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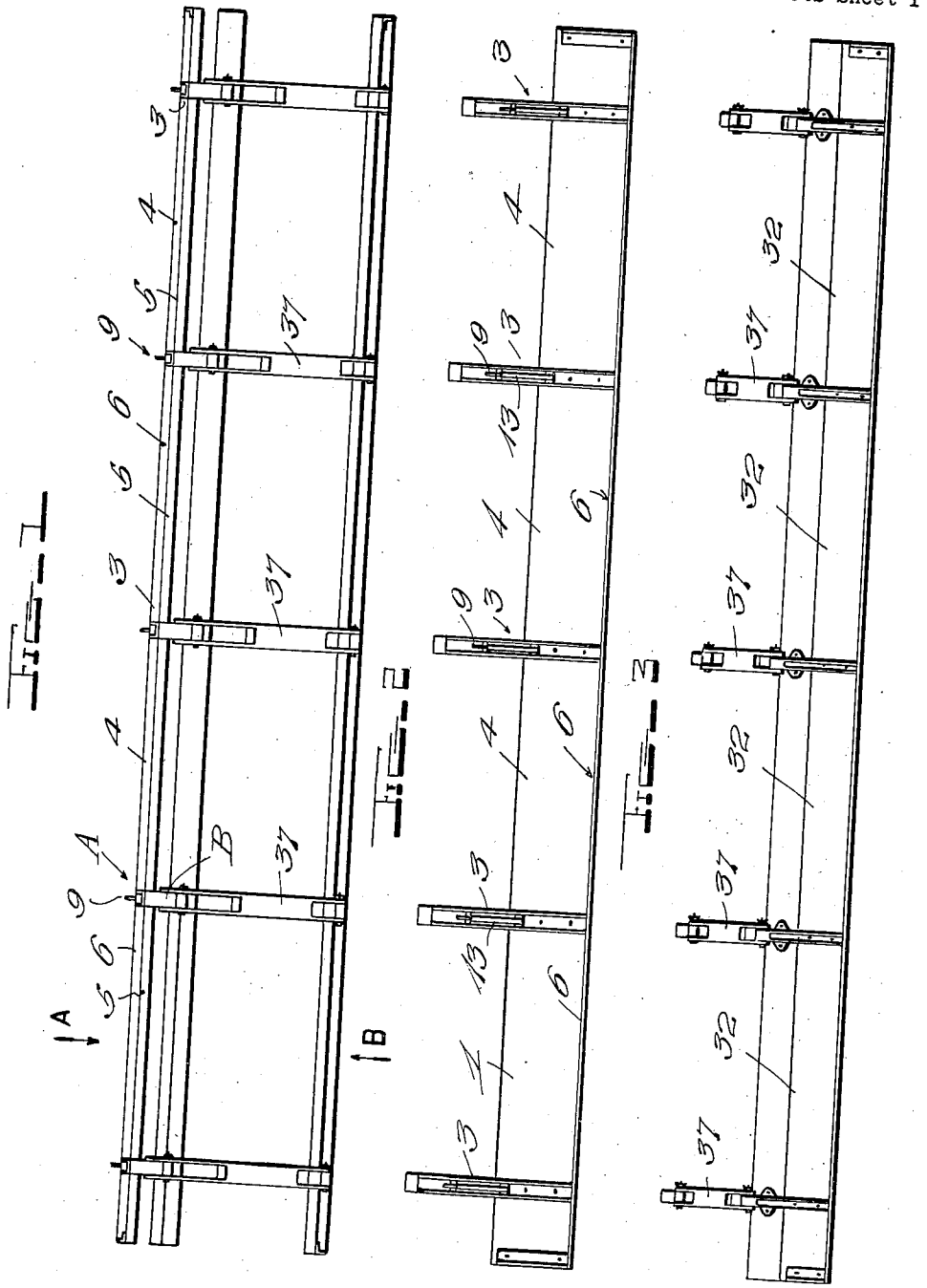
E. M. FORBES

