

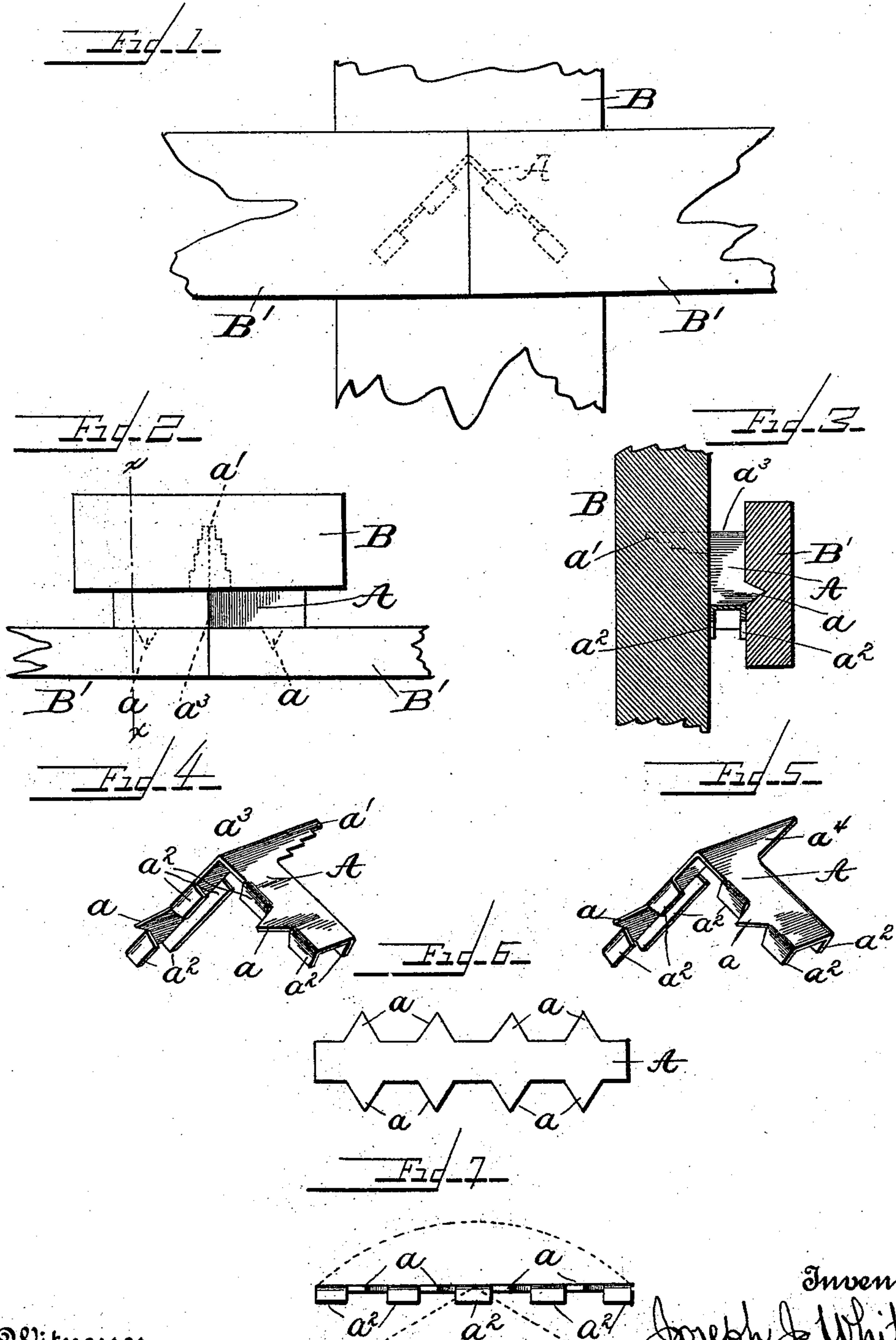
(No Model.)

