United States Patent [19]

Gerson et al.

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[54] **PAINT STRAINER**

[75] Inventors: **Louis M. Gerson**, Middleboro; **William G. Simmons**, Walpole, both of Mass.

[73] Assignee: **Louis M. Gerson Co., Inc.** Middleboro, Mass.

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[52] **U.S. Cl.** **210/497**

[51] **Int. Cl.** **B01j 23/28**

[58] **Field of Search** ..... 210/237, 238, 470, 210/474, 477, 497; D44/29 K

[56] **References Cited**

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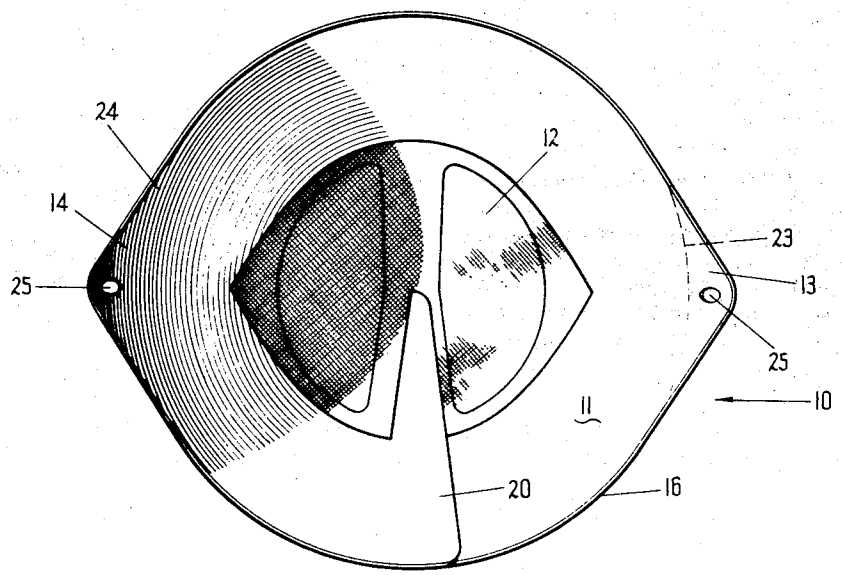
Primary Examiner—Charles N. Hart

Attorney—Wolf, Greenfield & Sacks

[57] **ABSTRACT**

A paint strainer has a generally conical body formed of a thin imperforate sheet material such as paper. The body has a plurality of cutouts covered by straining screen means with a filling opening defining a preselected circumference. A plurality of diametrically opposed tabs at 180° locations are integrally formed with the body and extend outwardly from the filling opening. Each of the tabs defines a base line extending over a distance corresponding to at least 17½ percent of the circumference of the filling opening. The tabs can be perforated or scored to allow them to be bent over a support structure or removed entirely. The tabs having a wide base, enhance the load carrying characteristics of the body when hand or mechanically held by the tabs. Buckling, wrinkling and sagging are thus eliminated when the strainer body is filled.

