Feb. 11, 1941. T. RORER 2,231,089

TOY HIGHWAY

Filed March 7, 1939 3 Sheets-Sheet 1

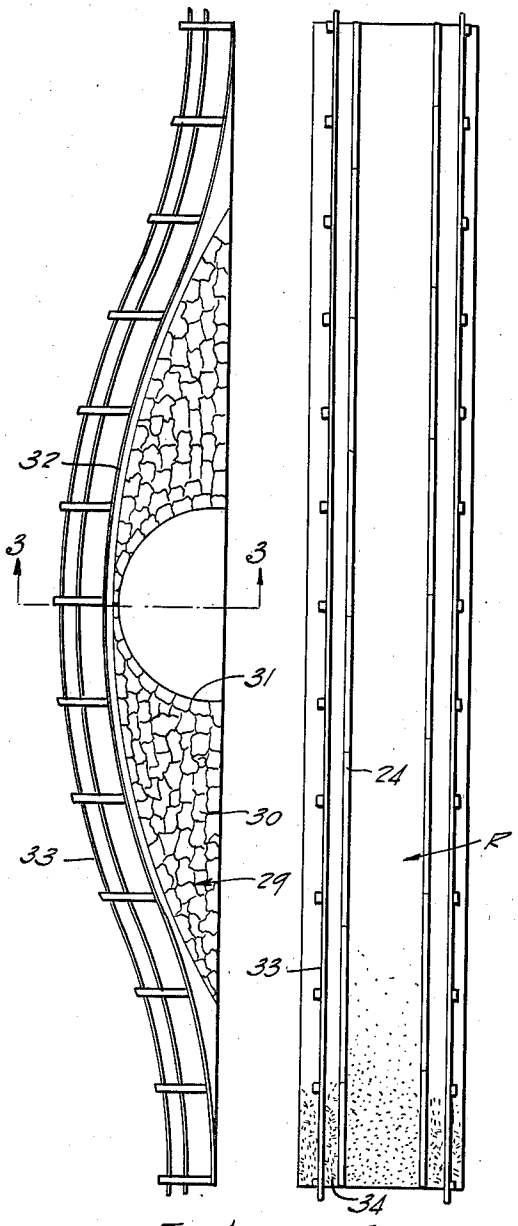

FIG. 1 FIG. 2

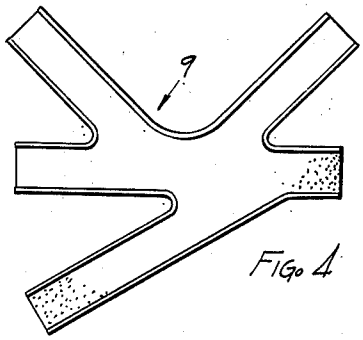

FIG. 4

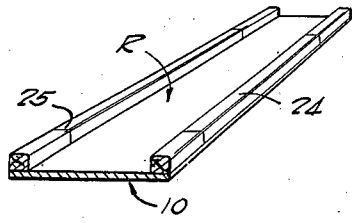

FIG. 5

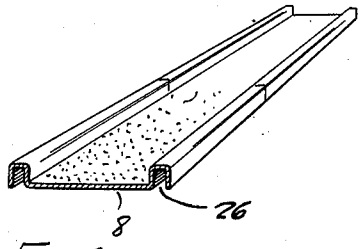

FIG. 6

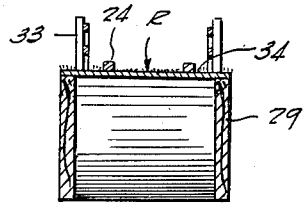

