PATENT SPECIFICATION

Application Date: Feb. 17, 1932. No. 4655/32. 397,533

Complete Left: Jan. 19, 1933.

Complete Accepted: Aug. 17, 1933.

PROVISIONAL SPECIFICATION.

Means for Constructing Miniature Models of Rural Scenery, Landscapes, or the like from Interchangeable Units.

I, FRANK HORNBY, of 236, Binns Road, Old Swan, Liverpool, British, do hereby declare the nature of this invention to be as follows:—

This invention relates to a toy by means of which models or imitations of rural scenery, landscapes or the like may be made by assembling together in various ways a number of interchangeable units.

According to this invention preferably substantially flat units are provided having shapes of such various profile or outline that they may be relatively interchangeably positioned, the units being assembled together with their edges abutting to form composite areas of various shapes and of varied appearance, each unit being provided, preferably along one or more of its outer edges, with an imitation hedge, wall, fence or the like, and the surfaces of the units being printed, embossed, or otherwise formed to simulate fields of grass, wheat or other crops or of ploughed land in such manner that a model representing an extent of countryside scenery may be built up from the component units, the composite appearance of the rural landscape being variable by changing the relative position of the units. The hedges, walls, fences or the like are preferably permanently attached to the units but they may be made detachable and such boundary features may also be provided with imitation gates. The units may be made of any material such as cardboard sheet metal or plywood and they may be provided with imitation trees which may be permanently secured to the units or detachable, the units for the latter purpose being provided with sockets at various positions into which the base of the trees engage. As mentioned the surface of the units may be printed, embossed or otherwise formed to represent any type of field and detachable covers may be provided of the same shape as that of each unit and having means for securing them in position, such detachable covers being printed or otherwise formed to represent a type of field surface different from that on the unit itself, thus enabling the appearance of any unit to be changed at will and so to vary the composite appearance of the model landscape. For example by means of such detachable covers while the appearance of the composite landscape provided by the proper surfaces of the assembled units might be substantially green, by fitting yellow detachable covers to certain of the units the appearance of the landscape might be changed to include fields of ripening corn and in this way great variety in the artistic arrangement and resulting scenic effect is possible.

The units may be made of any suitable size and shape and the length of their edges be based upon some unit of length, being either equal to or multiples of that length in order to facilitate assembly of the units and they may be marketed by being put up in outfits comprising a number of different units.

The invention is particularly applicable for use in providing an imitation rural setting for a toy railway track. As the shape of the looped layouts of such tracks is dictated by the possible combinations of the usual curved and straight rail sections of which they are built, the model landscape units for use therewith are preferably made of such corresponding geometrical unit shapes that when assembled they will produce composite areas, the peripheral contours of which will correspond to those of the curved and straight stretches of the railway track. By this means the area within the closed loops of a track may be entirely filled in with landscape units assembled together and having a curved boundary conforming to that of the loop and similarly a series of units may be fitted together outside the loop to follow closely the contour of the track on its exterior, so that the whole layout of a toy railway track may thus be caused to run entirely through model scenery representing a natural countryside, thus lending a greatly added charm and interest to the running of the toy trains particularly when model tunnels are disposed at advantageous positions along the track.

Where the units are of geometrical shape they may be square or rectangular,

or have one or more straight edges at right angles or otherwise, the remaining edge or edges being of curved formation, and such curved edges may be convex or concave, the radius of the curved edge being such that the curved boundary will be concentric with the curvature of the rail track, and the shorter straight edges of the units are preferably designed to be some multiple of the longer edges so that the assembly of the units to fill a certain area and the interchangeability of the units will be facilitated. It is desirable also that the shorter sides of some rectangular units should be equal to the length of a straight section of rail so that any length of straight track rail may be readily provided with adjoining model scenery of the same length by assembling units together. Similarly the diagonal length of the square units may be made to correspond to the radius of the track rail curvature, the segmental areas left between the sides of such a square unit and the surrounding rail curve being filled in with units having rectangular and curved edges.

Narrower strip units may be provided printed or formed in imitation of a road surface and these may be of straight or curved form complementary in shape with the other units, their interpolation among the assembled units giving all the appearance of a road passing or winding therethrough. Models of ponds, haystacks or other rural features either permanently secured on the units or detachably placed thereon at suitable positions may also be provided.

While the units are preferably substantially flat their surface may be made in relief, but in that case in order to provide for complete interchangeability of position it would be desirable that the boundary edges of the units should lie in one plane.

Dated this 16th day of February, 1932.

A. J. DAVIES,
Patent Agent,
24, Moorfields, Liverpool,

COMPLETE SPECIFICATION.

Means for Constructing Miniature Models of Rural Scenery, Landscapes or the like from Interchangeable Units.

I, FRANK HORNBY, of 236, Binns Road, Old Swan, Liverpool, British, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to a toy of the type by means of which models or imitations of rural scenary, landscapes or the like may be made by assembling together in various ways a number of interchangeable units. It has been heretofore proposed to provide toys of this type comprising uniform pieces carrying the representation of a section or landscape, various landscapes being obtained by changing the position of the units.

In the known toy the profile or outline of the units represented squares or rectangles being the multiple thereof, whereby the composite landscape itself built with the known units represented a square or a rectangle.

It is desirable to be able to build an imitation landscape the boundary lines whereof do not represent a rectangle but are in part curved or entirely irregular, especially if the landscape is to be assembled in conjunction with a curved track toy railway, in order that the realistic effect may be enhanced.

Accordingly this invention provides substantially flat units having shapes of such different profile or outline that they may be relatively interchangeably assembled together with their edges abutting to form continuous areas of different or irregular shape and composite scenic appearance, each unit being provided, preferably along one or more of its sides with a permanently fixed or detachable model boundary feature such as a hedge, wall, fence or the like, and the surfaces of the units being printed, embossed, or otherwise formed to simulate fields of grass, wheat or other crops or of ploughed land in such manner that a model representing an extent of countryside may be built up from the component units, the contours and the composite scenic appearance of the rural landscape being variable by changing the relative position of the units. The hedges, walls, fences or the like are preferably permanently attached to the units but they may be made detachable and such boundary features may also be provided with imitation gates. The units may be made in any material, such as cardboard, sheet metal, or plywood, and they may be provided with imitation trees which may be permanently secured to the units or detachable, the units in the latter case being provided with

sockets at suitable positions into which the tree stems engage. As mentioned, the surface of the units may be printed, embossed or otherwise formed to represent any type of field and detachable covers may be provided of the same shape as that of each unit and having means for securing them in position, such detachable covers being printed or otherwise formed to represent a type of rural surface different from that on the unit itself, thus enabling the appearance of any unit to be changed at will and so to vary the composite appearance of the model landscape.

