

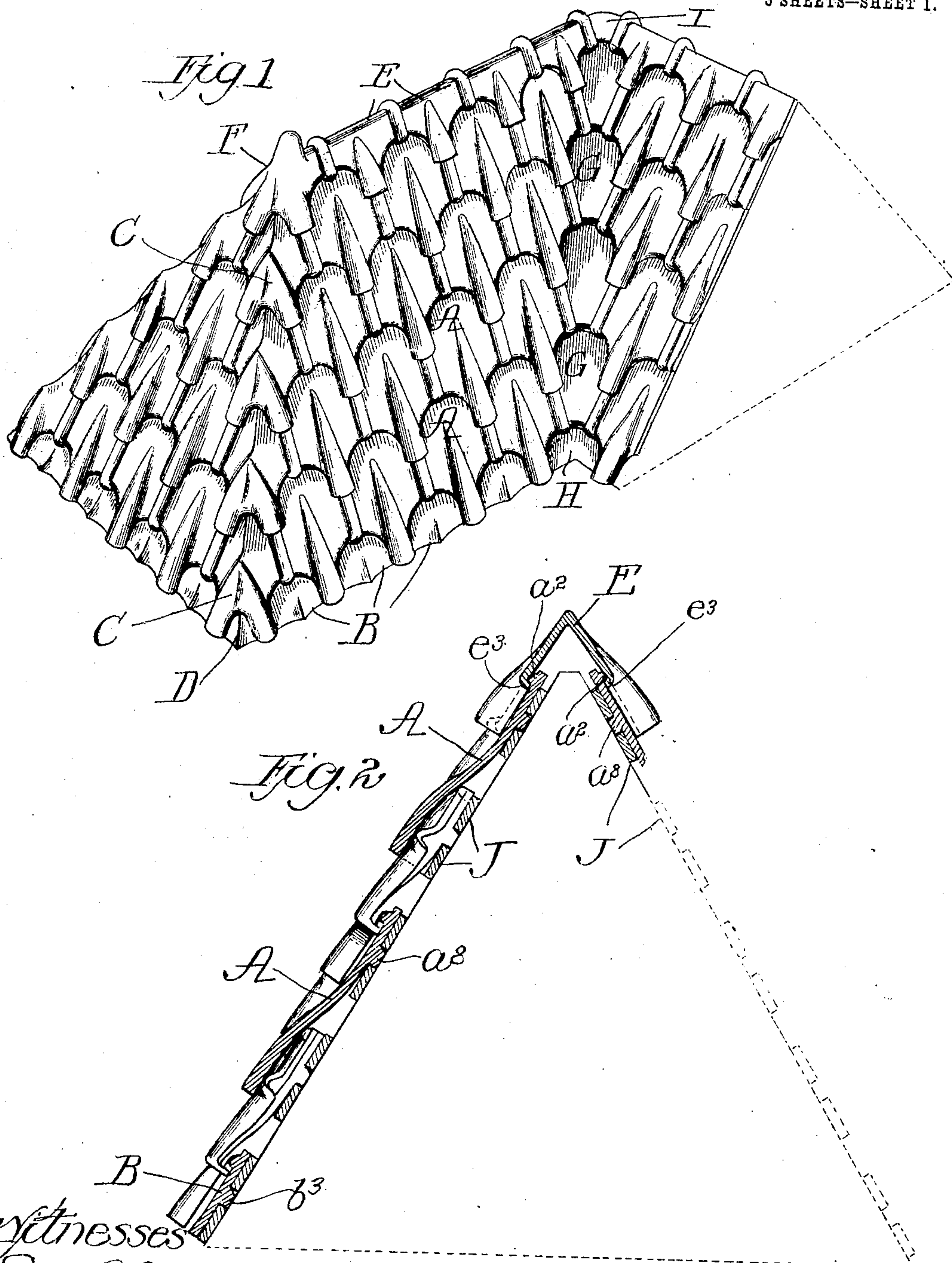
No. 803,524.

PATENTED OCT. 31, 1905.

L. J. W. BIRN.  
ROOFING TILE AND TILE ROOF.

APPLICATION FILED OCT. 3, 1904.