FIG. 3

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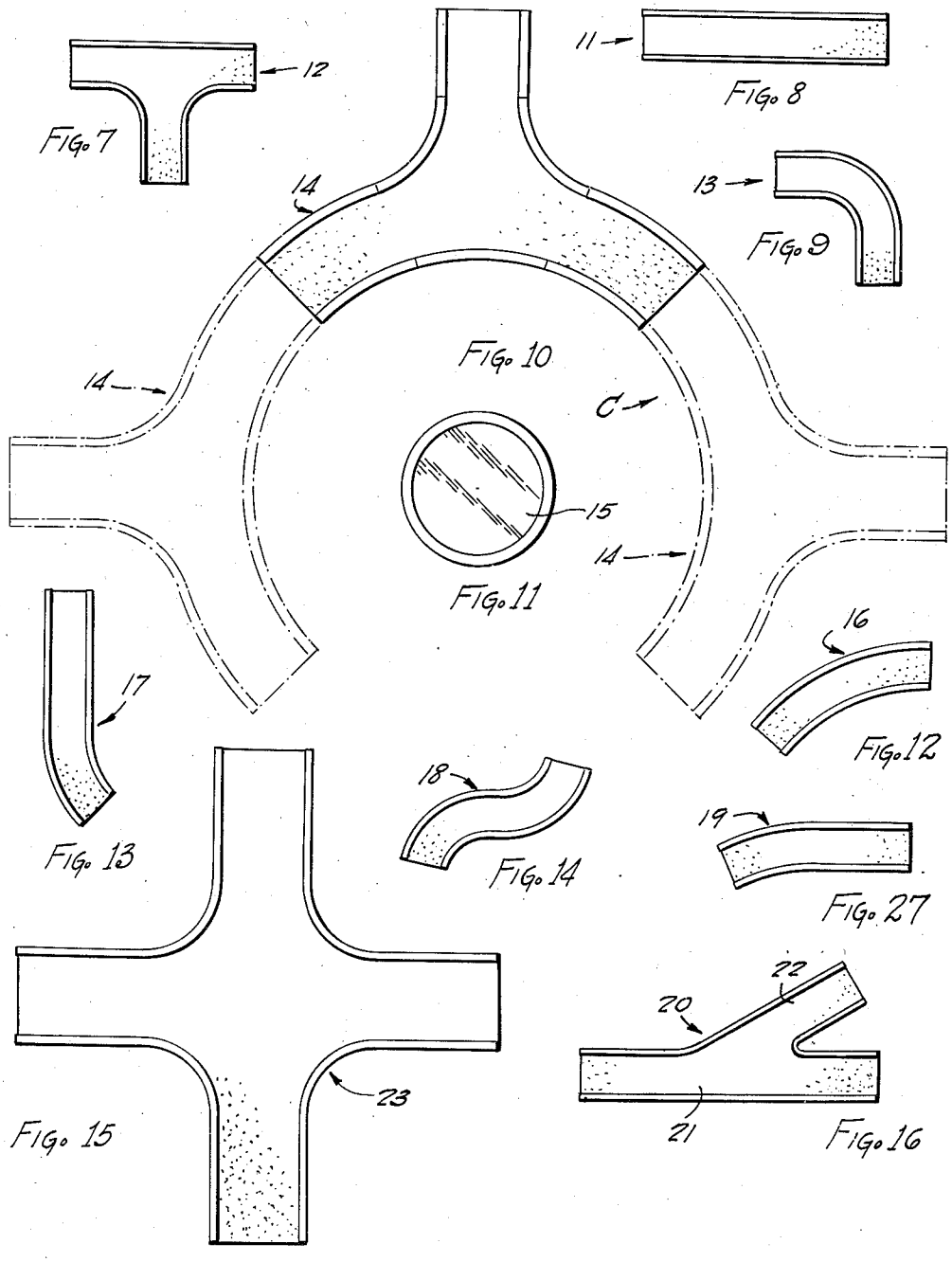

FIG. 7

FIG. 8

FIG. 9

FIG. 10

FIG. 11

FIG. 12

FIG. 13

FIG. 14

FIG. 27

FIG. 15

FIG. 16

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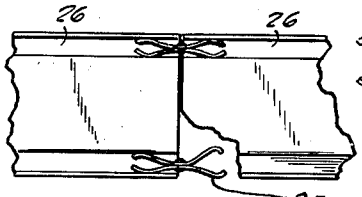