2,260,447

CURB AND GUTTER FORM

Filed April 26, 1939

6 Sheets-Sheet 1



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CURB AND GUTTER FORM

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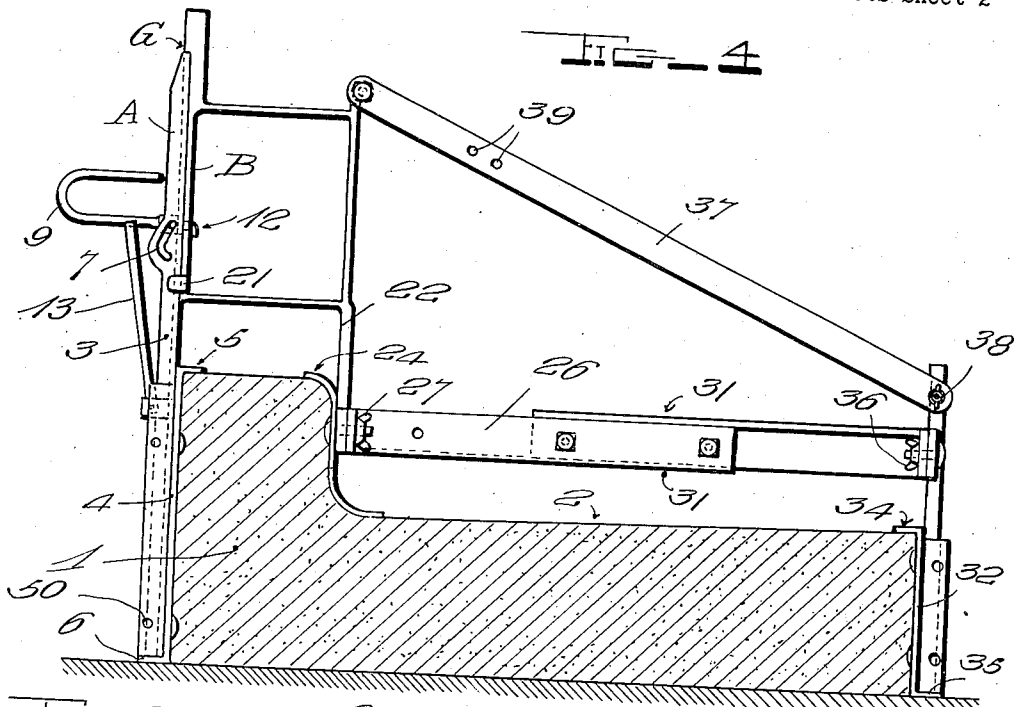


FIG. 4

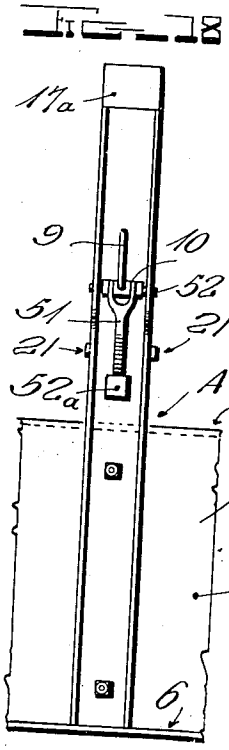


FIG. 18

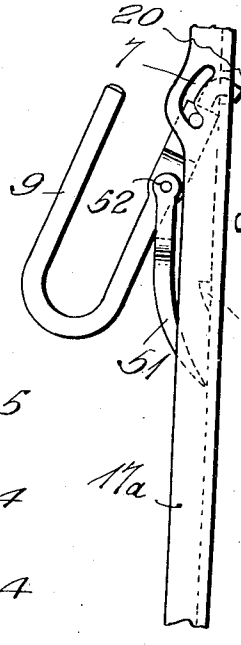


FIG. 19

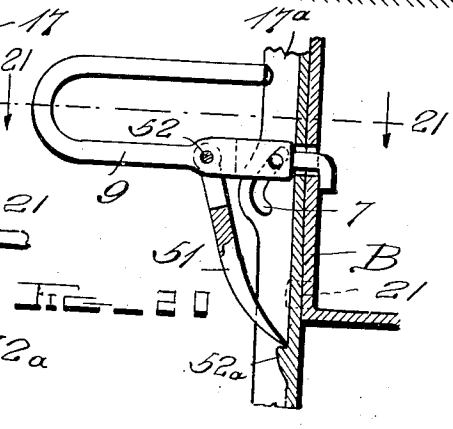


FIG. 20

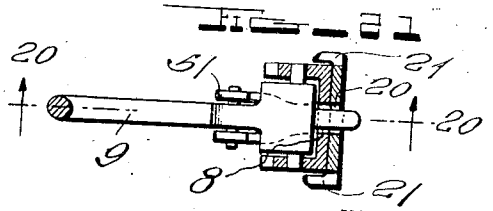


FIG. 21

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CURB AND GUTTER FORM

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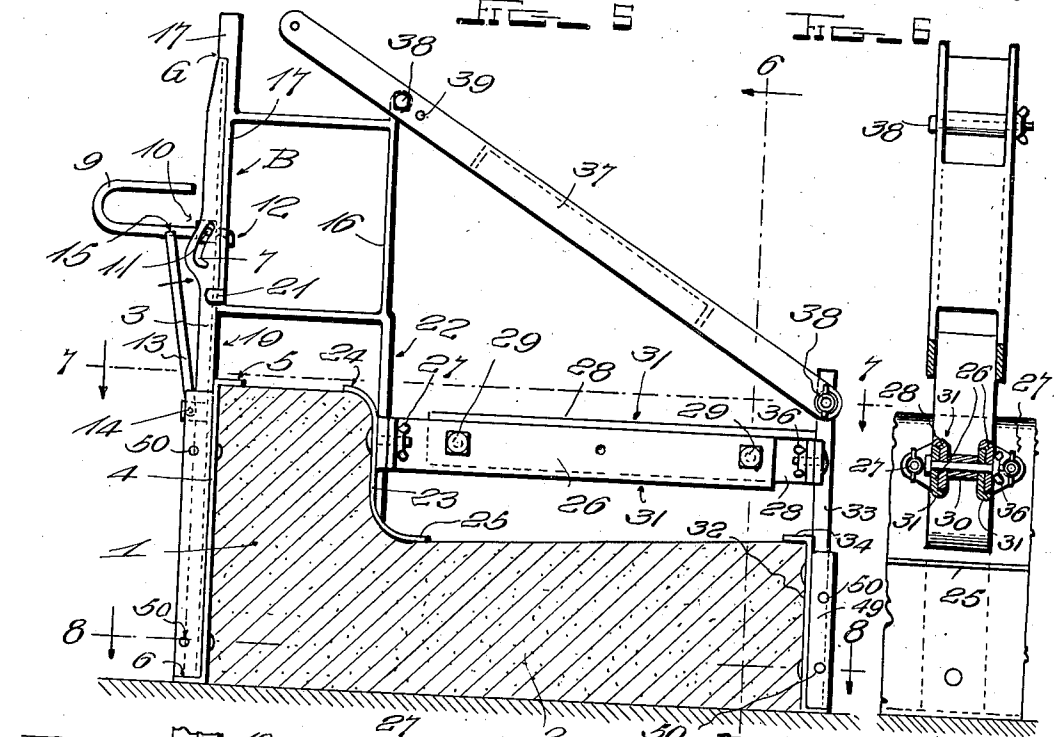


