

B. P. WISE.
TILE GREENHOUSE BENCH.
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923,921.

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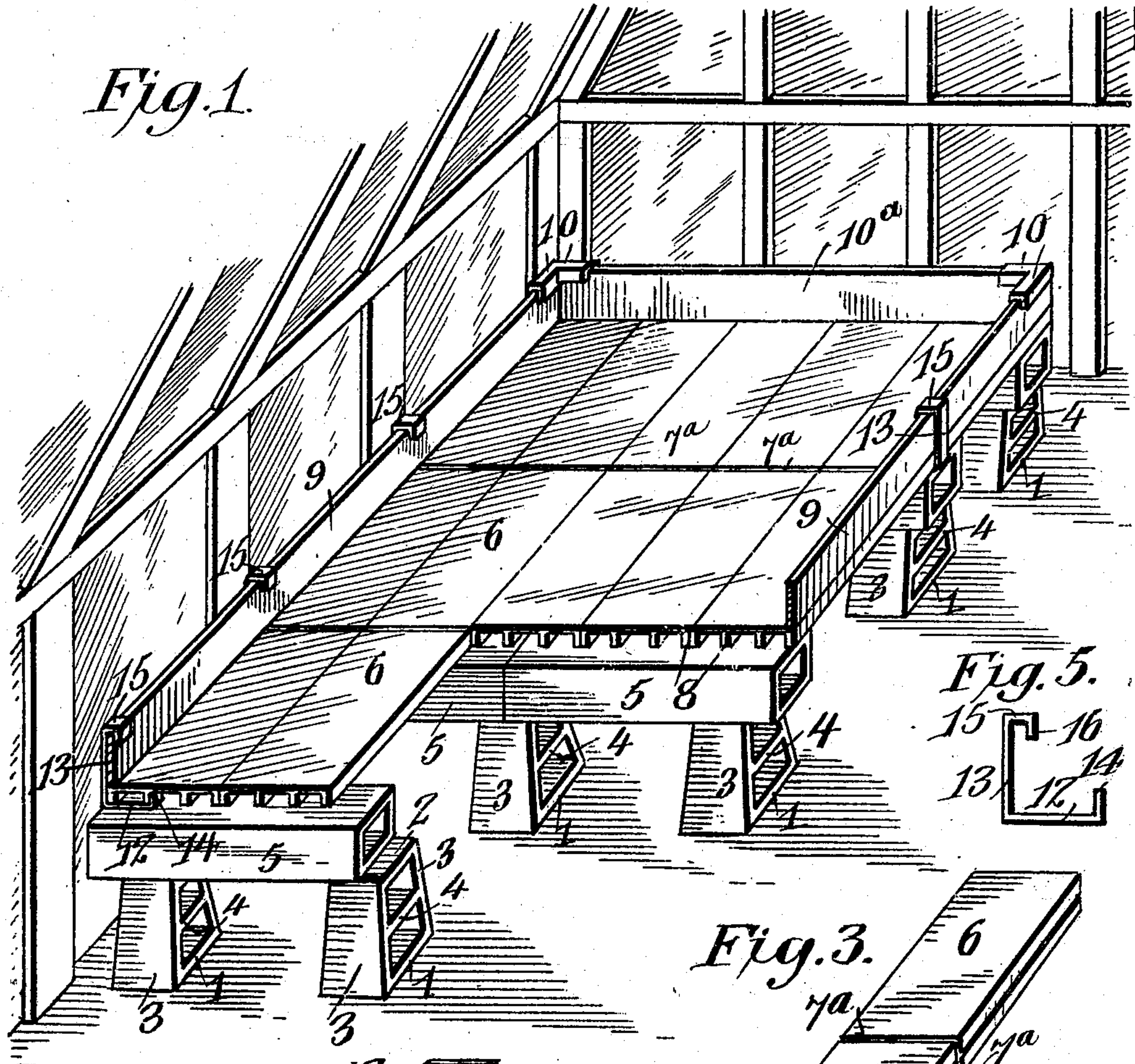


Fig. 2.

