

(No Model.)

2 Sheets—Sheet 1.

A. F. TEMPLE.
COMPOUND BOARD.

No. 369,216.

Patented Aug. 30, 1887.

Fig. 1.

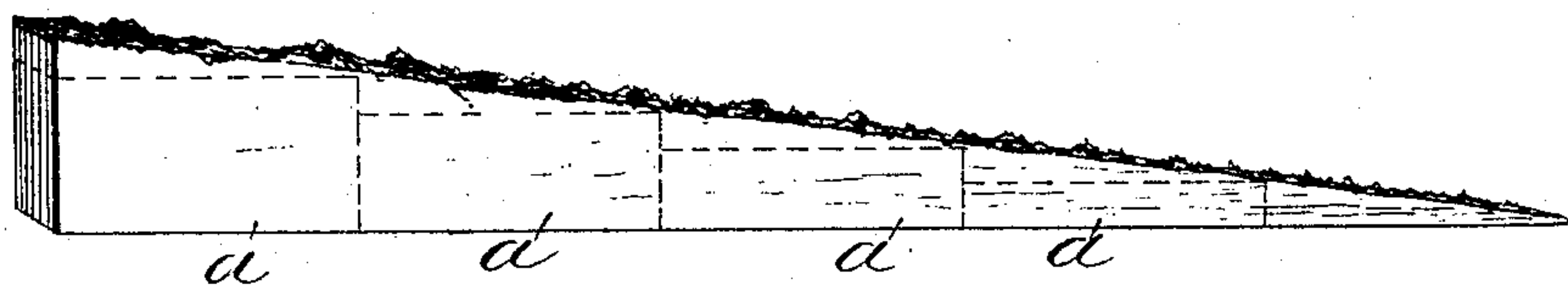


Fig. 2.

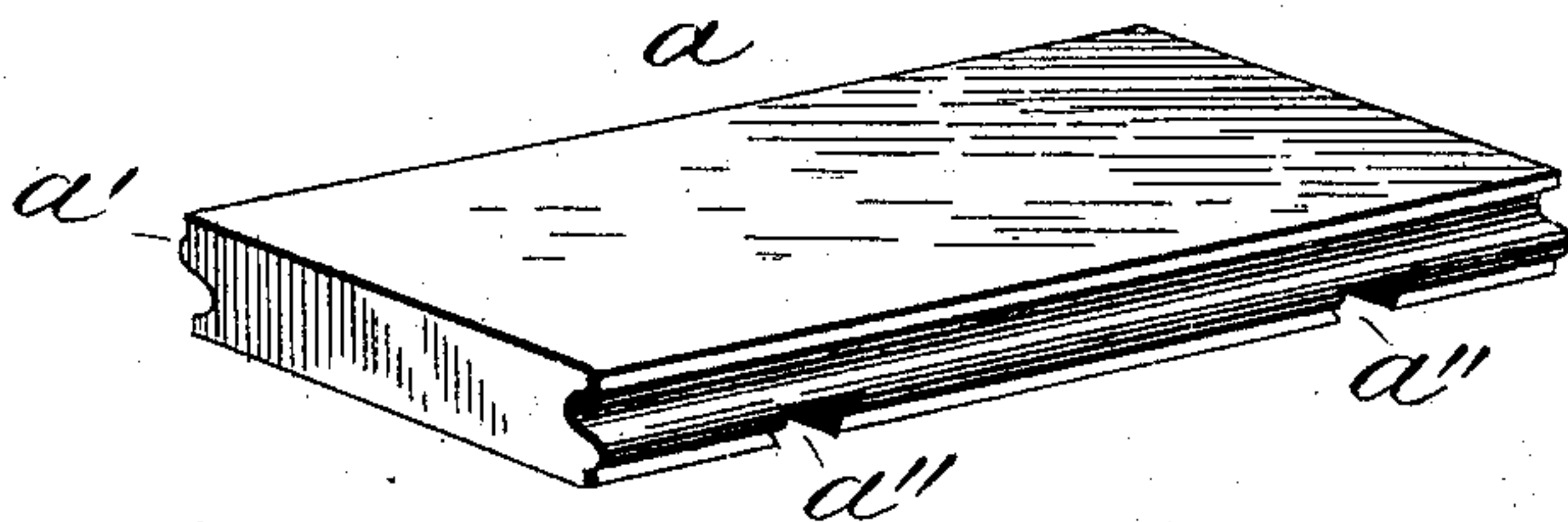


Fig. 3.

