May 10, 1966 H. PELETZ 3,250,189

CATCH BASIN

Filed March 25, 1965 2 Sheets-Sheet 1

FIG_1

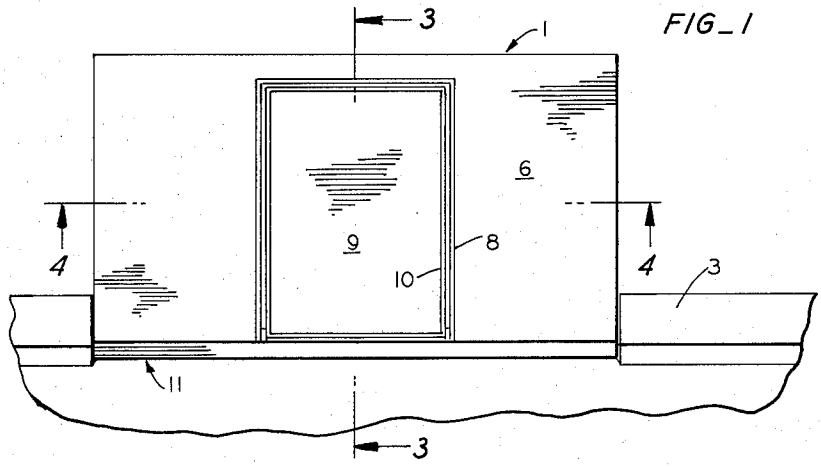


FIG_2

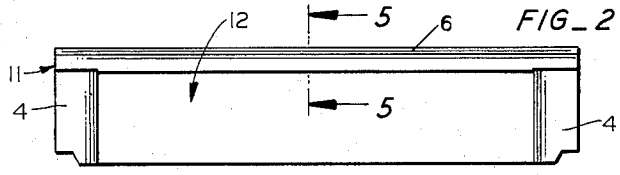


FIG_3

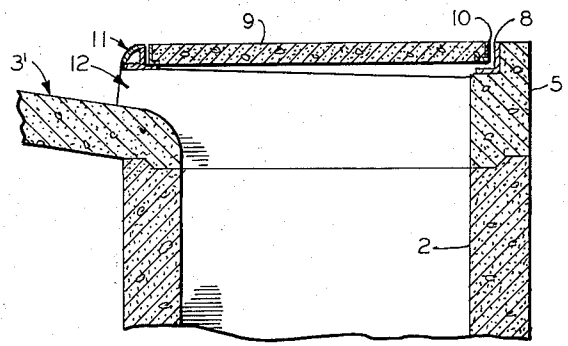
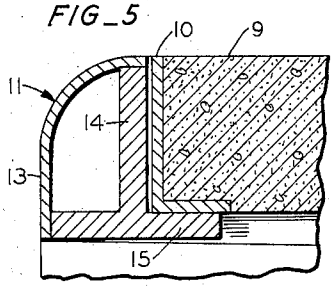


FIG_5



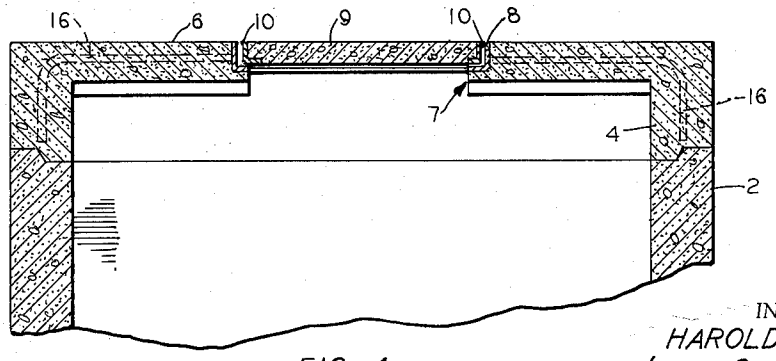


FIG_4

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May 10, 1966 H. PELETZ 3,250,189