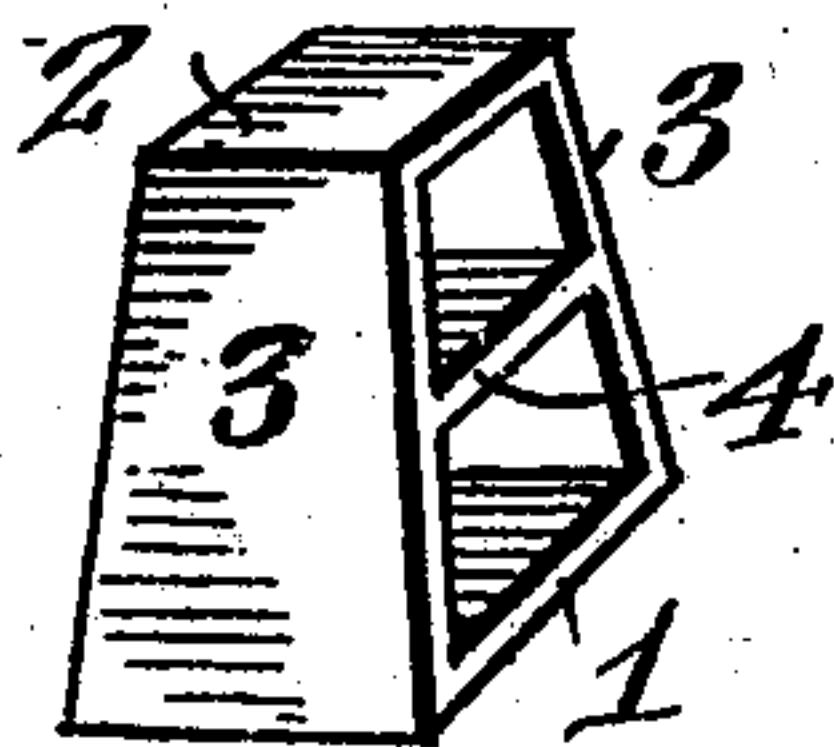


Fig. 3.