2 Sheets—Sheet 1.

J. J. WHITE.  
SPACING NAIL.

No. 528,406.

Patented Oct. 30, 1894.



Witnesses

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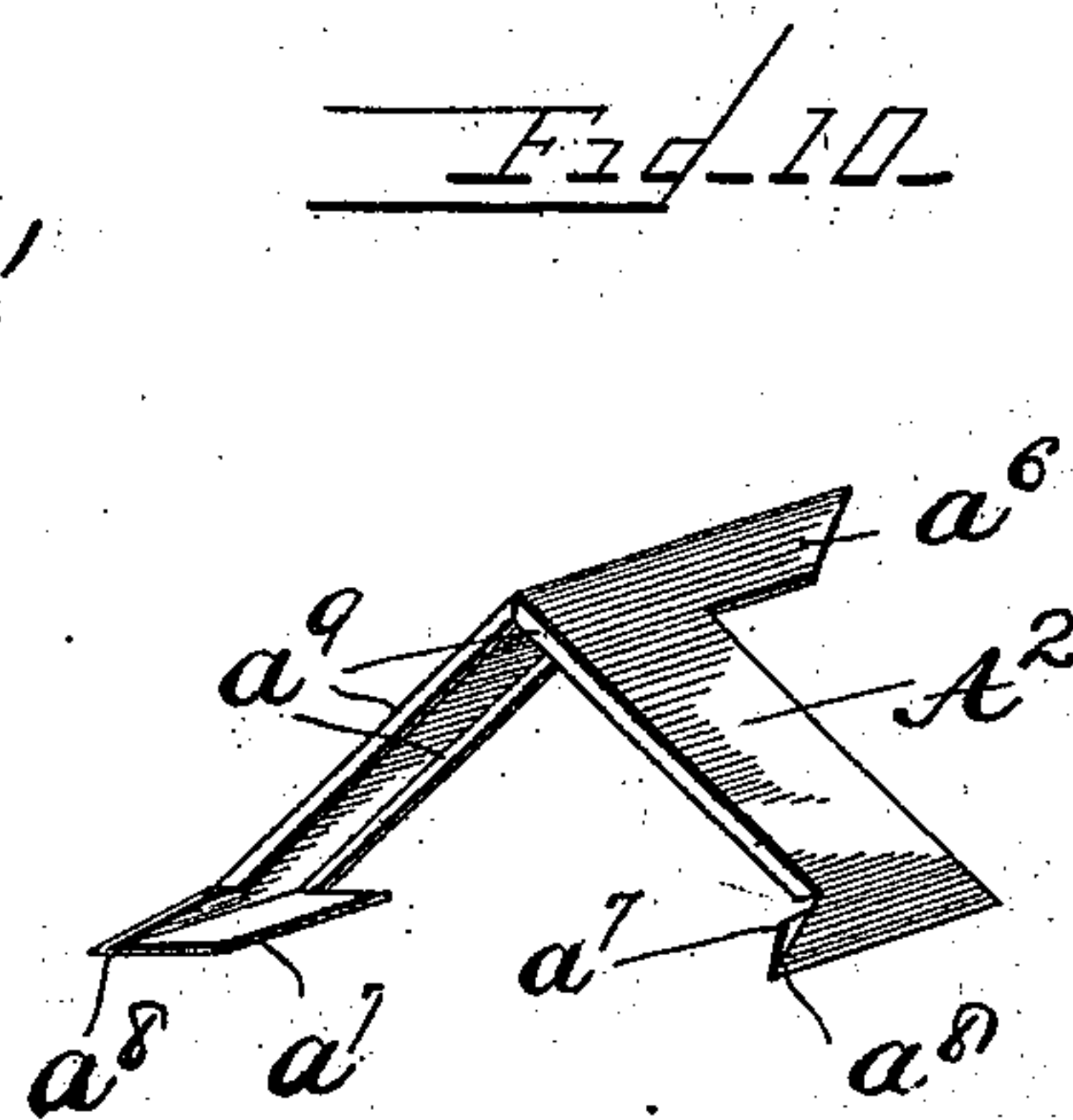
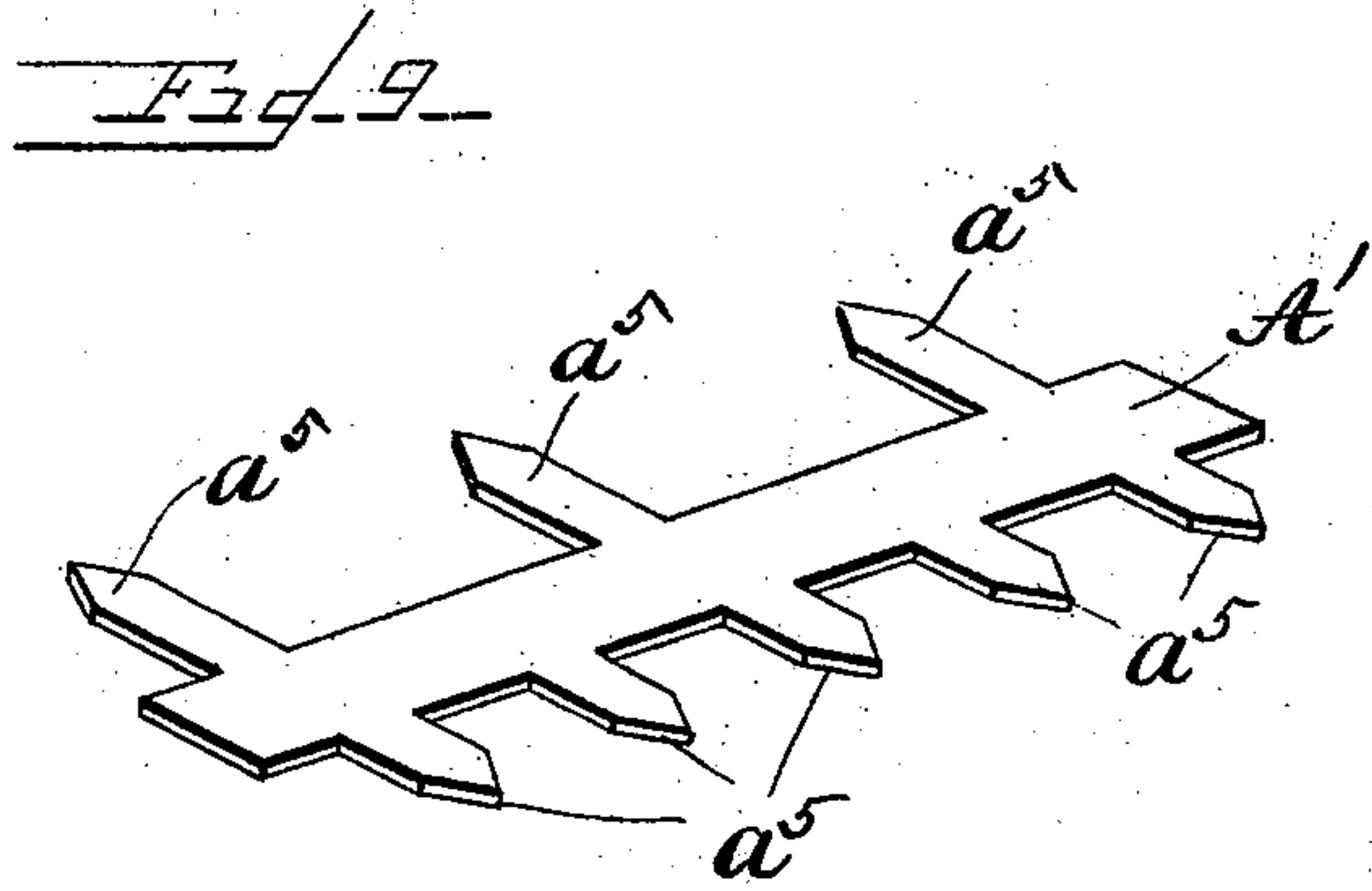