FIG. 17

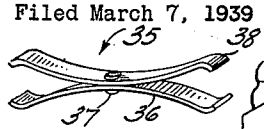

FIG. 18

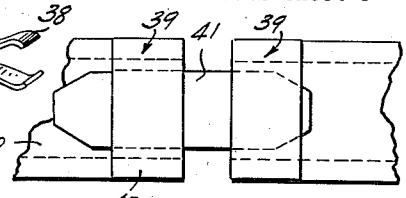

FIG. 19

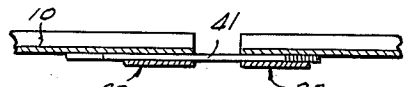

FIG. 20

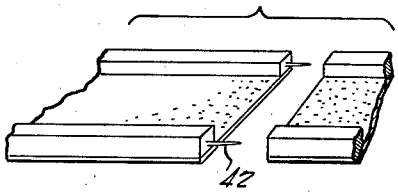

FIG. 21

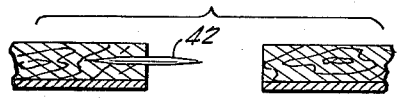

FIG. 22

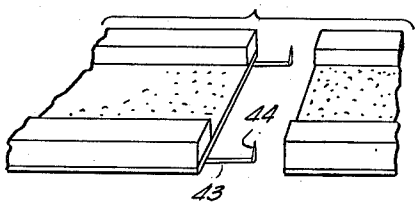

FIG. 23

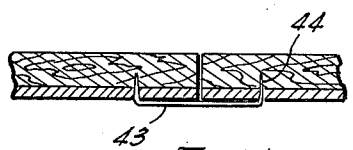

FIG. 24

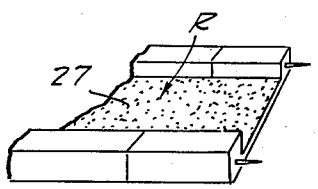

FIG. 25

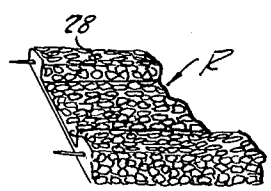

FIG. 26

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Patented Feb. 11, 1941 2,231,089

UNITED STATES PATENT OFFICE

2,231,089

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Thomas Rorer, Hatfield, Pa., assignor of one-third to Horace H. Smith, Pennsburg, Pa., and one-third to Harry I. Kulp, Lansdale, Pa.

Application March 7, 1939, Serial No. 260,265

2 Claims. (Cl. 46—1)

This invention relates to toys of the structural type and is concerned primarily with the provision of a toy or miniature highway.

The invention has in view, as an object, the provision of a structural toy comprising a plurality of units, each unit being provided with means for detachably connecting the same to another unit whereby various highway formations may be simulated in miniature.

An important object of the invention is the provision of such a toy including various units certain ones of which are characteristically distinct from others and identify peculiar parts of highways. Thus one unit is a miniature curve, another a miniature crossroad, another a T crossing, yet another a five-point crossing, still another the component parts of traffic circles, Y's, etc.

In providing a toy highway of the character above noted it becomes important to provide means for detachably connecting adjacent units together. Accordingly, an important object of the invention is the provision of such means.

Still another object of the invention is the provision of a toy highway of the character above set forth in which each unit is stamped from sheet metal. In this connection another important feature of the invention is the provision of means for detachably connecting the sheet metal units.

Still another object in view is the provision of a sheet metal unit of the character above noted which is provided with a curbing at each side intended to simulate the curbing ordinarily included in roadways.

Another object of the invention is the provision of a toy highway comprising a plurality of units, as above indicated, each of which units comprises a cardboard or similar composition base and which base carries curbing at each side.

Inasmuch as the toy of this invention is intended to be arranged to simulate highways it is important that the roadbed of each unit actually resemble the roadbed of a highway.

Hence another object of the invention is the provision, in a toy highway, of roadbeds constituting structural representations of the roadbeds of highways. In obtaining this objective an adhesive is first applied to the surface of the roadbed, and a material such as sand sprinkled thereover. Thus a close simulation of the surface of a highway is provided.

As above pointed out, the toy in intended to include certain units as representations of such highway constructions as traffic circles, culverts, bridges, etc., and an important object of the invention is the provision of such units with means for providing proper scenic effects. Thus a traffic circle ordinarily includes a central plot of grass, and certain units of the toy must be provided with means for effecting the required representation.

Another highly important object of the invention is the provision of connecting means of the type noted above which are peculiarly designed for the construction of the particular units with which they are used. Thus one type of connecting means may be employed when the units are made from sheet metal, while a different type is employed with the cardboard or composition roadbed.

Various other more detailed objects and advantages of the invention will in part become apparent, and in part be hereinafter stated, as the description of the invention proceeds.

