Oct. 16, 1934. H. T. RITTER 1,976,858

TILE GREENHOUSE BENCH

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Fig. 1.

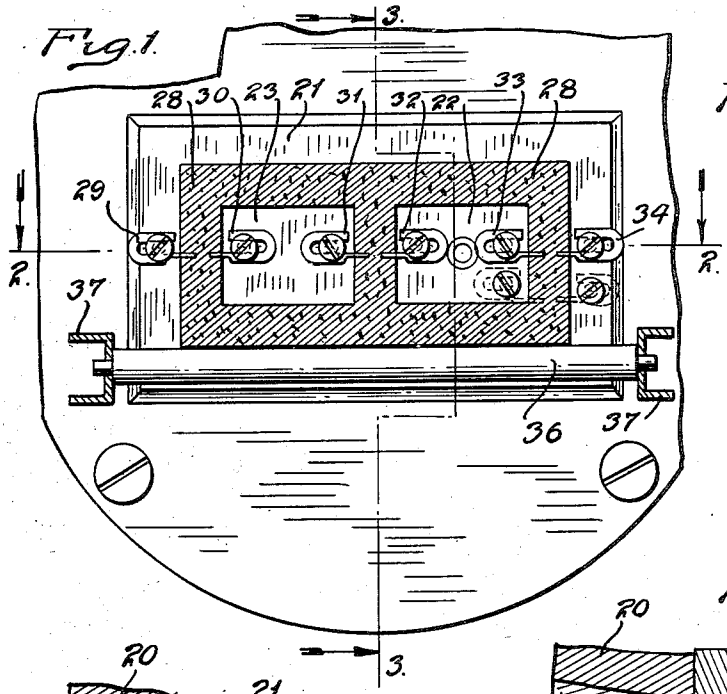


Fig. 4.

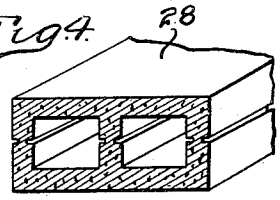


Fig. 5.

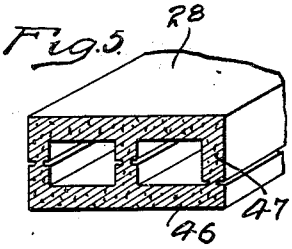


Fig. 6.

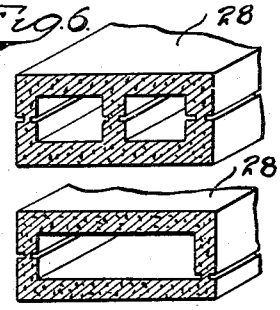


Fig. 7.

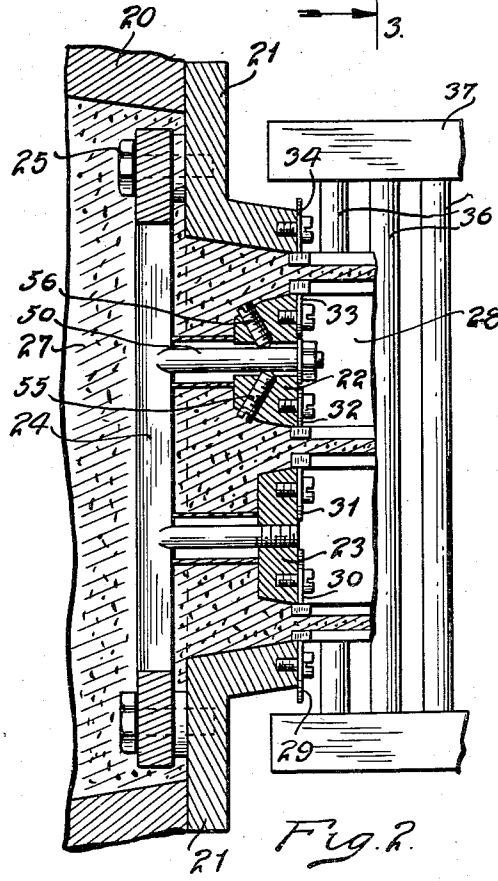


Fig. 2.

