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# The History of Canned Food

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# The History of Canning

Lisa K Couture  
SCI 3050



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# Canning Industry Facts

- Nearly 200 billion cans of food are produced in the world each year.
  - eight billion dollar industry
  - 200 manufacturing plants in 38 states
  - Creates jobs for 35 thousand employees.
  - *(food facts & trivia)*
-

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# Why did we need canned food?

- In 1795 Europe was fighting the Napoleonic wars.
  - Soldiers needed a way to keep their food from spoiling.
  - sailors were developing scurvy at sea.
  - (*history of canned food*)
-

# The Donner Party

- 1840's – group of 80 people traveling from Illinois to California
- On the way get caught in a pass in the sierra Nevada due to a terrible blizzard
- Due to starvation, they resorted to cannibalism
- Most died from starvation
- Only half of the group survived
- (*Donner Party*)



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## Had there been canned food...

- The Donner party's tragic occurrence happened just before the commercialization of canned food.
  - Had they a way to easily transport food that was healthy and safe from spoilage this story may have had a very different ending.
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# Innovation out of tragedy

- Created by Gail Borden. Feeling the after affects of the Donner Party's tragedy, Gail Borden created foods that would support travelers on their journeys.
  - Borden Condensed milk
  - The first factory was located just outside of New York City.
  - City Dwellers had no access to fresh milk, and it was a very difficult item to transport safely due to spoilage.
  - Borden's Condensed milk made milk available to everyone.
  - (*The Rise of National Brands*)
-



# Borden's

## THE NATION'S MILK

### *Four Steps to Purity*

There is the key to the Borden's formula. To insure this purity at the source of milk supply—no germ or through every manufacturing process—to guarantee it as the finished product—this is our service to you.

Before the milk is taken from the cow, Borden's process begins. Careful selection of the best for health and thus insure the quality and purity of the milk.

Here and milk houses are cleaned thoroughly and when clean hygienic and sanitary. Cows are checked daily by women who are trained. Fresh milk is then poured in clean cans for sale.

No step is overlooked—no precaution is ignored. That is why Borden's Milk is so pure and good and just as the big brands—and all others.

For your children—for your table—for your cooking—there is a Borden's Product for every purpose. You can trust that bears the name of Borden.

BORDEN'S CONDENSED MILK COMPANY  
New York

*Borden's*  
EAGLE BRAND

*Borden's*  
EVAPORATED MILK

*Borden's*  
MALTED MILK

Borden's Milk quickly generated many loyal customers.



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# Before Canning

- Before canning there were limited ways to keep food from spoiling.
    - Drying
    - Smoking
    - Curing
  - These methods drastically changed the freshness and quality of the food.
  - These methods were very time consuming and often difficult to do correctly.
  - *(history of canned food)*
-

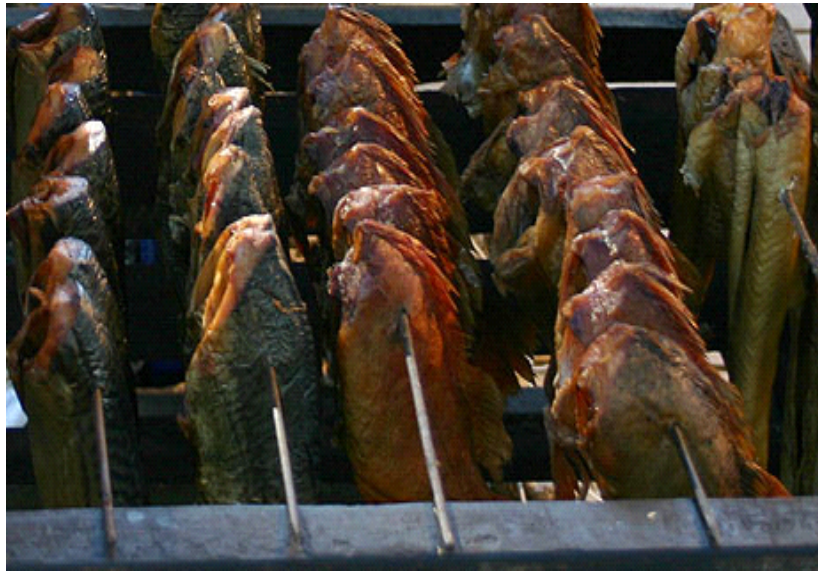
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# Smoking/Drying food

