G. W. HANSBROUGH.

METALLIC CURB AND GUTTER.

APPLICATION FILED MAR. 16, 1910.

993,244. Patented May 23, 1911.

Fig. 1.

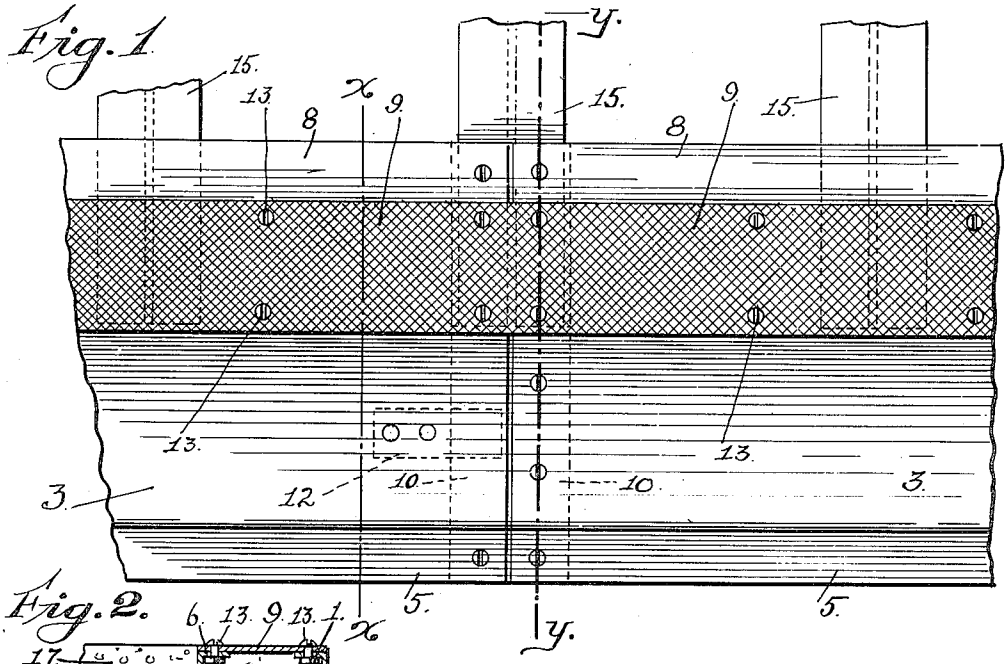


Fig. 2.

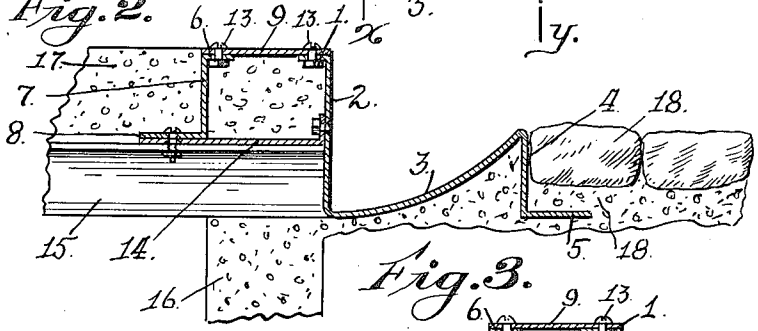


Fig. 3.

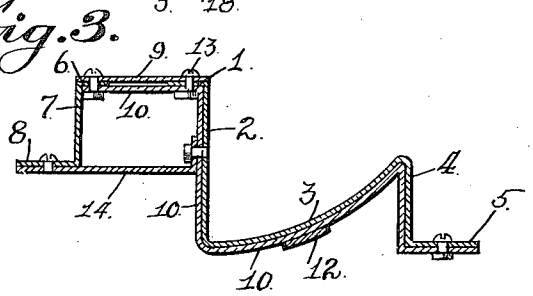
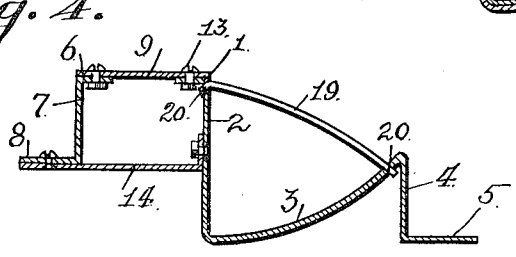


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

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METALLIC CURB AND GUTTER.

993,244. Specification of Letters Patent. Patented May 23, 1911.

Application filed March 16, 1910. Serial No. 549,669.

To all whom it may concern:

Be it known that I, GEORGE W. HANSBROUGH, a citizen of the United States, residing in the city and county of San Francisco and State of California, have invented certain new and useful Improvements in Metallic Curbs and Gutters, of which the following is a specification.

My invention relates to curb and gutter structures.

The object of my invention is to provide an efficient, durable, and sanitary structure, comprising either a gutter alone, or combining both curb and gutter, easily made and laid, and which will permit ready removal and replacement in part or in whole to meet any contingency which may arise.

To this end my invention consists in the novel metallic structure which I shall now fully describe by reference to the accompanying drawings in which:—

Figure 1 is a plan of my curb and gutter. Fig. 2 is a section on *x*—*x* of Fig. 1, showing the concrete and paving. Fig. 3 is a section on *y*—*y* of Fig. 1. Fig. 4 is a section showing the application of a cover plate to the gutter at points where needed.