3 SHEETS—SHEET 1.



Witnesses

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Fig. 3

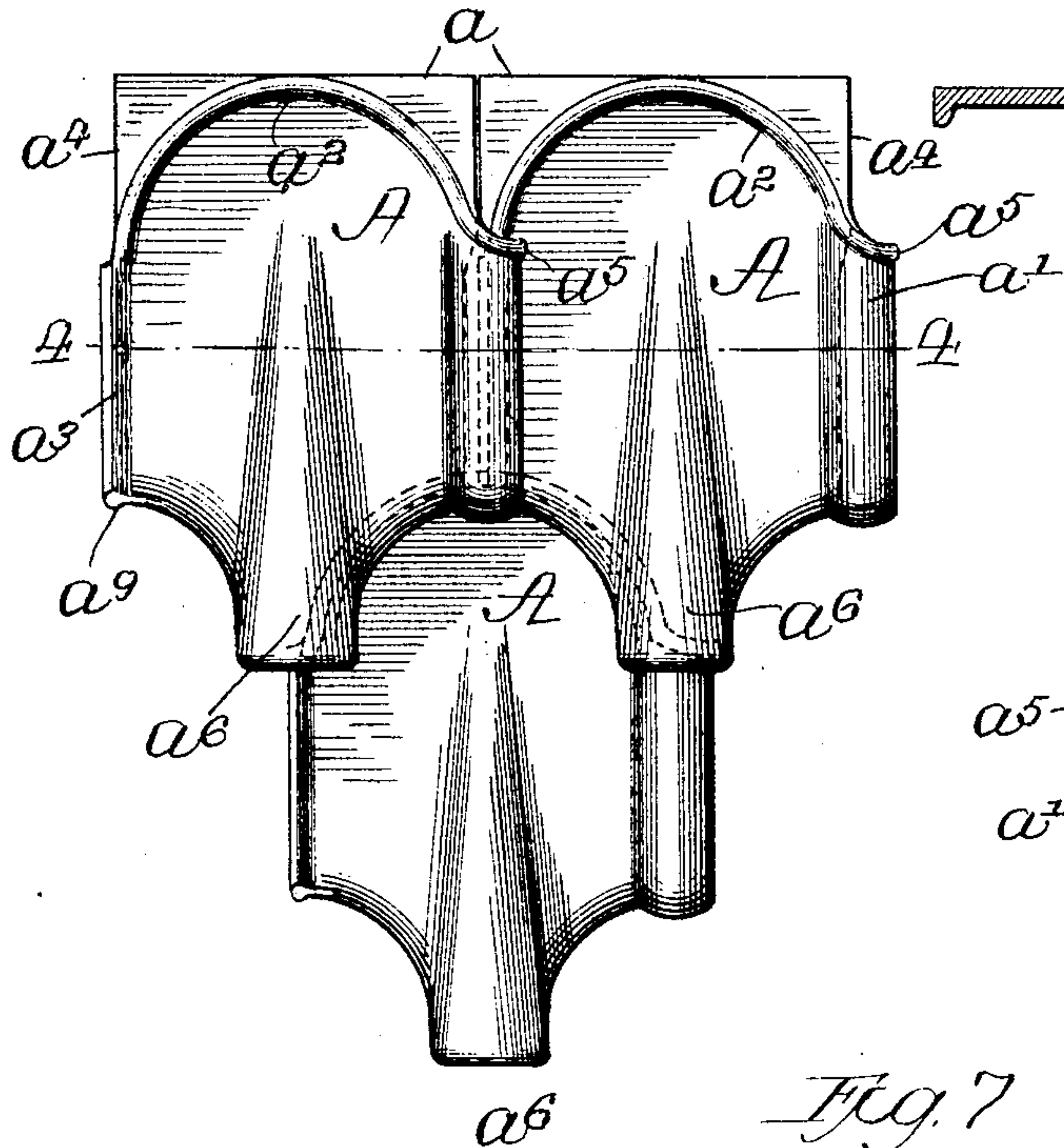