The units may be marketed in outfits comprising a number of different units which may be of any size and shape some of which, however, are irregular and comprise curved sides and the length of one or more of the sides may be based upon some arbitrary unit of length, being either equal to or multiples of that length in order to facilitate assembly of the units. The invention is particularly applicable for use in providing an imitation rural setting for a toy railway track.

The invention will be described with reference to the accompanying drawings, in which Fig. 1 is a perspective view of a model of an extent of countryside built up of assembled units arranged to form a setting for a toy railway track. Figs. 2 to 10 inclusive are diagrammatic plan views of various forms of the units having hedges along one or more sides. Figs. 11 to 14 are perspective views on a larger scale of typical units, Fig. 11 having a hedge border of convex curvature suitable for adjoining the interior of a toy rail track loop, while Figs. 12 and 13 have concave borders for surrounding the exterior of such a loop and Fig. 14 is a unit model of a length of country road. Fig. 15 is a perspective view of a detachable cover for a unit by means of which its appearance may be changed. Figs. 16 and 17 are an end view and inverted plan respectively of a detachable and flexible hedge border, secured by clips, Fig. 18 showing such a border secured to the straight side of a unit while Fig. 19 shows it bent and secured to a curved side. Figs. 20 and 21 are an end view and inverted plan respectively of a modified form of such a separate hedge border adapted to be secured by rubber suction cups. Figs. 22 and 23 show models of a haystack and a tree fitted with rubber suction cups. Figs. 24 to 27 show several layouts of toy railway tracks with the units assembled in various ways to form a rural setting.

The component units which are assembled to build up composite models in imitation of rural scenery consist of substantially flat elements of various outline or profile in plan. Examples are shown in Figs. 2 to 10 and Figs. 11 to 14. Where the units are of geometrical shape, as shown, they may be square as in the unit 1, or oblong as 5, 5a, and 6, or they may have one or more straight sides at right angles or otherwise, the remaining side or sides being of curved formation and such curved sides may be convex, as in the units 3, 3a, or concave as in the units 2, 2a, 4, 4a. Narrower strip units may be provided printed or formed in imitation of roads, such as 7, Fig. 9 and such strip units may be straight, as shown, or of curved form complementary with the curved sides of the other units, their interpolation among the assembled units giving all the appearance of a road passing or winding therethrough.

While in the drawings units having only geometrical outlines are shown the invention is not limited to such, Geometrical shapes are, however, particularly suitable for use with toy railway layouts in connection with which the invention is mainly described in the present specification. The flat surfaces of the units are printed, embossed, or otherwise formed in imitation of fields and coloured to represent grass, wheat, or other crops, 5a, Fig. 5 or ploughed land, 5, Fig. 4. One or more sides of each unit is or are preferably provided with a boundary feature such as an imitation hedge 9, wall, or fence, and model trees 10 and model gates 11 may be provided on the units. The units having convex or concave sides 12, 13, may have such sides as well as the straight sides fitted with boundary features. Preferably certain of the sides of the units are not provided with any boundary feature, so that by assembling together several such units with their open sides abutting, a surface of greater uninterrupted extent may be obtained. Cardboard, sheet metal, or plywood may be used for the flat bases or plates of the units, and the imitation hedges, walls, fences or the like may be made of any suitable material. Sockets 14, Fig. 11 permanently secured on the units may be provided into which the ends of the tree stems 15 may be detachably engaged. Detachable covers 16, Fig. 15, may be provided for the units simulating types of rural surface different from those of any of the component units, and having means, such as a flanged edge 17 for engaging the side of the unit to be covered. In this way the appearance of any unit may be changed.

For example, by means of such detach-

able covers while the appearance of the composite landscape provided by the normal surfaces of the assembled units might be substantially green, by fitting yellow detachable covers to certain of the units the appearance of the landscape might be changed to include fields of ripening corn and in this way great variety in the artistic arrangement and resulting scenic effect is possible.

Though the hedges, walls, fences or the like boundary features are preferably permanently attached, these features may be made detachable, as shown in Fig. 16 to 18, and, with this object the boundary feature 9 may be provided at its base with a series of clips 18 for engaging the side of a unit 1 as shown in Fig. 18. If the hedge or boundary feature be made of some flexible material the separated clips 18 permit of it being bent to conform to and be secured along a curved or other contoured side of a unit as shown in Fig. 19. In place of metal clips the boundary features 9 may be fitted with rubber suction cups 19 to enable the hedge or the like not only to be set along the side of a unit, but at any other position in the landscape. Similarly, models of haystacks, 20, Fig. 22, or trees 10a, Fig. 23, may be fitted at their bases with rubber suction cups 19 enabling such elements to be detachably secured on the units wherever desired. Or such elements may have pins for attaching to the units.

The length of one or more of the straight sides of the units in a set or outfit may be based upon some arbitrary unit of length and the straight sides of all the units in a set be made equal to or some even multiple of that unit of length so that assembly of the units to fill an area and relative interchangeability of the several units will be facilitated.

Units in accordance with this invention are particularly suitable for building up an imitation rural setting for a toy railway track. Such an application is shown in Figs. 1, 24. 25, 26, and 27.

As the shape of the looped layouts of such tracks is dictated by the possible combinations of the usual curved and straight rail sections of which they are built, the model landscape units for use therewith are preferably made of such corresponding geometrical shapes that when assembled they will produce composite areas, the peripheral contours of which will correspond to those of the curved and straight stretches of the railway track 21. In this way the area within a circular loop of track may be entirely filled in with units 1, 3, and 3a, Figs. 1 and 25, assembled together and having a curved boundary conforming to that of the loop and similarly a series of units, 2, 2a, 4 and 4a, Figs. 1, may be fitted together outside the loop to follow closely the contour of the track on its exterior, so that the whole layout of a toy railway track may be caused to run entirely through model scenery representing a natural countryside, thus lending a greatly added charm and interest to the running of toy trains particularly when model tunnels 22 are disposed at advantageous positions along the track.

The radius of the curved sides 12 and 13 of certain of the units is arranged to be such that the curved boundary of the area of model scenery will be concentric with the curvature of the rail track, 21, and the diagonal length of the square units 1 may be made to correspond to the radius of curvature of the rail track 21, the segmental areas left between the sides of such square units and the surrounding rail curve being filled in with units 3 and 3a having rectangular and curved sides.

It is desirable also that the shorter sides of some rectangular units such as 5 and 5a, should be equal to the length of the straight sections 21a of the toy rails, so that any length of straight rail track may be readily provided with adjoining model scenery of the same length by assembling the requisite units together, and in the same way the width of the road elements 7 and of a narrow section 6 may be made half the length of a rail track section, as shown in Fig. 24.

While the units are preferably substantially flat, their surface may be made in relief as is indicated in the detachable cover, Fig. 15, but in that case in order to provide for complete interchangeability of position, and continuity of surface, it would be desirable that the complete peripheral edge of each unit should terminate in one plane.