The structure is composed of sheet metal plates of proper thickness, and is made up of sections of desired length. The gutter portion is formed of a plate bent to present in cross section a top flange 1, a vertical inner wall 2, a gutter floor 3, an outer vertical abutment wall 4, and a retaining flange 5. The curb is formed of the inner vertical wall 2 of the gutter plate; a second plate bent to present in cross section a top flange 6, a vertical wall 7 and a base retaining flange 8; and a top-plate 9. The several lengths or sections of these plates are secured in alinement by having riveted to one end of each a flange strip 10 which projects beyond said end and overlaps the ends of the adjacent plates (as shown in dotted lines in Fig. 1) to which they are to be secured by suitable bolts.

To the under side of the gutter floor 3 I deem it best to secure a cleat strip 12 on one section to receive the overlapping flange strip 10 of the adjacent section, which construction affords good support and stiffens the structure.

The top plate 9 of the curb has its upper surface scored or roughened, as seen in Fig. 1, to prevent slipping, and to present a good appearance, and said plate is secured to the upper flanges 1 and 6 of the plates on which it rests, by suitable bolts 13.

14 is a stiffening supporting strip secured to the base flange 8 of the inner curb plate and to the vertical wall 2 of the gutter plate. This strip 14 also serves to support the structure on the I-beams 15 of the side-walk.

In setting the structure the outer side-walk wall 16 is carried up to receive the I-beams 15, and the concrete is filled in around them. Then the inner curb plate is set in place, and the gutter plate also, and concrete is rammed in under them and filled in between them; then the top plate 9 is put on. The side-walk concrete 17 is filled in upon the base retaining flange 8 of the inner curb plate and carried up to the top of the curb. The street paving 18 rests on the outer retaining flange 5 of the gutter plate and is laid up against the abutment wall of said plate. The street pavement is thus well supported at its line of junction with the gutter and by its weight holds the gutter plate in place, so that with this mutual support a close bond of union is made along a line at which it is important to have a good joint. Likewise at the inner side of the structure, the base retaining flange 8 of the inner curb plate affords both a support for the concrete 17 of the side-walk, and is itself held down in place by said concrete. The sections of the structure can be made in the shop, and when assembled at the work, a few bolts will quickly and effectually secure them together. It is best to leave a clearance between the sections, as seen in Fig. 1, to provide for expansion and contraction.

By having the top plate 9 of the curb a separate piece, opportunity is afforded for filling in the concrete and said plates can be readily removed for any purpose, as, for example, to substitute others, or to permit the laying in the curb of pipes or conduits. In places where the gutter has to be covered, as for drive-ways into private property, or at the corners to provide crossings, a curved metallic plate, such as is shown by 19 in Fig. 4, may be laid across the gutter with its convex side up, and secured therein in any suitable manner, as, for example, by end lugs 20 fitting in sockets in the walls of the gutter plate. This cover plate will furnish the

necessary support as well as provide for the water channel under it.

At the curves of corners, the several sections of the structure will, of course, be beveled or chamfered to fit together properly.

With a curb and gutter structure as here shown, the best sanitary conditions will prevail. There will be no depressions or holes, such as are made by standing horses, and in which filth accumulates and remains. The surface will be unbroken and continuous thus providing for good sweeping and flushing.

In cases where the curb is to be omitted, the inner vertical wall 2 of the gutter plate will be fastened directly to the outer facing of the side-walk.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:—

1. In curb and gutter structures, a metallic plate fashioned to present in cross section a vertical inner wall having an offset top flange, a gutter floor, an outer abutment wall and an outer retaining flange for the adjacent edge of the pavement to rest upon; in combination with a second plate fashioned to present in cross section a laterally extending base-retaining part, a vertical wall and a top flange; and a top resting upon and removably secured to said top flanges of the vertical walls of the respective plates, and constituting with the first and second mentioned plates a curb.

2. In curb and gutter structures, a metallic plate fashioned to present in cross section a vertical inner wall having an offset top flange, a gutter floor, an outer abutment wall and an outer retaining flange for the adjacent edge of the pavement to rest upon, in combination with a second plate fashioned to present in cross section a base retaining flange, a vertical wall and a top flange; a top resting upon and removably secured to the top flanges of the vertical walls of the respective plates, and a supporting structure extending between said vertical walls secured to the base-retaining flange of the second plate.

3. In curb and gutter structures, a metallic plate fashioned to present in cross section a vertical inner wall having an offset top flange, a gutter floor, an outer abutment wall and an outer retaining flange for the adjacent edge of the pavement to rest upon, in combination with a second plate fashioned to present in cross section a base-retaining flange, a vertical wall and a top flange, a top resting upon and removably secured to said top flanges of said vertical walls, a supporting structure extending between said vertical walls secured to the base-retaining flange of the second plate, and a metallic cover plate overlying and separated from the gutter floor and secured to the adjacent walls of the structure.

4. In curb and gutter structures, a metallic plate of integral construction throughout and comprising a vertical wall having at its lower end a transversely curved portion constituting a gutter floor which latter has at its outer end an abutment wall projecting downwardly and terminating in a transversely extending retaining flange, in combination with an auxiliary plate having a wall extending vertically and to the rear of the vertical wall of the first mentioned plate, the last mentioned plate having at the lower end of its vertical wall an integral offset retaining flange, a supporting strip upon which said last mentioned retaining flange rests secured to the vertical wall of the first mentioned plate, and a removable top plate projecting between and secured to the upper ends of the vertical walls of the first and second mentioned plates.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE W. HANSBROUGH.

Witnesses:
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