May 26, 1970 B. BELLINSON 3,513,977

LINT POT FOR SWIMMING POOL FILTER

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FIG. 1

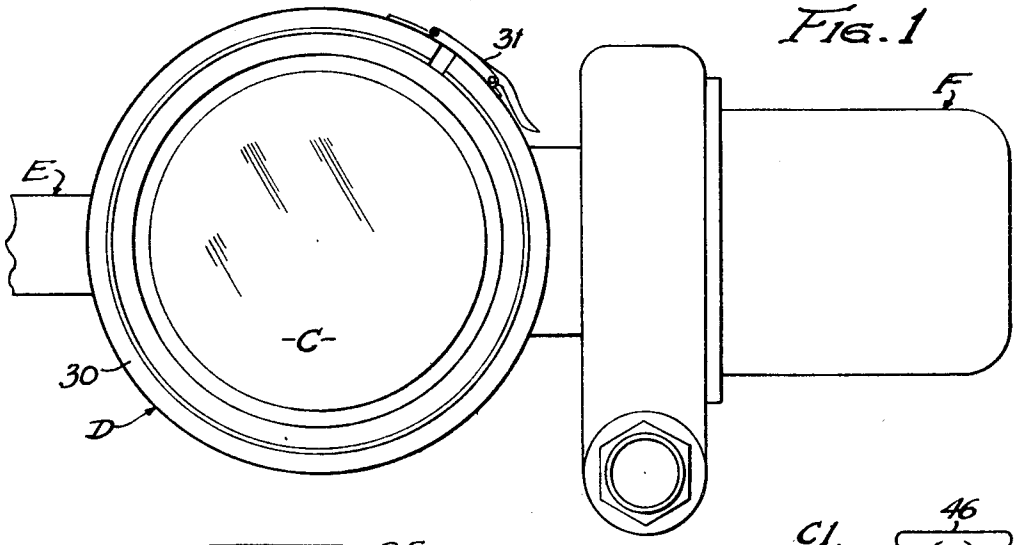


FIG. 3

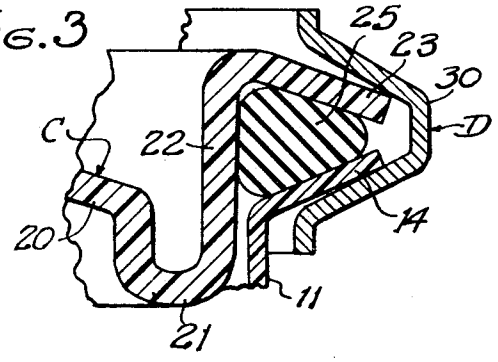


FIG. 5

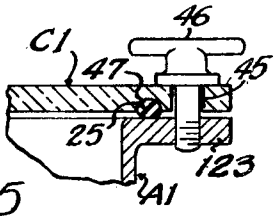
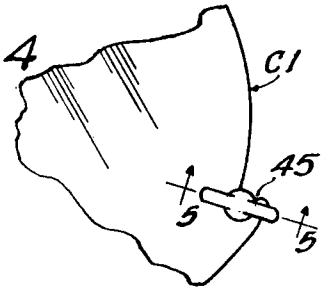