The units may be assembled on, and, if necessary secured to, a baseboard 23, table, or other surface.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Means for constructing models of rural scenery of the type comprising a series of substantially flat component units printed, embossed or otherwise formed to simulate fields, ploughed land or the like and provided with hedges, trees or other rural features, wherein the units are of different profile shape so that they may be interchangeably assembled with their edges abutting to form continuous surfaces of mixed straight and curved boundary lines, the extent, con-

tours and composite scenic appearance of which may be changed by varying the relative positions of the units.

2. Units for constructing models of rural scenery, as claimed in Claim 1 having one or more sides provided with boundary features such as hedges, walls, fences, or the like, permanently or detachably connected to the units.

3. Units for constructing models of rural scenery, as claimed in Claim 2 in which the boundary features are provided with clips, pins or suction cups for detachably connecting them to the units.

4. Units for constructing models of rural scenery, as claimed in Claim 2 in which the boundary features are made flexible so that they may be bent to conform to the contour of the edge of a unit.

5. Detachable covers for units for constructing models of rural scenery, as claimed in Claim 1, the covers being printed, embossed, or otherwise formed to represent types of rural surface and having means for securing them in position on the units.

6. A set of units for constructing models of rural scenery, as claimed in Claim 1, in which the length of certain of the straight sides of some or all the units is based upon an arbitrary unit of length, being equal to, or even multiples of, that unit of length.

7. In combination with a toy railway track, units for constructing models of rural scenery, as claimed in Claim 1, the peripheral contours of which are designed to fit the interior or exterior of the curved formation of the track.

8. In combination with a toy railway track, a set of units for constructing models of rural scenery, as claimed in Claim 1, in which the length of certain of the straight sides of some of the units corresponds to the length of a straight section of the toy rails.

9. Means for constructing models of rural scenery by assembling a series of component units substantially as described and shown in Figs. 1 to 27 of the accompanying drawings.

Dated this 17th day of January, 1933.

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Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1933.

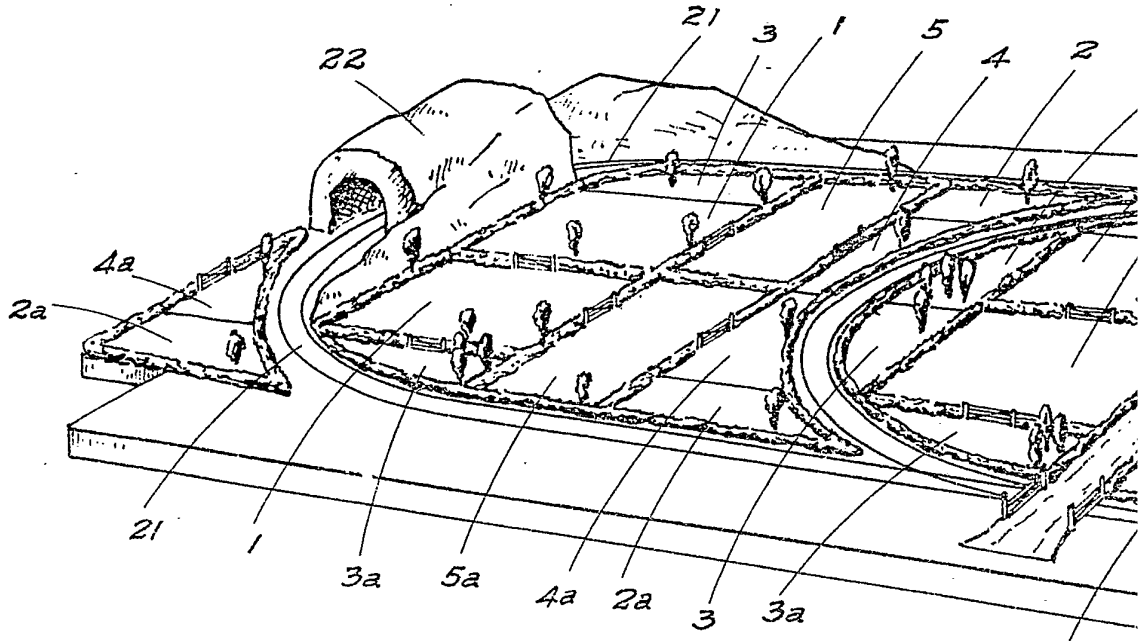


FIG. 1.

FIG. 2.

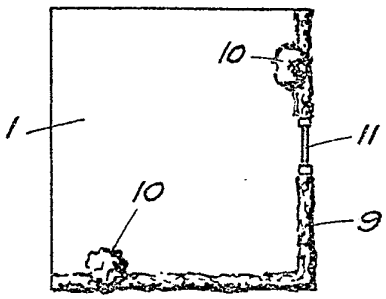
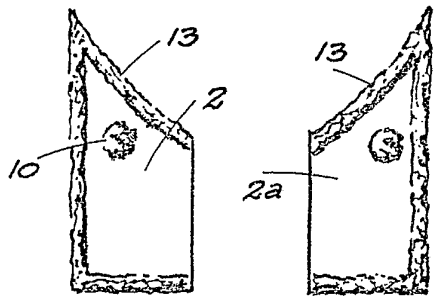


FIG. 3.



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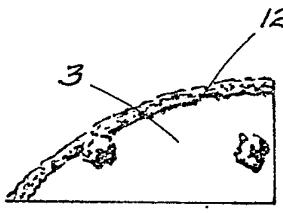


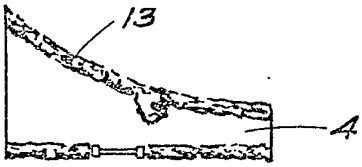


FIG. 6.

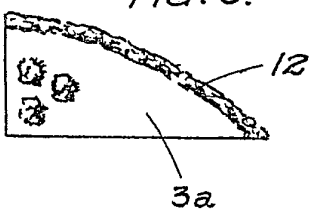
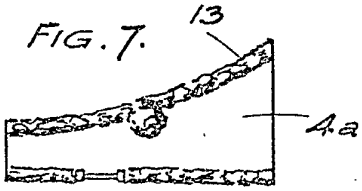
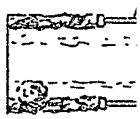


FIG. 7.