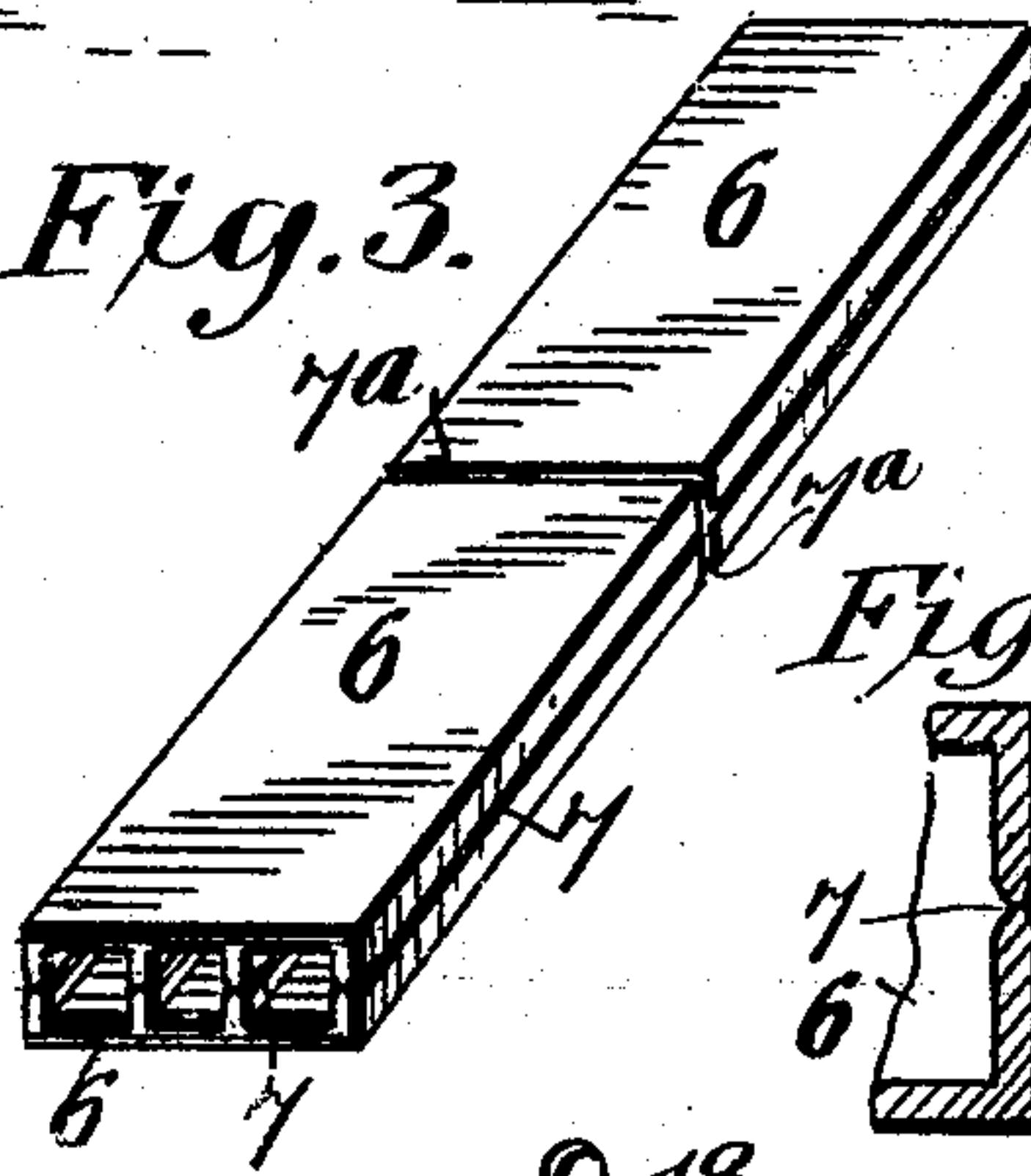


Fig. 4.

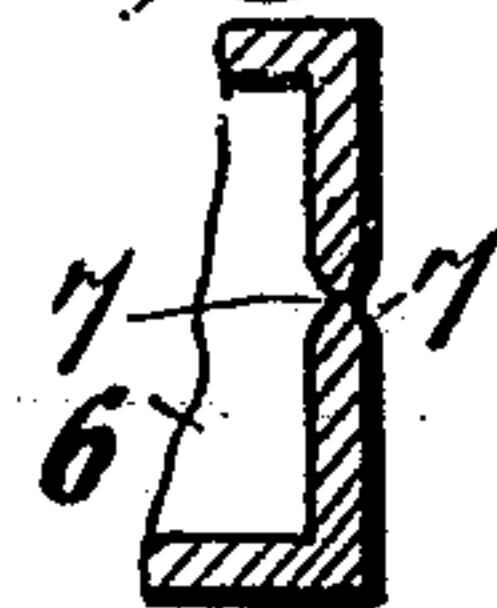


Fig. 7.