Fig. 4



Fig. 5

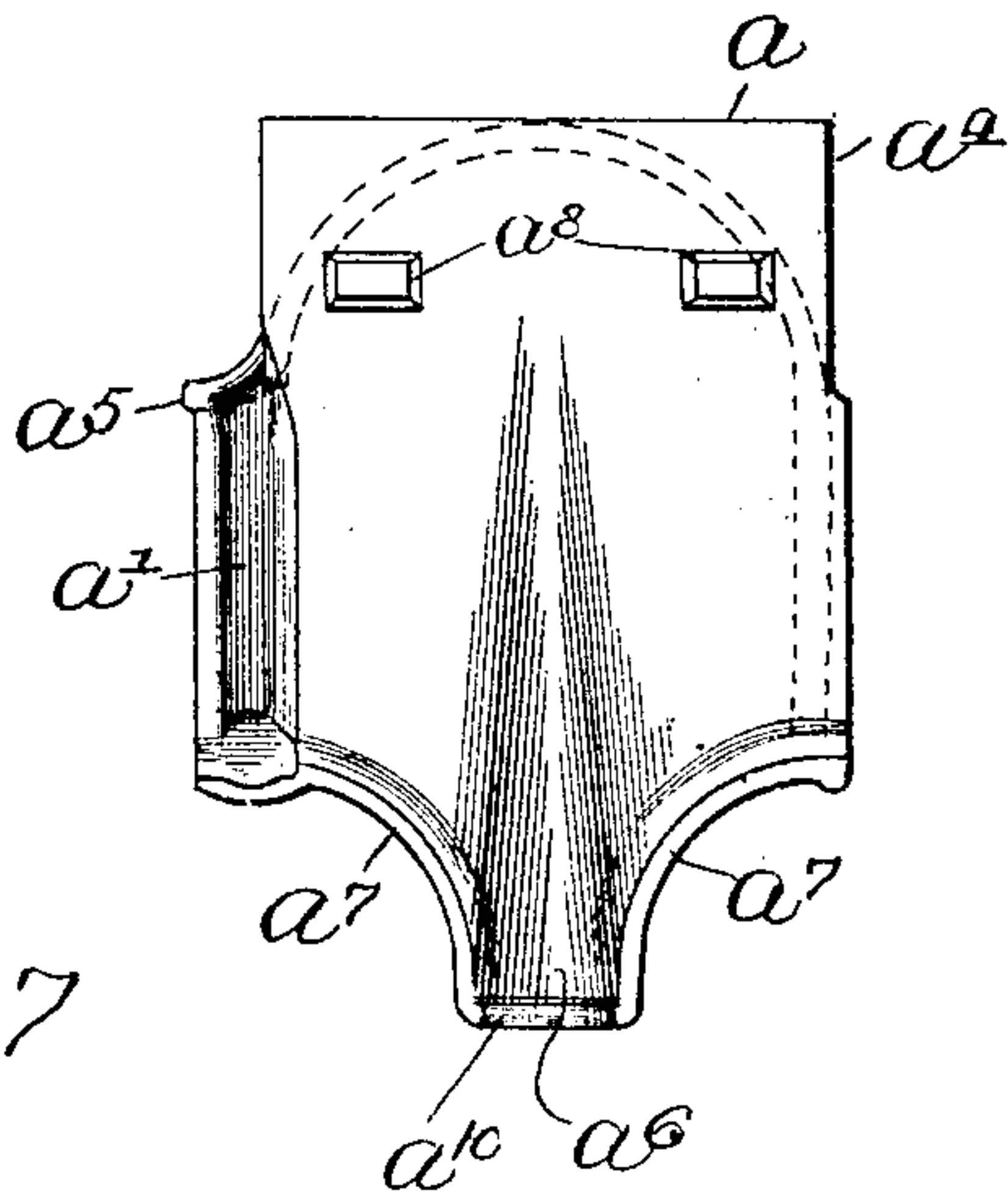


Fig. 7

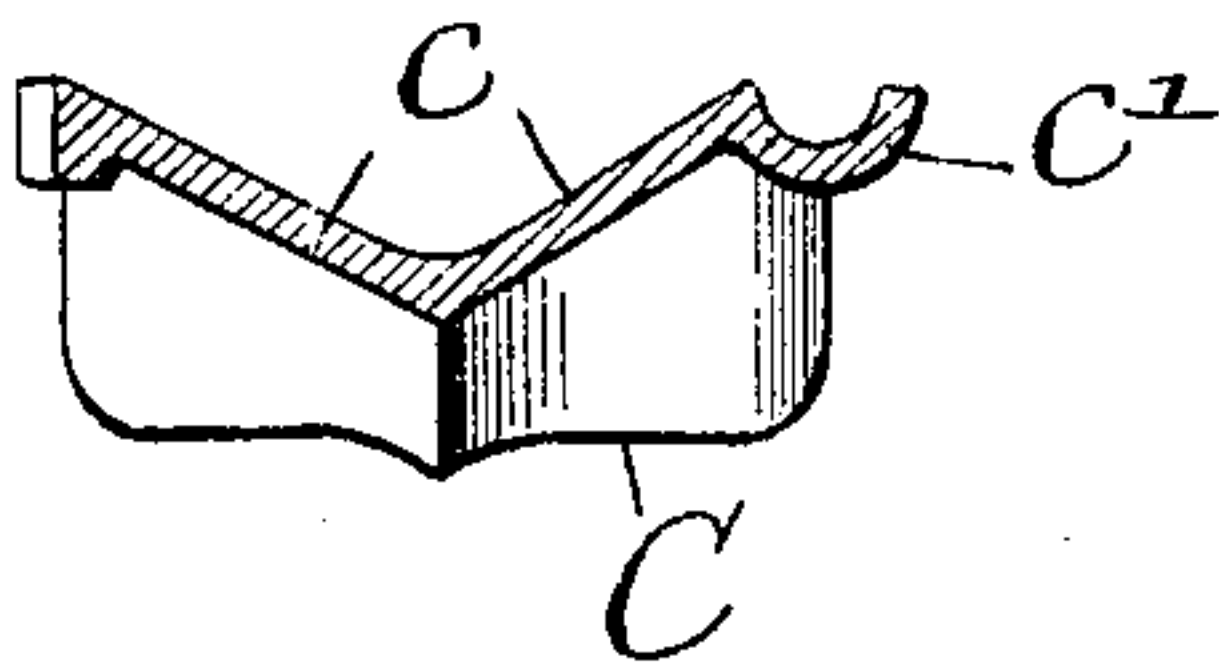


Fig. 6