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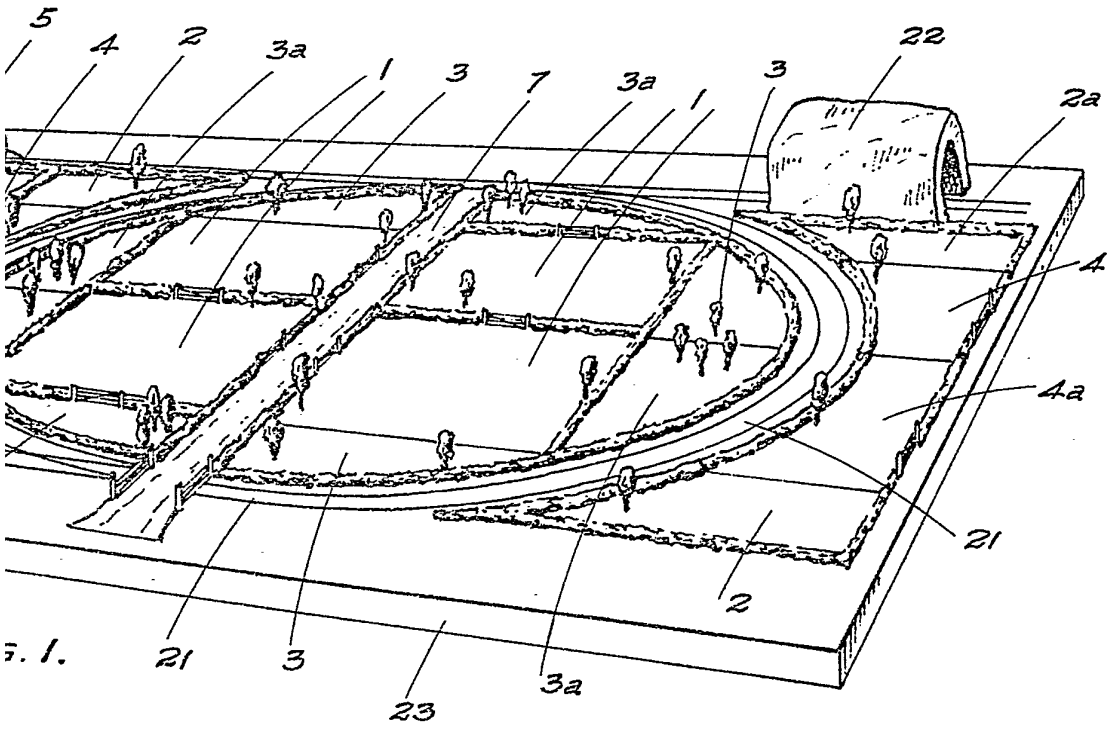
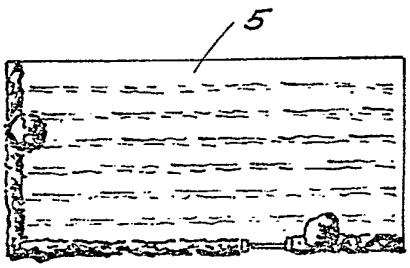


FIG. 1.

FIG. 4.

FIG. 5.



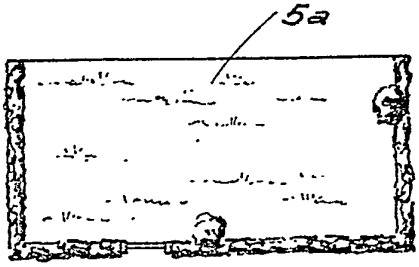
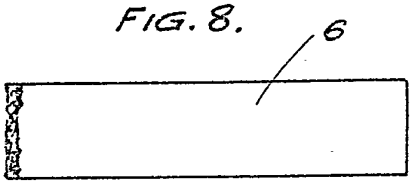


FIG. 8.



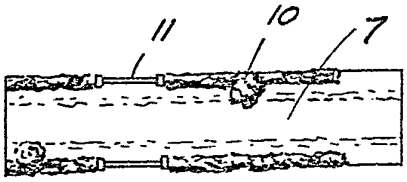


FIG. 9.

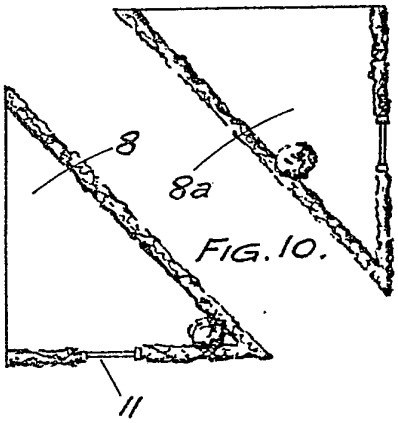


FIG. 10.

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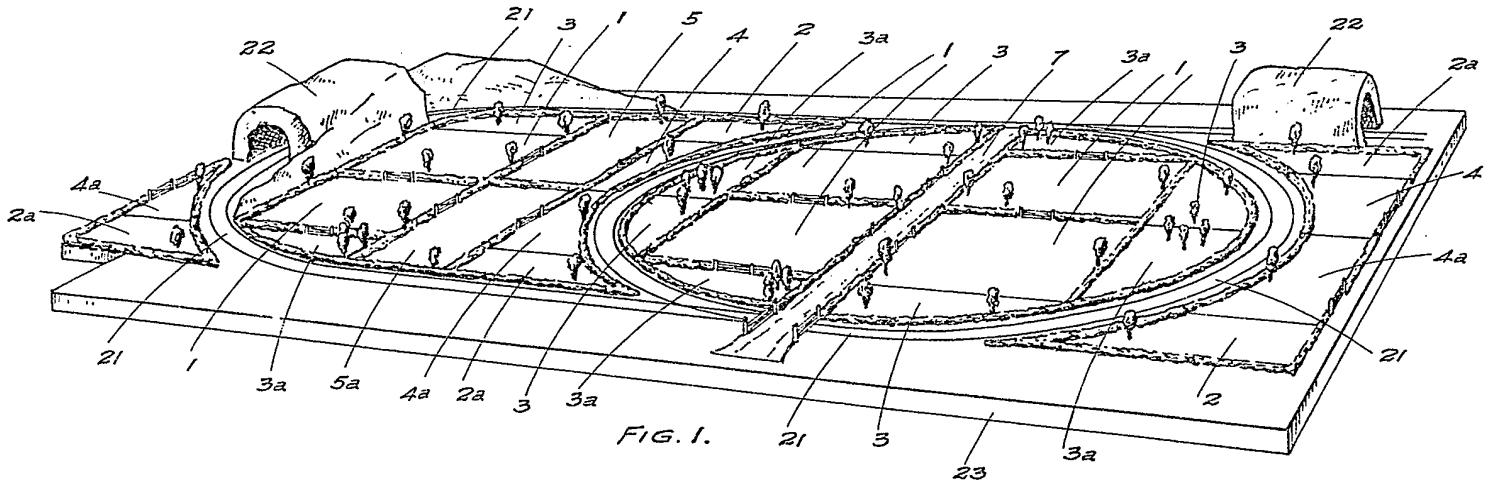


FIG. 1.

FIG. 2.

