April 23, 1968 C. JACUZZI 3,378,858

DRAIN ASSEMBLY

Filed June 17, 1965 2 Sheets-Sheet 1

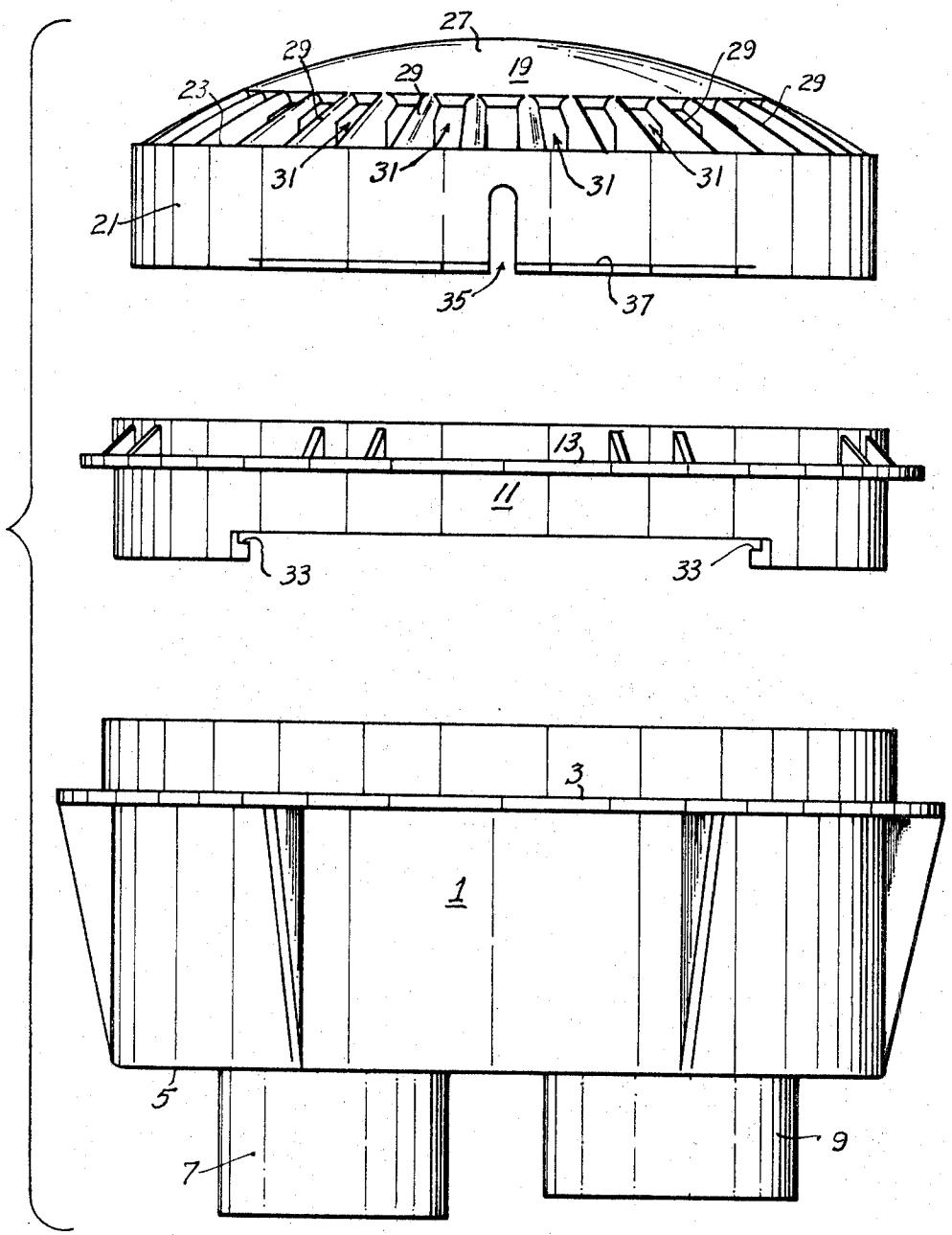


Fig. 1.