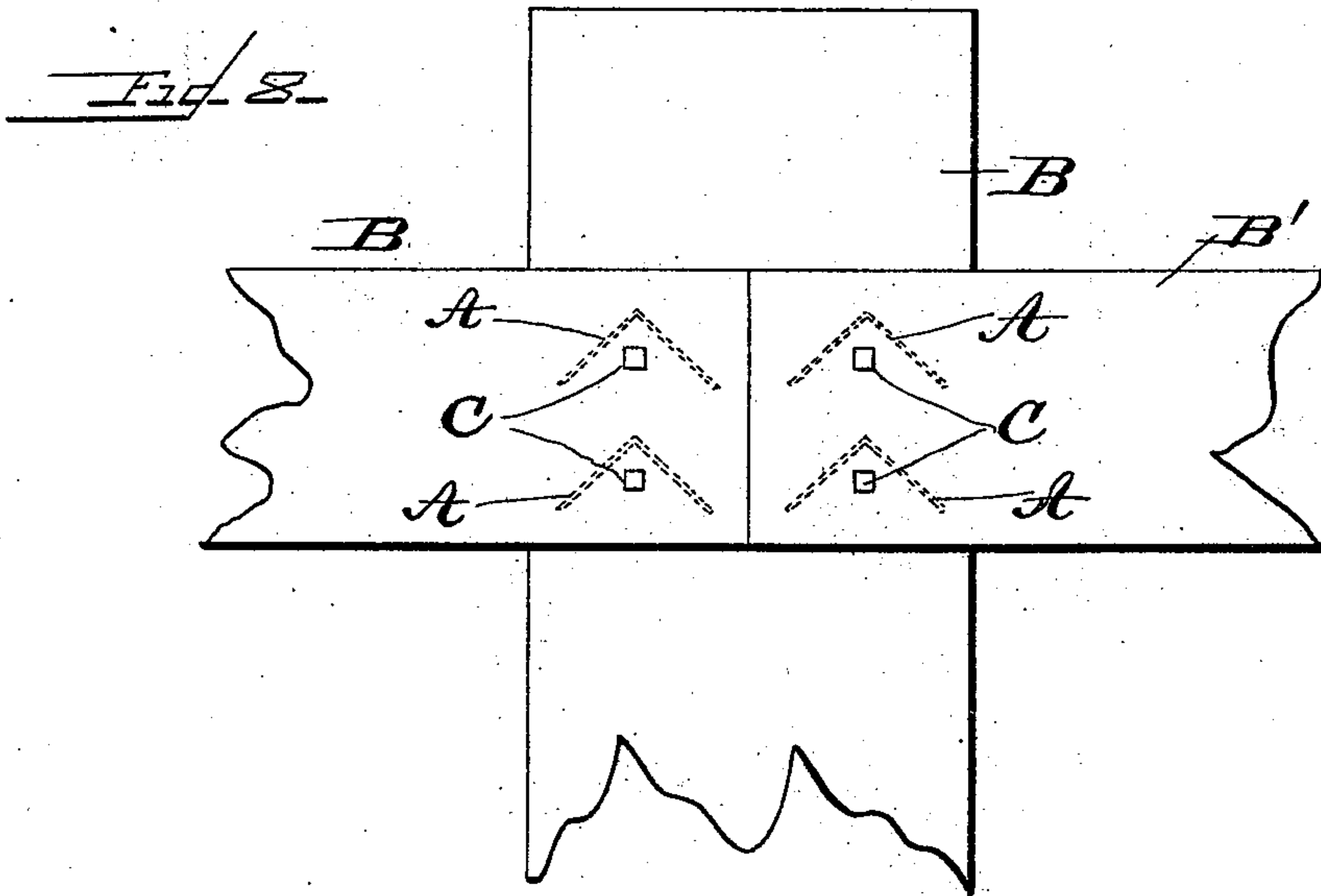
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