The invention, therefore, comprises a structural toy composed of a plurality of units which are adapted to be arranged together to form miniature highways. Each unit is intended to be a representation of a particular highway formation, and is provided with means for detachably connecting the same to adjacent units. Each unit may be of a sheet metal or cardboard construction, and in either event carries curbing simulating the usual curbing of roadbeds. Particular features of the invention are the actual construction of the unit parts, and the particular type of means employed for connecting the different types of units together.

For a full and more complete understanding of the invention reference may be had to the following description and accompanying drawings, wherein

Figure 1 is a side elevational showing of a bridge unit,

Figure 2 is a top plan view of the unit shown in Figure 1,

Figure 3 is a section taken about on the plane represented by the line 3—3 of Figure 1,

Figure 4 is a top plan view of a unit representing a five-point crossing,

Figure 5 is a perspective view of a straight unit in which the roadbed is made from cardboard or composition and carries wooden curbing at each side,

Figure 6 is a perspective view of a straight unit made from sheet metal,

Figure 7 is a top plan view of a unit representing a T crossing,

Figure 8 is a top plan view of a straight unit,

Figure 9 is a top plan view of an elbow bend,

Figure 10 is a top plan view showing how certain Y units are arranged to form a circle,

Figure 11 is a top plan view of a part representing the center of a traffic circle,

Figure 12 is a top plan view of a bend unit,

Figure 13 is a top plan view of a different type bend,

Figure 14 is a top plan view of an S curve,

Figure 15 is a top plan view of a cross road unit,

Figure 16 is a top plan view of one type of Y unit,

Figure 17 is a bottom plan view with parts broken away showing the manner in which certain sheet metal units are joined together,

Figure 18 is a perspective view of a connecting means,

Figure 19 is a bottom plan view showing the connecting structure for the units having a cardboard composition roadbed,

Figure 20 is a longitudinal section taken normal to the showing of Figure 19,

Figure 21 is an enlarged detailed view in perspective bringing out another type of connecting structure,

Figure 22 is a sectional view through the curbing at one side of the structure shown in Figure 21,

Figure 23 is a view similar to Figure 21, developing still another type of connecting means,

Figure 24 is a section through the curbing of one side of the structure of Figure 23,

Figure 25 is an enlarged detailed view in perspective bringing out the construction of the roadbed simulating a highway construction,

Figure 26 is a view similar to Figure 25 showing the units as made to simulate a snow covered highway, and

Figure 27 is a top plan view of a curbing unit.

Referring now to the drawings, wherein like reference characters denote corresponding parts, the structural toy is illustrated as comprising a plurality of units each of which represents a highway formation. Thus the unit referred to as 9 in Figure 4 simulates a five-point crossing. The unit 11 of Figure 8 represents a straight section of roadway. The unit 12 of Figure 7 is a miniature of a T crossing. The unit 13 of Figure 9 simulates an elbow bend.

Figure 10 shows a traffic circle which is referred to in its entirety by the reference character C, and which is made from a plurality of Y units each of which is identified as 14. The center of the circle C is represented by a piece, such as a mirror 15. Figure 12 shows a unit 16 that represents one type of curve, while Figure 13 shows a similar unit 17 developing still another type of curve.

Figure 14 brings out a unit 18 in simulation of an S curve. Figure 27 shows still another type of curve unit designated 19. A Y unit is referred to generally at 20 in Figure 16, and is shown as consisting of a straight highway section 21, with a branch 22 inclined with respect thereto. A unit cross road is designated 23 and is shown in Figure 15.

Each of the units 9, 11, 12, 13, 14, 16, 17, 18, 19, 20 and 23 may be made from any appropriate structure, although this invention has particularly in mind the use of one of the structures depicted in either Figure 5 or Figure 6.

In accordance with the showing of Figure 5, the roadbed of the highway which is referred to as R is made from a cardboard or suitable composition base, such as shown at 10, and which base carries curbing 24 at each side. The curbing is made from wood that may be joined to the cardboard base 10 as by an adhesive. Inasmuch as the curbing of the usual highways is made in sections, the curbing 24 is marked off in sections, as depicted at 25.

Another contemplated construction for the various units is to stamp the same from sheet metal, in which event the construction of Figure 6 is formed. In such a construction, both the roadbed R and the curbing at each side are made from a single sheet of sheet metal designated 8. This sheet metal is formed with a channel structure 26 at each side in representation of the curbing.

