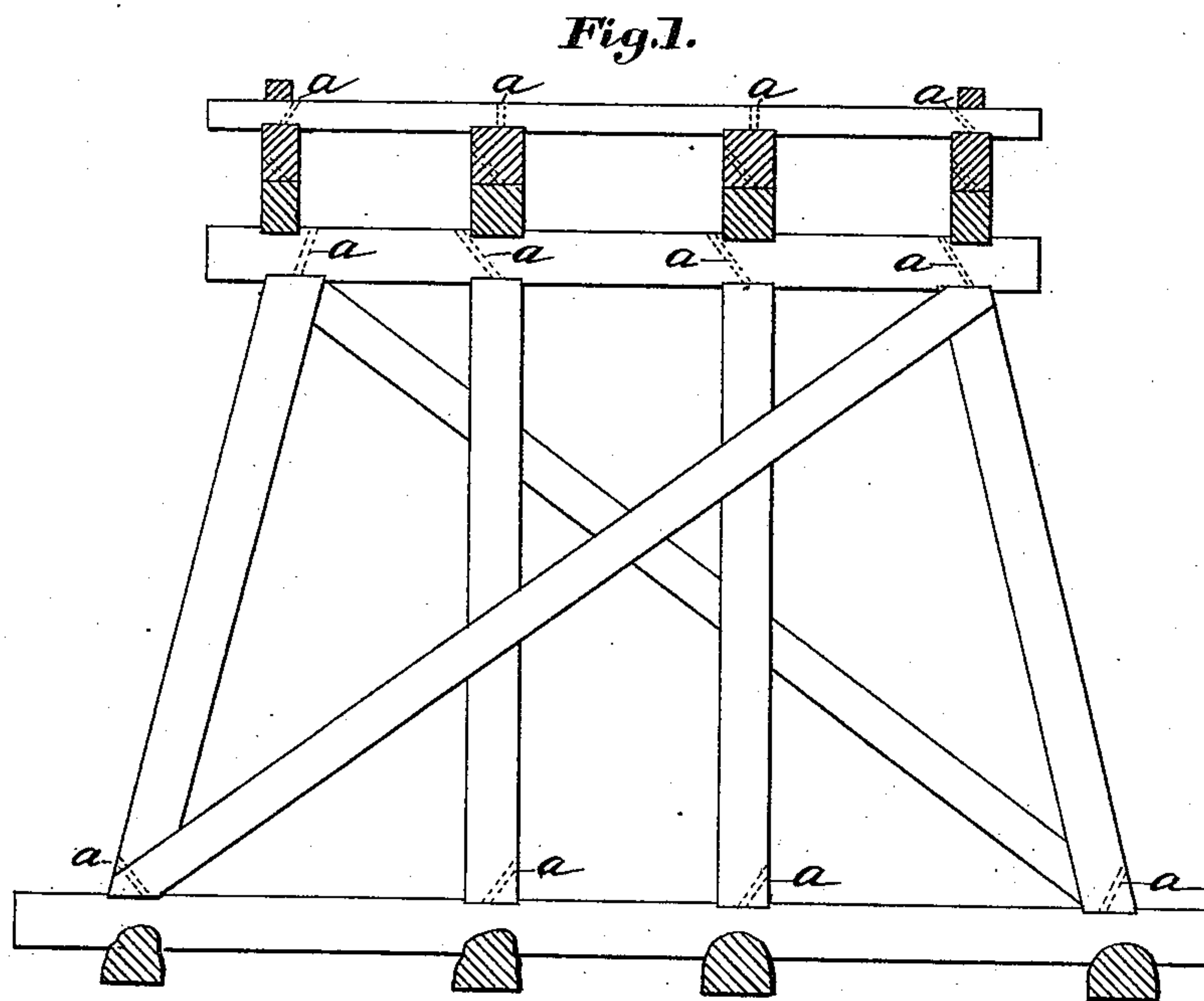