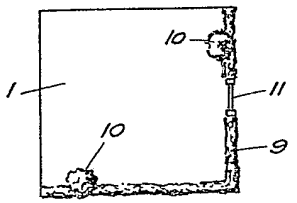


FIG. 3.

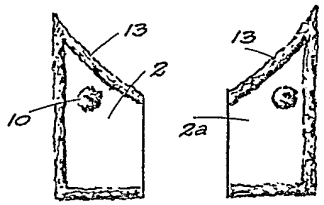


FIG. 4.

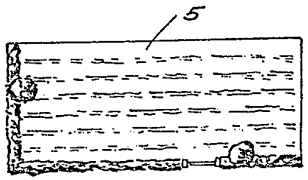
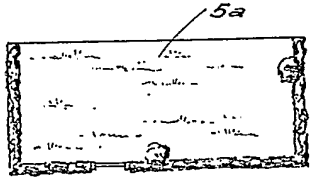
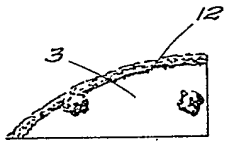


FIG. 5.





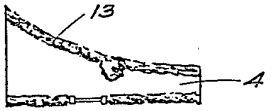
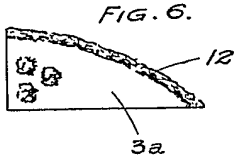


FIG. 6.



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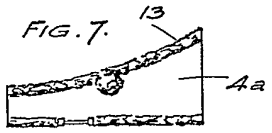

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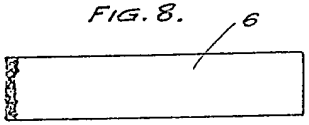

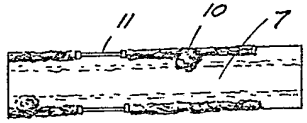

FIG. 9.

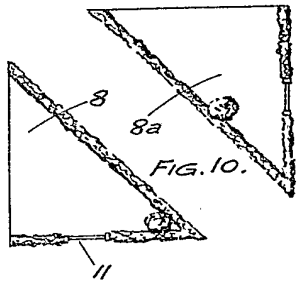

FIG. 10.

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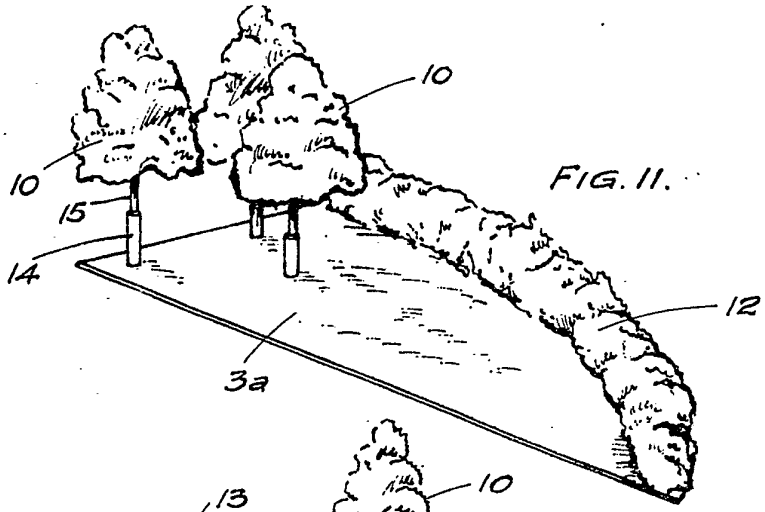


FIG. 11.

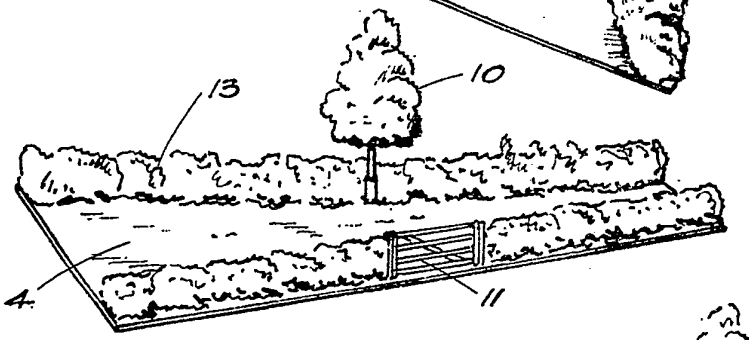
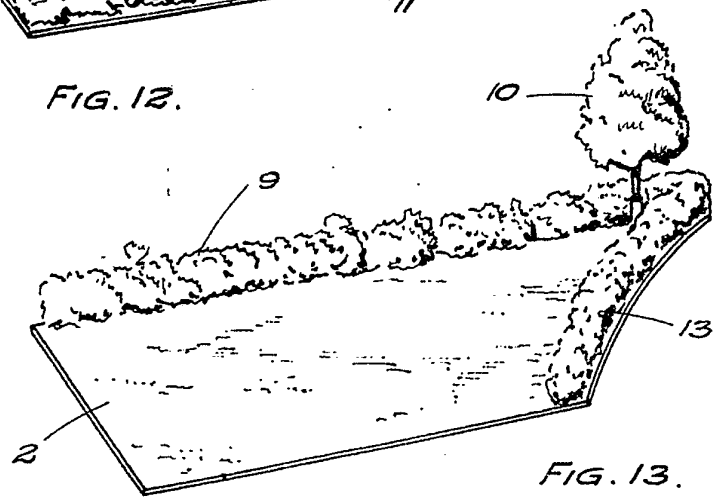


FIG. 12.



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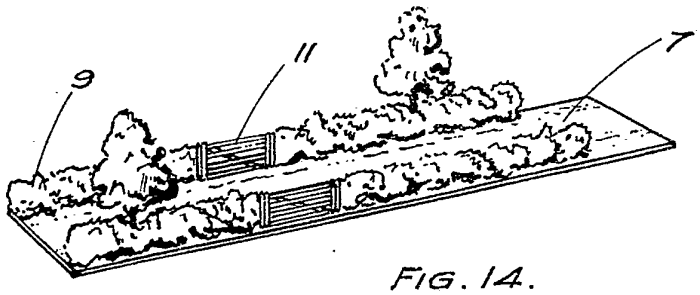

FIG. 14.

