

(No Model.)

H. F. WILLIAMS.
COMPOSITE TIMBER.

No. 598,127.

Patented Feb. 1, 1898.

Fig. 1.

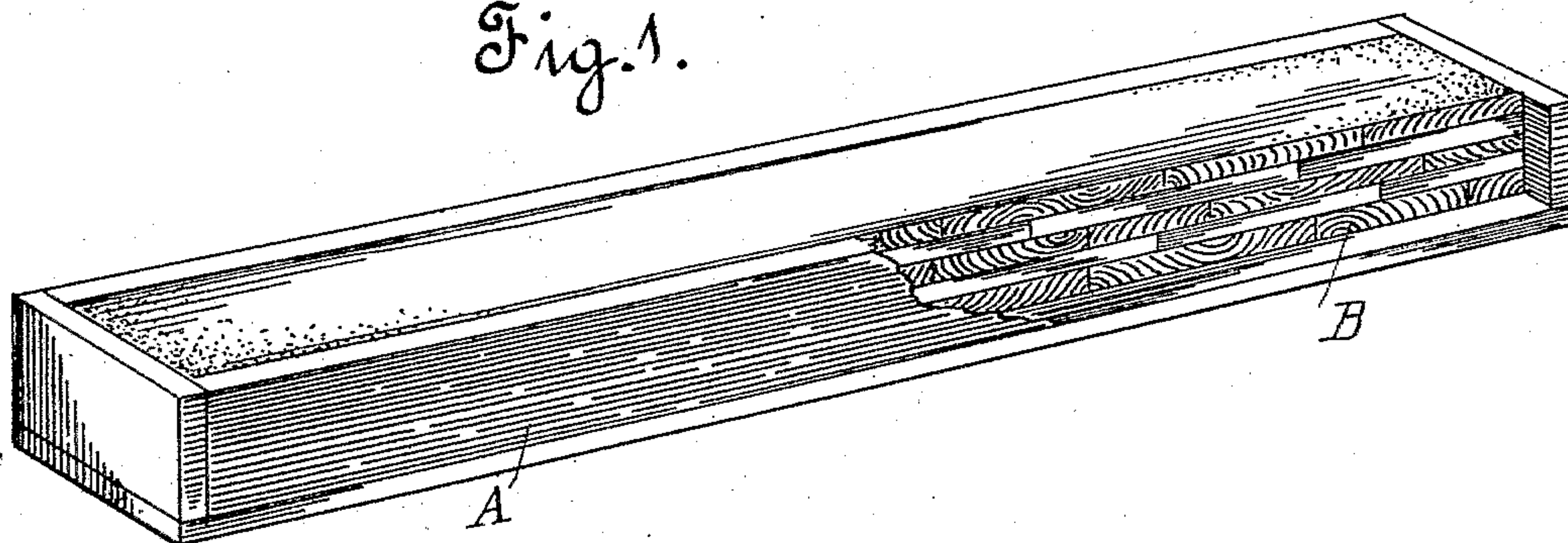


Fig. 2.