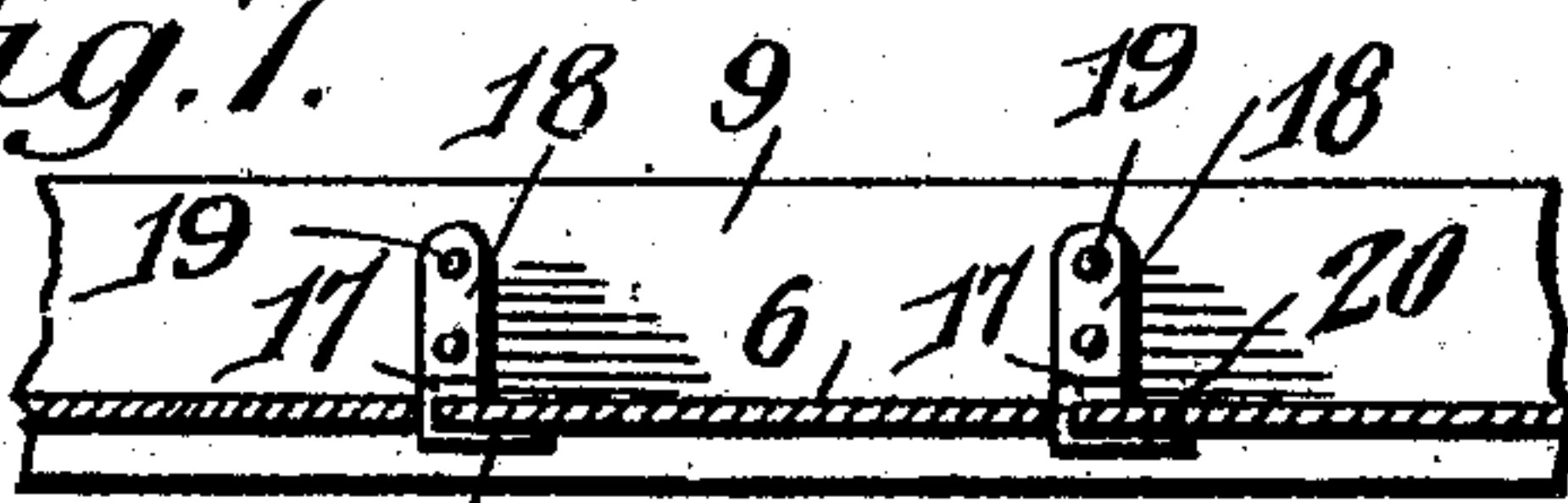
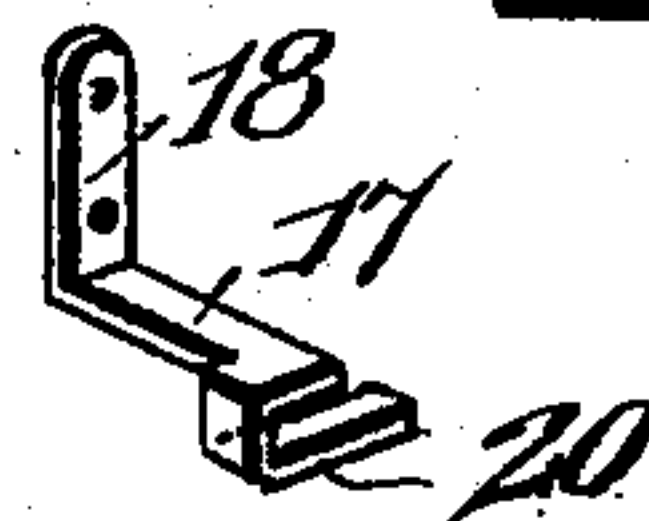


Fig. 8.