FIG. 5

FIG. 6

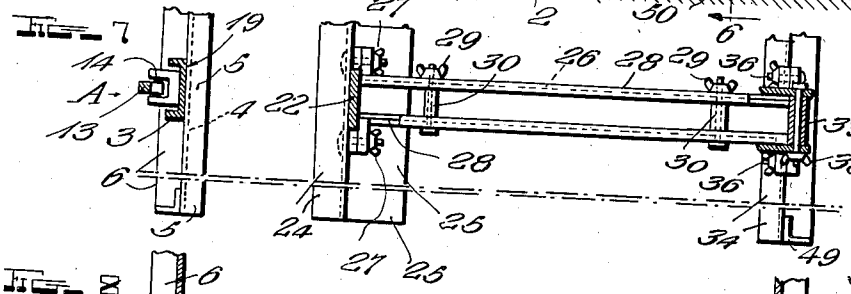


FIG. 7

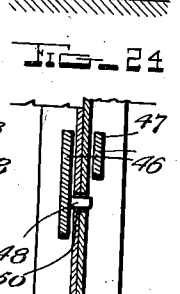


FIG. 24

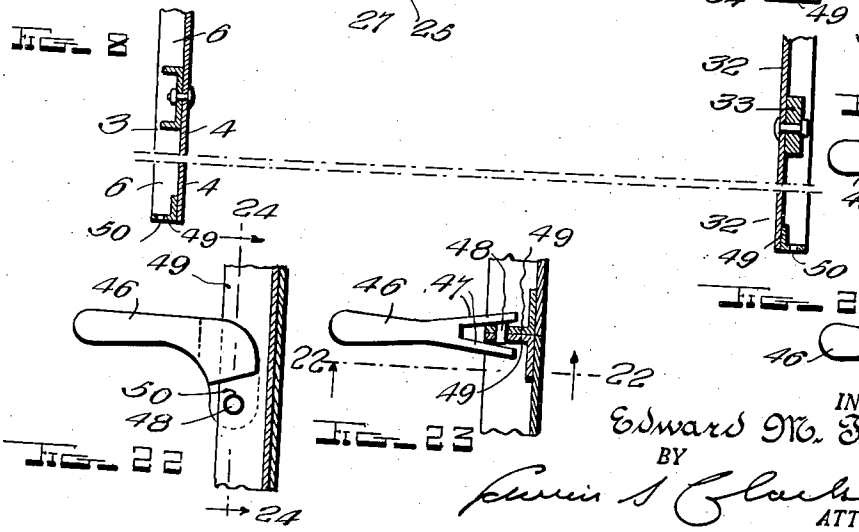


FIG. 8

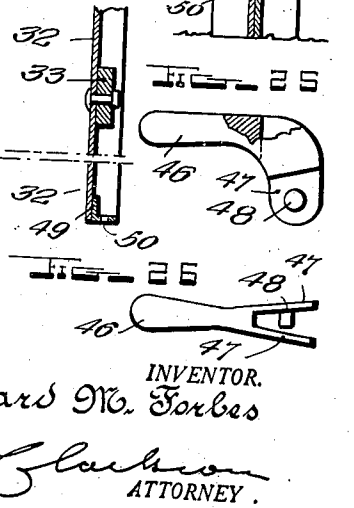


FIG. 25



FIG. 22



FIG. 23

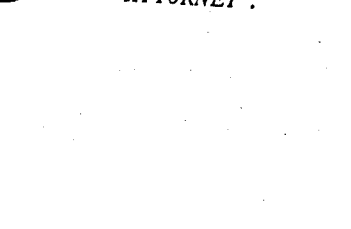


FIG. 26

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CURB AND GUTTER FORM

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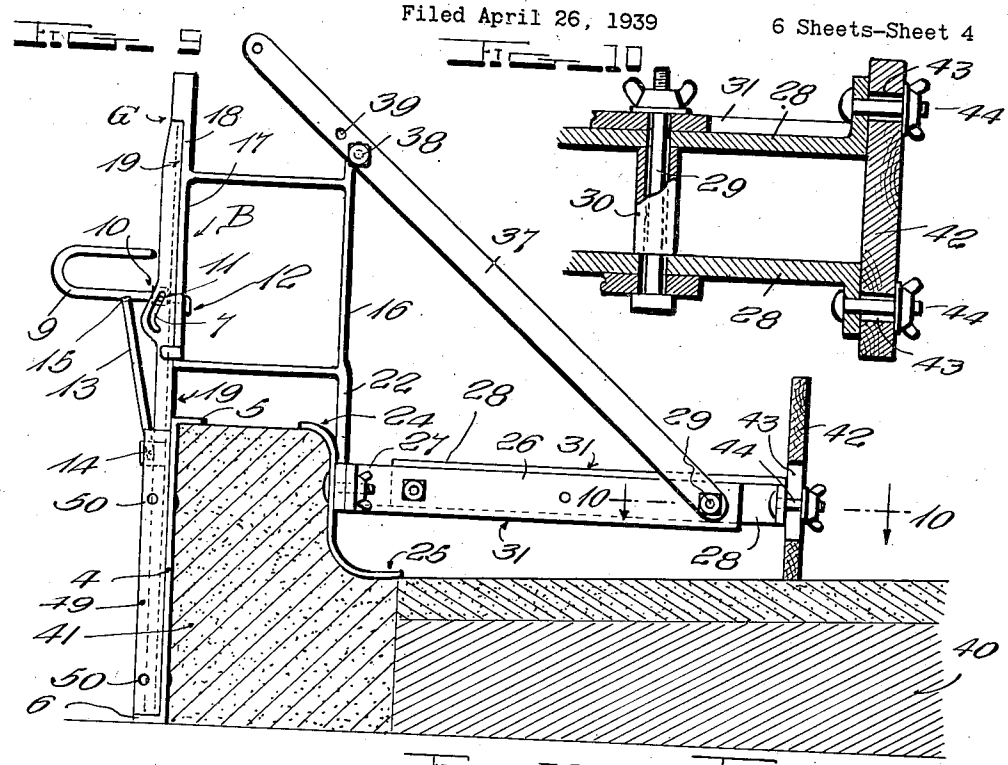