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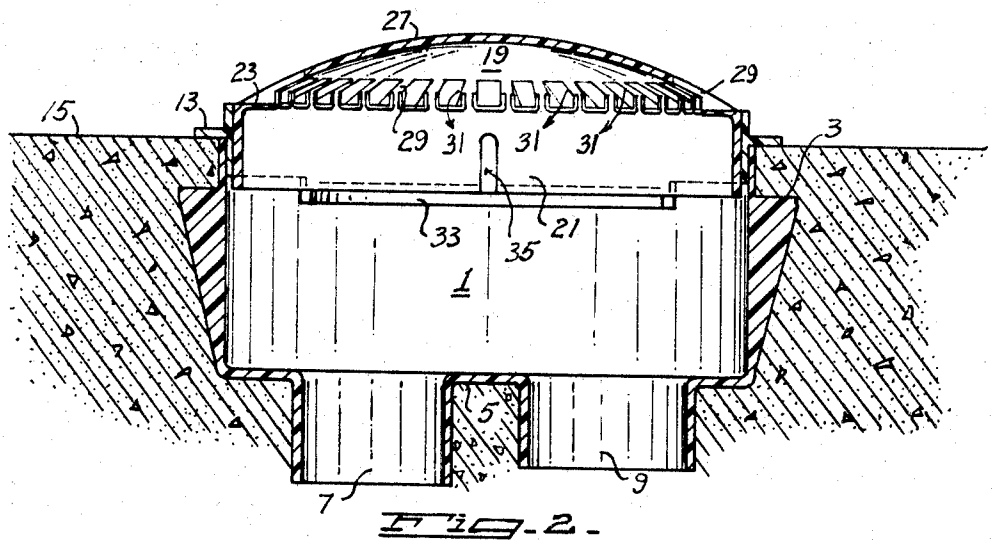


Fig. 2.

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United States Patent Office 3,378,858 Patented Apr. 23, 1968

3,378,858

DRAIN ASSEMBLY

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Filed June 17, 1965, Ser. No. 464,692
3 Claims. (Cl. 4—172)

ABSTRACT OF THE DISCLOSURE

A drain assembly for a swimming pool, having a cover including a ring, a central imperforate portion covering substantially the entire area bounded by said ring, and a plurality of short substantially radial ribs supporting said central portion slightly above the plane of the ring whereby all flow into such drain must be substantially horizontal and radial to preclude vortexing.

My invention relates to swimming pools or the like and more particularly to a main drain assembly for such pools.

In the construction of swimming pools, a main drain is installed in the floor or bottom of the pool, which drain has at least one outlet for connection to the suction side of the pool pump, from which it is pumped through a filter then back to the pool.

Such drain is usually also provided with another opening similar to the discharge opening to the pump, the second opening being provided for the installation of a hydrostatic relief valve which functions to relieve the pressure of ground water when the pool is being drained for maintenance or other reasons.

Heretofore, it has been the practice to provide the main drain with a cover in which slots extend over essentially the full diameter thereof to form a grate. With this type of cover, when the water level reached a low point in the pool during draining, a vortex would form, permitting air to enter the suction line of the pump and cause the pump to lose prime. This could occur when there was still as much as one foot of water left in the pool.

Also, during normal use of a swimming pool having such a drain, the vertical downward flow of water developed in the course of normal circulation for filtering purposes, constituted a hazard to weak swimmers caught in such flow.

To discourage this, a supplemental cover was installed over the grate, such cover involving a solid top with a depending flange having slotted openings therein causing water to enter parallel to the floor of the pool preliminary to entering the grate, and in this manner eliminated the downward flow and prevented vortexing.

Among the objects of my invention are:

(1) To provide a novel and improved drain assembly for swimming pools and the like;

(2) To provide a novel and improved drain assembly of simple construction and capable of performing the combined functions of the conventional grate and antivortex cover described;

(3) To provide a novel and improved drain assembly for swimming pools or the like, which lends itself to fabrication from materials such as plastic.

Additional objects of my invention will be brought out in the following description of the preferred embodiment of the same, taken in conjunction with the accompanying drawings, wherein:

FIGURE 1 is an exploded view of the drain assembly of the present invention in its prefered form; and

FIGURE 2 is a view in section depicting the drain assembly of FIGURE 1, as installed in the bottom a swimming pool or the like.

Referring to the drawings for a description of my invention in its preferred form, the same involves a substantially cylindrical drain body **1**, having a side anchor flange **3**, and a bottom **5**, from which depends a tubular projection **7** for flow coupling the drain body to the suction line of a pump (not shown), and a similar tubular projection **9** for installation of a hydrostatic relief valve (not shown).