Inventor

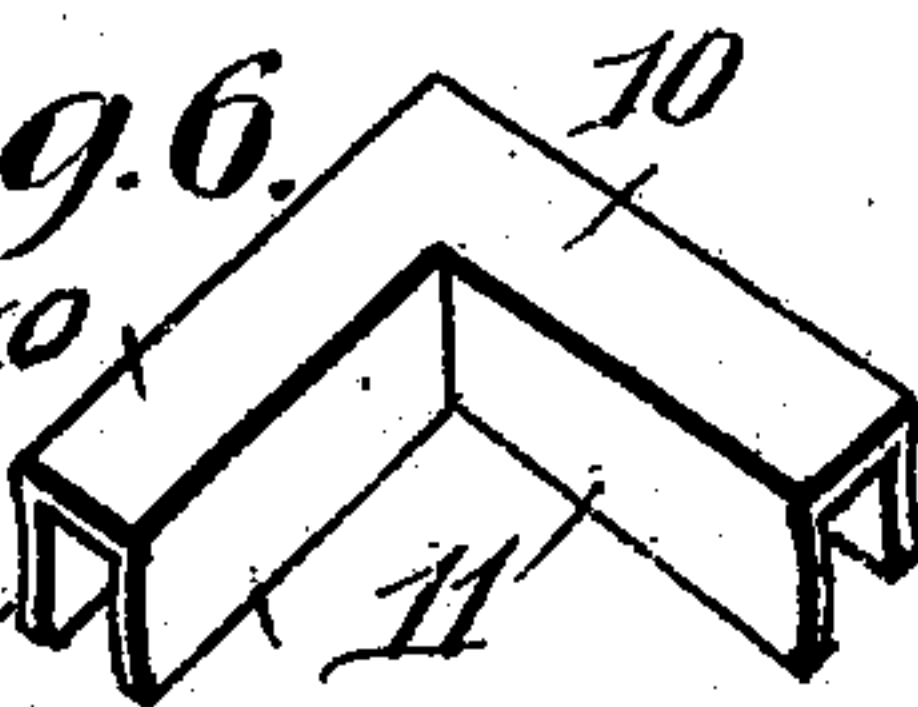
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UNITED STATES PATENT OFFICE.

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TILE GREENHOUSE-BENCH.

No. 923,921.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BYRON P. WISE, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Tile Greenhouse-Benches, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to benches or stands, and particularly to a tile greenhouse bench.

The object of the invention is the construction of a peculiar bench, preferably, formed of tile, and comprising a minimum number of parts, which are comparatively inexpensive to construct and efficient and durable in use.

Another object of the invention is the construction of a tile greenhouse bench, which can be quickly assembled and disassembled and the parts of which bench are not liable to decay or corrode, thereby increasing the life of the bench, and, consequently, minimizing the cost of maintaining the bench in a highly efficient condition.

A further object of the invention is the construction of a knock-down bench, comprising peculiarly-constructed posts or standards carrying cross-beams, and upon which cross-beams, is positioned a peculiarly-constructed body for containing soil, potted plants, or other articles.

With these and other objects in view, the invention consists of certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings: Figure 1 is a fragmentary, perspective view of a bench or stand constructed in accordance with the present invention. Fig. 2 is an enlarged view of one of the posts or standards. Fig. 3 is a perspective view of a floor-tile body, prior to separating the sections thereof for forming floor-tiles. Fig. 4 is a fragmentary, enlarged, sectional view of the floor-tile body. Fig. 5 is an enlarged view, in side elevation, of one of the side and end brackets. Fig. 6 is an enlarged, perspective view of one of the corner-clamps. Fig. 7 is a fragmentary view of the bench, showing particularly the application of another embodiment of the side and end brackets. Fig. 8 is a perspective view of the bracket shown in Fig. 7.

Referring to the drawings by numerals, 1 designates the base of the supporting posts or standards, and 2 is the top; the base and top being integrally connected by means of sides 3, which sides are connected intermediate their ends by a horizontal web 4. Each side diverges from its upper end toward the lower end, and, consequently, the base 1 is considerably wider than top 2, whereby the post or standard covers considerable area of ground or floor-space, making a very substantial and solid support for the cross-beam tiles 5. The forming of the posts or standards 1 hollow, reduces the expense of constructing the same, and owing to the forming of the horizontal web 4, the sides 3 are materially reinforced; also a pocket or support is formed in the post or standard for receiving tools or potted plants, or other articles, to be stored away, thereby utilizing the entire peculiarly-constructed post. Consequently, it will be seen that I have produced posts, each of which is provided with a comparatively wide or broad base or bottom, and each post decreasing or converging toward its upper flat end or top 2.