1 Claim, 6 Drawing Figures



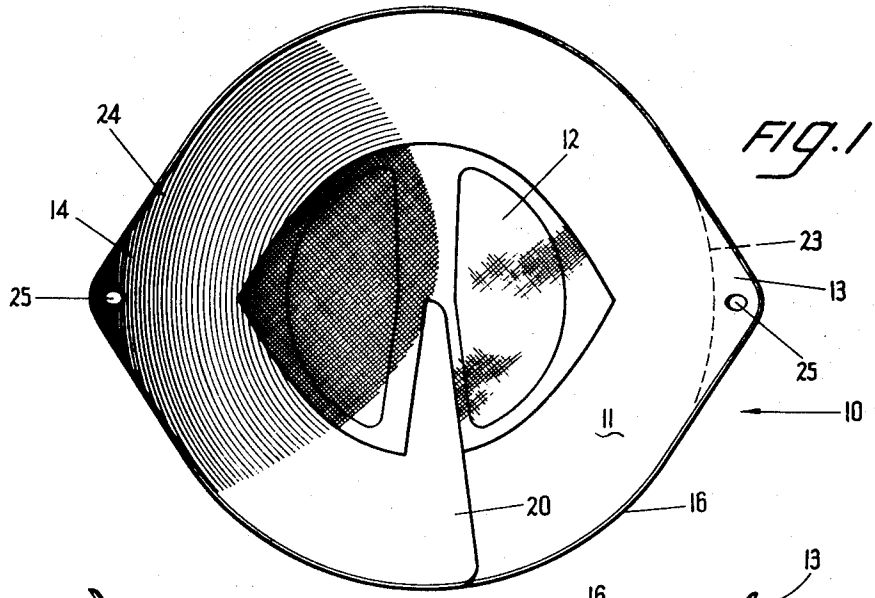


FIG. 1

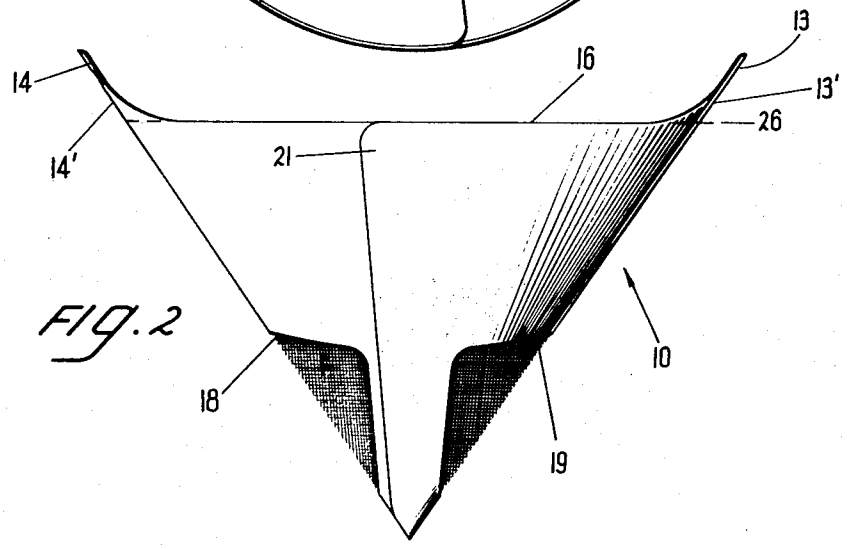


FIG. 2

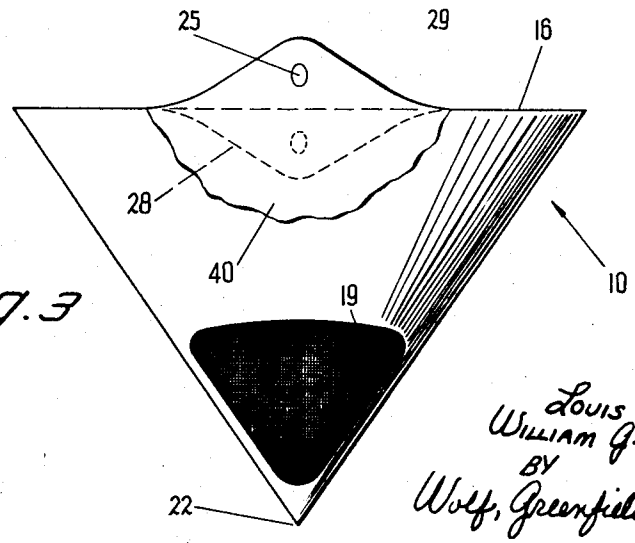


FIG. 3

INVENTORS
Louis M. Gerson
William G. Simmons
BY
Wolf, Greenfield & Sacks

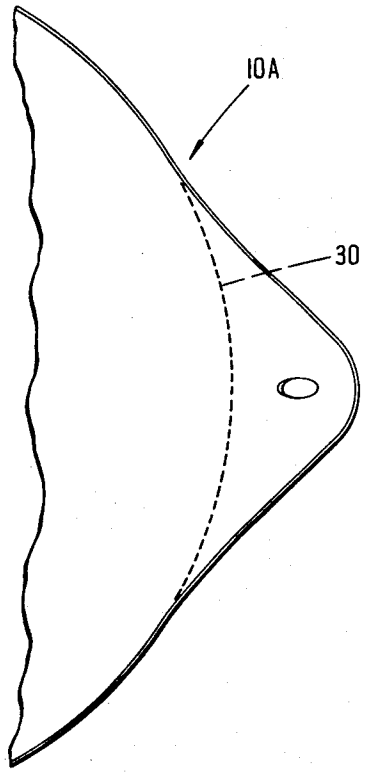


FIG. 4

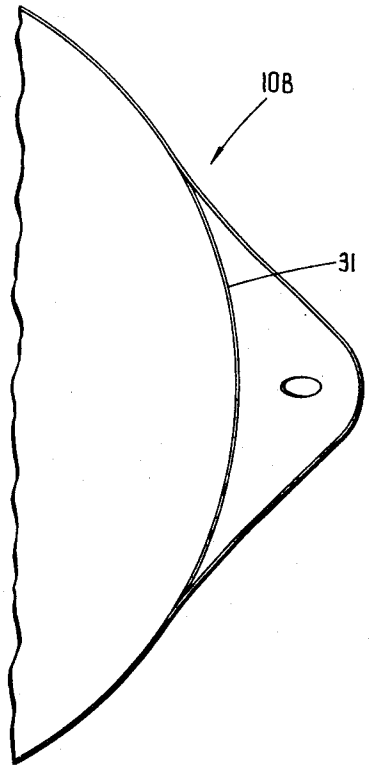


FIG. 5

INVENTORS
LOUIS M. GERSON
WILLIAM G. SIMMONS
BY
WOLF, GREENFIELD & SACKS

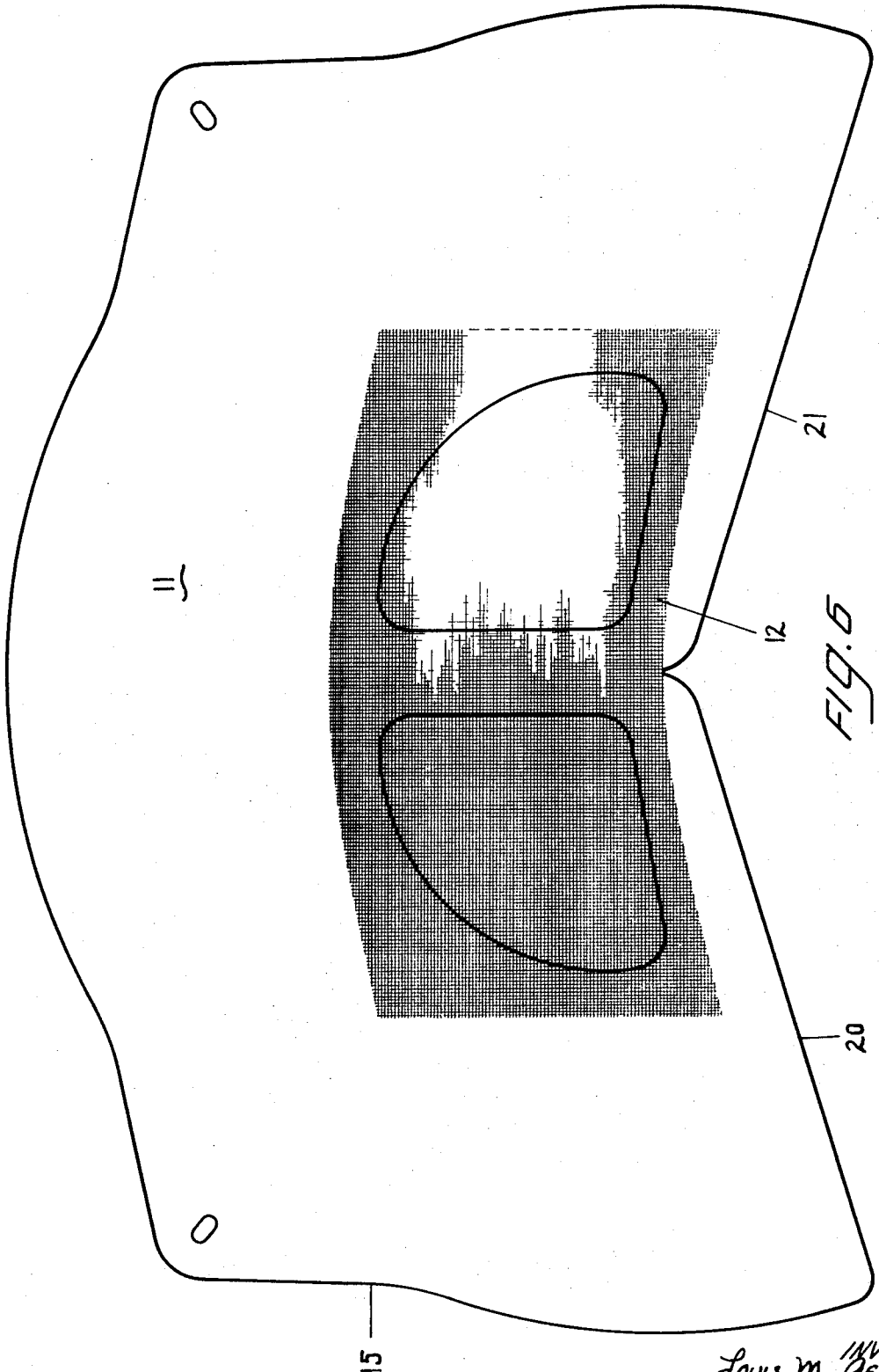


FIG. 6

INVENTORS
LOUIS M. GERSON
WILLIAM J. SIMMONS
BY
Wolf, Greenfield & Sacks

PAINT STRAINER

BACKGROUND OF THE INVENTION

A wide variety of disposable filters or strainers are known for use in various industries. One particular type of highly successful disposable strainer is illustrated by U.S. Pat. Nos. D208,488 and D208,936, the latter of which is owned by the assignee of this application. This type of disposable strainer comprises a strainer body having an apex end defining a plurality of cutouts which are covered by a straining screen enabling straining through a lower portion of the body with support provided by a thin conical body wall. Such strainers are often used in conjunction with a support apparatus such as a stand into which the strainers are placed. In recent times, handling tabs have been used to enable lifting, holding and positioning of the strainers when desired. However, such tabs as are known for use are usually of small size in comparison to the filling opening end size of the strainers. They are not centered at 180° apart and often buckling, wrinkling and sagging problems are evidenced in the strainer bodies when they are being used, and it is desired to lift the strainers for repositioning or disposal.