FIG. 16

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FIG. 17

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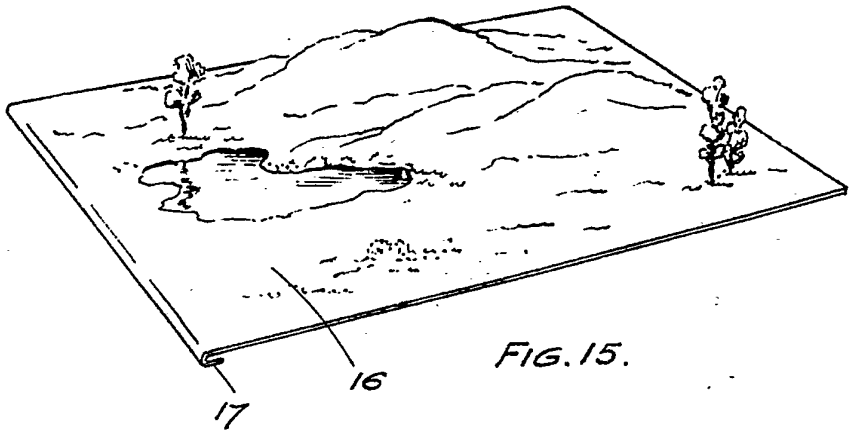
FIG. 22.



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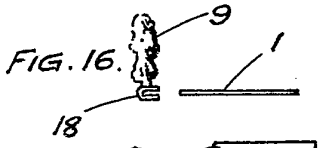


FIG. 16.

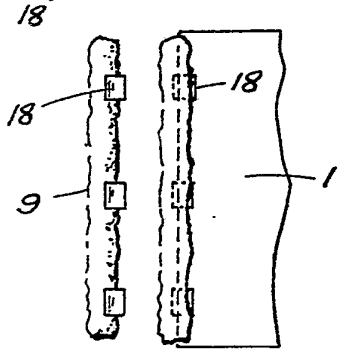
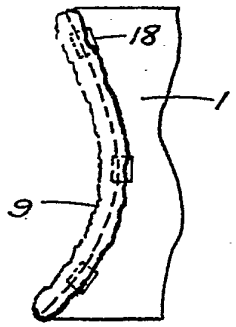


FIG. 17. FIG. 18.



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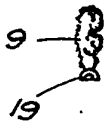


FIG. 20.

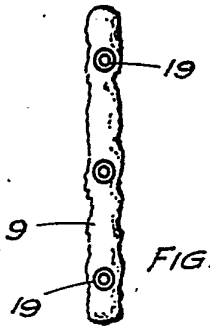
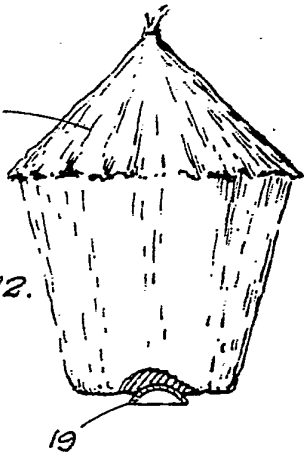


FIG. 21.



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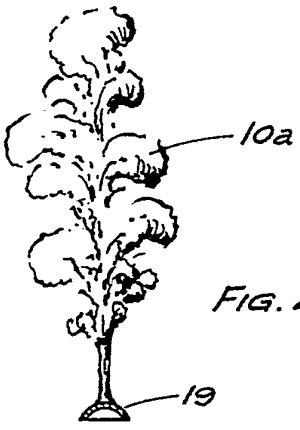


FIG. 23.

Malby & Sons, Photo-Litho.

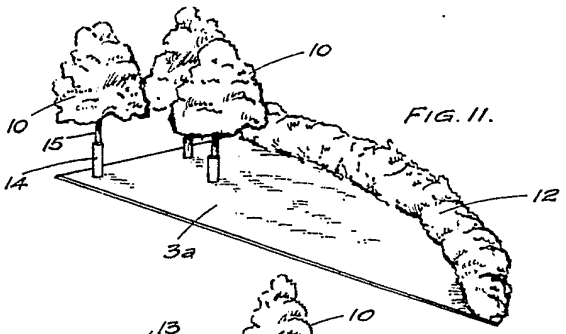
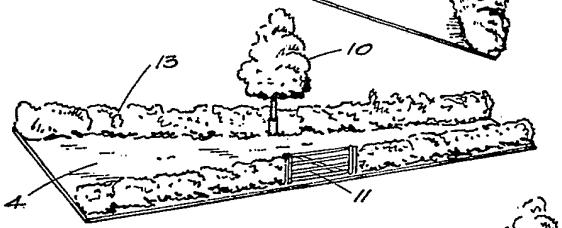


FIG. 11.



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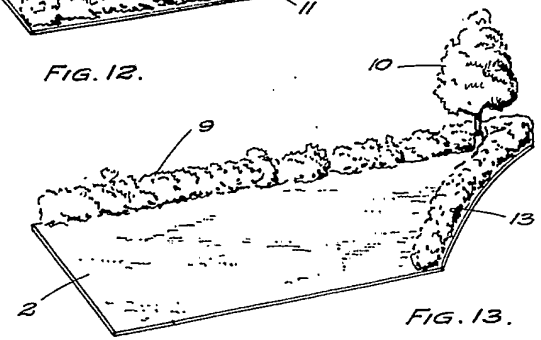

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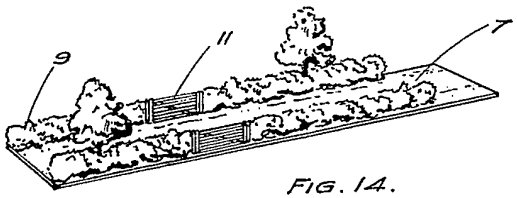
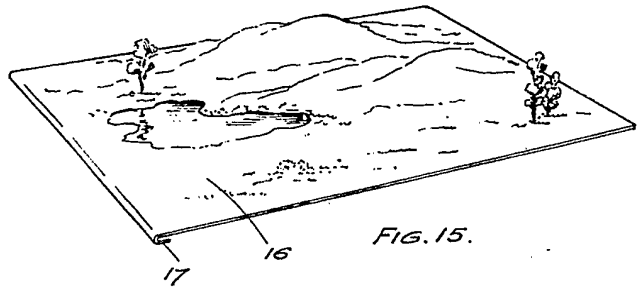


FIG. 14.



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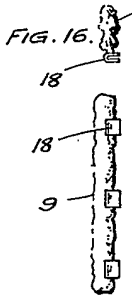


FIG. 16.

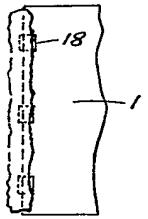
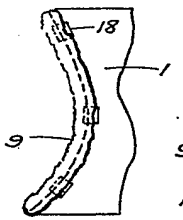


FIG. 17.

FIG. 18.



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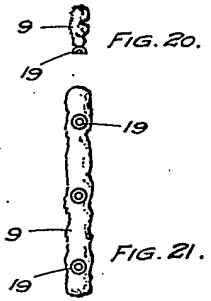


FIG. 20.

FIG. 21.

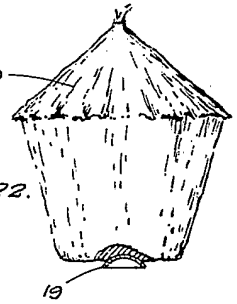


FIG. 22.