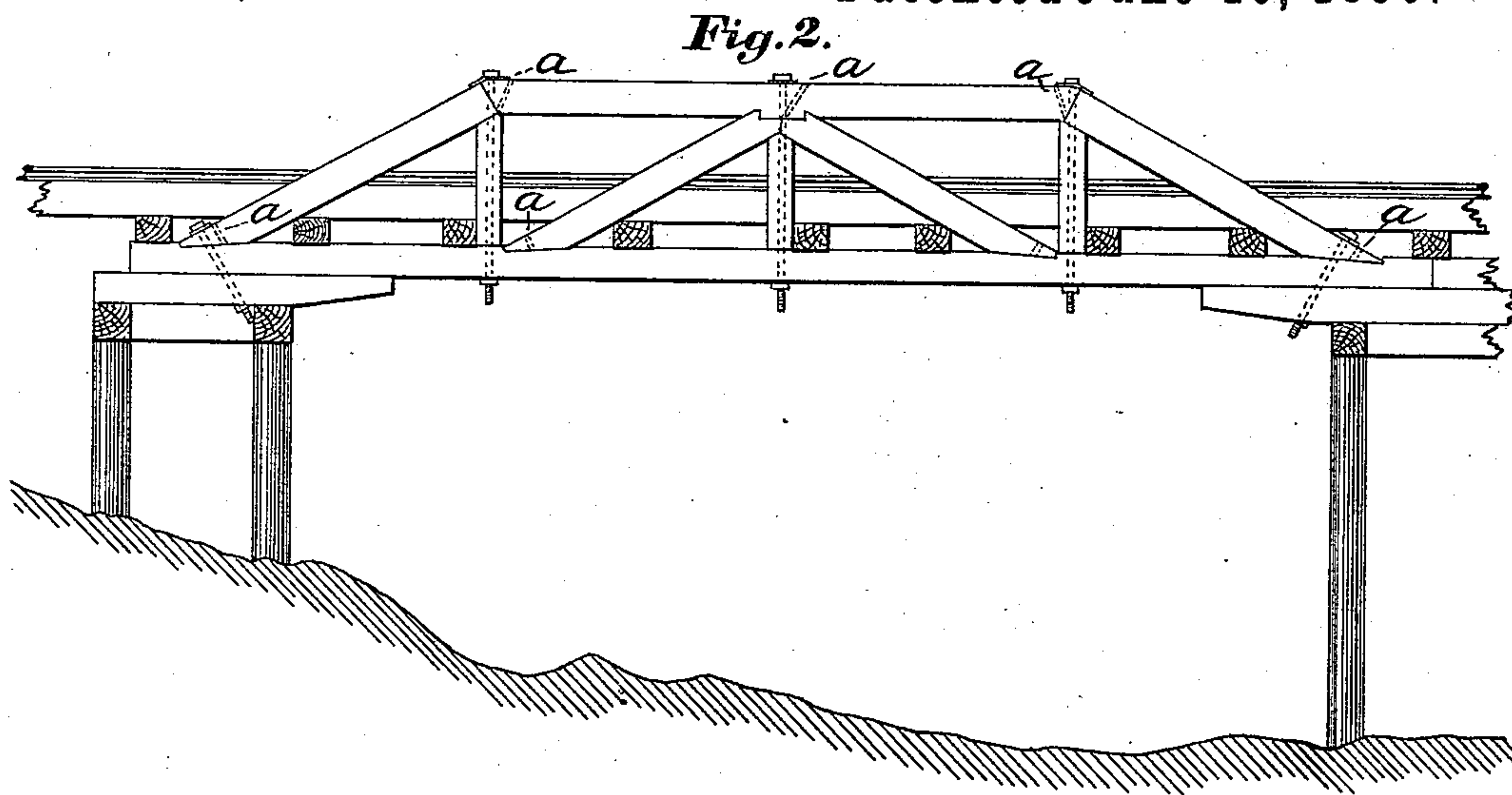