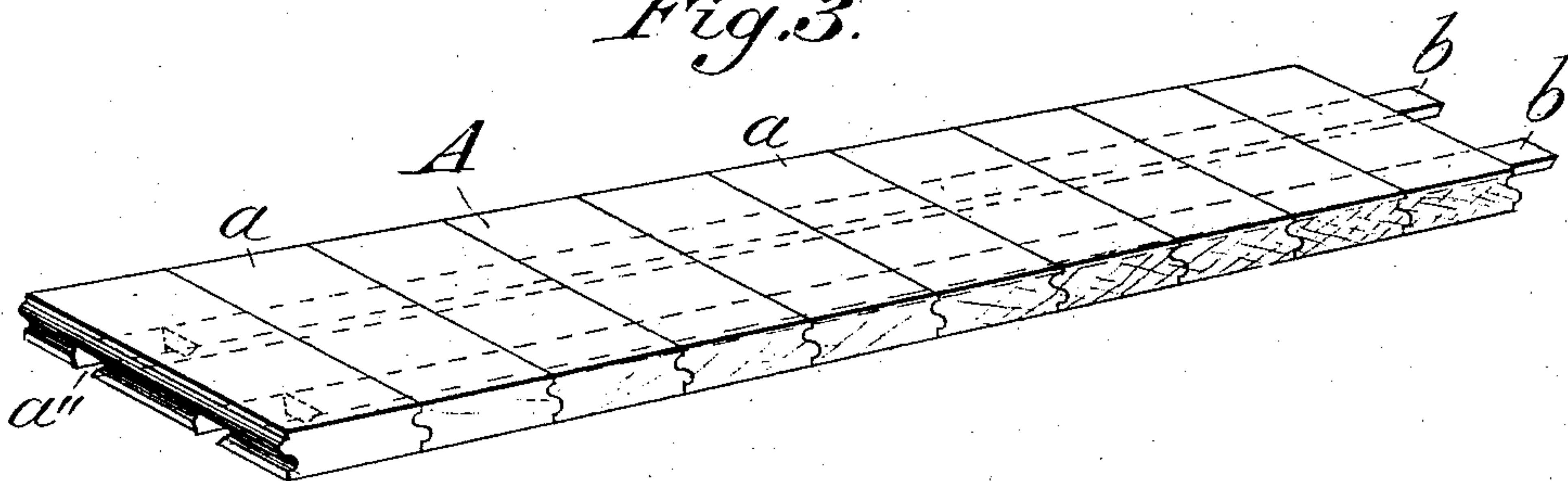


Fig. 15.

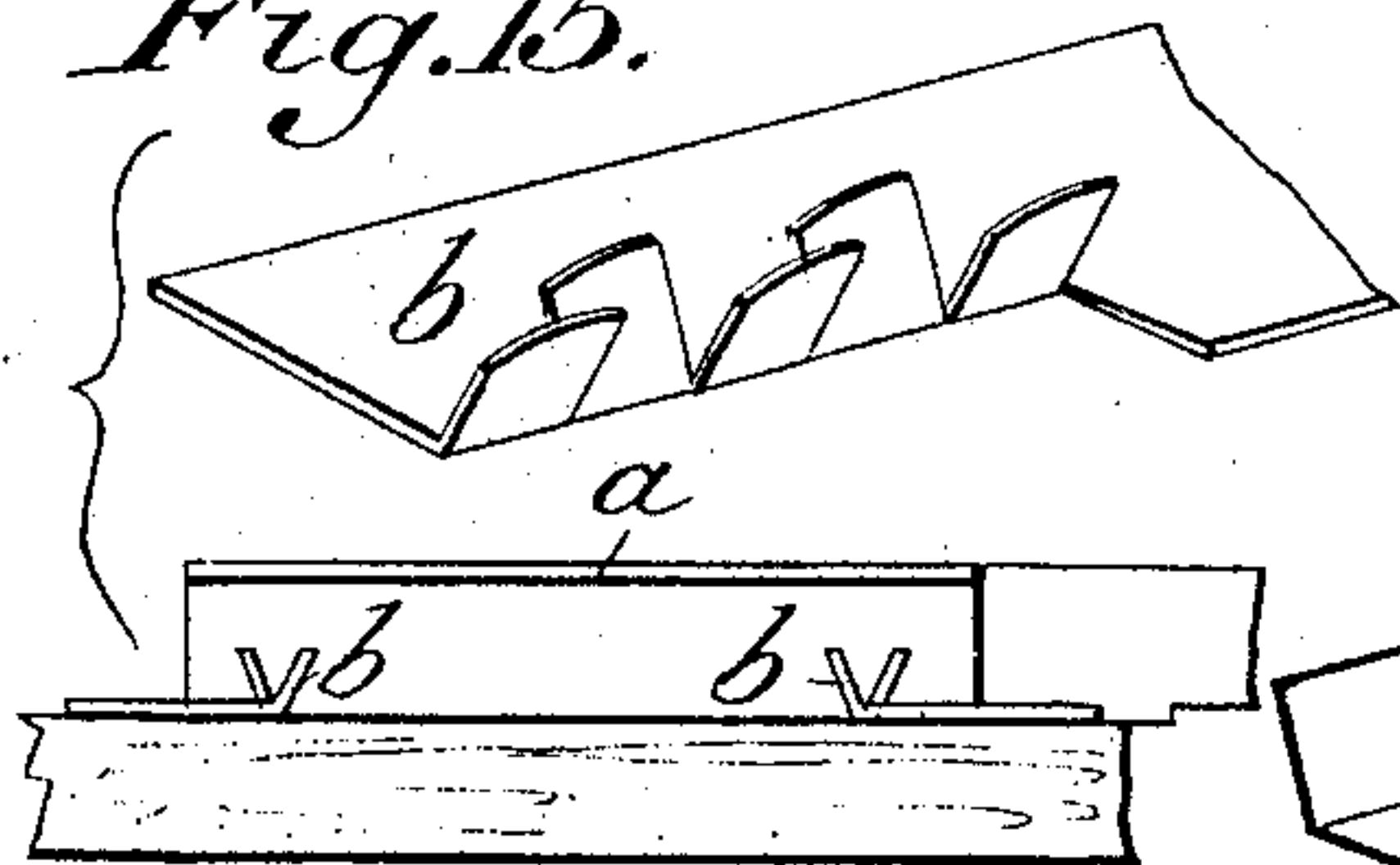
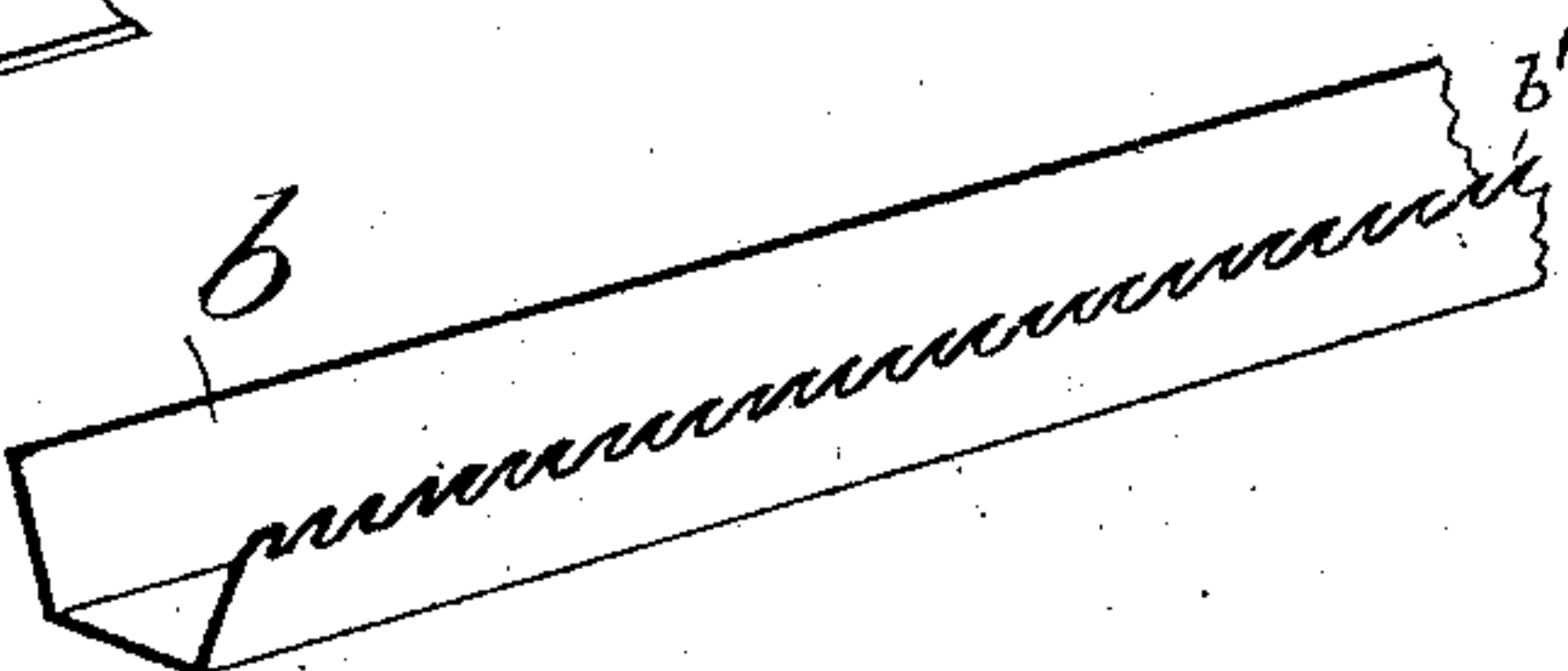