SUMMARY OF THE INVENTION

It is an object of this invention to provide an improved disposable strainer having tabs which enhance the load bearing characteristics of the strainer.

Another object of the invention is to provide a disposable strainer in accordance with the preceding object in which provision is made for firm support of the strainer in use and ease of removal of the tabs when desired.

According to the invention, a disposable strainer for use in paint straining has a generally conical body formed of a thin imperforate sheet material. The body defines a plurality of generally sector-shaped cutouts at an apex end thereof. An opposing open end defines a generally circular filling opening having a preselected circumference. Perforated strainer screen means extend over the cutouts. A plurality of tabs are integrally formed with the thin sheet material of the body and extend outwardly from the filling opening with each of the tabs defining a broad arcuate attachment base line. Each of the base lines extend over a distance corresponding to at least 17½ percent of the circumference of the filling opening to enhance the load bearing characteristics of the body.

In alternate embodiments of the invention, the base line can be perforated or scored to enable folding over the tabs to provide additional support for the paint strainer when positioned in a stand or other support device. When perforations are used, a convenient means is obtained for recording straining through the paint strainers. For example, each of the two tabs can be suitably marked with identifying notations. After the straining operation, one tab can be removed and permanently filed if desired, as a work record.

When no tabs are desired, the perforations permit rapid, easy removal with only fingertip pressure. Yet, even with perforations, the tabs provide substantial attachment to the strainer body to prevent buckling, wrinkling and sagging even when the strainer body is full of paint passing through the strainer as the strainer is held.

BRIEF DESCRIPTION OF THE DRAWINGS

The above and other features, objects and advantages of the present invention will be better understood from the following description when read in conjunction with the accompanying drawings in which:

FIG. 1 is a top inside plan view of a preferred embodiment of this invention;

FIG. 2 is a side view thereof;

FIG. 3 is an alternate side view thereof taken at 90° to the view shown in FIG. 2;

FIG. 4 is a fragmentary top plan view of an alternate embodiment thereof;

FIG. 5 is a fragmentary top plan view of a second alternate embodiment thereof; and

FIG. 6 is a top plan view of the preferred embodiment prior to formation into the form shown in FIG. 1.

DESCRIPTION OF PREFERRED EMBODIMENTS

With reference now to the drawings and more particularly FIGS. 1–3 and 6, a preferred embodiment of a disposable strainer of this invention is illustrated in the form of a paint strainer denoted at **10**. The paint strainer **10** has a body **11** with cutouts **18, 19** closed by a mesh filter **12** and carries outwardly extending broad based tabs **13** and **14**. The strainer **10** is used as a paint strainer to remove impurities, particles, coagulated matter and the like.