FIG. 23.

Malby & Sons, Photo-litho.

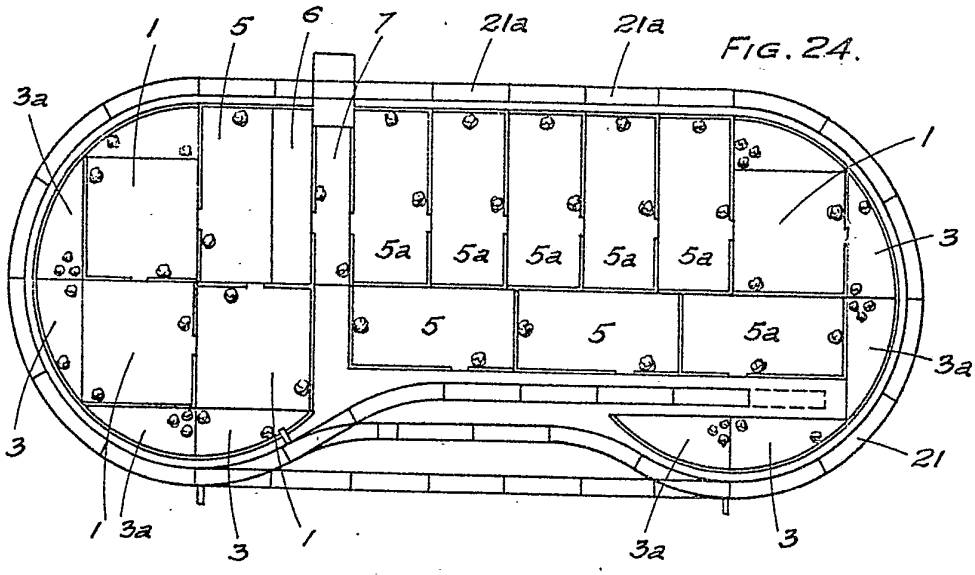
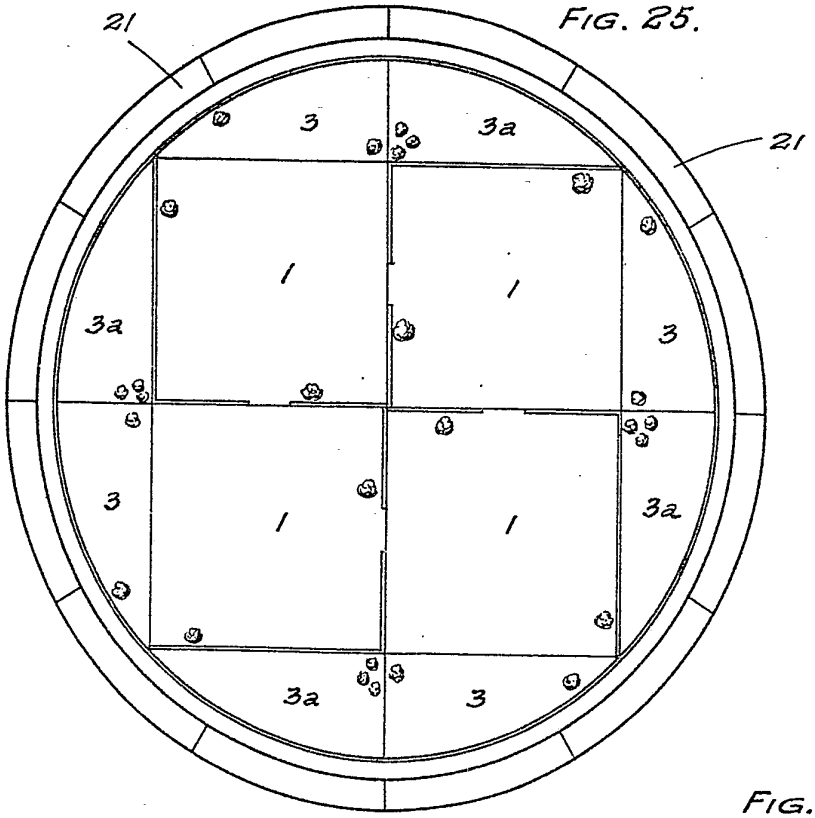


FIG. 24.



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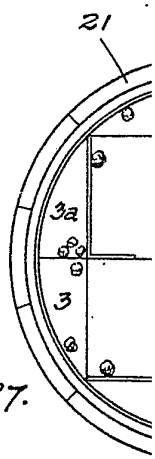
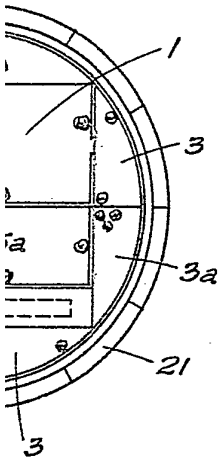


FIG. 27.

G. 24.



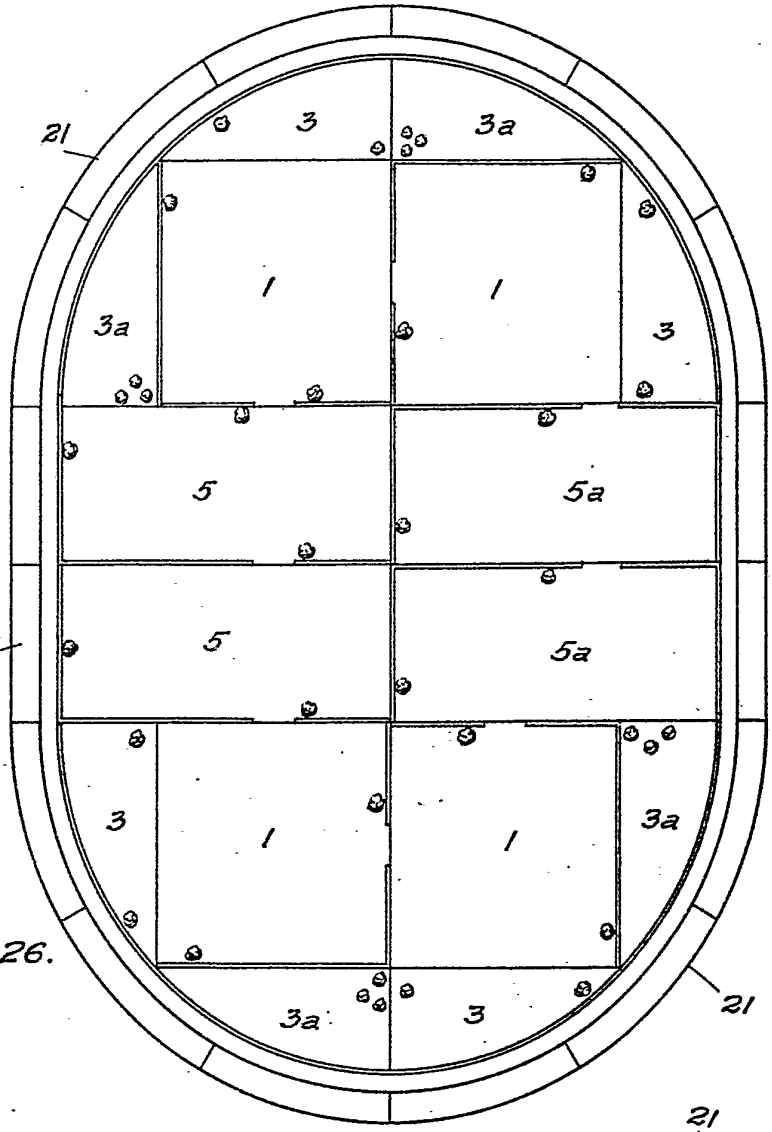


FIG. 26.