CATCH BASIN

Filed March 25, 1965 2 Sheets-Sheet 2

FIG_6

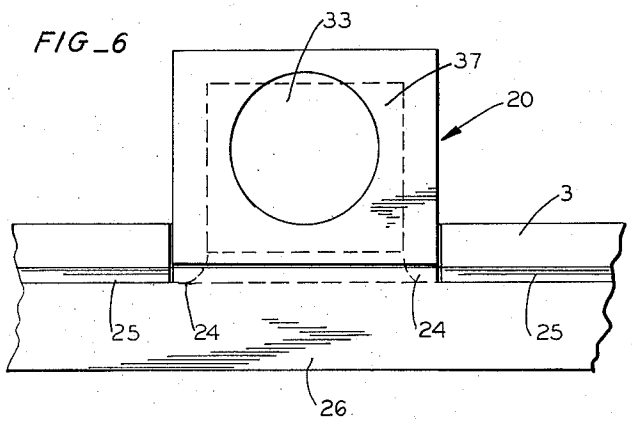


FIG_7

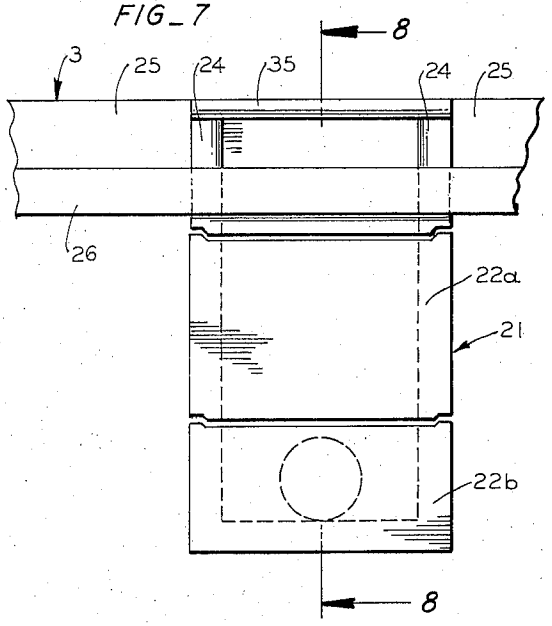


FIG_8

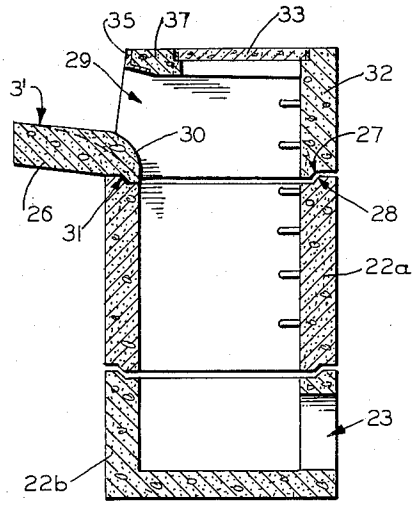
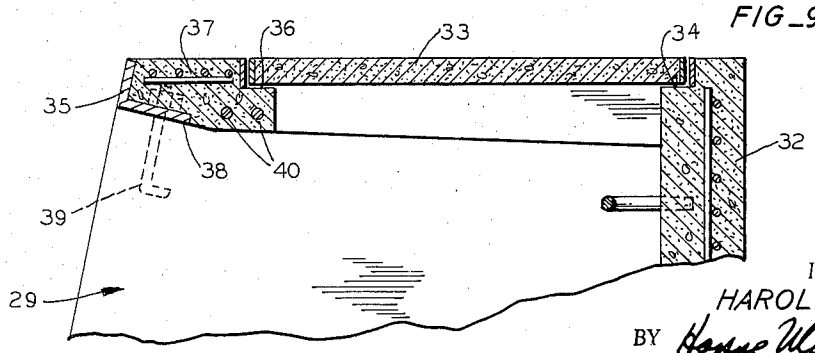


FIG_9



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CATCH BASIN

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5 Claims. (Cl. 94—31.1)

This invention relates generally to catch basins for surface drainage and more particularly to an improved precast concrete catch basin. This application is a continuation in part of application Serial No. 75,200 filed December 12, 1960, by Harold Peletz and now abandoned.