Referring for the moment more particularly to Figures 5 and 25, it will be noted that Figure 5 shows the roadbed R as substantially smooth. This view is intended to bring out the condition of the unit prior to application of the "highway surface." The roadbed R may be coated with a suitable adhesive such as sodium silicate and then sprinkled with a granulated material such as sand, the same being designated 27 in Figure 25. Any desired coloring material may be included with the adhesive and/or the granulated material to give a roadbed of any desired color.

Inasmuch as highways are often covered with snow it might be desirable to provide certain units in representation of a snow covered highway. In such event, rather than sprinkling the adhesive coated roadway with a granular material, a crystal or flake-like material may be sprinkled thereover. Thus a snow or ice covered roadway is closely simulated. Figure 26 develops such a construction, and in this modification the crystals 28 cover the curbings at the side as well.

Referring now more particularly to Figures 1, 2 and 3, the bridge unit there illustrated will be described. Such unit comprises side pieces 29 which may, as shown at 30 in Figure 1, be made to represent a rock construction. These side pieces may be cut out to form a recess at 31 to represent the arch of a bridge. These side pieces 29 have upper arcuate curved edges 32 to which is applied the roadbed R. This roadbed R will carry the usual curbing at 24, and exterior of the curbings 24, in spaced relation thereto, rails 33.

Between the rails 33 and the curbings 24 the roadbed R may be provided with a suitable material providing the required scenic effects. Thus the strips 34 may be made to represent grass plots.

Each of the units above described is intended to be joined with another unit of similar construction, although of different design. Thus any of the units 9, 11, 12, 13, 14, 16, 17, 18, 20 and 23 of sheet metal may be joined with any other sheet metal unit. Also any of these units which are made with the cardboard base roadbed may be joined to any other unit of similar construction.

When the sheet metal construction is employed the connecting means brought out in Figures 17 and 18 is preferably employed. A connecting device is intended to be associated with the channel structure 26 at each side, as brought out in Figure 17. This connecting device, which is referred to in its entirety by the reference character 35, comprises a pair of leaf springs 36 of bowed formation which are joined together centrally thereof, as indicated at 37, so as to present flared end portions the extremities of which are turned inwardly, as shown at 38.

Thus one-half of the device 37 may be inserted in one channel 26, and the flared portions of the springs 36 will be compressed to frictionally en-

gage the sides of the channel. In a similar way the other half of the device will be inserted in a channel 26 of the next adjacent unit to complete the connection.

A highly preferred type of connecting structure for use with the roadbeds R of cardboard or composition is brought out in Figures 19 and 20. In this arrangement each end of each unit carries a strip 39 on its underface, and which strip is joined to the bottom face of the base 10 only at the side edges, as represented at 40. Thus the intermediate portion of each strip is free from the base 10.

A connecting tongue 41 is inserted between the strip and the base of one unit, and also between the strip and base of the next adjacent unit, and the frictional engagement detachably maintains the assembled relationship.

Figures 21 and 22 bring out still another form of connecting device for the unit including the wooden curbing. Thus the curbing of each unit at one end carries pins 42 that are embedded therein, and these pins are intended to penetrate the wooden curbing of the next adjacent unit to establish the connection.

A somewhat different type of pin arrangement is brought out in Figures 23 and 24. In this form the connecting means takes the form of a staple-like member 43 having a back or base terminating in upturned points 44. These points 44 are intended to pierce the cardboard base 10 and the wooden curbing thereabove, as clearly brought out in Figure 24.

While preferred specific embodiments of the invention are hereinbefore set forth it is to be clearly understood that the invention is not to be limited to the exact constructions illustrated and described, because various modifications of these details may be provided in putting the invention into practice within the purview of the appended claims.

I claim:

1. In a toy transportation system, a pair of miniature road sections each comprising a roadbed, and curbing at each side, said roadbed and curbing being stamped from sheet metal with the curbing defined by open channel structures, said channel structures opening onto the underside of said sections and a frictional fastening device received in adjacent channel structures to detachably maintain the units in assembled relationship.

2. In a toy transportation system, a pair of miniature road sections each comprising a roadbed, and curbing at each side, said roadbed and curbing being stamped from sheet metal with the curbing defined by open channel structures, said channel structures opening onto the underside of said sections and a frictional fastening device received in adjacent channel structures to detachably maintain the units in assembled relationship, said fastening device comprising a pair of leaf springs of bowed formation joined together at the center.

THOMAS RORER.