FIG. 9

FIG. 10

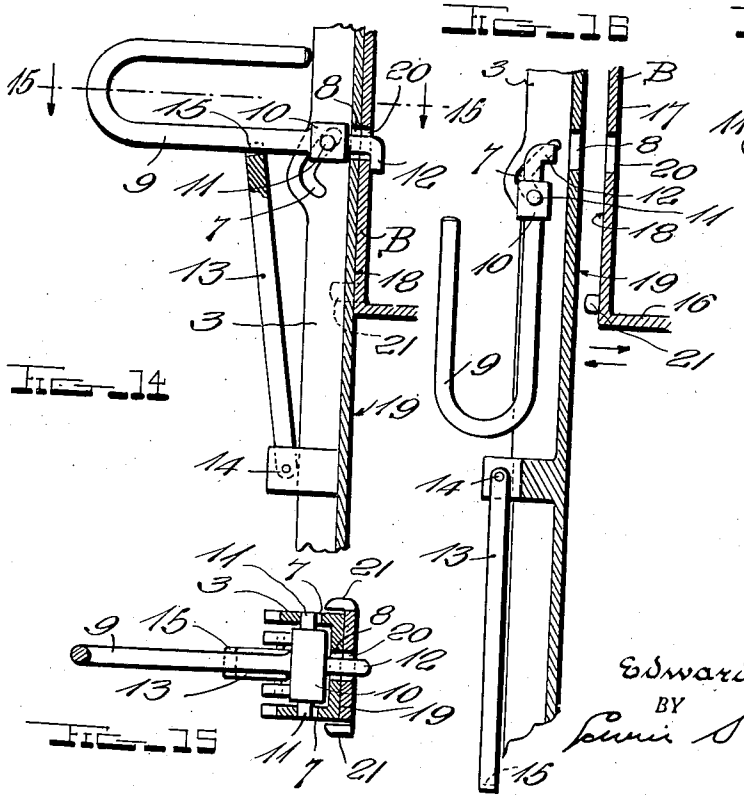


FIG. 14

FIG. 15

FIG. 16

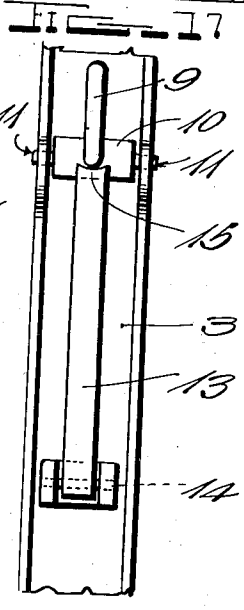


FIG. 17

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CURB AND GUTTER FORM

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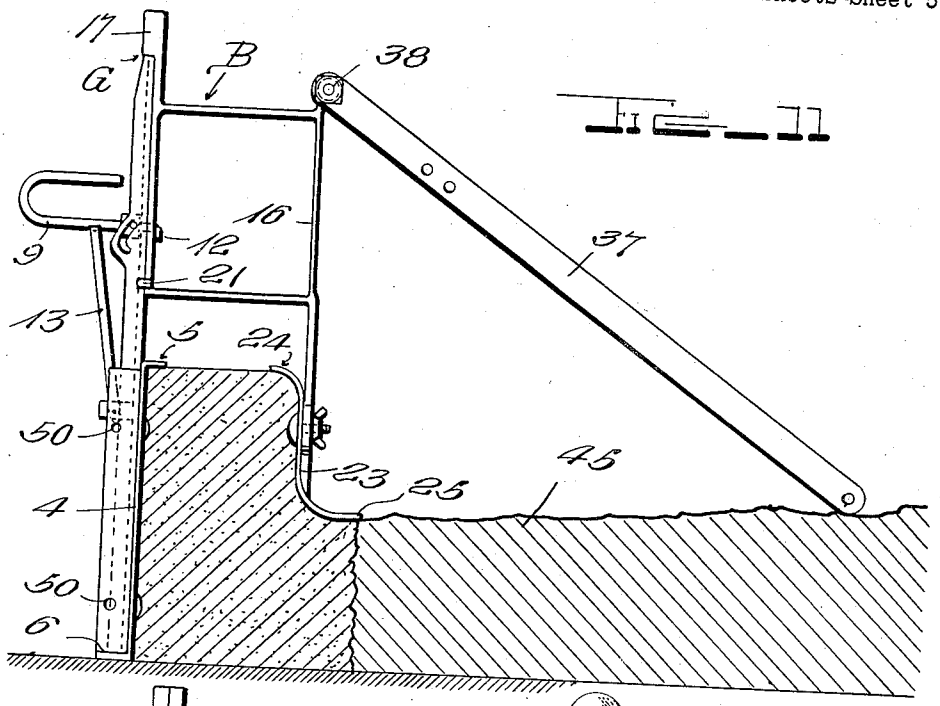