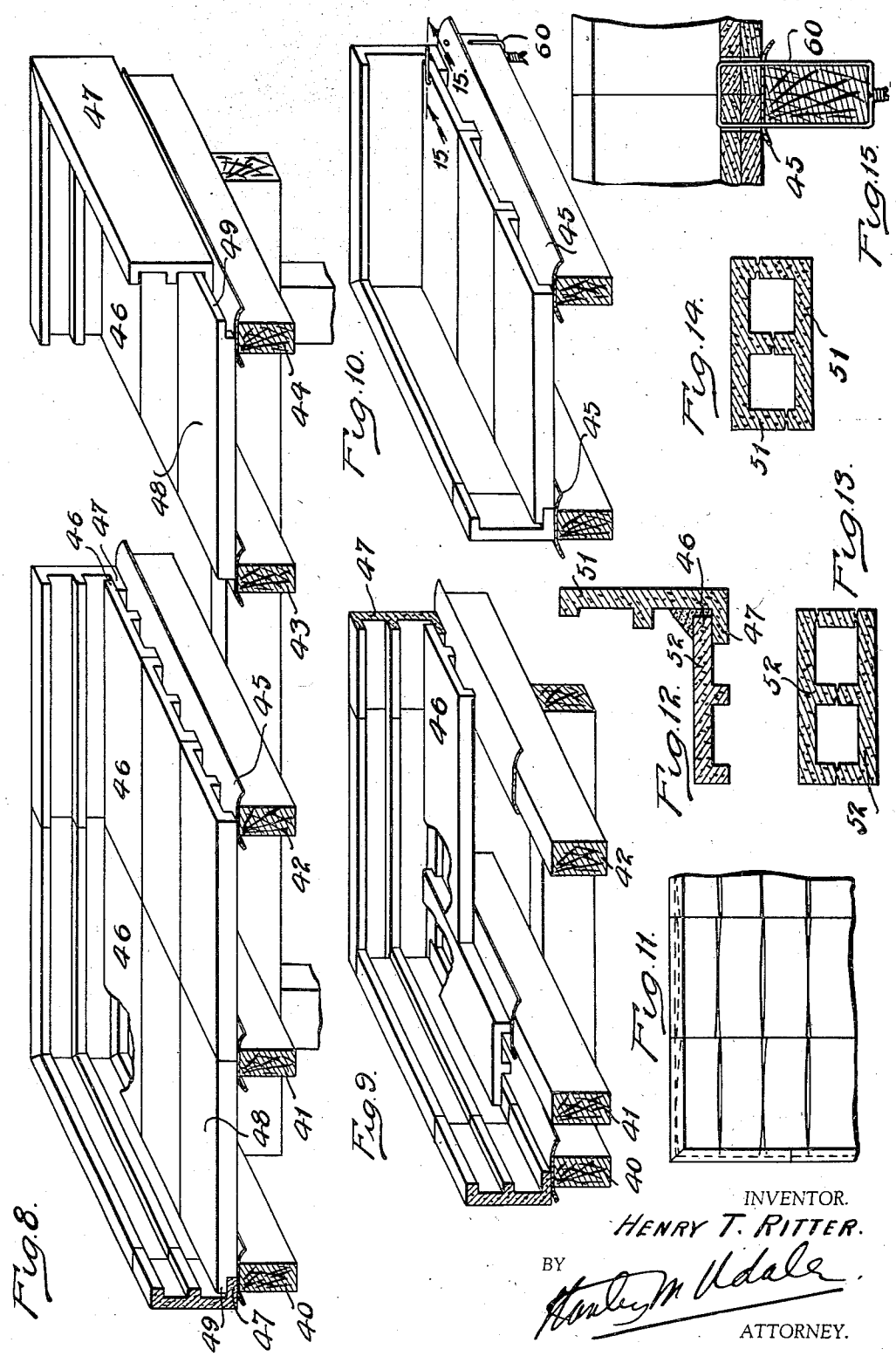
Fig. 3.