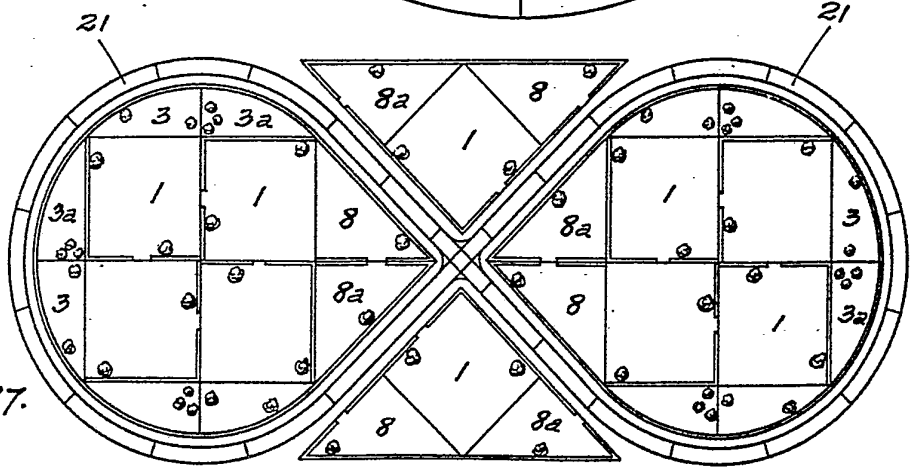


FIG. 27.

Malby & Sons, Photo Litho.

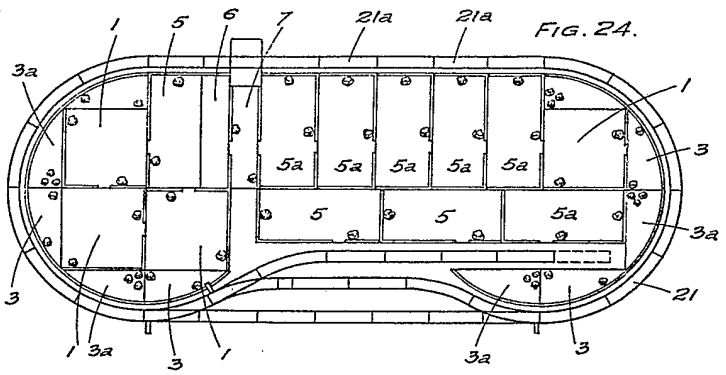
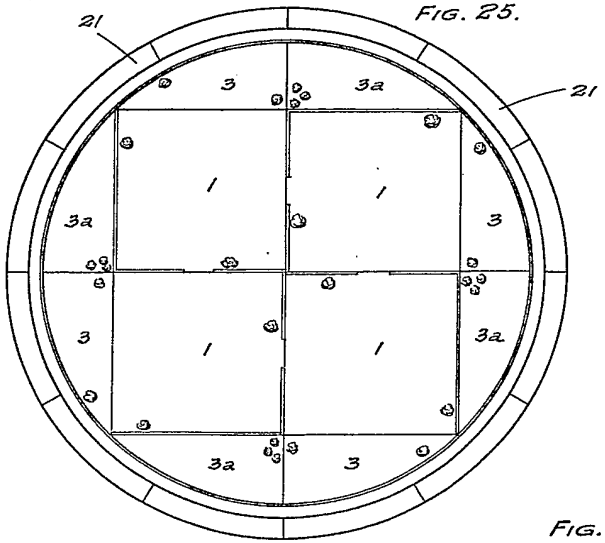


FIG. 24.



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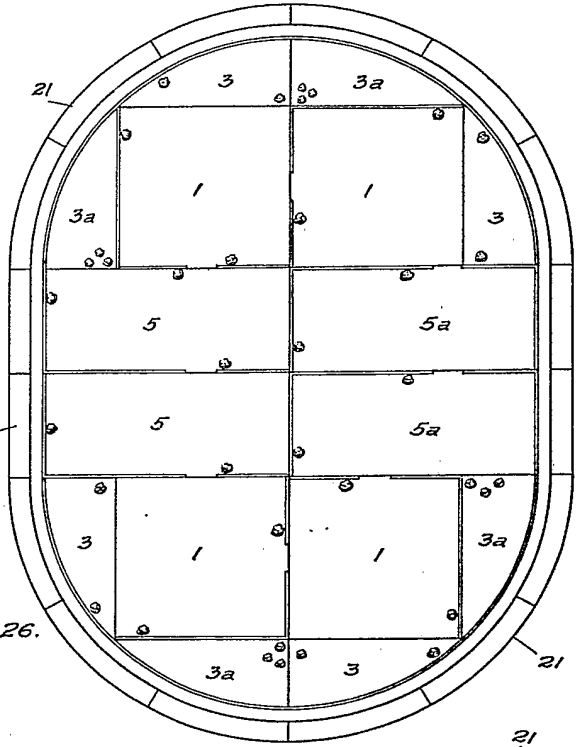

FIG. 26.

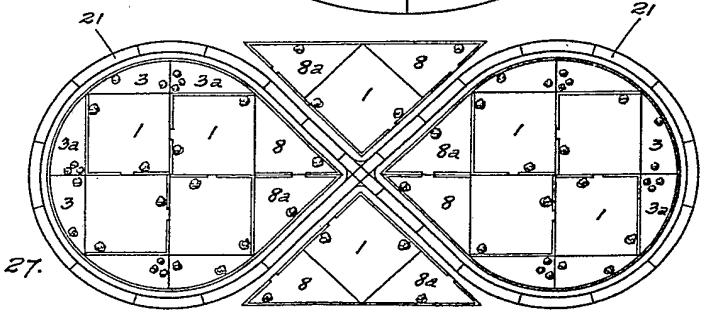

FIG. 27.

Malby & Sons, Photo Litho.