FIG. 4



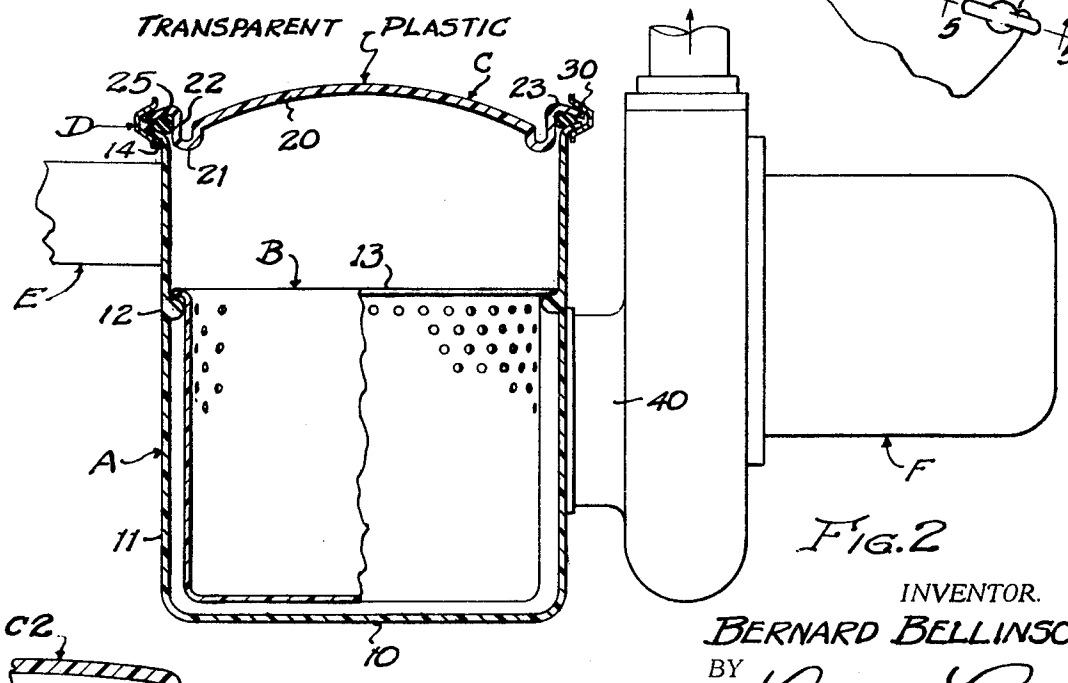


FIG. 2

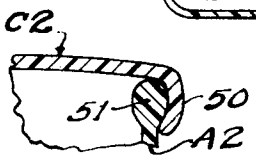


FIG. 6

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LINT POT FOR SWIMMING POOL FILTER

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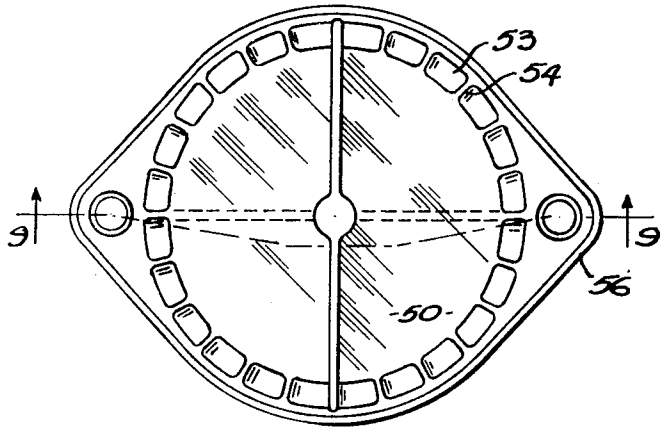


FIG. 7

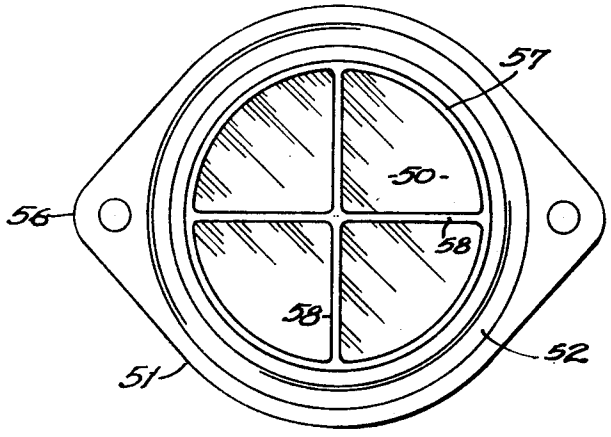


FIG. 8

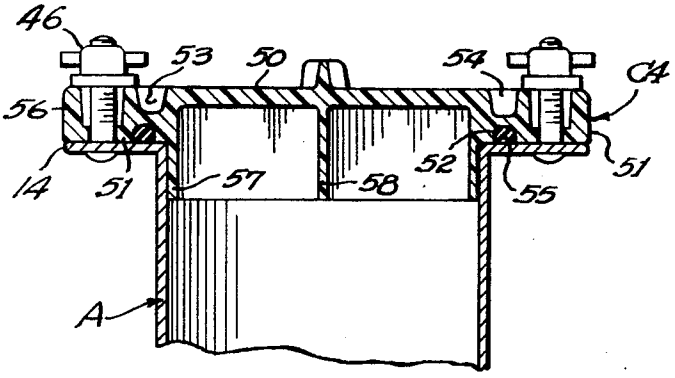


FIG. 9

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3,513,977

LINT POT FOR SWIMMING POOL FILTER

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Continuation-in-part of application Ser. No. 671,873, Sept. 29, 1967. This application Jan. 27, 1969, Ser. No. 814,219