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TILE GREENHOUSE BENCH

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Application March 23, 1934, Serial No. 717,040

7 Claims. (Cl. 47—18)

This invention relates to the solution of the problem of substituting tiles for wood in the construction of greenhouse benches. Tiles have been used for benches for twenty five years, but the trade has not adopted this form of construction, despite the obvious advantages of tile construction as compared with wood.

The side and end pieces of tile must be as strong as the floor members and these side and end pieces must be securely locked to the adjacent floor members.

The specific object of this invention is to devise a method of making the side rail and its adjacent floor member, whereby a single die will simultaneously produce a section of side rail and its corresponding floor member. These dies are the outlets from the extruding barrel from which the clay is forced to form the tile sections.

I have discovered that I can so score a tile section that when the hollow, rectangular tile is split the two halves are dissimilar; one being the side rail and the other the adjacent floor member, with which it is locked by cement to form a very strong side and end rail construction.

Another object of this invention is to so make the ordinary floor tile that they can be assembled either to provide openings in the floor for drainage, or to fit snugly together so that there is practically no drainage opening.

In the figures:—

Fig. 1 shows the end view of the extruding barrel with die in place.

Fig. 2 is a sectional plan view on plane 2—2 of Fig. 1.

Fig. 3 is a section view in elevation taken on plane 3—3 of Fig. 1.

Fig. 4 shows a hollow tile scored to produce two identical floor sections.

Fig. 5 shows a hollow tile scored to produce a side rail and its corresponding adjacent floor section.

Fig. 6 shows a hollow tile scored as in Fig. 4, but with one end rib thicker than the other.

Fig. 7 shows the simplest tile construction scored to form a side rail and its corresponding adjacent floor section.

Fig. 8 shows in perspective the tile assembled to form a tile bench.

Fig. 9 shows an alternative assembly arrangement.

Fig. 10 shows the arrangement of tile formed as shown in Fig. 7.

Fig. 11 shows the plan view of the floor assembly of tiles made according to Fig. 6.

Fig. 12 shows in cross section elevation the side rail and adjacent floor section construction.

Fig. 13 shows the method of scoring the double tile used in the floor section in Fig. 12.

Fig. 14 shows the method of scoring the double tile used for the rail in Fig. 12.

Fig. 15 shows a sectional elevation on plane 15—15 of Fig. 10.

20 is the extruding barrel (Figs. 2 and 3); 21 is the die or orifice bolted to the end of the barrel; 22 and 23 are the cores mounted on the cross bar 24, which bar is anchored to the die 21 by means of the studs 25; 27 represents the clay in the barrel 20.

The core 22 is shown mounted on the stud 50 projecting from the bar 24. Clearance between the stud 50 and the corresponding hole in 22 permits the core 22 to be adjusted slightly to vary the width of the side ribs of the tile; set screws 55, 56 are used to lock this adjustment in one plane and set screws 57 and 58 are used to lock this adjustment in the other plane.

The cross bar 24 is shown stream lined, (see Fig. 3), and the die 21 is flared so as to lead the clay into the outlets between 21 and the cores 22, 23. The sides of the cores are also flared for the same reason.

The finished (unburnt) tile 28 is carried on rollers 36 supported by rails 37 and is scored by the knives 29, 30, 31, 32, 33, 34. These knives may be adjusted by their lock screws. This arrangement of cores and knives produces the tiles shown in Figs. 4 and 6.

By moving the knives 33, 34 to the lower position, shown in broken lines in Fig. 1, the tile shown in Fig. 5 is produced.

By displacing the core 22, out of center, the right hand rib of Fig. 6 is thicker than the left hand rib, so that the tile will be distorted slightly after drying.

If one core is substituted for the two cores, then a tile as shown in Fig. 7 is produced.

After the tiles are baked they are easily split along the lines scored in them by the knives, or the tiles can be split after drying and before burning.