Fig. 14.



Witnesses

H. H. Schott
S. W. Chandler

Inventor

Amos F. Temple

By his Attorney

M. H. Chandler

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

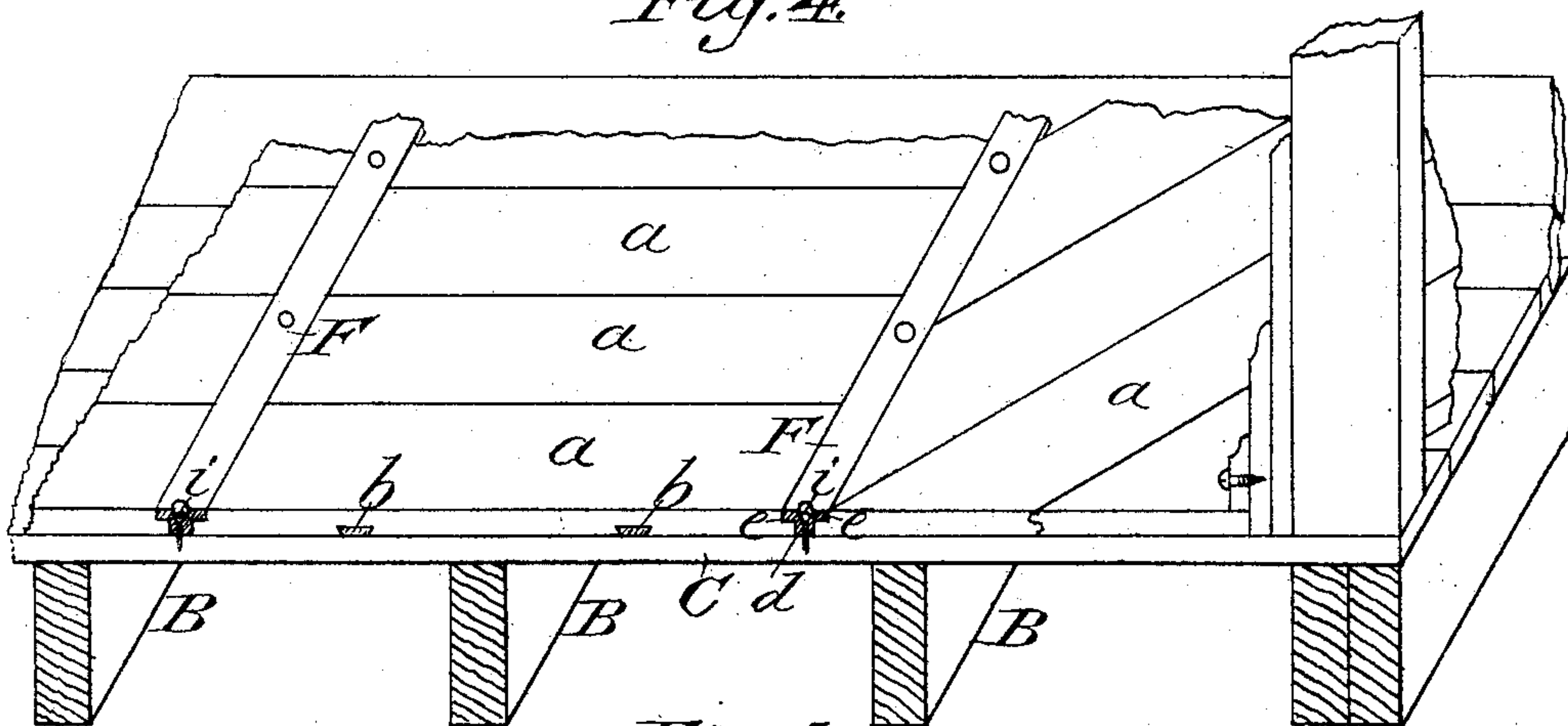


Fig. 5.

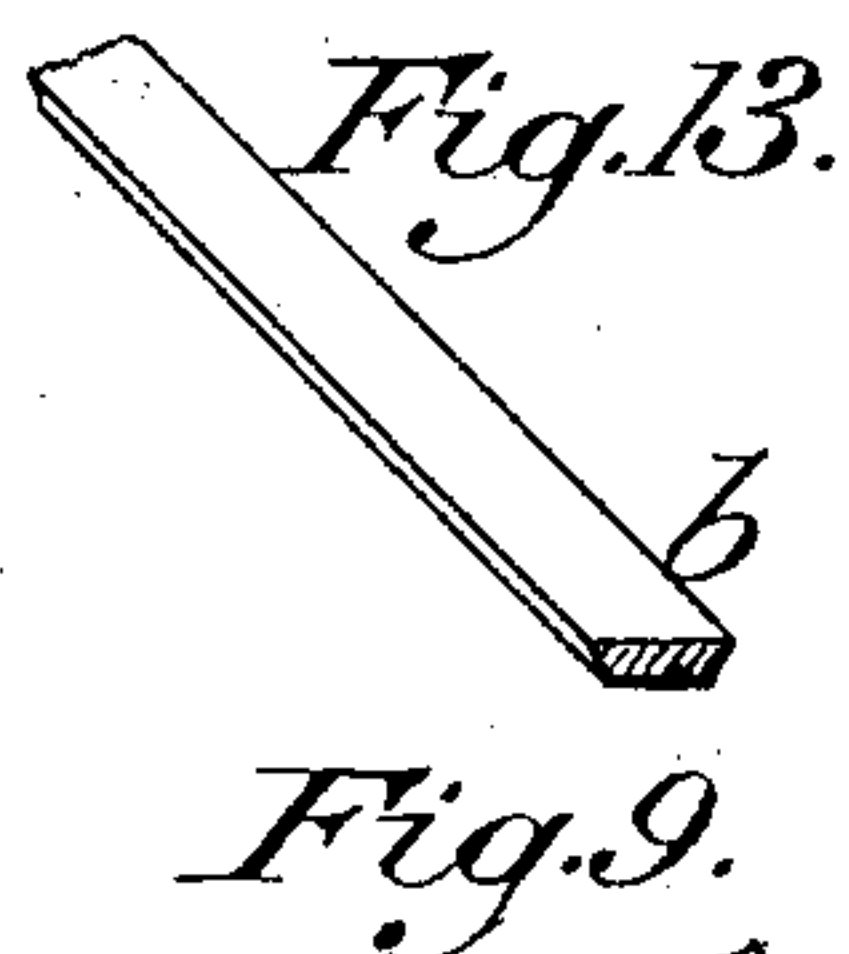
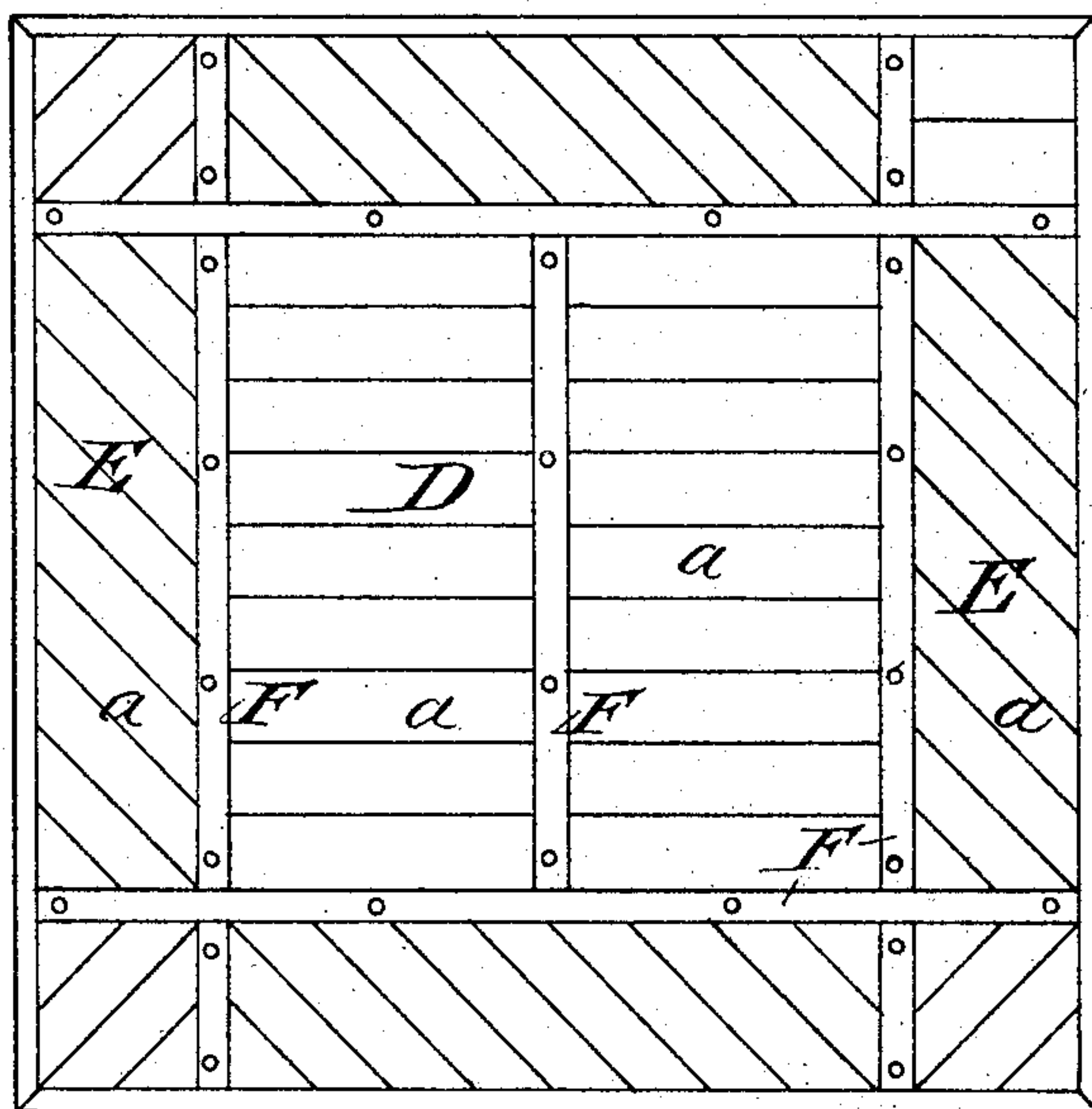


