

Aluminium Beverage Cans: A Pop-Culture Artifact

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Abstract- This paper will decode an evolutionary product design of an Aluminium Beverage can that had a dripping effect in the mainstream medium of entertainment, and it still maintains its iconicity and relevance even though it is a by product of events that highlighted the New York post World War. To understand the process of the evolution of 'a simple product' throughout the years of creative brainstorming of ideas, we need to study the historical reasons behind this evolution, the way its basic design was enhanced and the important role it plays in the market industry.

Index Terms- Aluminum Beverage Cans.

I. INTRODUCTION

Being an important part of the modern lifestyle, Aluminium beverage cans have experienced a long and innovative history of debonair designing processes in order to achieve the overall user friendly, chic and comfortable outlook it experiences today. Decades of genius creativity was required to create this modern engineering marvel.

1. Why Aluminium?

Aluminum was first recognized in the year 1782, and soon became the most popular metal after that. In the 1850's, Napoleon III, who fancied aluminum, decided to manufacture aluminum military equipment and silverware. (Rabinovich, D. 2012) He financed all the early experiments for the extraction of aluminum. This is how the idea of creating products using aluminum came to the market.

Predecessor of 'Aluminum' Beverage Cans.

Necessity of cans to store and transport beverages came into the limelight during World War II. The U.S. government had to deliver large amounts of beer to its servicemen and soldiers overseas. But glass bottles did not seem like a feasible idea. So they started transporting it in steel cans. After the war much of the companies switched back to selling drinks in bottles, but the veterans had grown a nostalgic liking for cans. So some companies continued to sell beer in cans, even though bottle production was cheaper. (Hosford, 1994). To create tumblers using metal was introduced to the manufacturing industry in the early 1930's. But the first choice of metal to create these tumblers was not actually aluminum, but rather its stronger, more thicker and less malleable competitor, 'Steel'. The cans were exported overseas and needed a strong containing system that could bear dents and avoid spillage during jostling and collision of cans when transported, (fig. 1) Therefore, steel was the considerable choice.



Figure 1: WAR and BEER. 1958. Image source

'Now steel beverage cans were more than a branded product in the market, it was an emotional iconic creation.'

It was 'Gottfried Kreuger Brewing Company', Newark, New Jersey, that became the first brewery that started marketing these 'steel cans' in 1933 for the public. Widely popular companies like 'Pabst' (fig 2.), 'Anheuser-Busch' and 'Schlitz' were quick to utilize the new idea.



Figure 2: Pabst steel can, 1950

Birth of 'Aluminium' Beverage Cans.

The first Aluminium Beverage Can was created by the Adolph Coors Company to produce beer in 1958, (fig. 3) and was brought to public domain by a Hawaiian brewery Primo. (Hosford, 1994). The aluminum cans soon became very popular and came out as a huge investing market for companies like Coors and other metal and aluminum corporations. The old steel cans required the use of a special opener which was popularly called the 'church key.' (section 2.1) and when in 1963, 'Schlitz Brewing Company' introduced its beer in an aluminum 'pop top can', other major beer makers quickly jumped on the bandwagon. By the end of that year, 40% of all U.S. beer cans had aluminum tops, and by 1968, that figure had doubled to 80%. (Larson, 1993).



Figure 3: Adolph Coors company beer flat top can in year 1958.

Expansion from Beer to Soft drinks.

Soda was not a huge market from the years 1939 to 1950 (war and post war time) because the main financial interest of the country was to spend more on basic necessities and well being of the citizens and soda was a luxury. So soda companies tried to attract the audience by introducing fancy cans and reducing the price of their products. The infamous 'nickel jingle' by Pepsi emphasized strongly on the cheap rate of the delicious drink. (JK Love, 2019). The first Coca Cola 'steel can' was introduced to the public in the year 1950 and the 'pop top' aluminum can in 1960. First Pepsi 'steel can' was introduced in the year 1948 and by 1963 almost all mainstream soda companies were trying to shift to aluminum cans. (Shaw, 2018) By the late 1950's, 15 million cases of canned soda beverages were sold under 40 different brands. By 1960, production had exploded to over 820 million. (Swierczynski, 2004.)