FIG. 11

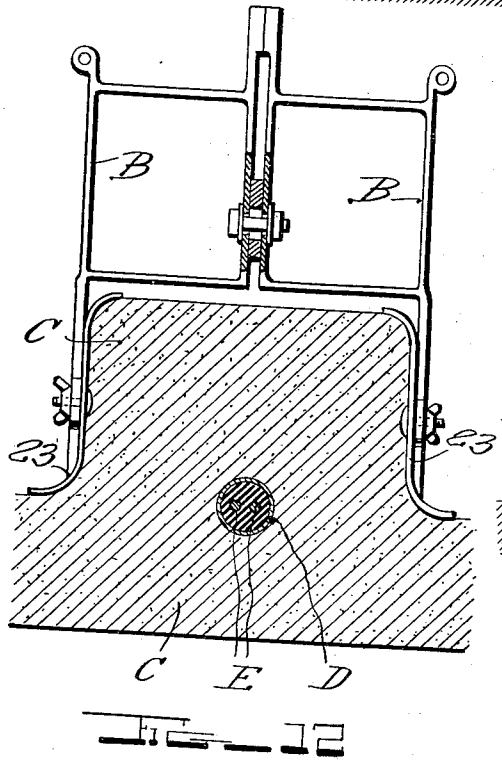


FIG. 12

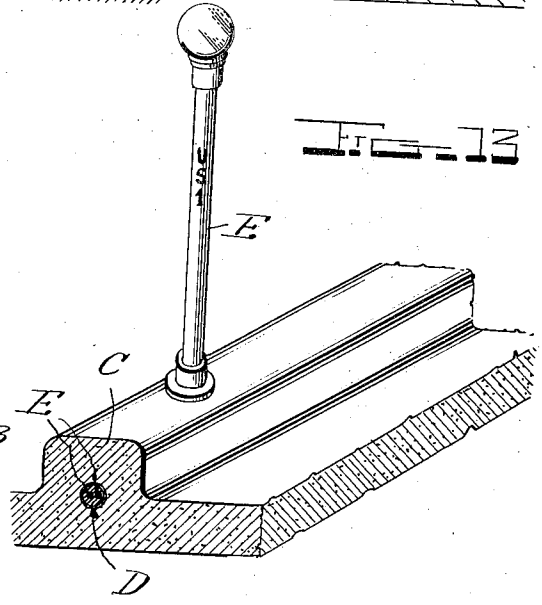


FIG. 13

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CURB AND GUTTER FORM

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FIG. 27

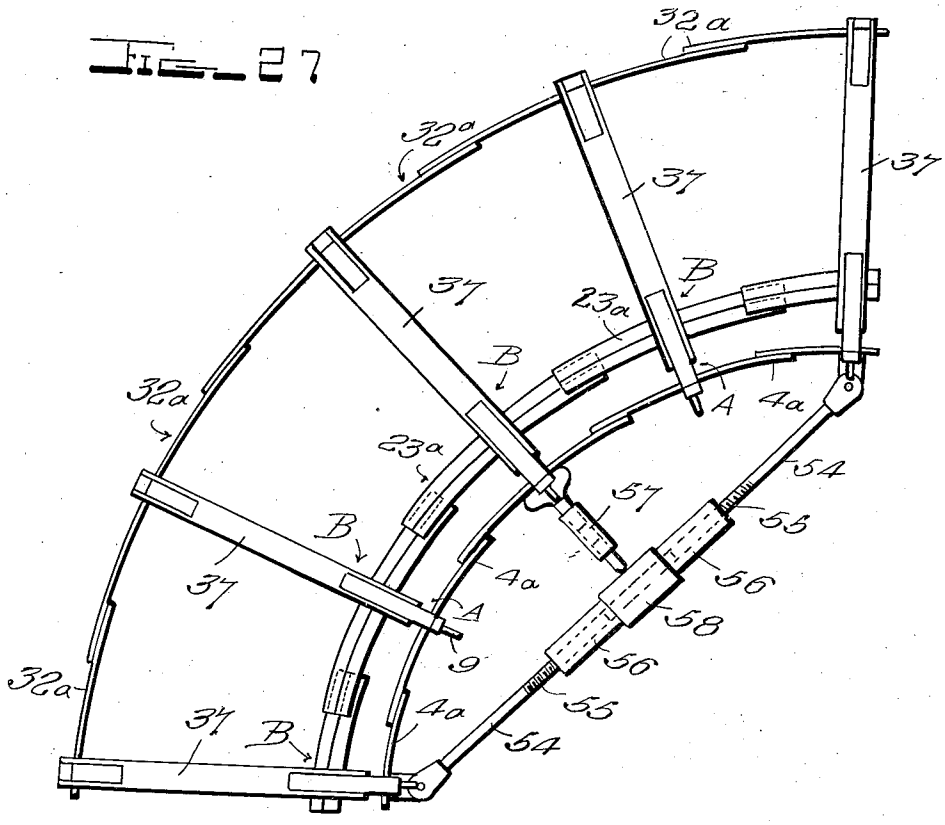


FIG. 28

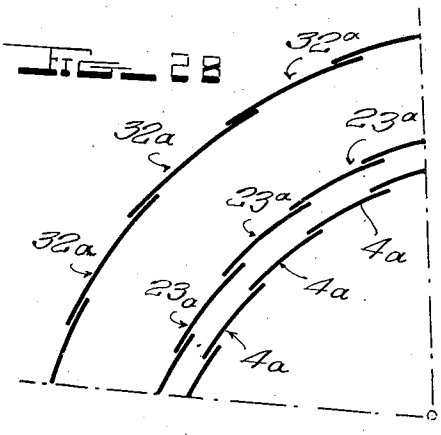
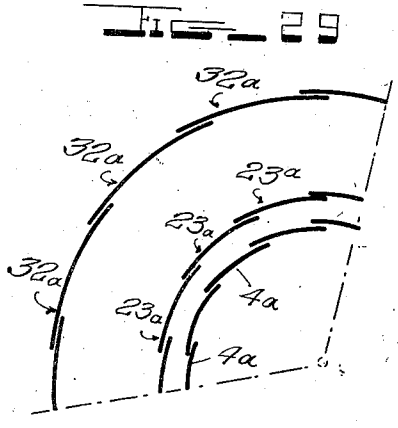


FIG. 29



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Patented Oct. 28, 1941

2,260,447

UNITED STATES PATENT OFFICE

2,260,447

CURB AND GUTTER FORM

Edward M. Forbes, Virginia Beach, Va.

Application April 26, 1939, Serial No. 270,209

4 Claims. (Cl. 25—118)

The mold herein described is an improvement on the mold shown in my Patent No. 2,129,208, issued September 6th, 1938.

The object of my invention is to provide a mold for use primarily on streets and highways, and one that is adapted for at least six conditions found in such work.

Another object of my invention is to provide a mold of this character that is durable, simple, effective, and one which may be quickly and accurately set up by unskilled labor.

Another object of my invention is to provide a self contained mold that is self-sustaining and requires no extra stakes, and one that may be readily separable from the molded concrete work, and the construction of the several parts is such that the concrete will not cement the parts together.

Another object of my invention is to provide a mold of this character that is adapted for use in forming curbs without a gutter; a curb and gutter; a divisional curb for highways; different widths of gutters, corners and all other requirements of street and highway conditions; and with these and other objects in view my invention consists of the parts and combination of parts hereinafter set forth.

