Widget － ウィジェットに関する技術資料

text: t.k. 2006/07/17

意味 1) 「からくり､仕掛け､小道具：イギリス口語の古いいい回し」（あまり使われない｡記載していない英和辞書もある｡）
意味 2) 「缶ビールに入っている､窒素ガスなどを蓄える小さな容器」（普通の英和辞典には載っていない｡）ギネスが有名で､今や widget という言葉はギネスの登録商標｡英国ではギネス以外のビール各社もよく使用していて､英国では市販缶ビールの過半はウィジェット入り｡びん詰めビール用もある｡

ギネスドラウトに使用されているフローティングウィジェット｡液面に浮いた状態で小さな穴（写真ではわかりにくいが上の矢印の部分｡レーザー加工で開ける由）は液面下に沈む設計。
左の缶は 2005 年末からの 202､右はそれまでの 204.

数年前まで使われていたディスクタイプ｡日本では「UFO」という名前で広告されていた｡缶底に固定された状態､すなわち液中に沈んだ状態で使用される。
現行のフローティングウィジェットに比べると､コストが明らかに高そう。

2002 年にギネスが上市した場用のウィジェット､通称「ロケット･ウィジェット」。
ややとがったほうが上になるように位置が決まっている｡また､羽がついていて場口から出ないようになっている。

ギネスのパテントを避けた形で､イギリスのビールメーカーの何社かは各種のウィジェットを開発した｡写真は､やや古いが 2000 年ごろの Boddingtons の金属製の widget｡小さな容器の上下に極く小さな穴の開いたプラスチックバルブが付いている。（写真は真っ二つにカットしてある｡）
Boddingtons ブランドはいまや InBev 傘下で､最新版 MkIV は全樹脂製と聞く。
また､カールスバーグ UK 傘下になった Tetley ’ s のウィジェットも有名。

(12) UK Patent Application (19) GB (11) 2 183 592 (13) A

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GB 1266351

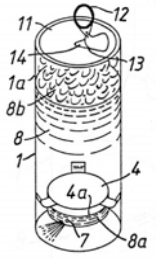
(58) Field of search
B8D
B8P
Selected US specifications from IPC sub-class B65D

(54) **Carbonated beverage container**

(57) A container for a beverage having gas (preferably at least one of carbon dioxide and inert (nitrogen) gases) in solution consists of a non-resealable container 1 within which is located a hollow secondary chamber 4, eg a polypropylene envelope, having a restricted aperture 7 in a side wall. The container is charged with the beverage 8 and sealed. Beverage from the main chamber of the container enters the chamber 4 (shown at 8a) by way of the aperture 7 to provide headspaces 1a in the container and 4a in the pod 4. Gas within the headspaces 1a and 4a is at greater than atmospheric pressure. Preferably the beverage is drawn into the chamber 4 by subjecting the package to a heating and cooling cycle. Upon opening the container 1, eg by draw ring/region 13, the headspace 1a is vented to atmosphere and the pressure differential resulting from the pressure in the chamber headspace 4a causes gas/beverage to be ejected from the chamber 4 (by way of the aperture 7) into the beverage 8. Said ejection causes gas to be evolved from solution in the beverage in the main container chamber to form a head of froth on the beverage. The chamber 4 is preferably formed by blow moulding and located below beverage level by weighting it or as a press fit within the container 1 by lugs 6 engaging the container walls, the container being preferably a can, carton or bottle. The chamber 4 may initially be filled with gas, eg nitrogen, at or slightly above atmospheric pressure, the orifice being formed by laser boring, drilling or punching immediately prior to locating the chamber 4 in the container 1.

The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

FIG. 5.



GB 2 183 592 A

基本となるギネスのパテント、1985 年出願の英国特許 8529441。アンリカ特許は 4832968。
他社のパテントはどうかというと、構造の差であったり、または単に「窒素を放出」と「窒素とビールの混合物を放出」という表現だけの差であったりする。パテントは難しい。

Guinness can be hard to swallow

THE PLASTIC device that produces the creamy head on cans of draught Guinness may make the stout hard to swallow.

At least four drinkers have found small rigid shards of plastic in their beer.

Scientists at Guinness spent five years and £5m developing the opaque plastic ring, which injects gas into beer when a can is opened. This enabled brewers reproduce the traditional head of draught beers for the take-away market, revolutionising the industry. The company launched Draught Guinness in 1989, and it is of the top six best selling cans, grossing more than £45m a year.

Bill Spears, public affairs director, confirmed last night that there had been "a handful" of complaints since last month, but he dismissed suggestions that these complaints might indicate some structural defect.

Last Sunday, Bass issued press advertisements recalling cans of Worthington's Best Bitter following the discovery of plastic by three drinkers. Bass has designed its own widget, and a spokesman said that the plastic had been canned by a faulty machine.

Guinness has taken no similar steps to alert drinkers. Brian Beanland, company secretary, told one customer who sent shards of plastic for analysis that the company had launched an investigation.