II. EVOLUTION IN DESIGN

1. Flat Tops or Stubby. (1933- 1963)

There is an old saying that goes, "You haven't held a can of beer until you have held the old stubby." Tin or steel flat tops entered the beer market in 1933. These cans used to weigh 4 ounces without the beer.

It was very difficult to hold, carry and store because of its extreme weight. Though the beer in cans tasted much better than in bottles, the whole, 'easy to carry' was demanded by the free spirited and busy youngsters. (Ressel, 1976) Also, they had to open the can using an opener called 'church key'. Church key was a metal stab that had a hard triangular metal in the end. This would be used to puncture two holes on the top of the can, one big one that acted as the spout to drink the beer, and the other small one for air. (Swierczynski, 2004). Every consumer was given one away with each case of can sold.



Figure 4: Classic flat tops: Hull's cream ale (1955); straight eight (1955); pear lager (1952); Acme beer (1950); krueger's (1935) yankee (1958); esslinger (1958).

2. Conical tops or Crowntainers. (1935-1963)

In 1935, the companies that could not come up with the machinery of flat top cans came up with the idea of cone top cans.

These conical drink cans were called Crowntainers. This can's name is derived from the company that made them, Crown Cork and Seal. (Swierczynski, 2004). It had a two piece structure: a bottom and a seamless body and were usually silver in color. These cans would come in three sizes, that is, 12 oz, 16 oz and 32 oz. (U.S Quart). It was all fancy and innovative but the strong metal body was still not very convenient to carry.



Figure 5: Classic cone tops

3. Pull Top Cans. (1962-1975)

Manufacturers were keen to provide a cheaper and user friendly packaging option for their consumers. Also, production of heavy tumblers and church keys resulted in huge aluminum wastage.

People also wanted a not returnable container to carry home. In 1962, Alcoa and Reynolds Aluminum came up with an innovative solution. (P Harry, JJ Maciejowski, JWA Shafer, 1962).

They put aluminum tops on steel cans and were hugely advertised and sold by Schlitz and Coors. However, these cans still needed church keys and their first forays into the market never gained traction. (Ressel, 1976) In 1958, the Hawaii Brewing Company marketed its Primo beer in an all-aluminum flat top.

The Aluminium flat top saved metal wastage, was easy to carry and manufacture, but still needed a church key to open. To solve this problem, In 1962, Alcoa developed an aluminum 'pull top' can. (K Jack, WA Beck, 1953). People started predicting that the aluminum 'pull top' would end the selling of the steel flat top.

All you had to do now was to pull and remove the aluminum tab to drink. Early variations of these were called Zip Tabs. Initially, these were mounted on steel cans, however, by the 1970s the want of lower weight and cost won. (Bauer, 1995) . An all aluminum can was introduced. Coors, Schlitz and Hamm's Brewery were among the first companies to adopt

this new can, and PepsiCo and Coca-Cola began using them in 1967.



Figure 6: Schlitz pull tab cans

4. Stay Tabs-1975 to Present.

The convenience of pull-top cans had created problems because of the irresponsible disposal of the severed portion of the can top. (Patent US 4030631, 2014). This led to unwanted littering, unaccounted wastage and could harm people's feet on places like the beach. Consequently, there was an immediate need to attend to this problem and thus, they came up with a 'Stay tab' can. This was made possible by imprinting a score line on the top of each can. This imprinted score line defined a small region to which the tab was attached. When the tab was pulled, it would convert into a first class lever, which is like a seesaw would fight the pressure inside the can, forcing it to open. (Patent 4,530,631, 1985)

III. ALUMINIUM INDUSTRY MARKET

1. Impact of the Aluminum Industry on Economic Growth Last Decade.

(Childress, Vincent W. 2008) says that 'Almost 100% of all the production scrap and over 60 per cent of all old scrap is recycled annually. Recycling is a 65 billion dollar-per-year industry.' The table below shows the overall dependency of major countries on aluminum recycling industries. and job opportunities that bauxite (aluminum ore) mining provides.