Each cross-beam tile 5 is, preferably, rectangular in shape, and is formed hollow for increasing the lightness of the bench, and also minimizing the cost of construction of the same. The cross, hollow tiles 5 are provided with flat, upper and lower faces; the lower faces resting snug against the upper, flat, horizontal faces 2 of the posts or standards, whereas the upper faces of the cross-tiles produce an efficient support, upon which rest the webs or flanges of the floor-tiles 6. The floor-tiles are, preferably, formed by constructing a hollow, elongated body, as shown in Fig. 3, and this body is provided with longitudinally-extending partitions, each partition being scored longitudinally, as at 7, Fig. 4, at opposite points, so that the body can be quickly and comparatively easily split or broken into two parts for producing floor-tiles 6. Each floor-tile is provided with an upper, flat, horizontal body and with a plurality of vertical, depending webs or flanges 8, constituting reinforcing ribs upon the under face of the body of each floor-tile. The reinforcing, parallel webs or flanges 8 extend the entire length of each floor-tile and contiguous to their ends, rest upon the flat, upper faces of the cross-beam tiles 5; the ends of the webs or flanges 8

overlap each cross-beam 5, and are normally positioned at their ends near the center of each beam, whereby said tiles 6 are secured against any accidental displacement off of the cross-tiles 5. The body of the tile is cut on line 7^a; the tile or body being, preferably, cut entirely off any desired length. The length of the floor-tiles depends entirely upon the size of the bench or stand to be constructed. The webs or flanges 8 on the floor-tiles permit the free circulation of air around the cross-beam tiles 5, and also allow the placing of steam pipes above the hollow cross-beam tiles 5 and directly beneath the body of the floor-tiles upon which dirt or soil or potted plants may be placed, thereby in extreme cold climates the plants can be better heated or kept from freezing.

Side and end pieces 9 and 10^a are employed in constructing my stand or bench, and these pieces are each of an ordinary flat, straight structure, preferably formed of tile, but the contiguous or engaging ends of the side and end pieces are secured together upon the floor-tiles by a peculiarly-constructed corner-clamp. It will be obvious that, preferably, four clamps are employed in constructing an ordinary square or oblong bench.

Referring particularly to Fig. 6, my angle corner-clamp comprises two angularly-disposed portions 10, each of which is provided with an upper, flat portion and with sides 11; the sides 11 being slightly inwardly bowed from the upper to the lower edge, producing a spring clamp, which, owing to the sides being turned outwardly at the lower edges, may be quickly placed over the sides of the side and end-pieces 9 and 10^a, respectively, and the clamp held upon these side or end pieces, by means of the clamping action of said corner-clamp or brace or bracket; the clamping action of the corner-brace or bracket prevents accidental displacement, and also holds the same upon the side and end pieces, and securely fastens said pieces together at the corners of the bench. One other advantage of the placing of the spring-clamps upon the corners is that, under normal conditions, no soil engages the same, which increases the life of the corner-clamps or brackets, as they will not corrode or decay, as quickly as if the soil engaged or covered said clamps or brackets. Intermediate the ends of the side and end pieces 9 and 10^a, respectively, the same are braced or partly held upon the floor-tiles, by means of vertical brackets, each of which comprises a horizontal portion 12, integral at one end with a vertical portion 13; the horizontal portion 12 terminating at its opposite end in a vertical, auxiliary extension 14. The auxiliary extension 14 is adapted to normally engage one side of a web or flange 8, for the horizontal portion

12 extends across, and is positioned under two of the webs or flanges 8, Fig. 1. The vertical portion 13 rests parallel with the outer flange of a floor-tile, and the upper, horizontal portion 15 extends across the upper edge of the side or end piece and the inner, vertical portion 16 rests against the inner face of the side or end piece (Fig. 1). Therefore, the portions 15 and 16 and portion 14, constituting a pair of hooks, one hooking around the web and the other over the side or end piece for securing the bracket or brackets upon the cooperating parts of the bench and also secures the cooperating parts together.