One object of the present invention is to provide a precast concrete catch basin including all miscellaneous steel, which is complete and ready to be set in place in the field.

It is another object of the present invention to provide a catch basin having adequate structural strength while at the same time permitting a low curb height.

It is still another object of the present invention to provide a catch basin structure having the safety feature of concrete walking surfaces rather than metal plates or grating which frequently become slippery and unsafe for pedestrians.

One other object of the present invention is to provide a catch basin structure which functions as a key to tie the sewer well which it encloses and the street curb into an integral unit.

Still another object of the present invention is to provide a catch basin structure which is easily aligned with the street curb and which nonetheless readily communicates with a sewer well which may have been set in place out of alignment with the curb.

Other objects and advantages of the present invention will become apparent to those skilled in this art upon a consideration of the following description together with the accompanying drawing wherein:

FIG. 1 is a top elevational view of an improved catch basin having features of the present invention;

FIG. 2 is a front elevational view of the improved catch basin of FIG. 1;

FIG. 3 is a transverse sectional view of the catch basin taken along line 3—3 of FIG. 1;

FIG. 4 is a longitudinal sectional view taken along line 4—4 of FIG. 1;

FIG. 5 is a sectional view of the catch basin nosing taken along line 5—5 of FIG. 2;

FIG. 6 is a top elevational view of another embodiment of the catch basin assembly having some of the features of the present invention;

FIG. 7 is a front elevational view of the catch basin assembly illustrated in FIG. 6;

FIG. 8 is a sectional view in elevation taken along line 8—8 of FIG. 7; and

FIG. 9 is an enlarged view of a portion of FIG. 8.

One embodiment of the improved catch basin is shown in FIGS. 1–4. It comprises a pre-cast reinforced concrete structure, referred to generally as **1**, which is set upon a concrete well **2** communicating with a storm sewer or other means for disposing of surface drainage, as more clearly appears in FIG. 4. The described catch basin **1** is of the type normally installed along the curb of a highway or street and fits flush with the face of curb **3** as illustrated in FIG. 1.

The catch basin comprises a monolithic structure of reinforced concrete having a pair of vertical substantially parallel side walls **4**, a rear wall **5** connecting the side walls, and a top slab **6**, all integrally cast.

The top slab **6** is provided with a manhole **7**, the edges of which are trimmed with protective miscellaneous galvanized steel, such as angles **8** of FIG. 4. The manhole in the top slab is provided with a cover **9** also having its edges trimmed with miscellaneous steel such as angles **10**. For structural strength, the top slab **6** has a tapered cross-section, as appears in FIG. 3, with the greatest thickness adjacent the rear wall **5** gradually tapering to a thinner section at the front of the catch basin. The tapered construction permits lower curb height than would otherwise be possible.

A nosing **11** fabricated from steel or other material having adequate structural strength spans the side walls **4** and defines an opening **12** or orifice at the front of the catch basin through which surface drainage is received from the gutter surface **3'**. In the embodiment illustrated in FIGS. 1–4, the nosing includes a convex sheet **13** welded to two adjacent ends of a T section **14**. The nosing is pre-cast integrally with the catch basin structure. The free end **15** of the T section **14** provides support for the front end of manhole cover **9**. The nosing also provides protection against damage from automobiles or other vehicles bumping against the street curb and contiguous catch basin cast therein.

Reinforcing steel, as at **16**, is provided to develop structural strength and to tie the top slab, side walls and rear wall together in the manner that will be familiar to those skilled in reinforced concrete design.

It will be apparent to those skilled in this art that the described improved catch basin is easily installed in the field wtihout the difficulties and expense heretofore encountered in forming and stripping field formed basins or in the placing of miscellaneous steel. Upon completion of the well **2**, the precast complete catch basin is easily set in place thereupon and cast integrally with the gutter and curb of the street as it is poured. Because of the unitary construction of the basin, adjustments in line and grade are easily made should the well be poured incorrectly.

