June 28, 1932. W. J. LATIMER ET AL 1,865,322

HILLSIDE CATCH BASIN

Filed July 12, 1930 3 Sheets-Sheet 1

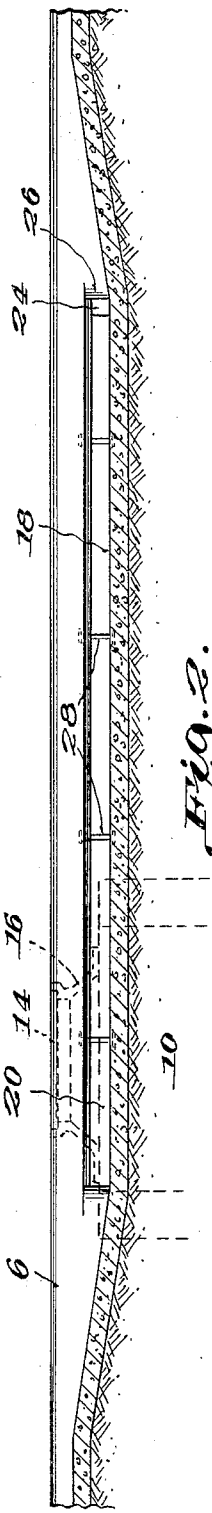


Fig. 1.

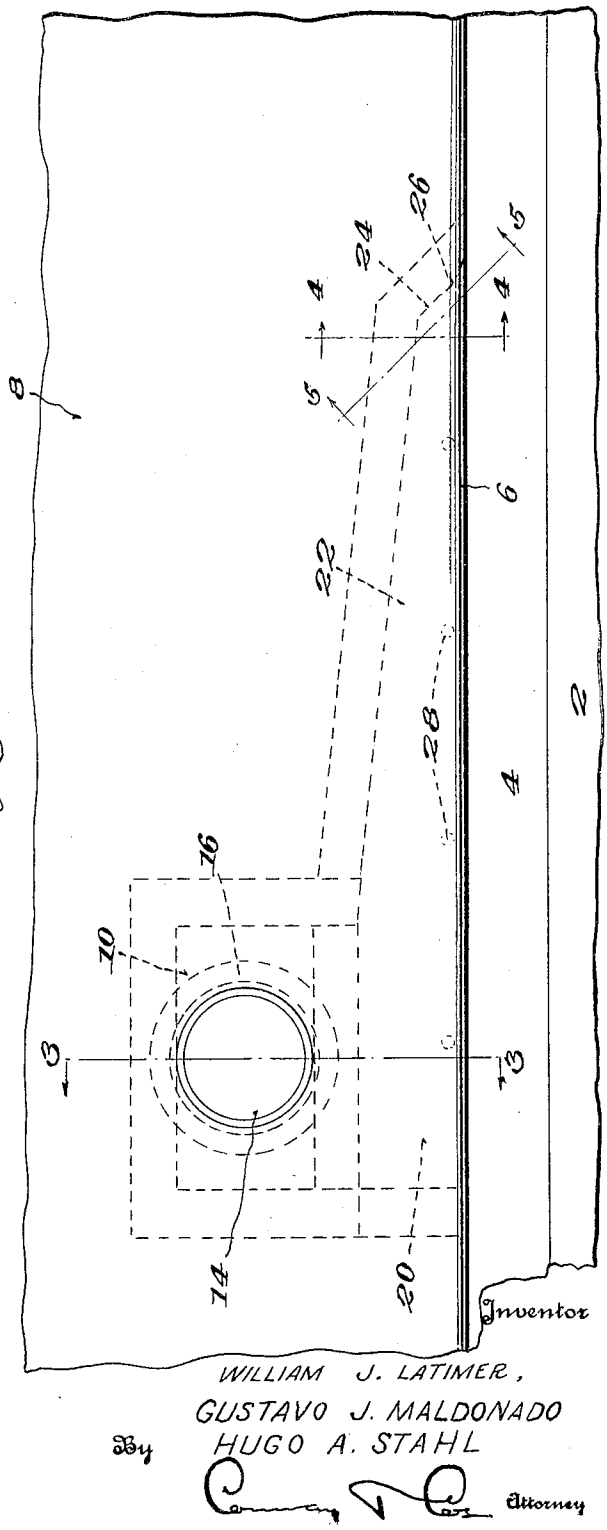


Fig. 2.