The body **11** of the strainer is formed of a thin imperforate sheet material and preferably a formulated paper which is formed from a flat sheet to form a planar blank **15** as best shown in FIG. **6**. The blank **15** is essentially a sector of a circle and defines a circumferential line **16** at an upper edge which forms the filling opening of the strainer. The blank is formed with two cutouts **18** and **19** which are covered by an overlapping mesh sheet **19** secured to the blank **15** by suitable adhesives as known in the art. The strainer body is formed by shaping the blank into the form of a cone and fastening together overlapping edges **20** and **21** to define a centrally located apex end **22** and a filling opening end at the circumferential line **16**.

The sheet material of the body **11** can be, for example, but is not limited to, kraft board, sulphate board, coated or non-coated paper and in all cases is resistant to paint.

The filter mesh **12** can be of suitable screening material as known in the art such as textile mesh of sufficient mesh size to filter the particular material processed in any particular use. Synthetic, textile, metallic and other mesh materials can be used. Mesh sizes can vary according to the nature of paint and desired finish and can, for example, be in the range of from 32 × 28 threads/in. to 80 × 80 threads/in.

Tabs **13** and **14** are each shaped to have a broad base portion **13'** and **14'** integrally joined with, and forming parts of, the body **11** along imaginary arcuate extensions of the circumference **16** denoted at broad base lines **23** and **24** in FIG. **1** and at straight dotted line **26** in FIG. **2**. An important feature of this invention resides in the fact that the base portion of each tab meets with a portion of main body **11** at the line **26** over a distance of at least 17½ percent of the length of the circumferential line **16**. Thus, in the preferred embodiment illustrated at **10**, where the circumference **16** is 18.5 inches, each tab has a base distance along its imaginary lines **23, 24** of 3¼ inches each. Preferably the tabs **13** and

14 are 180° apart on the circumference of the filter and are diametrically opposed. This feature enables lifting at opposed holes 25 without tipping of the strainer.

Because of their broad bases, when the strainer contains paints and the like being filtered, the tabs can be used to lift, to hold and to position the filter without buckling, wrinkling and sagging. Moreover, the tabs can be used to support the body during straining so that buckling, wrinkling and sagging of the mesh due to the weight of paint passing through the strainer is prevented during straining. Thus, the tabs can be bent over as suggested by the dotted outline 28 to form a support over the rim of a stand suggested at 40 in FIG. 3.

FIG. 4 illustrates an alternate embodiment of the invention where the strainer 10A is identical to strainer 10 described and shown in connection with FIGS. 1–3 and 6 except that a line of perforations 30 is provided along each imaginary line 23, 24. These perforations enable tearing off of the tabs after use or before use as desired. They further enhance bending over the tabs on the rim of a stand with which the strainer is used. Such bending over acts to further support the strainer within a stand or other support means since an edge portion directly underlies the strainer.

Another alternate embodiment of the invention is shown in FIG. 5 where the strainer 10B is identical to the strainer 10A except that a scored line 31 is used instead of the perforated line 30 to obtain similar advantages as obtained in connection with strainer 10A.

Because of the broad base tab features discussed above, the paint strainers of this invention allow increased loading with the ability to hold the strainer under shop working conditions. Dropping and spilling is reduced and controlled while buckling, wrinkling and sagging are eliminated.

While specific embodiments of this invention have been shown and described, it should be understood that many variations thereof are possible. For example, more than two tabs can be used if desired. Similarly, although only two cutouts 18 and 19 are used, additional cutouts can be used. The dimensions of the strainer can vary greatly depending upon the particular material which is to be strained.

We claim:

1. A paint strainer comprising,

a generally conical one-piece body formed of a thin imperforate paper sheet material formed with an overlying generally straight edge,

said body defining two generally sector-shaped cutouts at an apex end thereof and an opposing open end defining a generally circular filling opening having a preselected circumference,

perforate strainer screen means extending over said cutouts,

a plurality of tabs integrally formed with said body and extending outwardly from said filling opening, said tabs being diametrically opposed and each defining a hole therein with the holes being 180° apart,

each said tab defining a broad attachment base line and an outer edge in the form of a generally inverted wide mouth tapering U-shape,

each of said base lines extending over a distance corresponding to at least 17½ of the circumference of said filling opening to enhance the load bearing characteristics of the body to cause support for said body over a substantial portion of said circumference when said tabs are used to lift said strainer.

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