In Fig. 8 the bench is shown supported by wooden 2" x 4"—40, 41, 42, 43, 44. These 2" x 4" are protected by a piece of tar paper 45. Resting on these 2" x 4" are the tiles corresponding to those shown in Fig. 4. The side rail construction shown utilizes the two sections produced by Fig. 5; the long leg 46 of the F being laid on the long projection 47 of the E. The end construction is here shown formed by notching the tiles 48 as

shown at 49 to fit over the projection 47 of the side rail.

In Fig. 9 the side rail construction is adopted for the end rail construction. This necessitates an extra 2'' x 4'', as 40 and 41 are brought closer together.

In all cases, cement is poured into the joint, as shown in Fig. 12, between the long leg 46 of the F section and the long projection 47 of the E side rail section.

The gap shown in Fig. 12 between 46 and the rail is the clearance necessary to compensate for variations in width of the tiles and also to provide for odd widths; the tiles being made six inches wide will fit easily into benches that are an even number of feet wide.

In Fig. 10 the tiles formed as shown in Fig. 7 are utilized, together with the tar paper protection 45 for the 2'' x 4''.

Fig. 11 shows a plan view of the floor produced by the tile shown in Fig. 6.

As these tiles all have a slight curvature, due to the fact that one outside rib is thicker than the other, it is possible to assemble them as shown, to give drainage openings; and of course it is equally possible to assemble them so that they fit snugly with each other. Some beds require more drainage than others, so that this gives the nurseryman a simple means of changing the nature of the floor to suit the particular use to which the bench will be put. For example, pot benches are constructed with snugly fitting tiles to retain the sand, etc., spread on the floor of the bench. Cut flower beds require adequate drainage.

By increasing the eccentricity of the core 22 the amount of curvature of the tile is increased.

In Fig. 12 the side rail 51 is higher than the floor section 52 is wide. The width of the floor section is preferably six inches and the beds are usually three feet, three feet six inches to six feet. The side rails should be six inches for cut flower benches, measuring from the inside; which means seven and three eighths inches for the outside. Hence, the side rails are made in pairs in a special extruding die, as shown in Fig. 14. Pot benches require the construction shown in Figs. 8, 9 and 10, for which the six inch side rail is ideal; and one die can produce simultaneously side rails and the floor pieces that engage therewith.

In order to tie adjacent members of the rail together, a piece of wire 60 is threaded through a hole drilled in the toe of each side rail, the copper wire then passes around the 2'' x 4'' and is tied.

What I claim is:—

1. Side rail and floor construction for a greenhouse bench, comprising a U shaped tile forming the side rail and having one leg of the U longer than the other, an L shaped tile forming the side floor piece, the long leg of the L lying on top of the long leg of the U, the short leg of the L being as high as the long leg of the U is thick.

2. Side rail and floor construction for a greenhouse bench, comprising an E shaped tile forming the side rail and having the lower projection of the E longer than the others, an F shaped tile forming the side floor piece, the long leg of the F lying on top of the long projection of the E, which is as thick as the short leg of the F is high.

3. A greenhouse bench floor, comprising a plurality of tiles with curved sides assembled together so as to provide drainage openings between adjacent tiles.

4. A greenhouse tile bench having a ribbed tile side rail interlocked with ribbed floor tiles, so that the base of the side rail is flush with the bottom of the ribs of the floor tiles.

5. A greenhouse bench, comprising lateral supports, ribbed floor tiles having ribs removed adjacent to the edge of the bench, ribbed side rail tiles having a rib extending beneath the side floor tile, means for tying the side floor tile to the side rail tile and to the lateral supports.

6. Side rail and floor construction for a greenhouse bench, comprising a U shaped tile forming the side rail and having one leg of the U longer than the other, an L shaped tile forming the side floor piece, the long leg of the L lying on top of the long leg of the U.

7. Side rail and floor construction for a greenhouse bench, comprising an E shaped tile forming the side rail and having the lower projection of the E longer than the others, an F shaped tile forming the side floor piece, the long leg of the F lying on top of the long projection of the E.

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