In the drawings:

Figure 1 is a plan view of a complete section of my improved mold.

Figure 2 is a side elevation of the same looking in the direction of the arrow A in Figure 1.

Figure 3 is a side or rear elevation of my mold looking in the direction of the arrow B, Figure 1.

Figure 4 is an end elevation of my mold showing the parts extended for the maximum width of the gutter.

Figure 5 is a similar view showing the parts in minimum width adjusted position.

Figure 6 is a vertical sectional view on the line 6—6, Figure 5.

Figure 7 is a horizontal sectional view on the line 7—7, Figure 5.

Figure 8 is a horizontal sectional view on the line 8—8, Figure 5.

Figure 9 is an end elevation of my mold arranged for curb building solely adjacent a completed highway road.

Figure 10 is a horizontal sectional view on the line 10—10, Figure 9.

Figure 11 is an end elevation of my mold arranged solely for building a curb for a dirt road.

Figure 12 is an end elevation of my mold set for building on a highway, a center traffic dividing curb or fence.

Figure 13 is a perspective view of a completed highway dividing curb or fence with electric light conductors therein and light posts mounted thereon.

Figure 14 is a detail sectional view, on a large scale, showing the locking means for the two units of my mold.

Figure 15 is a detail horizontal sectional view on the line 15—15, Figure 14.

Figure 16 is a view similar to Figure 14 showing the two units of the mold unlocked.