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HILLSIDE CATCH BASIN

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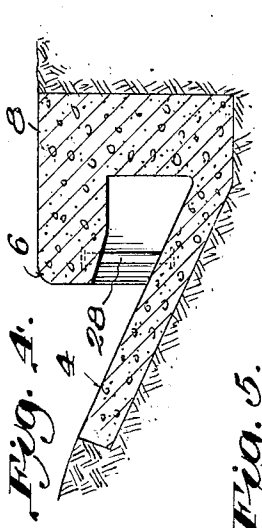


Fig. 4.

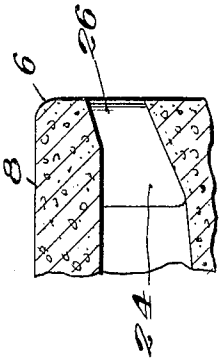


Fig. 5.

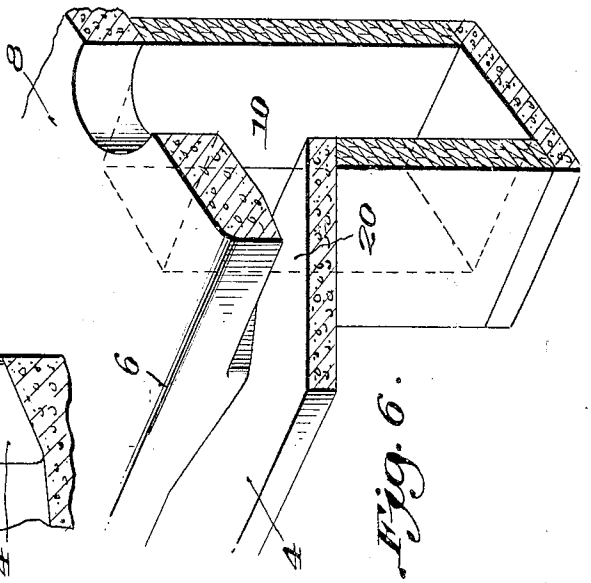


Fig. 6.