Adjustably receivable into the cylindrical drain body is a grouting ring **11** of a diameter approaching that of the drain body and formed with a peripheral flange **13** adapted to overhang the upper edge of the drain body.

The drain body and grouting ring are installed in the pool bottom **15**, the side flange **3** of the drain body, providing means for anchoring the same in the concrete of the pool bottom, while the grouting ring is adjusted to bring its flange **13** substantially into the plane of the bottom, thus enabling one to adjust for variations in thickness to the side flange **3** of the drain body.

The grouting ring is adapted to slidably receive a cover **19**, the cover including a base ring **21** having an upper ring surface **23**, and a dome shaped center portion **27** supported above the plane of the upper ring surface by a plurality of radially oriented ribs **29** anchored to the ring surface and defining with such surface and said dome shaped central portion, a plurality of substantially horizontal flow passageways **31** into the drain assembly. Such flow passageways perform both the function of the grate and the function of the antivortex cover of the conventional drain assembly described above as representative of the prior art.

At spaced locations about the lower edge of the grouting ring, the grouting ring is formed with inwardly directed lips **33** to be engaged by the lower edge of the cover and thus determines the proper assembled position of the cover in the grouting ring.

The drain assembly as thus described, lends itself to being molded of plastic, the use of which material further lends itself to the molding of the cover with slits **35** in the base ring thereof, to impart resiliency and flexibility to such base ring, and if slightly flared, the cover may be dimensioned to snugly fit into the grouting ring while still being removable, if desired. Preferably, however, I prefer a somewhat loose fit of the base ring, and provide thin friction ribs **37** located diametrically on the outer surface of the base ring to frictionally retain the cover in its installed position in the grouting ring.

From the foregoing description of my invention in its preferred form, it will be apparent that the same satisfies all the objects attributed thereto, and while I have illustrated and described the same in considerable detail, it will be apparent that the preferred form is subject to alteration and modification without departing from the underlying principles involved, and I accordingly, do not desire to be limited in my protection to the specific details illustrated and described, except as may be necessitated by the appended claims.

I claim:

1. A drain assembly cover for a pool drain assembly and adapted to preclude vortexing as the water level approaches pool bottom during draining, comprising

a base ring having an upper ring surface, a central circular imperforate portion covering substantially the entire area bounded by said ring, and a plurality of short radial ribs located about said upper surface and supporting said central imperforate portion slightly above the plane of said upper ring surface to provide a plurality of horizontal flow passages whereby all flow into such drain must be substantially horizontal.

2. A drain assembly for a swimming pool or the like comprising

a substantially cylindrical drain body having side anchor means and a bottom, said bottom including means for flow coupling said drain body to the suction line of a pump, and means for installation of a hydrostatic relief valve,

a grouting ring of a diameter approaching that of said drain body and adjustably receivable therein, said grouting ring having a peripheral flange in line with the upper edge of said drain body to limit the extent of reception of said ring in said drain body,

and a cover slidably receivable in said grouting ring, said cover including a base collar having an upper ring surface, and a center portion supported above the plane of said upper ring surface by a plurality of ribs anchored to said ring surface and defining with said surface and said central portion, a plurality of substantially horizontal flow paths into said drain body, whereby to function both as a grate, and to preclude vortexing as the water level approaches pool bottom during draining.

3. A drain assembly for a swimming pool or the like comprising

a substantially cylindrical drain body having a side anchor flange and a bottom, said bottom having a tubular projection therefrom for flow coupling said drain body to the suction line of a pump, and another tubular projection for installation of a hydrostatic relief valve,

a grouting ring of a diameter approaching that of said drain body and adjustably receivable therein, said grouting ring having a peripheral flange in line with the upper edge of said drain body to limit the extent of reception of said ring in said drain body,

and a cover slidably receivable in said grouting ring, said cover including a base collar having an upper ring surface, and a dome shaped center portion supported above the plane of said upper ring surface by a plurality of ribs anchored to said ring surface and defining with said surface and said dome shaped central portion, a plurality of substantially horizontal flow paths into said drain assembly, whereby to function both as a grate, and to preclude vortexing as the water level approaches pool bottom during draining.

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