Fig. 9.

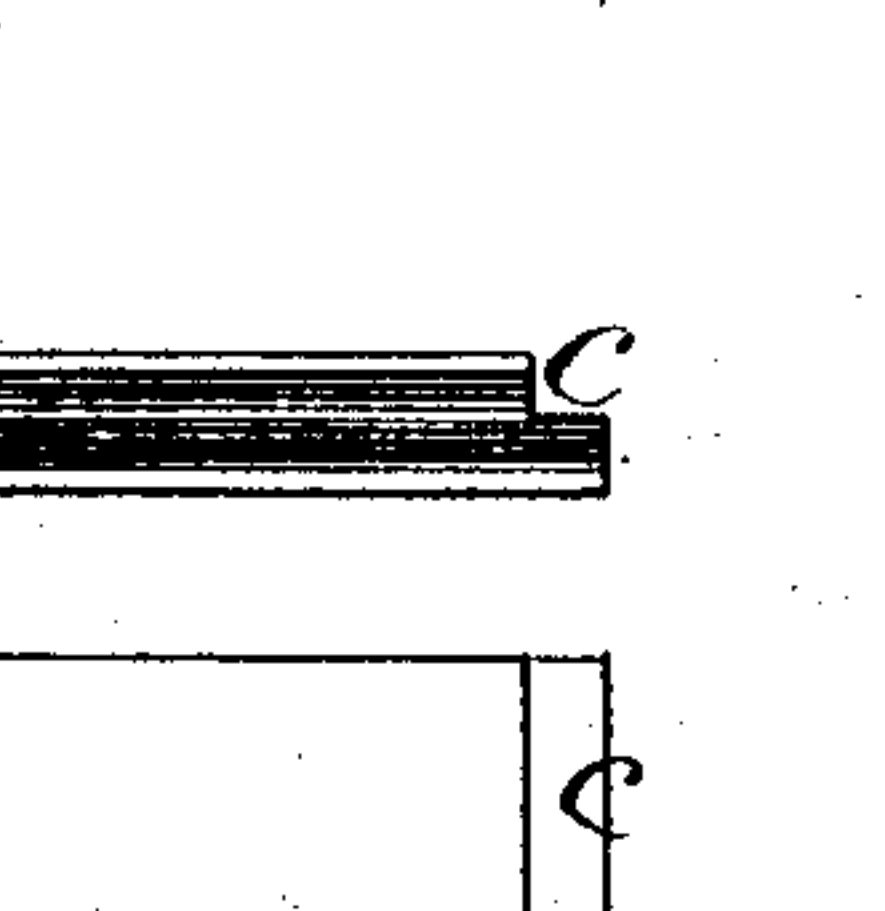
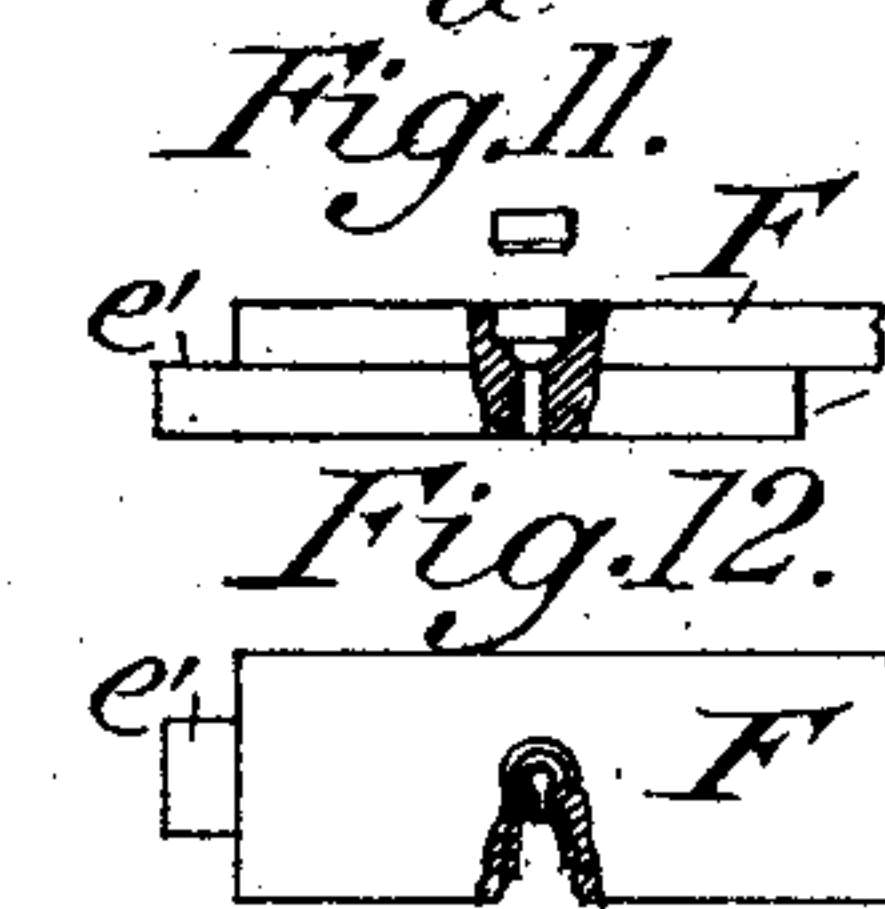