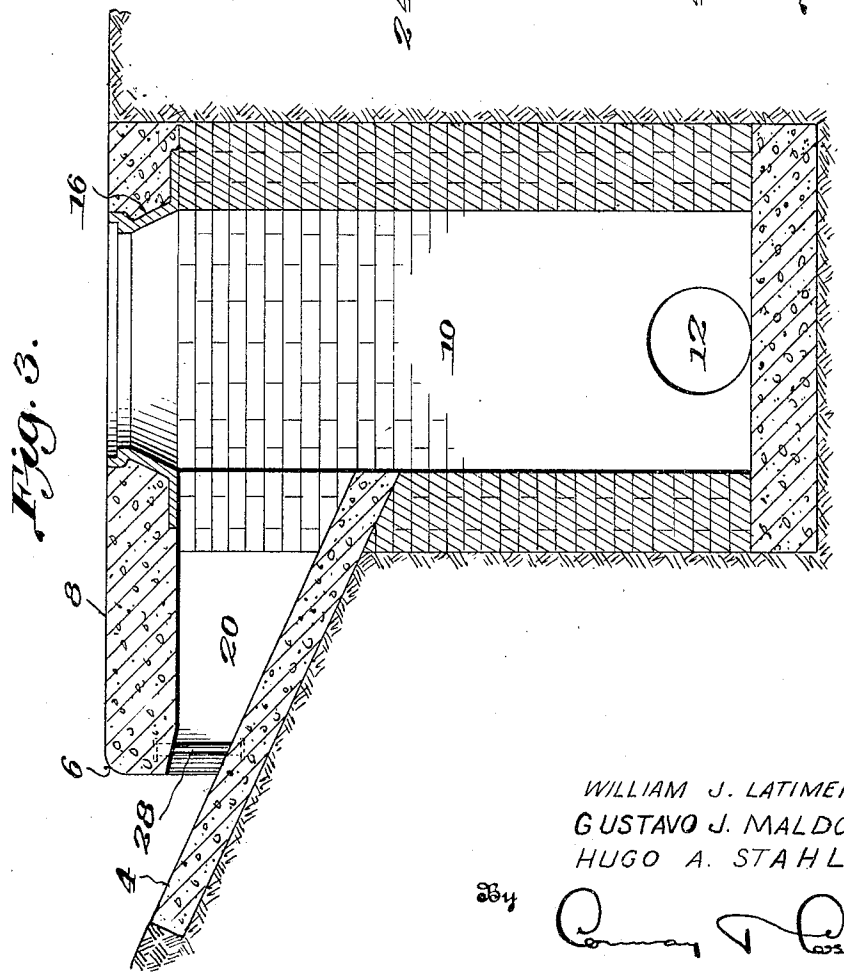


Fig. 3.

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HILLSIDE CATCH BASIN

Filed July 12, 1930 3 Sheets-Sheet 3

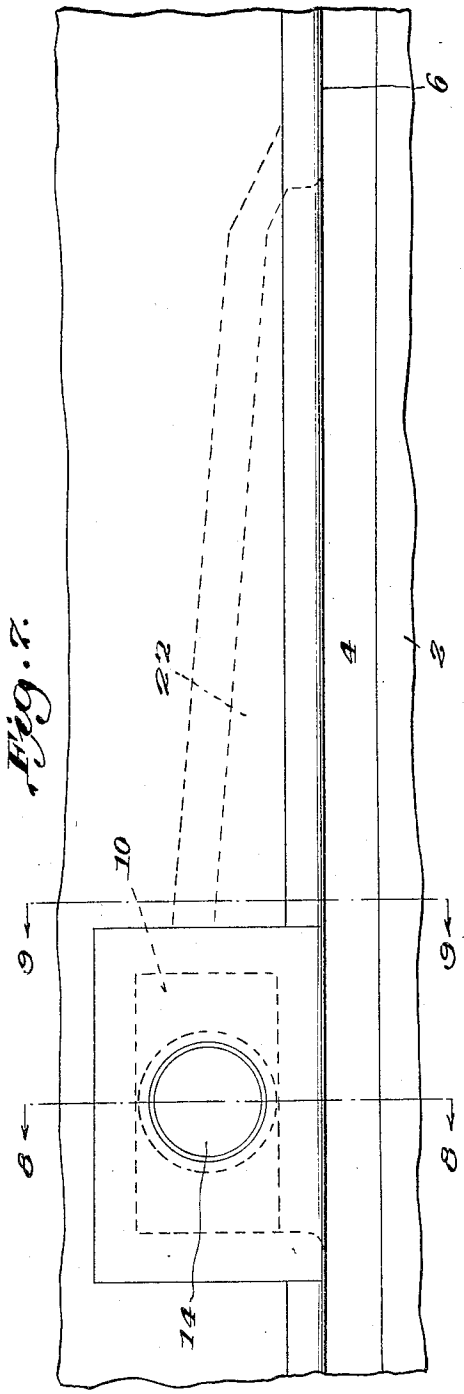


Fig. 7.

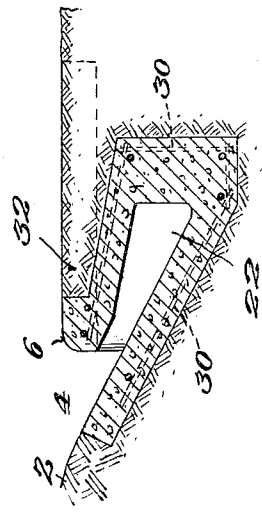


Fig. 9.