Figure 17 is a detail front elevation showing a safety lock for the locking means.

Figure 18 is a detail front elevation of a modified lock for the two units.

Figure 19 is a side elevation of Figure 18 with the lock in unlocked position.

Figure 20 is a similar view showing the parts in locked position.

Figure 21 is a detail horizontal sectional view on the line 21—21, Figure 20.

Figure 22 is a detail view looking in the direction of the arrows 22, Figure 23, showing a locking member for locking the mold section ends together in alignment with each other.

Figure 23 is a plan view of the section locking member, the ends of the sections being shown in section.

Figure 24 is a vertical section on the line 24—24, Figure 22.

Figure 25 is a side elevation of the section locking element.

Figure 26 is a top plan view of the section locking element.

Figure 27 is a top plan view of my improved curve or corner mold.

Figures 28 and 29 are schematic views of the corner mold showing the slip joints adapted for different radius.

The reference numeral 1 designates a curb having an integral gutter 2 formed of concrete.

My improved mold consists of two units A and B, the unit A being positioned back of the curb and the unit B in front of the curb, as clearly shown in the drawings, these frames A and B having a vertical abutting joint G.

It has been found in actual practice that it is most practical to construct these units in sixteen foot lengths, but, of course, it will be understood that the length of the units may be determined by the manufacturer or user.

The unit A comprises a plurality of standards 3, preferably of angle shape, which are secured

at their lower portions to a plate 4 which is provided at its top edge with a flange 5 and at its lower edge with an oppositely extending flange 6. The flange 6 extends outwardly from the plate 4 and is designed to rest on the ground, while the flange 5 extends inwardly from the plate 4 and constitutes a form for the top of the curb 1. The plate 4 may be of any desired length and width, the width of the plate 4 determining the heighth of the curb.

The standards 3 are provided with a cam like slot 7 and a lock opening 8 which is substantially in alignment with the top portion of the slot 7. A locking handle 9 is provided with an enlargement 10 provided at each end with a trunnion 11, which trunnions are adapted to enter and move in the slots 7, as more clearly shown in Figure 15. The lock handle 9 is provided with a locking hook 12 which is adapted, when in the position shown in Figure 14, to engage the unit B of the form, as will be more fully hereinafter described.

When the parts are in the position shown in Figure 14 it is desirable to hold them in that position until the concrete sets, and for this purpose I may provide the bar 13, which, at its lower end, is pivoted at 14 to the standard, the upper end of the bar being concaved, as at 15, to provide a snug and non-slip connection between the two elements, the handle 9, sealing in said concave.

As stated, the plate 4 forms the rear face of the curb, while the flange 5 defines the top or elevation of the curb.

The unit B of my mold comprises a rectangular frame 16, one vertical member 17 of which has a flat smooth face 18 which snugly contacts the face 19 of the standards 3, and is provided with an elongated opening 20 through which the hook 12 moves in its locking action to lock the units together. This member, or element, 17 is also provided with lugs 21 (see Figures 18 and 21) which fit, respectively, on the sides of the standard 3 to prevent any relative lateral movement between the units when in assembled position.

Depending from the rectangular frame 16 is an arm 22 to the lower end portion of which is secured the elongated plate 23 which, in cross section, is substantially a compound curve, the upper edge portion 24 of which coacts with the flange 5 of the unit A in defining the height of the curb, while its lower edge 25 forms the concave joint between the curb 1 and gutter 2. This plate 23 is of the same length as the plate 4.

An arm 26 is secured to the arm 22 of the unit B by any suitable means, such, for instance, thumb nuts 27 and slidably secured to the arm 26 is a similar arm 28. These arms are in pairs, as shown in Figure 7, and are slidably secured together by means of bolts and nuts 29 and are held in spaced relation by means of sleeves 30 which are loosely fitted over the bolts 29. These arms 26 are each provided with lugs 31. The lug of one arm overlapping the other arm, as shown in Figure 6.

A plate 32, of the same length as the plates 4 and 23, is secured to the bottom portion of the standard 33 and is provided at its top edge with an inwardly extending flange 34, defining the plane of the top face of the gutter 2, and at its bottom edge with an outwardly extending flange 35, which, generally, is positioned on the ground in the same horizontal plane with the flange 6 of the unit A. The standard 33 is connected with the arms 26 by suitable means, such as the bolts 36. That is to say, as clearly shown, one set of arms 26 are secured to the standards 33 while the other set of arms 26 is secured to the standard 22 whereby the standards 33 and 22 may be free to be moved toward or away from each other. For instance, in Figure 4 the units A and B are shown wider apart to provide, say, a thirty-four inch gutter, while in Figure 5 they are spaced to provide a twenty-four inch gutter.

To brace the standards 33 I provide an arm 37, one end of which is pivoted to the standard 33, as at 38, while its other end is bolted at 38 to the rectangular frame 16, whereby the standards 33 are braced through the arm 37, frame 16, to the rear standards 17 of the unit A, thus firmly and rigidly securing units A and B together. The arm 37 has a plurality of openings 39 which will be later referred to.