Fig. 6.



Fig. 7.

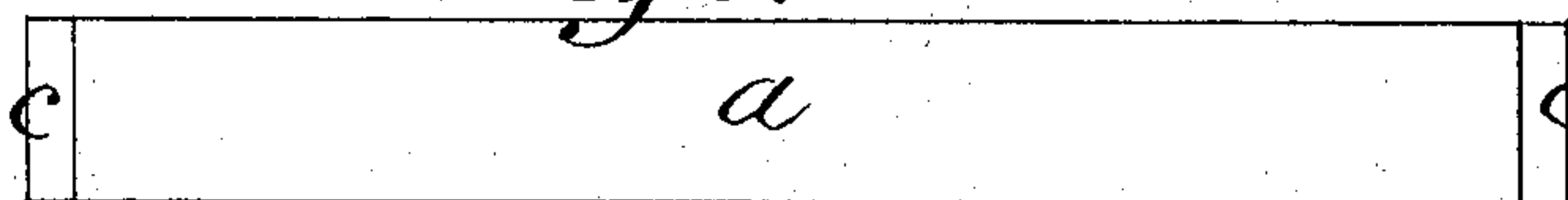
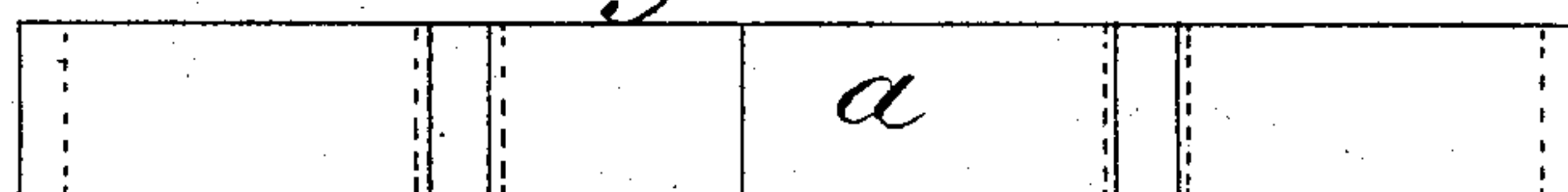


Fig. 8.



Attest:
J. H. Schott
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Inventor:
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UNITED STATES PATENT OFFICE.

ANSEL F. TEMPLE, OF MUSKEGON, MICHIGAN.

COMPOUND BOARD.

SPECIFICATION forming part of Letters Patent No. 369,216, dated August 30, 1887.

Application filed February 21, 1887. Serial No. 228,389. (No model.)

To all whom it may concern:

Be it known that I, ANSEL F. TEMPLE, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Compound Boards; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to certain means for utilizing the trimmings, edgings, and slabs which are now a waste product at many saw-mills throughout the country, where they are either thrown into the refuse-burners and destroyed, used as ordinary fuel, or carted away from the mills and deposited in heaps to decay in the ordinary process of nature. This refuse is composed of the clearest part of the timber, and the slabs and edgings come from that part of the log nearest the bark, and are therefore mainly free from knots, although the pieces are in such small and irregular shapes as to be useless in that condition for any purpose except as fuel. To convert this material into lumber, which may be used as flooring, wainscoting, or for other purposes, thus becoming a valuable and salable article of merchandise, is therefore the object of my invention.