JOSEPH J. WHITE, OF NEW LISBON, NEW JERSEY, ASSIGNOR OF ONE-HALF  
TO THE PENNSYLVANIA MACHINE COMPANY, OF PHILADELPHIA, PENN-  
SYLVANIA.

## SPACING-NAIL.

SPECIFICATION forming part of Letters Patent No. 528,406, dated October 30, 1894

Application filed April 12, 1894. Serial No. 507,226. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH J. WHITE, a citizen of the United States, residing at New Lisbon, in the county of Burlington and State of New Jersey, have invented certain new and useful Improvements in Spacing-Nails; and I do hereby 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.

My invention is an improvement in spacing nails and consists in the novel features hereinafter pointed out, reference being had to accompanying drawings which illustrate several forms in which I have contemplated embodying my invention, and said invention is fully disclosed in the following description and claims.

Referring to the said drawings, Figure 1 represents a front elevation of portions of a vertical post and two stringers showing the position of my improved spacing nail. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical section on line  $x-x$  of Fig. 2. Fig. 4 is a perspective view of my improved spacing nail. Fig. 5 is a similar view showing the nail provided with a different form of point at its central portion. Fig. 6 is a top view of a modified form of spacing nail constructed according to my invention. Fig. 7 is a side view of the same indicating by dotted lines positions into which it may be bent. Fig. 8 illustrates another way of using my improved spacing nail. Fig. 9 represents another modified form of my improved spacing nail, and Fig. 10, shows a spacing nail similar to those shown in Figs. 4 and 5 but provided with three angular points.

In joining pieces of lumber intended to be exposed to the weather, such as in fences, bridges and like structures, it has been found that overlapping portions of such timbers hold moisture much longer than portions not overlapping adjacent timbers and consequently decay more rapidly. The object of my improved spacing nail is to hold such timbers at such a distance apart that air can freely circulate between the adjacent portions of timbers and thus allow such portions to dry out rapidly. I also prefer to form my

improved nail so that it can be used to connect two pieces of lumber having their ends or edges adjacent, as in the case of the stringers and rails of fences, and I also prefer to form said nail with sloping portions which will drain off the moisture deposited between adjacent portions of the timbers held apart by said spacing nail and thus prevent the collection and retention of moisture between the same.

In Fig. 4 I have shown my preferred form of spacing nail formed of sheet material and struck up into the desired shape. The nail consists in this instance of a web A of a width equal to the distance desired between the adjacent pieces of lumber, the said web being provided with suitable entering points, or spurs  $a a a'$  and lateral flanges  $a^2$  which are turned at right angles to the web A and engage the opposing faces of the pieces of lumber to be held apart.

In Fig. 4 I have shown the web A bent at its central portion  $a^3$  so as to provide two portions at an angle to each other, and adjacent to the bend  $a^3$  I provide the web at one side with an integral angular point  $a'$  which is preferably notched in step form as shown in Fig. 4, but it may be a plain tapering angular point as shown at  $a^4$  in Fig. 5. On the opposite edge of the web A, I provide one or more points  $a$  at each side of the bend  $a^3$  adjacent to which are the angular flanges  $a^2 a^2$ , and the side of the web from which the point  $a'$  projects is also provided with angular flanges  $a^2 a^2$ . By constructing the nail in this manner, the metal used may be very light and thin so that the points  $a a a'$  will readily enter the wood while the web A may be made of any desired width according to the space desired between the parts to be united, and the angularly bent flanges  $a^2 a^2$  will offer surfaces in contact with the lumber very much broader than the thickness of the metal. By bending the nail at  $a^3$ , it can be driven in as indicated in Figs. 1, 2 and 3 and will provide sloping or inclined portions which will drain off any water falling upon them.