"In spite of what people may think, we really do take [this evidence] seriously and the fragments will be, or are being examined in a laboratory." Mr Beanland added that the company had no clear idea what was causing the widgets to fracture but that in each case the beer had been flat when opened.

He said that he had decided not to refer the matter to external food safety authorities because the number of reported fractures had been so small. "We have to put this in the context of the millions of cans of which almost all of that product has been consumed."

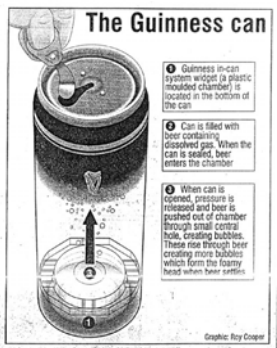
He said that Guinness had been told by doctors that the plastic shards should not harm adults. "We are advised that the size of the fragment would cause possible injury to children – but then it is not a product that children should be drinking."

Among those who have complained to Guinness is a man who has been referred to a hospital specialist following fears that a shard may have lodged in his throat. Another woman found plastic fragments in her mouth.

Tim Powlesland, quality inquiry manager at the Park Royal Brewery, north London, told one customer that a general recall had been ruled out because "product recalls are not 100 per cent, putting notices in the paper, whatever. You don't get to everyone anyway and this product has a relatively short shelf life.... There's a lot of fresh stock in the supermarkets these days and the majority will have been opened."

Brewing breakthrough, page 3

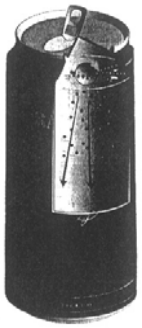
The Guinness can



INTERNATIONAL NEWS

《新方式の泡立て機能付き缶ビール》

社が1989年に発売した「樽から注いだような泡が立つ」缶入り"Draught"すでに５億缶以上が飲まの内底にプラスチック製り付けられている。缶蓋の中に内圧で密封され、く放出され、グラスに注ぎ上げることができる。の発売以来，他社の方式の缶ビールは年び，イギリスの缶ビーしている。ただ，この缶底にしっかりと固定造ラインの能率に影響，ある会社では，製造ック製仕掛けの一片がとがあった。そのため，式の研究が続けられた。が導入したのは，小さな球形の仕掛け（floating widget）で，ビール充填前に缶内に落とすだけで済むというものである。缶蓋を開けると，球形の仕掛けにある１つのピンホールから窒素ガスがビールに放出される。この仕掛けは，従来の固定式と異なり回転するため，液体と接する面が増え，窒素ガスの効率が良くなるという。また，同社によれば，缶を傾けると球形の仕掛けが奥の側面に移動するため，ビールを注ぐときの邪魔になることがない。この球形の仕掛けは直径約25mm，ピンポン球よりやや小さく，材質は固定式と同様に食品グレードのポリプロピレン製で，メーカーはイギリスの McKechnie Plastics Components 社である。

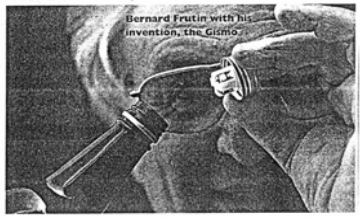


新方式の球形の仕掛けは，すでに"Draught Guinness"の缶に使用されており，1998年中に世界のビール市場に導入されるが，この技術をライセンシングする予定はないという。

（ＣＡＮ：1998年１月号）

上：1989 年、ディスク型のウィジェットが市販開始。The Independent 24.12.92。
下：1997 年からボール型のフローティングウィジェットが上市。Beverage Japan Feb. 98。

Real costs of a screw-top widget



BREWING INDUSTRY interest in the screw-top widget launched by inventor Bernard Frutin has been tempered by questions about real costs and concern about the marketing potential of 'draught' beer in a screw-top.

Mr Frutin's manufacturing company Rocep Pressure Packs is producing prototypes of the Gismo, as it is called. It consists of an insert attached to the inside of the closure, with a stainless steel capsule which releases a droplet of high-pressure nitrogen saturated water into the beer on opening.

Advantages of the system, says Rocep, are its simplicity and relative low cost. Depending on production volumes, unit cost of the Gismo could be between 10p and 20p, says the company. Work is currently underway with brewers and their suppliers to develop an inserting and closing system which could be fitted into existing lines.

Production of the Gismo is expected to start in early 1996, says Rocep (Rocep Business Park, Kings Inch Road, Deanpark, Renfrew, Scotland PA4 8XY - tel: 0141 8852222, fax: 8867464), and brewers have told *PN* that they see a huge potential for the system.

There may be initial consumer resistance to the idea of a 'draught' beer in a screw-top bottle, say brewers, requiring considerable marketing expertise and effort for a product launch. Regional brewers have suggested that the screwtop can be seen as a positive point of difference.