I am aware that it has been common heretofore in making parquet or other ornamental floors to cut good merchantable lumber into small pieces, and unite these pieces by means of various devices in such a manner as to form ornamental designs; but this is not the purpose of my invention, which, as heretofore stated, is to produce good and merchantable lumber in condition to be laid as a floor or applied as wainscoting and to other purposes without other preparation, after the manufacture is completed, from the ordinary mill-refuse, which is now comparatively valueless; and my invention consists, essentially, in the lumber prepared for use by first cutting the material into pieces of suitable and nearly equal length, bringing these pieces to an even width, tonguing and grooving their edges, uniting a series of them into one piece by a strip or

strips entering a groove in what is to be the under side of said compound piece of lumber, and then finishing the upper surface and ends by suitable machinery, thus producing a new article of manufacture; and the invention further consists in certain details of construction, which will be hereinafter clearly described, and then specifically pointed out in the claims.

In carrying out my invention I take the material and pass it through a series of processes, as follows: For the purpose of illustration I will take the ordinary edgings as they come from the mill. These edgings are generally about one inch in thickness, and vary in width from, say, two or more inches at one end to nothing at the other, being produced in the manufacture of merchantable lumber by the necessity of making the boards of equal width at both ends. Now, as saw-logs taper from the butt toward the top end, it is evident that boards of equal width can only be produced from the area of the small end. It will be apparent that from every board having the greatest equal width throughout its length that can be cut from said log two of these strips or edgings will be produced. I take these strips or edgings and by means of a circular saw cut them up into short lengths, preferably about sixteen inches, that being the distance from each other at which the floor-joists and studdings of a building are commonly placed. These short pieces are then brought to an even width by means of a circular saw and suitable gages, after which they are passed through a machine, which forms a tongue and groove of peculiar form upon each side of said pieces. This tongue and groove consists simply of a concave and convex part placed side by side, so that when the pieces are placed together the convex part of one enters the concavity of the adjoining piece, which construction of joint allows the pieces to be readily removed for the insertion of others without danger of breaking off the tongue, as in the case of the ordinary tongue and groove. Further advantages consist in the saving of material and the facility with which the position of the pieces may be reversed, if desired, so as to present their best surfaces outwardly, the imperfections being upon the under side and out of sight.

After the pieces have been tongued and grooved upon their edges, they are passed over a machine which forms one or more grooves, preferably of dovetail form, across their under sides, after which a series of them, forming a combined piece or board having a width equal to the length of the individual pieces and a combined length equal to that of the whole series, is formed by forcing the pieces one after another upon a strip or strips of metal or wood, which enter the groove or grooves and hold all the narrow pieces forming the combined board or piece together. This board is then passed through a surface-planer, which reduces it to an even thickness and renders its surface smooth and suitable for use. The board may then be passed through a machine, which rabbets its edges or otherwise prepares them for the particular use to which they are to be applied, which uses and the means I have devised for the purpose of securing these boards in place will now be described in detail.

It will be evident that the dimensions of this compound board may be varied to suit the different sizes of finished lumber now in common use, and which are kept in stock for sale, and, further, that it may be shipped in bulk by rail or vessel in the same manner as ordinary lumber.

In the accompanying drawings similar letters of reference indicate like parts in the different figures.

Figure 1 is a perspective view showing an ordinary board-edging which forms one of the various kinds of mill-refuse from which my compound board may be produced, the dotted lines illustrating the manner in which it is divided to produce the separate pieces of which said compound board is composed. Fig. 2 shows one of the pieces completed ready to be united with others by means of a connecting-strip. Fig. 3 is a perspective view of the compound board complete and ready to be placed upon the market. Fig. 4 is a perspective view of a floor and its supports, showing the manner in which the board may be applied to the formation of floors. Fig. 5 is a plan view illustrating the manner in which the boards may be laid to give the floor an ornamental appearance and economize material. Figs. 6, 7, and 8 present an edge, plan, and bottom view of the pieces as prepared for use in floors or wainscoting. Fig. 9 is a transverse section through one of the pieces composing the board, showing the form of tongue and groove made in its edges. Figs. 10, 11, and 12 show the locking-piece by which the boards are secured in place, and illustrate the method of securing the same. Figs. 13 and 14 show the strips which enter the grooves in the separate pieces and by which they are retained in position to form the compound board. Fig. 15 shows a modification in form of the locking-strip.

In Fig. 1 the sections of the edgings which go to form the individual pieces from which

the compound board is formed are represented by *a*, and the completed piece or section shown in Fig. 2 by the letter, *a'*, showing the tongued and grooved edges of the piece, and *a''* the grooves through which the connecting-strips *b* pass for connecting the pieces *a* in order to form the compound board, as shown in Fig. 3. This board is designated in the several figures of the drawings by the letter A, and, as shown in the last-named figure, is composed of a series of individual pieces, *a a*, united by strips *b b*, passing through the grooves in their under sides. It will be observed that the strips *b b* project at one end of the board A, a corresponding recess being left in the groove at the opposite end to receive the extensions of the strips of a similar piece. Thus a series of the boards may be united end to end, if desired. The strips *b* are preferably formed of metal having one or both edges, as *b'*, serrated, the teeth being so formed as to all point in one direction, so that the pieces *a* may be forced onto said strips from one end but not from the other, the points of the serrations entering the wood and preventing movement except in one direction. By this construction the points between the several pieces *a*, forming the board, may be brought close, and every movement of said pieces tends to crowd them still closer together—as, for instance, when the compound boards are used in the construction of a floor the tendency of movement caused by travel over it will be to crowd the separate pieces together, so that the points between them shall always be tight.