It also is evident that the top surface of the catch basin, being all concerte, presents a surface similar to adjacent areas of concrete sidewalk and thus greatly enhances the safety to pedestrians. Pedestrians thus do not encounter metal plates or gratings having tractive properties dissimilar from adjacent concrete sidewalks.

FIGS. 6–9 illustrate another embodiment of the catch basin of the present invention and illustrate how the catch basin forms a key to tie together the well and the street curb. The well and street curb forms are placed prior to installation of the catch basin **20** itself. The catch basin **20** then is set in place upon the well **21** which can be made of prefabricated sections **22***a*, **22***b*. Alternatively, the well may be a formed in place structure which is connected to storm sewer disposal means as at **23**. The well has a continuous peripheral wall with its upper end lying in substantially a horizontal plane. Its cross-section may be rectangular as shown or may be of other cross-sectional configurations.

The catch basin **20** is set upon well **21** with its orifice faces **24** aligned with the facing board of the curb form

so that these faces are aligned with the face 25 of the curb 3 when later cast. The curb illustrated in FIGS. 6–8 is of the type which includes a raised curb 3 and an adjoining gutter portion 26, defining gutter surface 3', which are cast in the field in a single piece. Any misalignment which exists between the well 21 and the facing board of the curb form which defines curb face 25 is taken up in a loose joint between the catch basin 20 and the well 21. As can best be seen in FIGS. 7 and 8 the catch basin may be provided with a key 27 which mates with a correspondingly key 28 along the continuous upper end of the peripheral wall of the well. In practice it has been found that a clearance of approximately ½" between the mating diagonal faces of these keys is sufficient to accommodate the normal misalignment between well and curb facing board. If the well has been set at too low an elevation relative to the curb elevation, the catch basin top surface is aligned with the top of the curb and the joint between catch basin and well may be shimmed and grouted to make up the elevation differences.

The single piece curb 3 and gutter 26 then is cast in place. A portion of the gutter is cast inwardly through catch basin orifice 29 as shown in FIG. 8 to secure the well, catch basin and the curb and gutter structure together. This inwardly cast portion of the gutter 30 has a curved radius to develop smooth liquid flow through orifice 29. The portion of the upper end of the peripheral wall of well 21 which mates with portion 30 of the gutter within the catch basin orifice may be provided with a key joint 31 to further secure the gutter and curb structure to the catch basin and well. Thus the catch basin acts as a key in the now integrally joined catch basin, well and gutter and curb assembly.

As illustrated in FIG. 9 the manhole details may include a manhole, access through which is obtained on the rear wall 32 opposite the catch basin orifice. The manhole in this instance is circular and extends from the rear wall toward the orifice. A manhole cover 33 is supported by a seat 34 in the rear wall 32 and may be supported at its edge nearest the catch basin orifice directly from nosing angle 35, somewhat as is shown in the embodiment illustrated in FIGS. 1–5, or as shown in FIG. 9 it may be supported in a seat 36 formed in the concrete top slab 37.

In the embodiment of FIG. 9 the nosing angle 35 has a rearwardly extending flange 38 which partially supports the front edges of the top slab 37 and manhole cover 33. The ends of the nosing angle 35 are integrally cast in the catch basin side walls as illustrated in FIG. 7. The ends may be anchored into the side walls by anchor bolt means 39 secured to each end of nosing angle 35 and imbedded in the side walls. For additional support of the forward end of the manhole cover, reinforcing rods 40 also may be cast into the front portion of top slab 37.

The gutter surface adjacent to the catch basin orifice may be depressed slightly to direct surface water into the orifice and eliminate standing water in the gutter itself. The radius formed at 30 is important to obtain maximum flow through the orifice. The actual size of the orifice 29 may easily be varied in the field by controlling the thickness of gutter portion 30 which defines the bottom of the orifice as well as its radius of curvature.