In using a nail of this form for instance in fence construction, as shown in Figs. 1, 2 and 3, the point  $a'$  will be driven into the post B



with the bend  $a^3$  uppermost and the adjacent ends of the stringers B' B' will then be placed in engagement with the points  $a a$  and tapped until said points enter the stringers and the flanges  $a^2 a^2$  engage them as shown in Figs. 2 and 3. This will hold the stringers away from the post so as to allow the air to circulate freely between them, and the nail also serves to unite the adjacent ends of the stringers and prevent them from pulling away from each other. If necessary ordinary nails or screws will also be used to hold the stringers B' B' to the post B.

In Figs. 6 and 7 I have shown a slightly modified form of spacing nail embodying my invention. In these figures the flange A is shown as straight but in Fig. 7 I have indicated by dotted lines positions into which it will advantageously be bent in order that it may provide sloping portions to drain off the matter falling upon it. The flange A is provided at each edge with a series of downwardly turned flanges  $a^2$  and points  $a a$  constructed as in the other figures. This form of nail may be found especially advantageous in some cases, and is very cheaply made.

In Fig. 8 I have shown a different manner of using my improved spacing nail from that shown in Fig. 1. In this figure I have shown each of the adjacent ends of the nails B' spaced from the post B by two of my angular spacing nails A, as shown in dotted lines, and within the angle of each spacing nail A an ordinary driving nail C is driven as indicated in full lines.

In Fig. 9 I have shown another slightly modified form of spacing nail constructed substantially like the nail shown in Figs. 6 and 7 except that the flanges  $a^2$  turned at an angle to the central web are omitted. In this figure A' indicates the central web, provided at each side with a series of entering points  $a^5 a^5$  in the plane of and integral with said web.

In Fig. 10 I have shown an angular nail similar to those shown in Figs. 4 and 5 with the exception that the plain points  $a a$  shown in those figures are omitted and angular points are substituted therefor. In this figure  $A^2$  represents the web, which is bent in angular form and provided at the apex with an angular point  $a^6$  at the ends of the web, the metal is bent inwardly as shown at  $a^7 a^7$  to form an angle with the web  $A^2$  and the angular parts are prolonged on the side opposite the point  $a^6$  to form angular points  $a^8 a^8$ . The advantage obtained by providing angu-

lar points is that the points so formed are stiffer and stronger than plain points and will therefore drive much more readily and without bending. In the form of nail shown in Fig. 10 the edges of the metal are turned down at each side of the web  $A^2$  to form flanges  $a^9 a^9$ .

It is obvious that in any form of spacing nail constructed according to my invention, the web A can be made of any desired width according to the amount of space desired between the adjacent faces of the pieces of lumber to be united. It is also obvious that instead of having the angular points bent at a sharp angle, they might be curved or rounded as well.

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

1. A spacing nail formed of sheet material comprising a spacing web adapted to be disposed perpendicularly to the opposing surfaces of the articles to be spaced, said web having a series of penetrating points extending outwardly from opposite edges of said web, said edges being each provided adjacent to the bases of said points with flanges turned at an angle to said web for engaging said articles, substantially as described.

2. A spacing nail formed of sheet material comprising a spacing web bent to provide sloping portions, for draining moisture therefrom, said web having its edges provided with points extending oppositely in the plane of the said web, and flanges turned at an angle to said web, substantially as described.

3. A spacing nail composed of sheet material comprising a spacing web, disposed perpendicularly to the adjacent faces of the articles to be spaced, said web being bent angularly to provide sloping portions for draining moisture, the edges of said web being provided with attaching points extending in opposite directions, in the plane of said web and with flanges bent at an angle to said web for engaging the articles to be spaced substantially as described.

4. A spacing nail composed of sheet material comprising a spacing web, having two opposite edges provided with attaching points, said points being angular in cross section, substantially as described.

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

JOSEPH J. WHITE.

Witnesses:

R. KENNEDY,  
WM. R. SHRYOCK.