Int. Cl. B01d 35/14

U.S. Cl. 210—94 7 Claims

ABSTRACT OF THE DISCLOSURE

Disclosed herein is a lint pot of a type comprising a casing in the form of a cup or pot having an open top normally closed by a transparent lid which is sealed to its rim and is removable in order to remove debris collected in a strainer basket within the pot. An outlet in the lower area of the casing is connected to the suction inlet of a pool circulation pump, and an inlet in the upper area of the casing, is connected to an inlet line which draws water from the pool (normally through the pool filter).

RELATED APPLICATION

This application in a continuation-in-part of my application Ser. No. 671,873, filed Sept. 29, 1967, for Lint Pot for Swimming Pools, now abandoned.

RÉSUMÉ OF INVENTION

This invention is characterized by a lid constructed wholly of transparent material, including a peripheral portion which is sealed directly to the rim of the pot casing, the seal being intensified by suction within the pot so as to avoid the leakage problem encountered in any effort to utilize a window in a metal cover. The invention is further characterized by means for supporting the window in a metal cover. The invention is further characterized by means for supporting the window portion of the cover against collapse under the pump suction while providing for maximum clarity of vision of the entire interior of the pot.

DESCRIPTION

The object of this invention is to provide a lint pot having a transparency such as to provide full view of the condition of the interior of the pot without opening it, and such as to maintain full pump suction on the inlet line from the filter.

In the drawings:

FIG. 1 is a plan view of the lint pot of my invention, connected between an inlet line and a pool circulation pump;

FIG. 2 is a vertical axial sectional view of the pot;

FIG. 3 is a detail sectional view of the coupling between the lid and casing of the pot, on an enlarged scale;

FIG. 4 is a fragmentary plan view of a modified form of the invention;

FIG. 5 is a vertical, radial sectional view thereof taken on line 5—5 of FIG. 4;

FIG. 6 is a fragmentary sectional view of another modified form;

FIG. 7 is a plan view of a cover embodying a preferred form of the invention;

FIG. 8 is an inverted plan view thereof; and

FIG. 9 is an axial sectional view of a lint pot equipped with the cover of FIG. 7.

Referring now to the drawing in detail, and in particular to FIGS. 1–3, I have shown therein, merely by way of example of one form in which the invention may be embodied, a lint pot comprising in general, a casing A containing a perforated strainer basket B, and a lid C coupled

to the top of casing A by means of a V-band Clamp D, the pot being connected between an inlet line E of the pool circulation system, and the pump F.

Casing A is of cylindrical pot form, including integral bottom **10** and lateral wall **11** having in its upper area an annular internal shoulder **12** supporting the rim flange **13** of strainer basket B, and having at its upper end an outwardly turned, upwardly flared rim **14**. Casing A (FIG. 5) can be of formed sheet metal, although preferably of molded plastic as indicated in FIGS. 1 and 3.

Basket B is of conventional cylindrical cup form, including perforated bottom and lateral walls which are spaced from the bottom and lateral walls of casing A as shown when its rim flange **13** is resting on the casing shoulder **12**. The basket may be lifted out of casing A when lid C is removed, and its contents of collected debris removed.

Lid C, as in the illustrative example shown in FIGS. 1 and 3, may be of transparent sheet plastic material, dieformed to include a central dome **20**, a depressed annular bead **21** of U-section encircling the periphery of dome **20**, a cylindrical collar **22** rising from the outer margin of bead **21** to a height above the level of the periphery of dome **20**, and a peripheral flange **23** of flat conical form, extending radially outwardly from the top of collar **22** with a downward flare. Collar **22** is of slightly smaller diameter than the internal diameter of lateral wall **11** of casing A, such as to be receivable therein with a loose piloting action, so as to position the flange **23** above the casing rim **14**, in registering relation thereto. A seal ring **25** is interposed between lid flange **23** and casing rim **14**.