Countries	No. of cans recycled in Billions	Recycling rates	Bauxite Mining process promoting jobs.
Australia	2	80%	Blanket Deposits
Japan	18	78.5%	Inter-layered deposits
Europe	36	48%	Pocket deposit
U.S.A.	57	63 %	Detrital deposits And Inter-layered deposits

(Mingqian Belinda, 2006)industries recycled 51.5 billion aluminum cans in 2004, for a beverage can recycling rate of 51.2 percent

IV. CONCLUSION

The cheap, easy to carry, user friendly and easily crushed aluminum cans have undergone many complex engineering experiments in order to reach the point where they are right now where they not only serve the purpose of delivering the beverage but are the most Eco-friendly beverage packaging system ever. The aluminum material helps in altering the galvanic reaction between the beer and the steel, resulting in better tasting beer with twice the shelf life of that stored in all-steel cans. The huge economic industry that is dependent on the aluminum extraction and recycling provides various job opportunities to the not so skilled workers as well, thus eradicating poverty and helping in overall increase in GDP of both developed and developing countries.

The ordinary beverage can is used by everybody from the age of 7 to 70. This is because of the simple engineering of opening the can, comfortable drinking and disposing the can. This, henceforth, is a great designing example that has proved that even the most casual and unappreciated product requires years of research and development in order to achieve simplicity but has also touched many hearts of those who have a liking for historical and nostalgic development of the can, enhancing the culture of the retro period of the 1950's. Such vintage creations transform the global industry for good.

REFERENCES

1. Hosford, W. F., & Duncan, J. L. (1994). The Aluminum Beverage Can. *Scientific American*, 271(3), 48–53. <http://www.jstor.org/stable/24942835>
2. "History of the can" (PDF). Can Makers. Archived from the original (PDF) on 2015-09- 22. Retrieved 2012-08-07.
3. "Patent US4030631 - Easy-open ecology end - Google Patents". Retrieved 2014-01-24.
4. Patton, Phil (1997-11-27). "Public Eye; Wide-mouth design: less glug in beer, more chug in Mountain Dew". *The New York Times*.
5. Eric Onstand "Plastic bottles vs aluminium cans - who'll win the global water fight?" OCTOBER 17, 2019
6. Manuela Ingaldi / Production Engineering Archives 16 (2017) 7-11

7. *Journal of Food Engineering*, Volume 81, Issue 2, July (2007), Pages 341-346
8. Rabinovich, D. The allure of aluminium. *Nature Chem* 5, 76 (2013)
9. Larson, Melissa. "New Ideas Come In Cans." *Packaging*, April 1993, pp. 30-31.
10. National Association Breweriana Association (NABA). www.nababrew.com (13) Book *The Big Book O' Beer: Everything You Ever Wanted to Know about the Greatest Beverage on Earth*, Duane Swierczynski, 2004.
11. Joanna k love, *Soda Goes Pop: Pepsi-Cola Advertising and Popular Music*, 2019
12. Here's how Coca-Cola has changed over the past 132 years, Gabbi Shaw May 31, 2018,
13. *Analysis of the Recycling Method for Aluminum Soda Cans*, HE Mingqian Belinda, 2006.
14. *Beer Cans: A Guide for the Archaeologist*, D. B. S. Maxwell, 1993
15. *Beer Cans Unlimited: A Value Guide To Beer Can Collecting by Art and Pete Ressel*, 1976
16. *Food packaging assembly* K Jack, WA Beck - US Patent 2,775,383, 1956
17. *Container filling and sealing machines*, P Harry, JJ Maciejowski, JWA Shafer - US Patent ..., 1962 (21)
18. *Zip-top can with spoon*, RG Bauer - US Patent 5,443,174, 1995.
19. (22) *Pull tab for easy open can end-method of manufacture there of*, EG Kaminski, CF McEldowney - US Patent 4,530,631, 1985
20. Childress, V.W. (2008) 'Scrap metal recycling: scrap metal recycling is not very glamorous, but it might help save the planet', *The Technology Teacher*, 67(5), 13+, available:<https://link.gale.com/apps/doc/A174324141/AONE?u=anon~d8bd22e5&sid=googleScholar&xid=ce2dd66f> [accessed 11 May 2024].