In Fig. 15 I show a modification of the metallic strip used to connect the several pieces forming the compound board in which that portion of the strip which enters the grooves is produced by cutting one edge of said strip into teeth, and then bending these teeth alternately, so that they shall form a dovetail to enter the grooves formed in the pieces *a*, while the flat portion of the strip lies beneath these pieces, serving as an additional support thereto.

It will be apparent that for some purposes the metallic strip may be dispensed with, and instead thereof a plain strip of wood used in the groove for connecting the several individual pieces; but I prefer the serrated metallic strip, or some modification thereof, for general purposes.

In Figs. 4 and 5 I have shown one method of using my compound board as flooring for a room, B B representing the floor-joists, and C the rough sub-floor laid upon said joists and upon which the upper flooring is laid. To prepare the compound boards for use in this way, they are first passed through a machine which forms a rabbet, *c*, upon each edge of the same, or at the ends of the pieces *a a*, as shown in Fig. 6. The boards A are then laid down so as to cover the middle of the floor, as D, leaving a margin all around to be afterward filled, as E. In placing the boards A so as to

cover the part D they are laid with their edges near each other, but not touching, so as to leave room for the tongue *d* of the key-piece F to pass between them. These key-pieces, as shown in Fig. 10, are T-shaped; the tongue *d* projecting down between the edges of the boards and the side flanges, *e*, of the key, filling the rabbet *c*. The under side of these side flanges, *e*, is not at right angles to the tongue, but has an upward inclination as it extends outward, so that when the screws *i*, which hold the floor in place, are passed through said key-piece and turned down its arms *e* will first come in contact with the extreme outer edge of the rabbet *c*, and as the screws continue to be turned the wood at the ends of the pieces *a* will be compressed until by the time the key-piece is level with the upper surface of the floor the boards A will be firmly secured to the sub-floor C.

The beveling of the under side of the arms *e* of the key-pieces causes the greatest pressure to be brought upon them near the point of their junction with the tongue, where they have the greatest ability to withstand such strain, thus preventing the danger of splitting off such arms when the pressure is brought upon them—an accident likely to occur at any time when the arms of the key-pieces have a bearing throughout their width upon the ends of the pieces *a*. In order to connect these key-pieces at their ends, I cut off the tongue, as at *d'*, at one end of the key-piece and cut off the arms, as at *e'*, at the other, so that the extension *e'* upon one end of a key-piece may enter the recess *d'* in the end of another piece, thus causing a series of them laid down end to end to form substantially one piece, after the holding-screws *i* have been inserted. The holes for these screws *i* pass through the key-pieces, and may be countersunk below the upper surface of the same, if desired, and the screw-heads covered by a plug of wood or the cavity filled with putty. The part E of the floor, extending from the middle piece, D, to the walls of the room, are next placed in position. These may be either plain boards, like those used for the middle, or the pieces *a* may be placed at an angle, so as to produce a border presenting a surface with the appearance of an ordinary parquet-floor. These boards, which form the part E of the floor, of course require no especial fitting to make them form a close joint with the part D, and may be loosely fitted to the wall, as their junction with the same is covered by the skirting-board *h* in such a manner that any small discrepancy in the fitting will be concealed.

The floor laid as hereinbefore described will present an ornamental appearance, and may be laid down with little or no skilled labor; but in laying ordinary floors I simply take the boards constructed as shown in Fig. 3, and either rabbeted, tongued, or grooved at their edges or left plain, as may be desired, place them side by side until the surface is covered, when a few nails or screws driven through them into the sub-floor will hold the whole in place, as they are so strongly connected by the strips *d*, passed through the grooves in their under sides, as to prevent one part of a board from moving without moving all the rest.

In applying these compound boards as a wainscot or ceiling, they may be placed in position, as described above, so as to present an ornamental or plain appearance; or they may be divided into blocks held in place by key-pieces or battens of such form as give the surface a paneled appearance, and by the use of the said battens as a means for securing them to the sheathing or studding they form an excellent exterior covering for dwelling-houses and other buildings.

Having described my invention, I claim as new, and desire to secure by Letters Patent, the following:

1. As a new article of manufacture, the compound board consisting of a series of short pieces tongued and grooved at their edges, placed side by side in sufficient numbers to form the board, each provided with dovetail grooves upon one face and dovetail strips in the grooves uniting the pieces together to form the board, substantially as shown and described.

2. As a new article of manufacture, the compound boards A, consisting of a series of short pieces united by metallic strips *b* and rabbeted at each edge, in combination with the key-strips F, having flanges *e*, with inclined under surfaces which enter the rabbets and hold the compound boards in position, substantially as set forth.

3. As a new article of manufacture, the compound board consisting of a series of short pieces, as *a*, having a groove or grooves upon one side, and the metallic strip *b*, serrated upon one or both edges and inserted in said grooves, as and for the purpose stated.

In testimony whereof I affix my signature in presence of two witnesses.

ANSEL F. TEMPLE.

Witnesses:

M. T. E. CHANDLER,
ROBERT E. MORRIS.