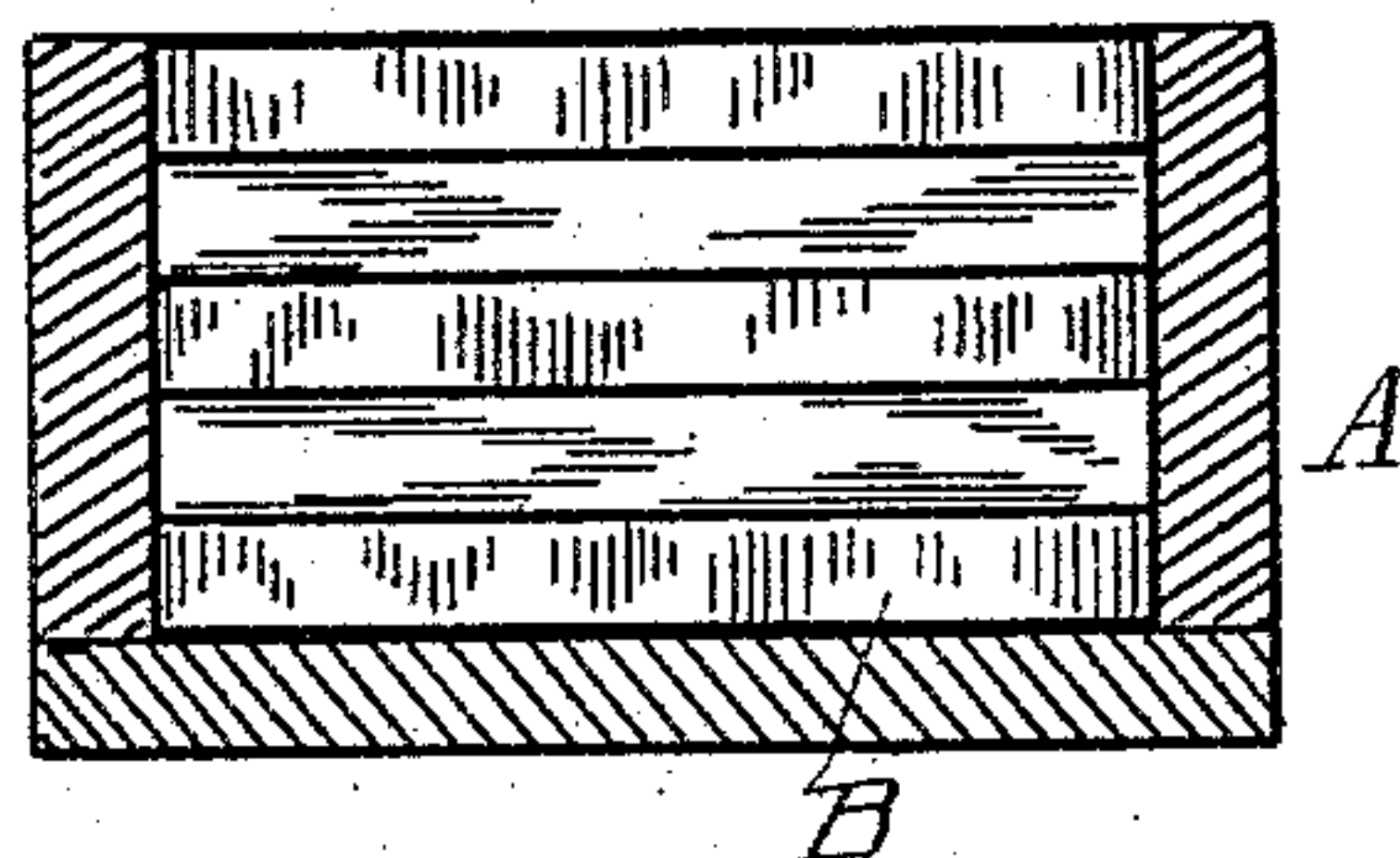
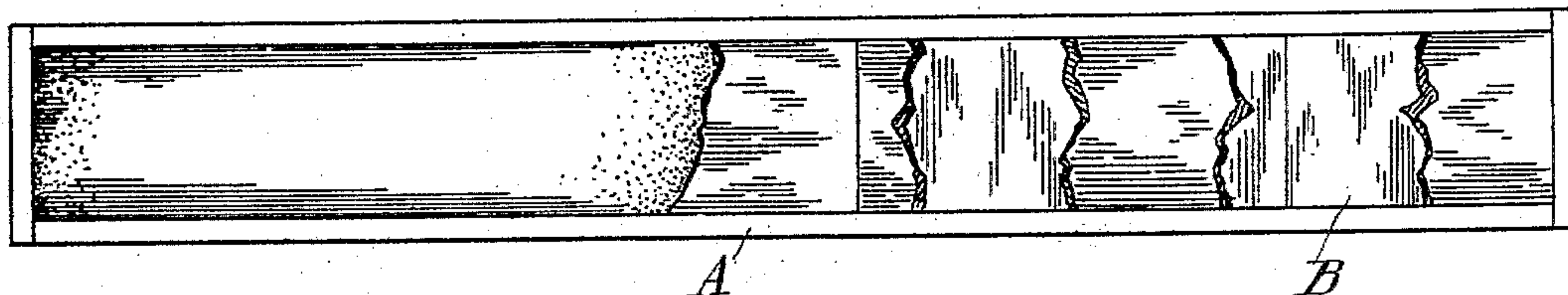


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

HENRY F. WILLIAMS, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF TO JOHN J. HALEY, OF SAME PLACE.