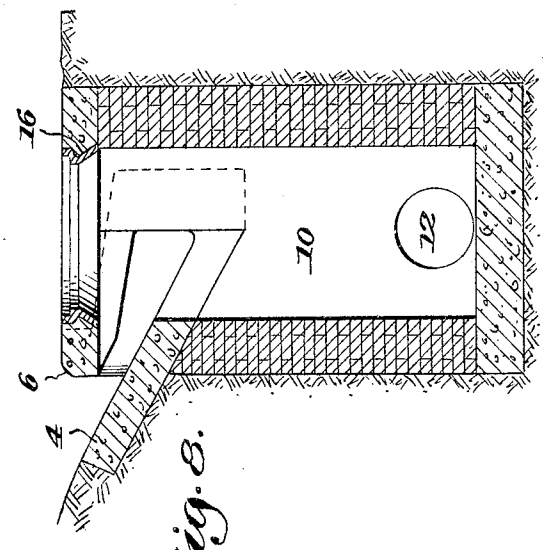


Fig. 8.

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UNITED STATES PATENT OFFICE

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HILLSIDE CATCH BASIN

Application filed July 12, 1930. Serial No. 467,594.

This invention relates to a catch basin for storm water sewers, adapted for use on all grades, and particularly on steep grades, and designed to catch all the water flowing in the gutter and to prevent it from flowing past the sewer opening to points further down grade.

The principal object of our invention is to provide an entrance to the catch basin which will cause the water to run into the catch basin and not to pass by it, which will nevertheless be cheaply and easily constructed and will stand long and hard use. A second object of the invention is the provision of a catch basin having an elongated opening which is formed at a low cost and which is concealed from above, and does not form a break in the pavement. A further object of the invention is the provision of a new type of entrance for catch basins which can be used with standard catch basins and can be applied to basins which are already installed and will make them more effective.

In the past, in order to accomplish these results, several methods have been tried. The principal and most common formation is the use of a catch basin having a length of about twelve feet instead of the usual four feet. This is extremely expensive and for this reason has not come into general use. It has also been proposed to form cross ridges in the gutter for directing the water into the catch basin, but this leaves openings in the gutter which are dangerous and are likely to cause injury to persons stepping in the gutter. This form also does not accomplish the desired objects with any great degree of success. The present invention overcomes all the disadvantages of the prior structures.

Other objects and advantages will appear from the following description when taken in conjunction with the accompanying drawings which form a part thereof.

In the drawings:

Fig. 1 is a front elevation of the entrance;

Fig. 2 is a plan view of a part of a roadway provided with our form of catch basin entrance;

Fig. 3 is a cross section on the line 3—3 of Fig. 2;

Fig. 4 is a cross section on the line 4—4 of Fig. 2;

Fig. 5 is a cross section on the line 5—5 of Fig. 2;

Fig. 6 is a perspective view of the lower portion of the catch basin in the entrance thereof, the section being cut substantially on the line 3—3 of Fig. 2;

Fig. 7 is a plan view of a modified form of catch basin;

Fig. 8 is a cross section on the line 8—8 of Fig. 7; and

Fig. 9 is a cross section on the line 9—9 of Fig. 7.

The invention is applied to a catch basin used particularly on hillsides for draining water from a road or street into storm water sewer mains. The catch basin is generally placed beneath the sidewalk and a manhole opening is provided in its top which is closed by a manhole cover. A passageway leads from the cutter into the catch basin so that the water drains into the basin and the storm water sewer system. This opening in the usual form extends across the front of the catch basin only.

In the drawings, 2 represents a roadway having a gutter 4, a curb 6, and a sidewalk 8. Beneath the sidewalk is the catch basin 10 consisting of a fairly deep rectangular hole, usually about four feet in width, from which water is drained off through mains 12. The top of the catch basin is closed by a manhole cover 14 seated in a flanged ring member 16 so arranged that the manhole lies flush with the sidewalk and may be removed to give access to the basin. The gutter or apron in front of the catch basin has a greater slope than the slope at other parts of the roadway. This dip, more clearly shown at 18 in Fig. 1, tends to turn the water into an opening 20 which communicates with the catch basin 10. That is, as in the usual construction, the gutter line dips in front of the catch basin.