The lid is preferably of a relatively stiff transparent plastic material (such as methyl-methacrylate, commonly known as Plexiglas as obtained from one source) and although it is sufficiently thick to avoid collapse of dome **20** under the differential operating pressure to which it is subjected, its dome shape will maintain it substantially rigid and unflattened. Such minor flattening as may occur will tend to expand the bead **21** into a closer fit within casing wall **11** and to flatten flange **23** into tighter engagement with seal ring **25**.

In the illustrative example shown in FIGS. 1 and 3, band clamp D is of a conventional type comprising a split band **30** of truncated V-section and a toggle type fastener **31** for connecting the ends of the band **30** and drawing them together so as to constrict the band **30** circumferentially. Thus the opposed lateral walls of band **30**, which bear against the rim **14** and flange **23**, will exert a wedging action against them clamping the seal ring **25** between them so as to provide a tight hydraulic seal between casing A and lid C. This seal is accentuated by atmospheric pressure acting against the external surface of lid C when pumping suction is applied to the interior of the pot, and thus leakage is completely avoided and loss of suction in the inlet line E is likewise avoided.

Inlet line E communicates with the interior of casing A above the rim of basket B. Pump F has an inlet **40** connected to the interior of casing A below the basket rim and its supporting shoulder **12**, so that the pump will apply suction to the space defined between the exterior of the basket and the casing interior. As water is evacuated from this space, water will be drawn from inlet line E into the casing A and thence into the strainer basket B, which will arrest all debris particles of substantial size, and hold them.

In using the lint pot, it is only necessary to look downwardly into the pot through the transparent lid C in order to immediately determine the amount of debris contained in basket. When there is sufficient accumulation to decrease the flow to a point where efficiency is impaired, the pot is opened up by removing band clamp D, and the basket B is removed, emptied and replaced. The lid C is

then replaced, the band clamp D is replaced and is tightened, and the pot is ready for further operation.

As shown in FIGS. 4 and 5, the invention can be embodied in a modified form wherein a transparent lid C1 can be in the form of a plate of disc shape, having diametrically opposed bayonet slots 45 adapted to receive correspondingly positioned screw studs 46 secured to the rim 123 of pot A1, an O-ring 25 being retained in an annular groove 47 in lid C1. Lid C1 can be of suitable transparent plastic (e.g. Plexiglas or equivalent), or of glass if desired. A molded transparent lid, generally of flat disc form as in FIG. 5 but with a circular periphery molded to fit a band clamp such as clamp D, can be used with such a clamp instead of the formed sheet lid of FIGS. 1 and 3.

The lid and its attaching means may be other forms, such as for example a transparent cap C2 (FIG. 6) with a peripheral flange 50 coupled to a bead rim 51 of a container A2 by an elastic contractive engagement or, alternatively, a screw-threaded engagement; and the cap C2 may be of sufficiently soft, flexible material to seal against the more rigid rim 51 with a fluid-tight sealing engagement. The cap C2 can be of a slightly stretchable, plasticized, transparent, elastic plastic material.

It is to be understood that the constructions described above are disclosed as examples only, and that the invention may be embodied in various forms wherein a transparent lid, cover or cap is sealed to the rim of a lint pot by quickly detachable coupling means of any suitable form.

Referring now to FIGS. 7–9, I have shown therein an improved cover which provides a clear view of the entire interior of the lint pot while resisting the pressure differential applied thereto by the pump suction, a problem that has given trouble in simpler cover constructions. This cover embodies a relatively thin window portion 50 of flat disc form, merging at its periphery with a thick integral rim 51 having in its underside an O-ring groove 52. In its upper side, opposite the groove 52, is a circumferential succession of pockets 53 separated by radial tie webs 54, the pockets 53 collectively defining, in effect, a deep annular recess separated from the O-ring groove 52 by a thin bottom web which functions as a window through which an O-ring 55 can be clearly viewed to ascertain whether it is in proper position in groove 52. O-ring 55 engages the pot flange 14 to seal the cover to the pot. At diametrically opposite sides of the cover it has integral apertured ears 56 for bolting the cover to the pot by means of bolts 46.