COMPOSITE TIMBER.

SPECIFICATION forming part of Letters Patent No. 598,127, dated February 1, 1898.

Application filed May 10, 1897. Serial No. 635,954. (No specimens.)

To all whom it may concern:

Be it known that I, HENRY F. WILLIAMS, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Composite Timbers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to wooden structures, such as railway-ties, mine-timbers, &c.; and its object is to produce a structure for such purposes from cheap material which in strength, durability, and general utility will be superior to solid timbers.

A timber constructed according to my invention comprises separate layers of wooden blocks, strips, or pieces united solidly together by an asphaltic or bituminous composition and provided with a wooden casing having a bottom which is also united solidly to the inner composite mass by the same means.

In the following description I have fully set forth the manner of constructing such timbers and the timber itself and have illustrated the same in the accompanying drawings, in which—

Figure 1 is a perspective view of a composite timber embodying my invention. Fig. 2 is a cross-section of the same. Fig. 3 is a horizontal longitudinal section.

In constructing a timber I make a box or casing A of any suitable wood, which preferably has been thoroughly seasoned. This box has a bottom, two sides, and two ends, but is open at the top. Its external dimensions will be those of the railway-tie or other timber under construction. Upon the bottom of the box is poured a layer of the adhesive composition, which binds the parts of the timber together. For this composition I prefer to use asphaltum mixed with carbonate of lime, which when hard forms an exceedingly tough and adhesive asphaltic cement; but any other substance of a tarry or bituminous nature may be substituted for the asphalt. This compound in liquid or semiliquid consistency can be readily poured. While the composition is soft, I place upon the bottom blocks, pieces, or strips of wood B of the same

thickness and of such length and width that it requires a number of them to fill the length and width of the box with an easy fit. The grain of the wood throughout this layer of pieces runs in the same direction. The bottom layer of wood is then covered with the composition, and the easy fit of the pieces permits such composition to work down around the edges and so to harden between the interior pieces and the inclosing box, thus binding the box firmly to the interior mass. The interior structure is thus built up by separate layers of wood and composition, the wood being arranged so that the grain in each layer is transverse to that in the adjacent layers. The composition spreads and flows through the joints and interstices of the wood layers, binding the separate pieces firmly together and also binding the whole to the casing. The interior layers are continued nearly to the open top of the box, which is then filled flush with the upper edges, with a top layer of the composition, to which a small quantity of small gravel may be added to secure greater superficial hardness. The sides, ends, and bottom of the box are then thoroughly coated with the composition.

A railway-tie, mine-timber, or other wooden support for sustaining weight or pressure constructed in this way is in strength equal to solid timber and in durability superior. Its durability arises partly from the solidity of the composite structure and partly from the fact that the composition is a preservative of the wood from decay, the attacks of insects, &c. The manner of laying the interior pieces with the grain of the wood alternating throughout the successive layers renders it impossible to split the wood, which is an additional element of durability. Further, the interior layers can be made from small pieces of waste timber of no other value, the manner of binding these together making the composite timber as firm and solid as if hewed from the log.

I have indicated some of the uses to which my composite timber is adapted; but it is evident that it is capable of substitution for solid timbers for many other purposes.

Having thus described my invention, what

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

A composite timber for the purposes set forth, consisting of a box having a bottom and walls and of substantially the shape and size of the complete timber, and layers of wood placed within the box and supported by the bottom, such layers being secured to one another and to the bottom and walls of the

box by layers of a composition of substantially the character described.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 30th day of April, 1897.

HENRY F. WILLIAMS.

Witnesses:

L. W. SEELY,

M. R. SEELY.