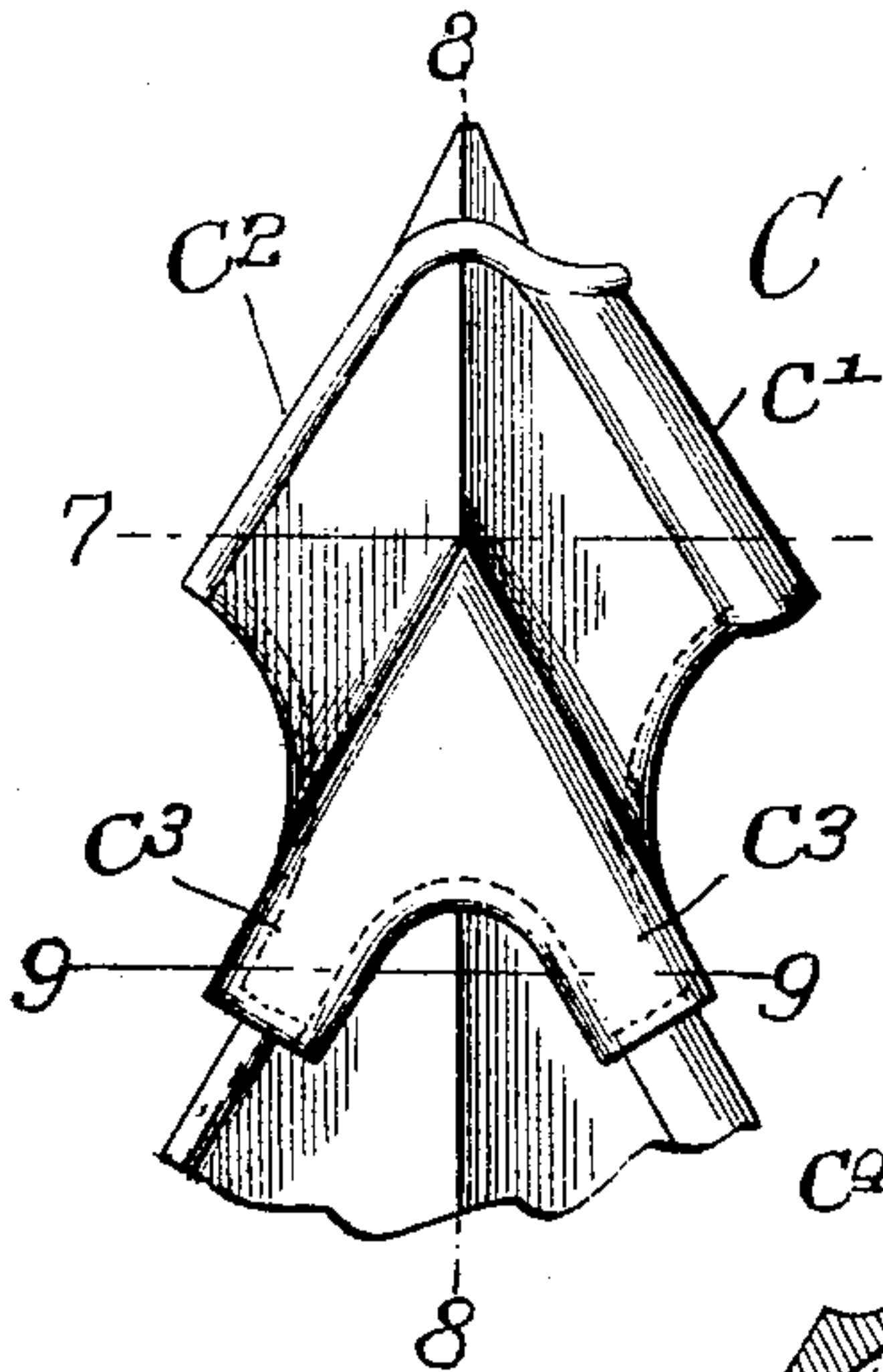


Fig. 8

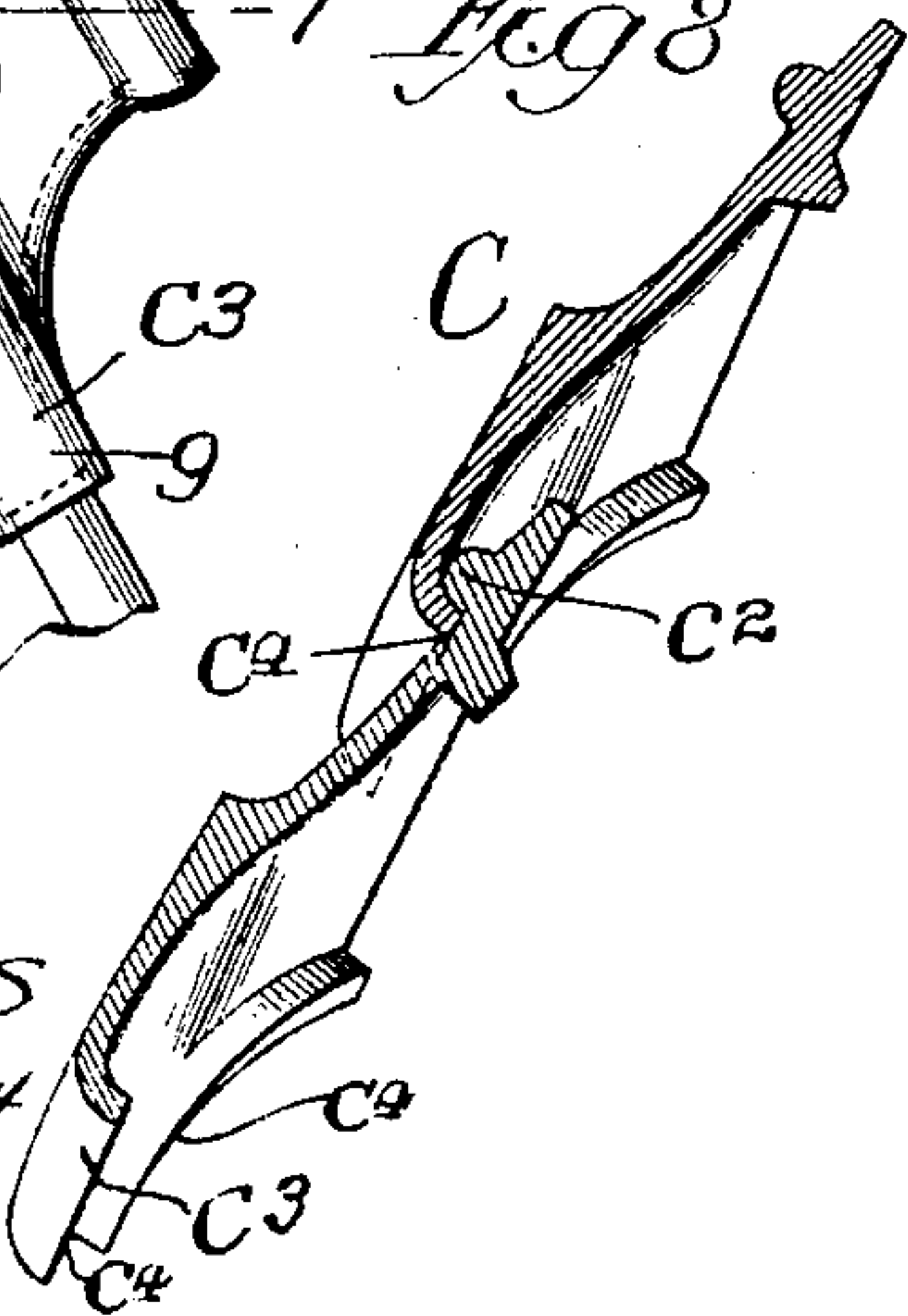
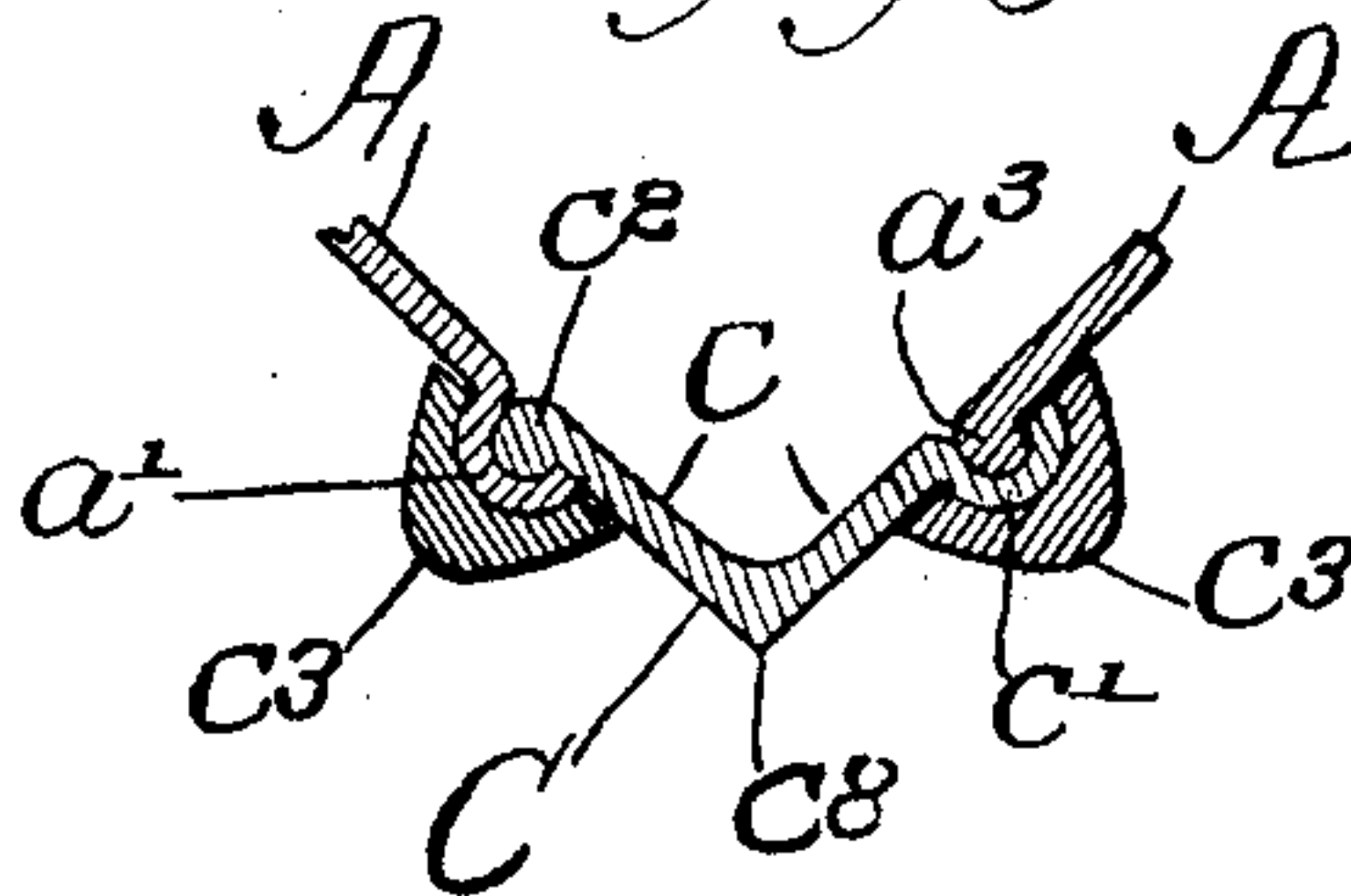