At the inner margin of rim 51 is an integral, cylindrical skirt 57 which projects downwardly into the pot when the cover is attached. Extending to the full depth of skirt 57, and integrally joined to the window 50 and the skirt 57, are the four arms of a buttressing cross 58 which supports the window 50 rigidly against inward deflection under the differential of atmospheric pressure over pump suction. The entire cap is injection molded of a suitable clear, transparent plastic material such as acryllic, e.g. Plexiglas (methyl methacrylate) or polyethylene.

I claim:

1. A lint pot for a swmming pool filtering system, said lint pot including:

a casing having a top opening defined within a radial flange;

strainer means within said casing for collecting debris from water drawn through said casing by pressure differential applied thereto;

a lid of transparent plastic material comprising;

a transparent central disc body overlying the interior of said casing and functioning as a window providing a view of said interior and its contents;

an integral rim around the periphery of said disc body, overlaying said flange in axially-opposed relation thereto;

an axially extending cylindrical skirt integral with and disposed radially between said rim and said disc body and receivable within said top opening to position said lid in concentric relation to said casing;

said rim having a first annular depression in its underside;

an O-ring received in said first annular depression and engaged between said rim and said flange and sealing the lid to said casing;

said lid having in its upper side a second annular depression in opposed relation to said first annular depression and having a transparent annular web separating said annular depressions, said O-ring being visible through said annular web;

a cross-shaped buttress bridge within said skirt, comprising webs radiating from a common axis, joined integrally to said skirt at their outer ends and to said disc body at their upper extremities, said webs extending axially downwardly from said disc body to a depth substantially equal to that of said skirt, and supporting said disc body against said pressure differential;

said rim having a plurality of radial tie webs bridging said second annular depression and integrally joined to said rim and to said disc body;

and means acting between said rim and said flange for coupling them together in sealed relation.

2. A lint pot as defined in claim 1;

said lid rim being relatively thick axially and said central disc body being relatively thin;

said rim having an underface defined by an annular radial shoulder in the periphery of said lid, said first annular depression being an O-ring groove in said radial shoulder;

said cylindrical skirt being integrally joined to said rim at the inner margin of said shoulder and projecting downwardly into said casing;

said second annular depression being axially aligned with said O-ring groove and said annular web defining the bottom of said second annular depression.

3. A lint pot as defined in claim 2, wherein said second annular depression is composed of a circumferential array of upwardly opening pockets in said rim, said pockets being separated by said tie webs.

4. A lint pot as defined in claim 3, wherein a major portion of the axial thickness of said lid rim is disposed below the level of said disc body.

5. A lint pot as defined in claim 4, said lid rim including radially projecting ears provided with bolt holes for attachment of the lid to said flange;

said rim having an upper face disposed substantially in the plane of the upper face of said disc body.

6. A lint pot for a swimming pool filtering system, said lint pot including:

a casing having a top opening defined within a radial flange;

strainer means within said casing for collecting debris from water drawn through said casing by pressure differential applied thereto;

a lid of transparent sheet plastic material comprising;

a transparent dome-shaped central disc body overlying the interior of said casing and functioning as a window providing a view of said interior and its contents;

an integral depressed annular bead of U-section extending downwardly from the periphery of said central disc body and receivable in said top opening to position said lid in the mouth of said casing, said bead having an outward portion in the form of a cylindrical collar extending upwardly above said disc body periphery and above said casing mouth;

a peripheral rim extending outwardly from the upper extremity of said collar and over said casing flange in axially-opposed relation thereto, said annular bead, collar and rim collectively being of S-section;

an O-ring engaged between said rim and said casing flange and internally contained between said collar and the top of the casing;

and a V-band clamp embracing and compressively engaging said lid and casing flanges so as to seal them against said O-ring.

7. A lint pot as defined in claim 6, wherein said lid flange is of shallow frusto-conical form, overhanging said O-ring with a downward and outward inclination.

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U.S. Cl. X.R.

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