(No Model.)

O. CHANUTE.
PRESERVING TIMBERED STRUCTURES.

No. 430,068.

Patented June 10, 1890.



Witnesses:
N. B. Andersson.
S. B. Gaults

Inventor:
Octave Chanut
by C. D. Moody atty

UNITED STATES PATENT OFFICE.

OCTAVE CHANUTE, OF KANSAS CITY, MISSOURI.

PRESERVING TIMBERED STRUCTURES.

SPECIFICATION forming part of Letters Patent No. 430,068, dated June 10, 1890.

Application filed December 10, 1886. Serial No. 221,223. (No model.)

To all whom it may concern:

Be it known that I, OCTAVE CHANUTE, of Kansas City, Missouri, have made a new and useful Improvement in Preserving Timbered Structures, of which the following is a full, clear, and exact description.

The methods usually practiced in preserving wood from decay consist in impregnating the wood with some antiseptic solution, such as corrosive sublimate, sulphate of copper, chloride of zinc, dead-oil, &c.

This impregnation, however, needs to be done before the timber, or whatever form of wood is being treated, is placed in its final position, and for railway-ties and timber, which can be readily taken to the somewhat cumbrous works required for the impregnating operation, there is no better procedure; but for the timbered structures of new railways this practice is seldom pursued, chiefly because of the inconvenience of moving an expensive wood-preserving plant from place to place and treating the timber at the point where it is to be used. The structures are composed of untreated timber nearest at hand, and they decay in a few years. The decay, however, does not proceed uniformly in the various parts of the structures. The wood rots much faster at the joints, at the ground-line, and wherever two surfaces come into contact with each other, and an examination of old timber taken out of such a structure discloses the fact that its renewal is rendered necessary by the decay of a small percentage only of the piece or pieces of timber, and that in every instance the decay is initiated at the joints or surfaces in contact. Efforts are occasionally made to protect the joints and surfaces in contact by smearing or painting them at the time of the erection of the structure with some moisture-repelling substance, and such applications have materially prolonged the life of the structure; but no attempt, to my knowledge, has been made to apply a moisture-repellent or antiseptic between the surfaces in contact after the structure has been erected; and the present improvement consists in preserving timbered structures from decay by introducing after the structure is erected and its members have come to a bearing upon each other a moisture-repellent or an antiseptic, or both a moisture-repellent

and an antiseptic, into the joints and between the surfaces in contact, and in carrying out the improvement the procedure is as follows: The outer edges of the joint are made tight to prevent from without the entrance of moisture and from within the escape of the substance applied, which substance is preferably dead-oil, (hot when applied,) and which is introduced into the joint through a passage made into the timber and extending to the joint at a point thereof within the outer edges of the joint. Enough of the dead-oil is introduced to fill any vacant space in the joint or between the surfaces and to thoroughly cover all of the opposing wood surfaces. The outer edges of the joint can be made practically tight by calking them with oakum or by plastering them over with clay or other plastic substance—such as cement or lime-mortar—which will harden upon exposure, or by brushing them over with some hot liquid—such as asphaltum, pitch, rosin with or without some thickening material, glue, or brimstone—which will harden upon cooling; care being taken that the calking substance or compound be of such a nature as not to yield to the particular antiseptic or preservative selected. All other openings—such as tenon or treenail holes—through which the antiseptic or preservative can escape, are similarly stopped, and the passage through which the antiseptic, &c., is introduced is plugged, but so as to be opened when it is desired to repeat the operation.

The details of the application of the improvement necessarily vary according to the position of the joint or timber and the character of its framing. A desirable mode of carrying out the improvement is exhibited in the annexed drawings, making part of this specification, in which—

Figure 1 is a side elevation of a bend in a trestle-bridge, and Fig. 2 is a side elevation of a girder-bridge.

The same letters of reference denote the same parts.

The structure, being of a familiar form, unmodified, save the passages *a* for the introduction of the preservative, do not require description. The passages (indicated by dotted lines in the drawings) in practice are auger-holes bored at various angles of inclina-

tion, as illustrated in the drawings, through the upper timber downward to where the upper timber is joined to or bears upon the lower timber. The calking or substance used to close the joint externally is not shown. The upper end of the passage *a* is located to facilitate the introduction of the preservative, which may be a liquid and self-operative, or in a solid form—such as salt, arsenic, corrosive sublimate—to be dissolved *in situ* by the sap of the timber or the infiltration of moisture.

I am aware that holes have been bored into timber, and that these have been filled with some antiseptic; but so far as I know they have not been applied to the joints of timbered structures, nor have the joints been stopped externally to inclose the antiseptic. The improvement is adapted to other forms of timbered structures than bridges.

I desire to have it understood that the treatment herein described is especially directed to the joints of a timber structure. I have observed that timbered structures, even when composed of wood treated generally with a wood-preservative, are apt to decay first at those points where the various members of the structure bear upon each other, and I conclude that the joints and bearings of a

timbered structure should therefore receive a special treatment, irrespective of such timber having as a whole been previously treated or not, and I have also ascertained that such special treatment can be applied more surely and more effectively after the structure has been completed.

I claim—

1. The herein-described mode of treating a timbered structure to preserve it from decay, which consists in applying the wood-preservative between the opposing surfaces of the joints of the structure after its erection.

2. The herein-described mode of preserving a timber joint, which consists in sealing said joint externally after erection and then introducing the wood-preservative between the opposing surfaces of the joint.

3. The herein-described mode of preserving a timber joint, which consists in sealing said joint externally after erection, saving a passage for the introduction of the wood-preservative, and then introducing said wood-preservative through said passage between the opposing surfaces of the joint.

OCTAVE CHANUTE.

Witnesses:

C. P. JAMES,
C. H. HAMM.