Fig. 9



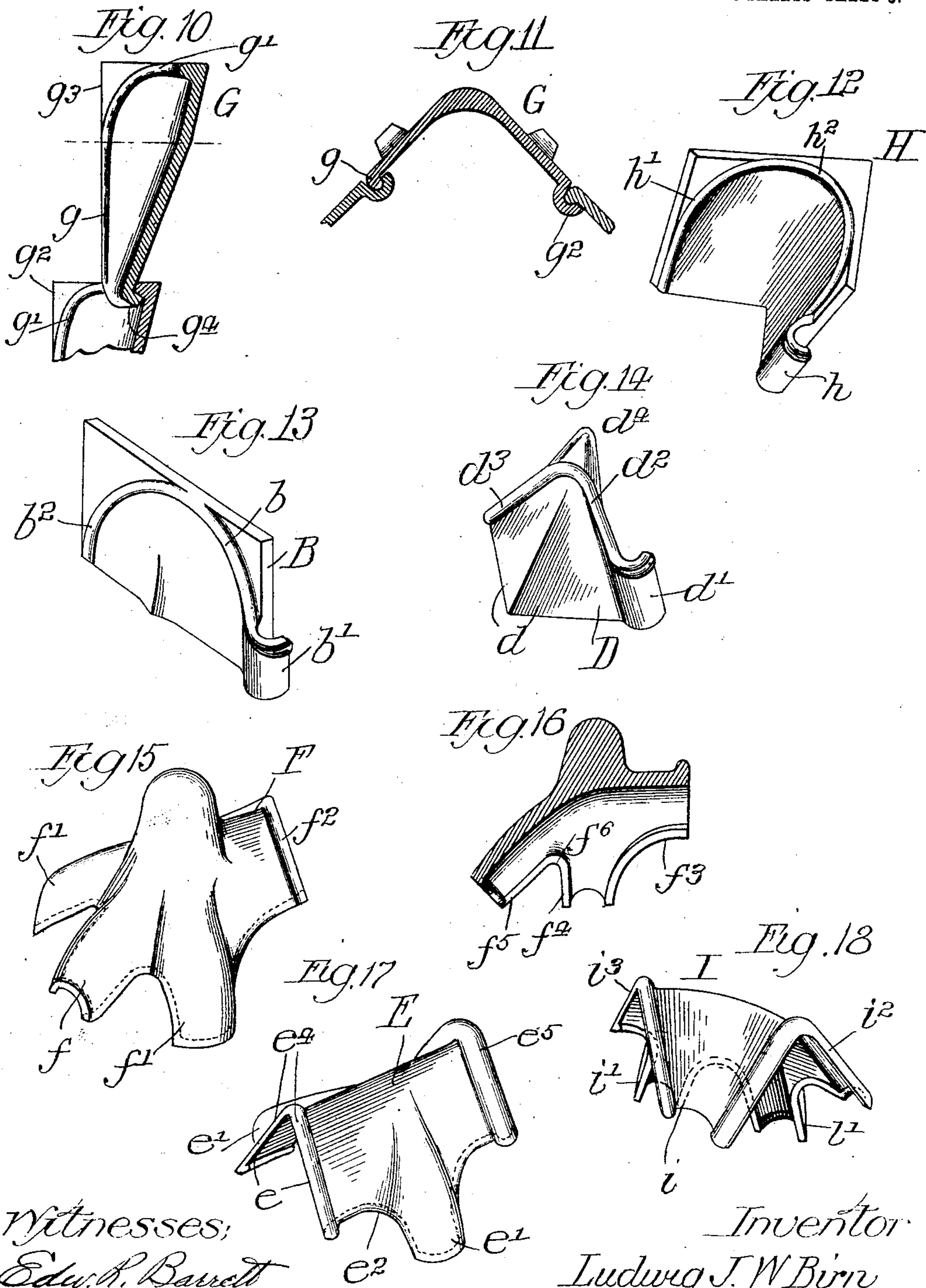
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

LUDWIG J. W. BIRN, OF CHICAGO, ILLINOIS.

## ROOFING-TILE AND TILE ROOF.

No. 803,524.

Specification of Letters Patent.

Patented Oct. 31, 1905.

Application filed October 3, 1904. Serial No. 227,011.

*To all whom it may concern:*

Be it known that I, LUDWIG J. W. BIRN, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Roofing-Tiles and Tile Roofs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in tile roofs and also to improved roof-tiles by which said roofs are constructed.

The object of the invention is to produce an ornate roof by the use of my improved tiles and also to provide novel forms of tiles designed for different parts of the roof with one so constructed as to be closely interlocked to produce a compact and weather-tight roof and whereby also the roof is made of relatively light weight.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 illustrates what may be termed a combined "hip and ridge roof," showing also a valley, it being composed for the purpose of indicating the manner in which the roof-tiles are interlocked with each other. Fig. 2 is a vertical section taken through a ridge-roof, showing the manner of fastening the interlocking tiles thereon. Fig. 3 is an elevation of three of the main roof-tiles, showing the manner of interlocking them. Fig. 4 is a cross-section taken on line 4 4 of Fig. 3. Fig. 5 is a rear or under view of one of the main roof-tiles. Fig. 6 is an elevation of one of the hip-tiles and a portion of another interlocked hip-tile. Fig. 7 is a cross-section taken on line 7 7 of Fig. 6. Fig. 8 is a longitudinal section taken on line 8 8 of Fig. 6. Fig. 9 is a cross-section taken on line 9 9 of Fig. 6. Fig. 10 is a sectional view of a valley-tile with an interlocking portion of another valley-tile. Fig. 11 is a cross-section taken through one of the valley-tiles and shows the manner of its interlocking with the main roof-tiles. Fig. 12 is a perspective view of the eave valley-tile. Fig. 13 is a perspective view of one of the eave body-tiles. Fig. 14 is a perspective view of one of the eave hip-tiles. Fig. 15 illustrates a combined ridge and hip tile. Fig. 16 is a longitudinal section thereof. Fig. 17

is a perspective view of one of the ridge-tiles. Fig. 18 is a perspective view of a combined ridge and valley tile.

A roof made in accordance with my invention consists of a number of variously-shaped tiles, the principal ones of which comprise the main tiles A for the body of the roof and are made all of the same form and eave-tiles B for the eaves of the roof and other suitably-shaped tiles which interlock with each other and with the main tiles A and the tiles B to fit the various angles of the roof. For roofs of different styles the tiles other than the main tiles are varied in their contour and manner of interlocking. The roof herein shown comprises, in addition to the main and eave roof-tiles A and B, respectively, hip-tiles C, Figs. 6, 7, 8, and 9, eave hip-tiles D, Fig. 14, ridge-tiles E, Fig. 17, combined ridge and hip tiles F, Figs. 15 and 16, valley-tiles G, Figs. 10 and 11, valley and eave tiles H, Fig. 12, and combined valley and ridge tiles I, Fig. 18. These tiles are supported on separated sheathing-strips J, which are nailed either to the rafters or to sheathing fastened to the rafters. The tiles are herein shown as being provided with suitable lugs which fit in the spaces between pairs of said sheathing-strips and may be fastened thereto by means of staples or otherwise. Said tiles may be made of any suitable material, as material which is formed when soft and allowed to harden by baking or other process, or may be made of metal.