The above construction is well known in the art. The present invention consists in the formation of a trough 22 or an extension of opening 20 which starts at a point considerably above the catch basin and which is cut under the edge of the sidewalk. This trough

gradually widens as it approaches the basin, that is, the rear wall forms an angle with the curb, its bottom or floor slopes downwardly on the same angle as the apron surface in front of the basin or at a greater angle so that the water may make a gradual turn to flow into the catch basin and will not be carried past the opening. The upper end of the trough 22, as shown in Fig. 2, comprises a more sharply sloping wall 24 and a curved cheek 26 in the curb. Pipes or rods 28 spaced at intervals along the edge of the curb serve to support the top of the trough above the opening. The trough is open throughout its length to the gutter and communicates therewith.

In the modified form shown in Figs. 7 to 9, the catch basin is located at the curb instead of being spaced from the curb. Otherwise, the invention has the same application as in the previously described modification.

In this form of the invention, the gutter and entrance are formed as a single piece having a cantilever construction and strengthened by a metal beam 30 of suitable cross section. The sidewalk 32 or tree space rests above this cantilever portion and is supported thereby. It is apparent that this cantilever construction may be employed with equal effectiveness when the catch basin is set back from the curb as in the embodiment illustrated in Figs. 1, 2, 3, 4, 5, and 6. So may the construction shown in the figures mentioned be used when the catch basin is set near the curb. However, when the cantilever construction is used the posts 28 may be dispensed with if desired.

While preferably all of the described structure is formed of concrete, of course it might be made of any other suitable material without departing from the spirit of the invention. The result of the structure is that the water flowing down the inclined gutter makes a gradual bend through the gradually sloping trough and flows into the catch basin. The angle between the rear wall of the trough and the curb line is made small so that the trough will be of considerable length, and will permit the water rushing down grade to curve slowly under the action of gravity on account of the slope of the apron into the catch basin. If such a gradual slope were not provided, the water would accumulate in the entrance to the catch basin and would be carried past the catch basin on account of its velocity before the action of gravity could bring the outermost water into the basin entrances. This fact is the cause of the overflow in the catch basin entrances commonly in use today. This difficulty is overcome by the present construction.

While we have disclosed one embodiment of our invention, we wish it to be understood that we do not intend to limit ourselves thereby, except within the scope of the appended claims.

We claim:

1. In combination, a gutter, a catch basin, a curb, a trough beneath said curb connecting a point in said gutter spaced from said catch basin to said catch basin, the rear wall of said trough forming a slight angle with said curb, the end of said rear wall farthest from said catch basin forming a greater angle with said curb, whereby water may flow in a gradual curve from said gutter into said catch basin, and means for supporting said curb from said gutter throughout the length of said trough.

2. In a catch basin opening construction, a gutter, a curb, and an opening from said gutter beneath said curb into said catch basin, said opening having an inclined floor and a rear wall forming a small angle with said curb the end of said rear wall farthest from said catch basin forming a greater angle with said curb, said rear wall extending from a point adjacent said gutter and above said catch basin to a point spaced from said gutter in the wall of said catch basin.

3. In a catch basin opening construction, a gutter, a curb, and an opening from said gutter beneath said curb into said catch basin, said opening having a floor having substantially the same slope as said gutter and a rear wall forming a small angle with the line of said curb, the end of said rear wall farthest from said catch basin forming a greater angle with said curb, said rear wall extending from a point adjacent said gutter and above said catch basin to a point spaced from said gutter in the wall of said catch basin, said opening communicating throughout its length with said gutter beneath the edge of said curb, and posts adjacent the edge of said curb and connecting said curb and said gutter to support said curb from said gutter.

4. In a catch basin opening construction, a gutter, a curb, and an opening from said gutter beneath said curb into said catch basin, said opening having a floor having a greater slope than said gutter and a rear wall forming a small angle with the line of said curb and extending from a point adjacent said gutter and above said catch basin to a point spaced from said gutter in the wall of said catch basin, a portion of said rear wall furthest from said catch basin forming a greater angle with the line of said curb.

In testimony whereof we have hereunto set our signatures.

HUGO A. STAHL.
WM. J. LATIMER.
GUSTAVO J. MALDONADO.