It is to be noted that the vertical brackets or braces (Fig. 5) are placed outside of the floor-tiles and the side and end pieces, and, consequently, are not in contact with the soil, whereby the life of the brackets is increased, owing to their not being subject to corrosion or decay.

In Figs. 7 and 8, I have shown another embodiment of the vertical brackets, in which the horizontal portion 17 of the bracket rests flat upon a floor-tile, and the vertical, apertured portion 18 is secured against the inner ends of a side and an end-piece, by means of rivets at 19, or any other suitable fastening means. The inner end of the horizontal portion 17 is provided with a transversely-disposed U-shaped clip, which normally fits over the end of a floor-tile; the upper part of the U-shaped portion engages the upper face of the floor-tile and the lower part, the inner or lower face. The brackets shown in Figs. 7 and 8 perform the same function as the bracket shown in Figs. 1 and 5, to wit: bracing and supporting and holding the sides and end pieces upon the floor-tiles.

While I do not limit myself specifically to the placing of the vertical, intermediate brackets directly above the cross-beam tiles 5, still I, preferably, arrange the same at these points for producing a very durable bench or stand for it is at these points that the floor-tiles are cut and the edges of two contiguous tiles are brought together, and, therefore, it is easy to assemble the brackets in these places as will be obvious upon considering the foregoing description and the accompanying drawing.

From the foregoing description, it will be noted that I have provided a tile greenhouse bench, of a type known to the trade as a knock-down bench or stand, that is to say, it is a bench which is built up of peculiarly-constructed parts or members susceptible of being quickly assembled or disassembled, when it is desired to assemble the bench in any spot, or disassemble the same for transportation, without injuring or marring the parts, constituting the bench, which I have, preferably, illustrated and described as the

peculiarly - constructed posts or standards, the hollow, supporting cross-tiles, and the floor-tiles, etc.

From the foregoing description, it will be noted that pipes may run on supports placed in the openings of the posts or standards to insure proper heating of the bench, or for drainage purposes. The tops of the supporting posts or standards are, preferably, the same width or length as the width of the lower or base pieces of the hollow, transverse or cross-tiles.

It is to be noted that the hollow posts or standards are arranged, preferably, in rows transversely of the bench for accommodating the aligned, hollow cross-beam tiles. In the drawing, I have, preferably, shown in Fig. 1, two cross-beams, and indicated three posts or standards in each transverse row.

What I claim is:

1. A tile greenhouse bench, comprising rows of hollow posts, a plurality of hollow cross-beam tiles arranged in alinement and carried by the posts in each row, and floor-tiles resting upon the hollow cross-beam tiles, each floor-tile provided with webs or flanges extending transversely of the cross-beam tiles.

2. A tile greenhouse bench, comprising hollow posts, arranged in alinement, hollow tiles resting upon the upper ends of the posts, and floor-tiles resting upon the top of the hollow tiles.

3. A greenhouse bench, comprising posts, each post having a hollow body and a narrow flat top and a comparatively wide base, transverse tiles resting upon the tops of said posts, and floor-tiles resting upon the tops of the transverse tiles and positioned transversely of the same.

4. In a tile greenhouse bench, the combination with a support, of a floor-tile carried by said support, said floor-tile comprising a body provided with longitudinally - extending vertical flanges or webs upon its under face, and said webs serving as a support for the body and spacing the same from the support.

5. A greenhouse bench, comprising posts, each post provided with sides, a base, and a top, each side diverging from its upper end to its lower end, and a horizontal web integral with the sides intermediate their ends, a floor-tile, and means supporting said floor-tile upon said posts.

6. A greenhouse bench, comprising a support, floor-tiles carried by said support, side and end - pieces in engagement with said floor - tiles, brackets assembled with said floor-tiles and said side and end pieces, each bracket provided with a pair of angularly-disposed portions, each angularly-disposed portion provided with a hook, the hook of one portion engaging the edge of a side

piece and the hook of the other portion engaging a portion of a floor-tile, and means fastening the ends of the side and end-pieces together.