The forms of the main roof-tiles A are shown best in Figs. 2, 3, and 5. They are made generally flat, having upper and side straight marginal parts  $a^1$ , giving thereto a rectangular form. Each tile A is provided at one of its side margins with a hook-flange  $a'$ , which opens rearwardly and is located principally laterally outside of the margin  $a^1$ . The tile A is also provided on its front or upper face with a curved rib  $a^2$ , one end of which begins at the upper end of the hook-flange, is curved upwardly around the upper end of the tile, and terminates in a straight rib  $a^3$ , which is somewhat thicker than the curved rib  $a^2$  and is parallel with the margin of the tile opposite to that upon which is formed the hook-flange  $a'$ . Both of said hook-flange and rib are made of generally the same length. The rib  $a^2$  of each tile extends outwardly over the upper end of the hook-flange  $a'$ , as shown at  $a^5$ , and coöperates with a part on an adjacent tile, as will hereinafter



more fully appear, to prevent the entrance of rain or the like between the tiles at these places. Said tiles are reduced at their lower ends, terminating in noses  $a^6$ , which latter are  
 5 concave on their lower sides and project above the upper faces of the tile, and between the lower ends of said noses and the lower ends of the hook-flanges  $a'$  and ribs  $a^3$  the margins of said reduced portions of the tiles are curved  
 10 to correspond with the curvature of the curved ribs  $a^2$  on the outer faces of the upper ends of said tiles. Said curved lower ends of the tiles at the sides of the noses are formed on the inner faces of the tiles to constitute rear-  
 15 wardly or downwardly directed curved flanges  $a^7$ , which when the tiles are assembled hook over or engage the flanges  $a^2$  of the next lower rows of tiles, as clearly shown in Fig. 3. The hollow nose  $a^6$  of each tile tapers up-  
 20 wardly on the outer or upper face of the tiles, the elevation of said nose gradually disappearing and the hollow or concave part of said nose vanishing on the under face correspondingly, as shown in Figs. 2 and 5. The  
 25 lower end of each hook-flange  $a'$  is closed by the extreme end of the adjacent flange  $a^7$ , which extreme end is curved downwardly to receive the projection  $a^9$  of the rib  $a^3$ . The lower end of the concave nose  $a^6$  is formed to  
 30 provide a transverse flange  $a^{10}$ , Fig. 5, which hooks over the extension-ribs when the tiles are assembled.

The lower course or eave-tiles B constitute, in effect, substantially one-half of the main  
 35 tiles described. As shown in Fig. 13, said tiles are made rectangular at its upper end and provided at its upper end on its upper or outer faces with a curved rib  $b$ , which terminates at one end or one margin of the tile to  
 40 constitute a flange having the function of the flanges  $a^3$  before described and extending at its other end across the upper end of a short hook-flange  $b'$ , corresponding with the hook-flange  $a'$  of the tile A. The fastening-lugs  
 45  $a^8$  and  $b^3$  of the tiles A and B may be fastened to the sheathing-strips in any suitable manner. (Not shown.)

The manner of locking together the main and eave tiles will first be explained, and  
 50 thereafter will be explained the forms of the several tiles which complete the roof at the hip, the ridge, and the valley.

The lower course or eave-tiles are first affixed to the lowermost sheathing-strip side  
 55 by side, with their upper straight margins abutting together. When so laying the eave-tiles, the hook-flange  $b'$  of each tile engages the lower end of the lateral rib  $b^3$  of an adjacent eave-tile. The main tiles A are next  
 60 laid above the eave-tiles. The tiles A of the first course are laid above and between the individual tiles of the lower course or eave-tiles. The hollow nose  $a^6$  of each tile A embraces or is laid over the overlapping hook-  
 65 flange and rib of one pair of eave-tiles. The

flanges  $a^7$  on the opposite curved margins of the tile A at the sides of the nose  $a^6$  engage or hook over the adjacent halves of adjoining eave-tiles, as shown in Fig. 2, thereby consti-  
 70 tuting a firm lock between the eave and main tiles. It is to be understood that each main tile A of the second course interlocks in the manner last described with the flanges  $b$  of two adjacent eave-tiles, above and between  
 75 which the individual tiles of the second course are located, with the exception of the tiles at the angles of the roof, which will be hereinafter explained. When laying the tiles of the second course, the hook-flange of each  
 80 tile is hooked over or engages the rib  $a^3$  of the adjacent tile of said row. The tiles A of the second row or course are located above and between the tiles A of the lower row, and the noses of the tiles of the upper row  
 85 overlie the interlocked marginal ribs of the tiles of the first row. The oppositely-located curved hook-flanges  $a^7$  of the second row are hooked over or engage the curved ribs  $a^2$  of the lower row or course of tiles A. Thus the several courses are laid, the relation of the  
 90 tiles of each course corresponding with the relation of the first and second courses described.

It will be observed that the raised part  $a^5$  of the rib  $a^2$ , which extends across the convex  
 95 upper end of the hook-flange  $a'$ , coöperates with the flange  $a^{10}$  at the lower concave end of the nose, the latter hooking over the former, affording a rain-stop or weatherproof joint. The coöperation of the flanges  $a^7$  on  
 100 the margins of said nose and the curved tile-margins with the curved proof-ribs  $b$  and  $a^3$  of the eave and main tiles constitute weather-joints to prevent wind and rain passing between the overlapping tiles. It will be noted  
 105 in Fig. 2 that the upper parts of the bodies of the tiles A are curved downwardly instead of being straight, thereby enabling said upper parts of the tile to lie flat on the sheathing-strips and also admitting a greater length of  
 110 engagement in the overlapping parts of the tiles than would occur if the tile-bodies be made substantially straight. This construction also aids to effect reliable weatherproof joints between the overlapping parts of the  
 115 tiles.

At the peak or ridge of the roof are placed the ridge-tiles E, Fig. 17, which constitute a connection between the tiles A on the two  
 120 sides of the oppositely-sloping roof. Said ridge-tiles E consist of inclined side members  $e$ , which converge to constitute the ridge or peak of the roof. Each inclined member of the ridge-tile is provided with a nose  $e'$ , similar  
 125 to the nose of the main tiles A, and said noses  $e'$  each fits over the overlapping hook-flange and rib of a pair of adjoining tiles A of the uppermost row or course of such tiles. The curved margins  $e^2$  of said ridge-tiles, Fig. 17, are provided with inwardly-projecting flanges  
 130



5  $e^3$ , Fig. 2, which engage the curved ribs  $a^2$  of the tiles of the upper course. One end margin of each ridge-tile is provided with a rib  $e^4$ , and the other end margin of said tile is provided with a hook-flange  $e^5$ , adapted to engage or hook over the rib of an adjoining ridge-tile, whereby said ridge-tiles are interlocked together from endwise movement. Such endwise interlocking connection of the ridge-tiles continues from end to end of a given length of ridge, and at the ends thereof the end tiles interlock with specially-formed tiles, as will be hereinafter described.

15 At the angle between the main and hip parts of the roof are provided the tiles C and D, which interlock with each other and with the tiles A to firmly connect said tiles and afford weatherproof joints between said interlocking parts.

20 The lower or eave hip-tile D is shown in Fig. 14 and consists of a body comprising two inclined side members  $d$ . It is provided at the side margins of one of its members with a hook-flange  $d'$ , that is adapted to engage or hook over one rib  $b^2$  of an adjacent eave-tile B and is also provided on its upper face with a rib  $d^2$ , that extends around the upper end of the tile and terminates at the side margin thereof in a marginal rib  $d^3$ , that is adapted for engagement with the hook-flange  $b'$  of an eave-tile adjacent to said rib  $d^3$ . Said hip eave-tile is provided at its upper end with a projection  $d^4$ , which bears at its upper end or throughout its length against the sheathing-strip J above the space between the strips into which the holding-lug projects.