There are some instances in which a cement roadway 40 (see Figure 10) exists to which it is desired to add a curb 41. In such a case I remove from the unit B the standards 33 and plate 32 and secure to the outer ends of the arms 26 any suitable support, such as 42, having an elongated slot 43 in which the bolts 44 may be adjusted in placing the unit A in proper vertical position for correctly molding the curb 41. I then secure the arm by means of a bolt positioned in the proper hole 39, as shown in Figure 9.

Again, there are instances in which it is desired to add a cement curb to a dirt road 45, as shown in Figure 11. In such a case I remove from unit B the standard 33, plate 32 and arms 26. In this case the free end of the arm 37 is adjusted along the surface of the dirt road until the curb forming mold parts are in proper vertical position whereupon the free end of the arm 37 may be depressed in the dirt road bed to brace the parts in proper position.

In Figure 12 I have illustrated the use and arrangement of two of the sections B to form a curb or fence C in the center of a highway for dividing traffic, parts of section B being detached when such sections are used for this purpose. In the formation of the curb, or fence, C, conduits D may be placed in position to receive the electric wires E and said conduit will have outlets over which lighting post F may be positioned. The plates 23 may be of any desired width.

After the sections of my approved mold are arranged in position the abutting ends of the sections are locked together by means of a locking lever 46 which has a forked end 47, one fork of which is provided with a pin 48; the forked end 47 is adapted, as shown in Figure 23, to fit over the end flanges 49 at the ends of the mold section boards 4, said flanges having an opening 50 to receive the pin 48 (see Figures 22, 23, 24, 25 and 26).

In Figures 18, 19, 20 and 21 I have illustrated a slightly modified form of catch to lock the locking lever 9 in its locked position. This catch 51 is forked at its upper end to straddle the lock 9 to which it is pivotally secured as at 52; the catch being slightly bowed as clearly shown in Figures 19 and 20. The standards 17a being provided with a lug or stop 52 against which the lower edge of the catch 51 rests when the lock 9 is in its locked position, as shown in Figure 20, locking the sections A and B together.

Referring now to Figures 27, 28 and 29, it will be seen that the form is arranged for constructing around corners at intersections of highways, and the frames A and B are the same for this work as has heretofore been described, a portion

of the frame B appearing between the bifurcated end of the member **37**.

The plates **4***a* perform the same function as the plates **4**, while the plates **23***a* perform the same function as the plate **23**, and the plates **32***a* perform the same function as the plates **32**. The plates **4***a*, **23***a* and **32***a* are made up of a plurality of overlapping members, as clearly shown in the Figures 27, 28 and 29, so that they may slide one upon the other in the formation of different radii. Attached to the end frames of this corner section are rods **54** provided with screw threads **55** which are engaged by the nuts **56** by means of which the radii of the corner section may be changed as desired. Attached to one of the frames B is an abutment **57** which bears on the stationary member **58**, said abutment **57** functioning as a fulcrum from which the plates are bowed to the desired radii. The adjusting nuts **56** are revoluble in the stationary element **58**.

What I claim is:

1. In a mold for use in forming cement curb and gutter, a standard, a curb rear face plate secured at the bottom of said standard and having oppositely extending flanges at the top and bottom thereof, a cam slot and a perforation in said standard, a locking handle pivotally mounted in said cam slot, a locking hook extending from one end of said handle, a frame having a vertical member, a perforation through said member, adapted to receive the locking hook on said handle whereby the said standard and the said vertical member are locked together, and a gutter forming mold carried by said frame.

2. In a mold for use in forming cement curb and gutter, a standard, a curb rear face plate secured at the bottom of said standard and having oppositely extending flanges at the top and bottom thereof, a cam slot and a perforation in said standard, a locking handle pivotally mounted in said cam slot, a locking hook extending from one end of said handle, a frame having a vertical member, a perforation through said member, adapted to receive the locking hook on said handle whereby the said standard and the said vertical member are locked together, and means to lock said handle in locked position, and a gutter forming mold carried by said frame.

3. In a mold for use in forming cement curb and gutter, a standard, a curb rear face plate secured at the bottom of said standard and having oppositely extending flanges at the top and bottom thereof, a cam slot and a perforation in said standard, a locking handle pivotally mounted in said cam slot, a locking hook extending from one end of said handle, a frame having a vertical member, a perforation through said member, adapted to receive the locking hook on said handle whereby the said standard and the said vertical member are locked together, an outer curb face mold plate secured to the bottom of said frame, an arm secured to the bottom of said frame, an arm adjustably secured to the first named arm, a standard secured to the outer end of the second named arm, a gutter mold secured to the bottom of said last named standard, and a gutter forming mold carried by said frame.

4. In a mold for use in forming cement curb and gutter, a standard, a curb rear face plate secured at the bottom of said standard and having oppositely extending flanges at the top and bottom thereof, a cam slot and a perforation in said standard, a locking handle pivotally mounted in said cam slot, a locking hook extending from one end of said handle, a frame having a vertical member, a perforation through said member, adapted to receive the locking hook on said handle whereby the said standard and the said vertical member are locked together, an outer curb face mold plate secured to the bottom of said frame, an arm secured to the bottom of said frame, an arm adjustably secured to the first named arm, a standard secured to the outer end of the second named arm, a gutter mold secured to the bottom of said last named standard, a gutter forming mold carried by said frame, and a bracing arm secured at one end to the last named standard and secured at its other end to said frame.

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