7. A greenhouse bench, comprising a support, floor-tiles carried by said support, side and end pieces carried by said floor-tiles, brackets fastening said side and end-pieces and floor-tiles together, each bracket comprising a vertical and a horizontal portion, the vertical portion provided with a horizontal portion extending across the upper edge of the side or end piece, the first-mentioned, horizontal portion provided with an extension engaging an inner face of the side or end piece, said first-mentioned, horizontal portion provided with a vertical extension at its inner end, and the last-mentioned vertical extension engaging a portion of the floor-tile.

8. A greenhouse bench, comprising a support, floor-tiles carried by said support, side and end pieces carried by said floor-tiles, the side and end pieces being positioned together at their ends, and corner-clamps positioned over the contiguous ends of said side and end pieces and securing the same together.

9. In a greenhouse bench, the combination with a support, a floor carried by said support, of side and end pieces positioned upon said floor, the side and end pieces positioned near together at their ends, and a corner-clamp positioned over the two contiguous ends of each side and end piece, said corner-clamps comprising a pair of angularly-disposed portions, and each angularly-disposed portion comprising spring-clamping sides adapted to grip the sides of a side or end piece.

10. A greenhouse bench, comprising a support, floor-tiles carried by said support, side and end pieces carried by said floor-tiles, the side and end pieces positioned together at their ends, corner-clamps positioned over the upper edges of the side and end pieces at their ends, each corner-clamp comprising a horizontal upper portion and the upper portion provided with integral, vertical sides, each side being bowed inwardly from its upper end to its lower end and said sides constituting a spring-clamp for gripping opposite sides of the side and end portion of the bench.

11. A greenhouse bench, comprising hollow posts, hollow cross-tiles carried by said posts, webbed floor-tiles extending across the cross-tiles, side and end-pieces carried by said floor - tiles, brackets positioned against the floor-tiles and the side and end pieces and intermediate the ends of said side and end-pieces, and angle spring-clamps positioned over the ends of the side and end-pieces at the corners of the bench and securing the side and end-pieces together.

12. A greenhouse bench, comprising posts, cross-tiles carried by said posts, floor-tiles carried by said cross-tiles, side and end pieces carried by said floor-tiles, and angle
5 clamps provided with clamp-sides positioned over the ends of the side and end pieces at the corners of the bench and holding the side and end pieces upon the floor-tiles.

13. As a new article of manufacture, a tile
10 greenhouse bench, comprising hollow, webbed posts, horizontal, hollow, intermediate or cross-beam tiles positioned upon the posts, and webbed floor-tiles supported by and extending partly across and resting
15 only upon the upper faces of the hollow cross-beam tiles.

14. As a new article of manufacture, a tile
greenhouse bench, comprising, hollow, vertical posts, hollow horizontal cross-tiles resting upon the posts, and floor-tiles resting
20 upon the upper faces of the hollow cross-tiles.

15. In a greenhouse bench, the combination with a support, floor-tiles carried by
25 said support, side and end pieces in engagement with said floor-tiles, of brackets as-

sembled with said floor-tiles and said side and end pieces, each bracket comprising a vertical and a horizontal portion, said portions integrally connected, said horizontal
30 portion provided with a hook adapted to lie flat against a portion of a floor-tile, and fastening means securing the vertical portion to a side or end-piece.

16. In a greenhouse bench, the combination with a support, a floor carried by said
35 support, side and end pieces engaging said floor, said side and end pieces being positioned together at their ends, of a detachable, horizontal, angle corner-clamp securing
40 two contiguous ends of the side and end pieces together, said corner-clamp covering portions of and resting upon the upper edges of a side piece and an end piece at
45 their contiguous ends.

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

BYRON P. WISE.

Witnesses:

GRANT LEE,

R. H. BONNALLI.