35 The hip-tiles C are shown in detail in Figs. 6, 7, 8, and 9. The body portion of each tile consists generally of two inclined members  $c$ , one of which side members of each tile is provided with a marginal hook-flange  $c'$ , and the opposite margin of the other side member is provided with a rib  $c^2$ , that is curved around the upper end of the tile and extends across the upper end of the hook-flange  $c'$  thereof. Said hook-flange  $c'$  is adapted to hook over or engage the rib  $a^3$  of an adjacent tile A in one plane of the roof, while the rib  $c^2$  is adapted to be engaged by the hook-flange  $a'$  of an adjacent tile A in another plane of the roof. Said hip-tiles are also provided with divergent noses  $c^3$ , which are hollow or concave on their lower sides and overlies the overlapping hook-flanges and ribs of the next subjacent hip-tiles and adjacent tiles A, as more clearly shown in Fig. 9. The inner or adjacent margins of the noses  $c^3$  are provided with flanges  $c^4$ , which hook over or engage the curved ribs  $e^2$   $d^2$  on the upper parts, respectively, of the hip-tile and eave hip-tiles.

60 The combined hip and ridge tile F (shown in Figs. 15 and 16) is located at the intersection of the lines of the ridge and hips and is adapted for interlocking connection with the hip-tiles and ridge-tiles and also for inter-

locking or overlapping engagement with the main roof-tiles. Said tile consists of a main body having inclined diverging side walls, Fig. 15, which fit over the upper ends of the adjacent tiles A. Said tile is also provided with three noses  $f$   $f'$   $f''$ , one of which (the central one) fits over the overlapping flange and rib of the two highest hip-tiles which are located near the peak or ridge of the roof and interlock together in the same manner as do the lower hip-tiles interlock with the body-tiles A. The two side noses  $f'$   $f''$  extend obliquely laterally from the body of the tile F and each overlap the joint between the next adjacent interlocking hip and body tiles. One of said noses  $f'$  extends over and is made part of one side of the double-inclined roof, the other nose occupying a like position relatively to the other slanting side of the roof, and the middle nose extends over and forms part of what may be termed the "hip" member of the roof.

The inclined members of the hip and ridge tile and the margins of the adjacent noses are provided at their lower margins with locking-flanges  $f^3$ , Fig. 16, which interlock with the curved ribs  $a^2$  of the adjacent tiles A of the upper courses of said tiles. The inner margins of the side noses  $f'$  are provided with like flanges  $f^4$ , which are continuous with and meet in curved relation with flanges  $f^5$  on the lower margins of the central nose. The curved parts  $f^6$ , joining said flanges  $f^4$  and  $f^5$  coincide with the ridges between said inclined members of the hip-tiles and has interlocking engagement with the upper curved parts of the ribs  $e^2$ , thereby locking said combined ridge and hip tiles to the next subjacent hip-tiles.

105 The valley-tiles G, which are located in the valley of the roof structure between the roof members, which are inclined in different planes and which tiles constitute when in place the valley between said roof members, are shown in Figs. 10 and 11. Said valley-tiles, as shown in Fig. 1, are made larger at their upper than at their lower ends. Said tiles are transversely curved so as to fit into the concave seats therefor. Each tile is provided on its upper or outer face with a rib  $g$ , which extends from the bottom of the tile upwardly along one inclined margin thereof, and is curved across the upper end of the tile to constitute a transversely-curved rib  $g$  and is joined at its other end to a hook-flange  $g^2$ . The rib  $g$  at one margin of the valley-tile is adapted to be interlocked with the hook-flange  $a'$  of an adjacent main tile A, while the hook-flange  $g^2$  at the other margin of the valley-tile hooks over or interlocks with the rib  $a^3$  of an adjacent main tile A. The margins  $g^3$  at the upper corners of said valley-tile are made straight to abut against the straight portions  $a^4$  of the main tiles. The lower end of each of the valley-tiles is provided with a curved hook or flange  $g^4$ , which engages the



upper curved part of the rib  $g$  of a subjacent valley-tile.

The lowermost valley-tile H, termed herein as the "eave valley-tile," on the valley side of the roof is made like the other valley-tiles, with the exception that it is made shorter and has no hook at its lower end. The hook-flange  $h$ , the marginal rib  $h'$ , and transversely-curved rib  $h''$  are like the similar ribs  $g''$ ,  $g$ , and  $g'$  of the valley-tile G and have the same interlocking relation with the hook-flanges and ribs of the eave-tiles B as do the valley-tiles proper with the main tiles A.

The combined valley and ridge tiles I (shown in Fig. 18) constitute the top of the valley and the interlocking connection of the valley-tiles with the ridge-tiles. Said tile I comprises a short concave part  $i$  on the valley side of the roof and two noses  $i'$   $i''$ , that are adapted to engage the hip-tiles and main tiles on the side of the roof opposite the valley. The said combined hip, ridge, and valley tile is provided at one end with a hook-flange  $i''$  and at its other end with a rib  $i'$ , which are adapted for interlocking relation with the hook-flanges and ribs of the adjacent ridge-tiles.

In the erection of the roof the eave-tiles and the eave valley-tile and the hip eave-tiles are fixed in place on the roof structure and constitute the lower course of the roof. Therefore as the main tiles A are assembled on the roof (in the manner stated) the hip-tiles and valley-tiles are placed in position, and finally, the ridge-tiles, the combined ridge and hip tile and combined ridge, hip, valley tile are placed in position, thereby completing the roof, said tiles interlocking with each other and with the main tiles in the manner before stated.

It will be observed that the transversely-curved rib on the upper face of the top end of the tile extending from the hooked flange thereof to the corresponding lateral rib is a feature common to the main body-tiles, eave-tiles, and the hip-tiles and that such transverse ribs of all of the tiles are engaged by the flanges formed on the curved margins of the noses of adjacent interconnecting tiles, and, further, that the said flanges formed on the curved margins of the noses of the tiles are common to all of the tiles in which the nose constitutes part of the construction. An important advantage arising from the curvature of said transverse ribs and the curvature of the flanges at the margins of the noses which interlock with said ribs is that by this construction the connecting-joints between the tiles of adjacent courses are free from angular recesses, which are likely to catch and retain snow, rain, or the like. On the other hand, such curving of the tiles at such joints prevents such accumulation of snow and rain, inasmuch as such elements follow the curvature of the joints and produce a swirl which throws the same away from the joints and prevents the same entering the spaces between the tiles. Moreover,

the arrangement whereby a single transverse rib of each tile is engaged by the curved lower margins of two tiles of adjacent courses is advantageous, as it provides a very reliable interlocking connection for the tiles.

The style of roof herein shown is merely for the purpose of indicating one manner in which my invention may be applied; but it is to be understood that the contour of some of the tiles may be varied to adapt them to roofs of different styles while retaining the same general feature of the invention as herein claimed.