The foregoing detailed description has been given for clearness of understanding only and no unnecessary limitations should be understood therefrom, for certain modifications will be obvious to those skilled in this art. The invention is defined in the following claims.

I claim:

1. A catch basin assembly for collecting surface drainage from a street gutter and directing such drainage to a storm sewer disposal means comprising a precast vertical well adapted to communicate with said storm sewer disposal means, said well having a continuous peripheral wall with its upper end lying in a substantially horizontal plane; a precast catch basin supported upon and closing off the upper end of said well, said basin having integrally formed side and rear walls and a top slab with said side and rear walls mating with corresponding portions of the well wall along the upper end thereof, a metallic nosing assembly interconnecting the side walls adjacent the upper edges thereof and being integrally formed therewith, said nosing assembly adapted to be positioned adjacent the gutter and defining therebeneath a drain opening, said nosing assembly being further provided with a rearwardly extending flange, said top slab being provided with a manhole extending to said nosing assembly, and a removable cover closing said manhole and being partially supported by the rearwardly extending flange of the nosing assembly.

2. A catch basin assembly for collecting surface drainage from a street gutter and directing such drainage to a storm sewer disposal means comprising a vertical well adapted to communicate with said storm sewer disposal means, said well having a continuous peripheral wall with its upper end lying in a substantially horizontal plane; a precast catch basin supported upon and closing off the upper end of said well, said basin having integrally formed side and rear walls and a top slab with said side and rear walls mating with corresponding portions of the well wall along the upper end thereof, a metallic nosing assembly interconnecting the side walls adjacent the upper edges thereof and being integrally formed therewith, said nosing assembly adapted to be positioned adjacent the gutter and defining therebeneath a drain opening, said nosing assembly being further provided with a rearwardly extending flange, said top slab being provided with a manhole and a removable cover closing said manhole and being partially supported by the rearwardly extending flange of the nosing assembly.

3. A catch basin assembly for collecting surface drainage and directing such drainage to storm sewer disposal means comprising a vertical well communicating with said storm sewer disposal means, said well having a continuous peripheral wall with its upper end lying in a substantially horizontal plane; a precast catch basin supported upon and closing off the upper end of said well, said catch basin having an integrally formed top slab, a pair of side walls, and an interconnecting rear wall which mate with corresponding portions of the well wall along said upper end and a metallic nosing interconnecting and integrally formed with the side walls adjacent to the upper edges of said side walls at their ends opposite said rear wall, said nosing having a rearwardly extending flange, said top slab having a manhole extending toward said nosing and having a removable cover closing said manhole which is partially supported by the rearwardly extending flange of said nosing; and a street curb and gutter having a drainage collecting surface at an elevation greater than the upper end of said well wall, a portion of said gutter overlying the upper end of said well wall which is between said catch basin side walls and beneath said nosing to define with said nosing a drainage orifice for conducting drainage from said collecting surface into said well.

4. A catch basin assembly according to claim 3 wherein the upper end of the peripheral wall of said well carries a key for mating with the lower edge of said side and rear walls of said catch basin and with the portion of said street gutter which defines with said nosing said drainage orifice.

5. A catch basin assembly for collecting surface drainage and directing such drainage to storm sewer disposal means comprising a vertical well communicating with said storm sewer disposal means, said well having a continous peripheral wall with its upper end lying in a substantially horizontal plane; a street curb and gutter having a drainage collecting surface at an elevation greater than the upper end of said well wall; a precast catch basin supported upon and closing off the upper end of

said well and keying said well to said street curb and gutter, said catch basin having an integrally formed top slab, a pair of side walls and an interconnecting rear wall which mate with corresponding portions of the well wall along said upper end and a metallic nosing interconnecting and integrally formed with the side walls adjacent to the upper edges of said side walls at their ends opposite said rear wall, said nosing having a rearwardly extending flange, said top slab having a manhole and a removable cover closing said manhole which is partially supported by the rearwardly extending flange of said nosing.

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