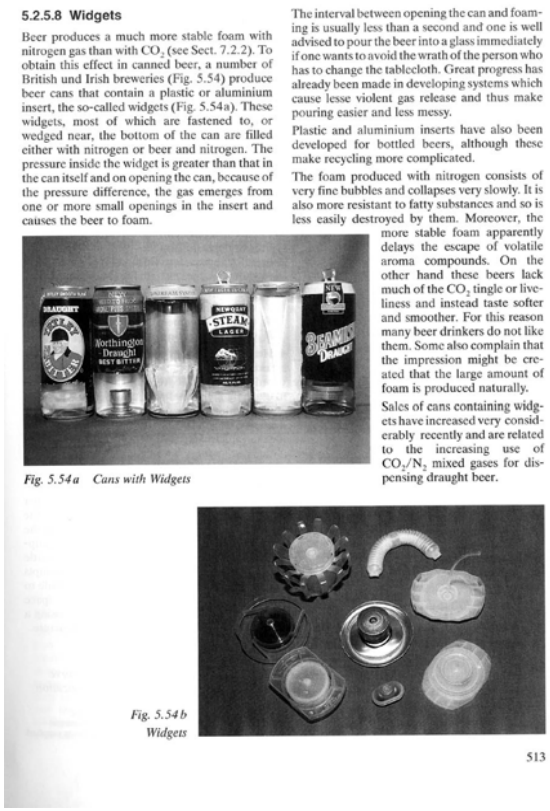
The company hopes that users will make savings and be able to maintain basic brand 'colour coding' by fitting the Gismo to existing or stock bottles with ropp or twist closures. But some brewers say it is likely that the launch of a completely new product would in any case involve a fresh pack design for reasons of marketing as much as physical performance.

Earlier this year, Whitbread launched 'draught' Murphy's in a bottle (*PN* May '95) and Bass is working towards a widgeted premium Carling beer in glass for the end of the year.

CIRCLE NUMBER LG-170

イギリスで「キャップにウィジェット機能を持たせる」というプロジェクトを推進した人がいた。「Gismo」という名称で、ビールよりむしろ清涼飲料をターゲットにしていた。
下の写真は、当社の「地ビールパッケージニューズ 99 年 10 月号」に掲載した実物写真。

日経新聞 1994 年 7 月 28 日の一面広告。当時、ギネスは日本ビールさんが扱っていた。
ディスク型のウィジェットを「UFO」と称して PR している。
窒素、という言葉も使用している。



5.2.5.8 Widgets

Beer produces a much more stable foam with nitrogen gas than with CO_2 (see Sect. 7.2.2). To obtain this effect in canned beer, a number of British und Irish breweries (Fig. 5.54) produce beer cans that contain a plastic or aluminium insert, the so-called widgets (Fig. 5.54a). These widgets, most of which are fastened to, or wedged near, the bottom of the can are filled either with nitrogen or beer and nitrogen. The pressure inside the widget is greater than that in the can itself and on opening the can, because of the pressure difference, the gas emerges from one or more small openings in the insert and causes the beer to foam.

The interval between opening the can and foaming is usually less than a second and one is well advised to pour the beer into a glass immediately if one wants to avoid the wrath of the person who has to change the tablecloth. Great progress has already been made in developing systems which cause lesse violent gas release and thus make pouring easier and less messy.

Plastic and aluminium inserts have also been developed for bottled beers, although these make recycling more complicated.

The foam produced with nitrogen consists of very fine bubbles and collapses very slowly. It is also more resistant to fatty substances and so is less easily destroyed by them. Moreover, the more stable foam apparently delays the escape of volatile aroma compounds. On the other hand these beers lack much of the CO_2 tingle or liveliness and instead taste softer and smoother. For this reason many beer drinkers do not like them. Some also complain that the impression might be created that the large amount of foam is produced naturally.

Sales of cans containing widgets have increased very considerably recently and are related to the increasing use of CO_2/N_2 mixed gases for dispensing draught beer.

Fig. 5.54a Cans with Widgets

Fig. 5.54b Widgets

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「クンツェ」（ビール関係者は皆さん知っている有名なビール解説書）には、ちゃんと widget の解説ページがある。
結構いろいろな形状の写真はあるが、詳細技術には触れていない。

（参考資料）上：「セラストリーム」、ホローファイバーを通じて、ディスペンス直前のビールに窒素ガスを吹き込む。スーパークリーミーな泡のビールができる。　下：2006 年発売の「プライムタイム」には「原材料：麦芽・ホップ・窒素」の表示が。

以上(text: t.K.)

Tidbit ミニ知識：

窒素：窒素の「窒」は「穴」と「至」からできた文字。「穴が至る(一杯になる)」から「ふさぐ」という意。窒息など。（角川、新字源漢和辞典）
Azote(アゾトゥ、アゾーテ)：フランス語やイタリア語の窒素。ギリシャ語起源。「呼吸を困難にする」の意。（白水社。仏和辞典）漢字の意味に似ている。
Nitrogen（ナイトロゲン）：英語の窒素。ニトロ（硝酸化合物）と gen（生じたもの、という接尾語）の組み合わせ。（研究社、英和辞典）