I claim as my invention--

1. A roof comprising a roof structure, a plurality of tiles supported thereon in courses, said tiles being each provided on its outer face at one side margin with a rib and at its other side margin with a rearwardly-directed hook-flange adapted to engage the rib of an adjacent tile of the same course, the tiles of each course interlocking end to end with the tiles of an adjacent course, the tiles of the courses, excepting the eave-course, being provided with concave noses which project from the ends thereof and overlap the lateral meeting joints of the next subjacent tiles.

2. A roof comprising a roof structure, a plurality of tiles supported thereon in courses, said tiles being each provided on its outer face at one side margin with a rib and at its other side margin with a rearwardly-directed hook-flange adapted to engage the rib of an adjacent tile of the same course, the tiles of one course being located out of line with the tiles of an adjacent course, and the tiles of one course interlocking end to end with the tiles of another course, the tiles of the courses, excepting the last course, being provided with concave noses which project centrally from the ends thereof and overlap the lateral meeting parts of the next subjacent tiles.

3. A roof comprising a roof structure, a plurality of tiles supported thereon, said tiles being each provided on its outer face at one side margin with a rib and on its opposing margin with a rearwardly-directed hook-flange, adapted to engage the rib of an adjacent tile of the same course, the tile of each course being laid with their lower ends over the upper ends of the tiles of the next lower course, the upper ends of the tiles of each course being provided on their outer faces with curved transverse ribs, and at the inner or under faces of their lower ends with curved flanges, the flanges of the tiles of one course hooking over or engaging the curved ribs of the tiles of the next lower course.

4. A roof comprising a roof structure, a plurality of tiles supported thereon, each of said tiles being provided at one lateral margin with a rearwardly-directed hook-flange, and on the outer face of its opposing margin with a rib which is connected by a transversely-curved rib on the outer face of its upper end with



the said hook-flange, the side ribs and flanges of each tile being interlocked with the ribs and flanges of adjacent tiles of the same course, the tiles of each course being laid with their lower ends over the upper ends of the tiles of the next lower course, said tiles of each course being located between and above the tiles of a next lower course, and provided on their lower ends with concave noses which have curved side margins and project centrally from said ends and overlap the interlocking connections between adjacent tiles of such lower course, and flanges on the curved sides of the noses which engage the transversely-curved ribs of the tiles of the next lower course.

5. A roof comprising a roof structure, a plurality of tiles supported thereon, said tiles being each provided on its outer face at one side margin with a rib, and on its opposite margin with a rearwardly-directed hook-flange adapted to engage the rib of an adjacent tile of the same course, the tiles of each course being laid with their lower ends over the upper ends of the tiles of a subjacent course, the tiles of the courses, excepting the eave-course, being provided with concave noses which extend centrally from the ends of said tiles and overlap the lateral meeting joints of the tiles of the next subjacent courses, and flanges at the side and end margins of the noses which engage flanges or ribs on the tiles of the next lower courses to afford weatherproof joints between the tiles of adjacent courses.

6. In a roof, the combination of like tiles each provided on one side margin with a downwardly-directed hook-flange, and on its opposing margin with a rib, said rib continuing laterally across the outer face of the upper end of the tile and extending transversely across said hook-flange, said tiles being each provided in its lower end with a downwardly-concave nose, having curved side margins provided with flanges adapted to engage said concave ribs at the upper ends of the tile when the tiles are interlocked, the nose overlapping the lateral joints between the ribs and hook-flanges of adjacent courses and provided at its concave end with a downwardly-extending hook adapted to overlap the flanges and ribs of said lateral joints just below the part of the curved rib which extends across the hook-flange.

7. A tile for a roof structure provided at one side margin with a rearwardly-directed hook-flange, at its other side margin on the upper face thereof with a rib, on the outer face of its upper end with a laterally-curved rib joining the upper end of said marginal rib with said hook-flange and at its lower end with a hollow or concave nose projecting from said end and provided with curved side margins.

8. A tile for a roof structure provided at one side margin with a rearwardly-directed hook-flange, at its other side margin on the

upper face thereof with a rib and on the outer face of its upper end with a laterally-curved rib joining the upper end of the said marginal rib with said hook-flange and adapted to cooperate with a similarly-curved part of an adjacent tile, said laterally-curved rib extending transversely across the concave face of the upper end of the hook-flange to form a transverse rib on said upper end of the hook-flange.

9. A tile for a roof structure provided at one side margin with a rearwardly-directed hook-flange, and at its other side margin on the outer face thereof with a rib, a transversely-curved rib near the upper end of said tile joining the upper end of said marginal rib with said hook-flange, and a hollow nose projecting from the lower end of the tile, the upper end of said tile above said transversely-curved rib being made generally rectangular.

10. A tile for a roof structure provided at one side margin with a rearwardly-directed hook-flange, and at its other side margin on its outer face with a rib, and with a transversely-curved rib near the upper end of said tile, extending from the upper end of said marginal rib to the upper end of said hook-flange, the lower end of the tile terminating in a rearwardly-concave nose made narrower than the body of the tile.

11. A tile for a roof structure provided at its lateral margins with parts of interlocking connection terminating at their lower end in a nose which is rearwardly concave and provided with curved side margins and is raised at its lower end above the general plane of the body of the tile.

12. A tile for a roof structure provided at one side margin with a rearwardly-directed hook-flange, and at its other side margin on its upper or outer face with a rib, and also with a transversely-curved rib near the upper end of said tile, extending from the upper end of said marginal rib to the upper end of said hook-flange, the lower end of the tile terminating in a rearwardly-concave nose made narrower than the body of the tile, the side margins of the nose being curved to correspond to the curvature of said transverse rib, and the margins of the nose being formed to provide downwardly-directed flanges.

13. A tile for a roof structure provided at one side margin with a rearwardly-directed hook-flange, and at its other side margin on its upper or outer face with a rib, and also with a transversely-curved rib near the upper end of said tile, extending from the upper end of said marginal rib to the upper end of said hook-flange, the lower end of the tile terminating in a rearwardly-concave nose made narrower than the body of the tile, the side margins of the nose being curved and provided with rearwardly-directed marginal flanges, the lower end of said nose being provided in its concave part with a hook-flange, and said transversely-curved upper rib ex-



tending transversely across the upper end of the hook-flange and being slightly raised therefrom.

14. A roof comprising a roof structure and  
5 a plurality of tiles supported thereon in  
courses, marginal interlocking connections  
between the tiles of the same course, the tiles  
of one course overlapping the tiles of the next  
subadjacent course, the tiles being provided at  
10 their upper ends with transversely-curved  
flanges and at their lower ends with concave

noses having curved margins adapted to interlock with said transversely-curved flanges at the upper ends of the tiles.

In testimony that I claim the foregoing as  
my invention I affix my signature, in presence  
of two witnesses, this 12th day of September,  
A. D. 1904.

LUDWIG J. W. BIRN.

Witnesses:

W. L. HALL,  
D. E. MARMON.