- A process of food preservation where all water is removed from food
  - Lack of water stops bacterial growth allowing it to be edible for a long time
  - -----
  - The proteins in food are drastically effected in the drying process
  - Though they still have nutrients, they are not as healthy as fresh foods
  - The drying process is very tedious and time consuming as opposed to canned food, which can be mass produced
  - *(History and Trends of Food Preservation)*
-

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# Smoked/ dried Food



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# Curing/pickling Food

- Curing food stops the growth of bacteria and preserves
  - By adding salt the food becomes dehydrated
  - -----
  - This process negatively effects the nutritional value of food causing it to lost vitamins, proteins begin to get broken down
  - consuming large amounts of salt can dehydrate the body and have a negative effect on the heart
  - *(History and Trends of Food Preservation)*
-

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# Cured/ pickled Food





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# Scurvy

- Sailors would eat a great deal of salt cured food
  - Cured food loses many essential vitamins in the curing process
  - Scurvy is caused by a lack of vitamin C
  - Between 1600 – 1800 over a million men lost their lives to scurvy
  - Canned food dramatically changed the lives of sailors giving them the opportunity to be out at sea for extended periods of time with access to fresh nutritious food
  - (*Scurvy, the sailor's nightmare*)
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# Why canning is the best method

- Canned food does not lose fiber during the process
  - Packed at the height of freshness
  - Vitamins, potassium, thiamin and carotenoids are not lost
  - Meats do not lose any nutrient value.
  - Some types of fish will even gain calcium when canned.
  - (*The Benefits of Canned food*)
-

# Napoleon Bonaparte

- “An army marches on its stomach”
  - In order to gain the upper hand in the war, Napoleon wanted to make sure his troops were provided with daily rations.
- 
- a 12,000 franc reward was offered to the first person to solve the problem of preserving food for extensive periods of time.
- 
- (*Maxims of Napoleon Bonaparte*)



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# The Troops

- “An army marches on its stomach” - Napoleon
  - Too bad it was difficult to get food to the troops.
  - “30-40 tons of food to feed the soldiers in his Northern Italian army in 1795 on a daily basis.” – (*To Feed An Army*)
  - Could not have it delivered, so soldiers were given money to purchase food from merchants
  - When there was no food, soldiers often stole, ate spoiled food, or went hungry
  - Napoleon’s army were often deprived of food.
  - With the invention of bottled and canned food, food could be stored and stay fresh for long periods of time, fueling the army.
  - (*Napoleonic Era*)
-

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# Nicolas Appert

## The Father Of Canning''

- Before finding the perfect method, Appert tried his hand at several preservation techniques.
- Discovered: food does not spoil once sealed in an airtight container.
- By 1806 Appert had perfected his method of preserving food in glass airtight containers.
- Appert won the prize of 12,000 Francs in 1810, when he published a book explaining his process.
- He created a factory called "The House of Appert" to produce bottled food using his method.
- This factory was the first commercial cannery.

*(Empire week 1) (Nicolas Appert)*

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- An excerpt from Appert's book (translated from its original French to English). "The Art of Preserving all Kinds of Vegetable and Animal Substances for Several Years."
- This section of the book displays Napoleon's decision to award Appert the award of 12,000 francs
- (*The Art of Preserving All Kinds of Vegetables & Animal Substances for Several Years*)

XVI

THE MINISTER OF THE INTERIOR, COUNT  
OF THE EMPIRE, TO M. APPERT, &c.

*Paris, 30th January, 1810.*

Second Division

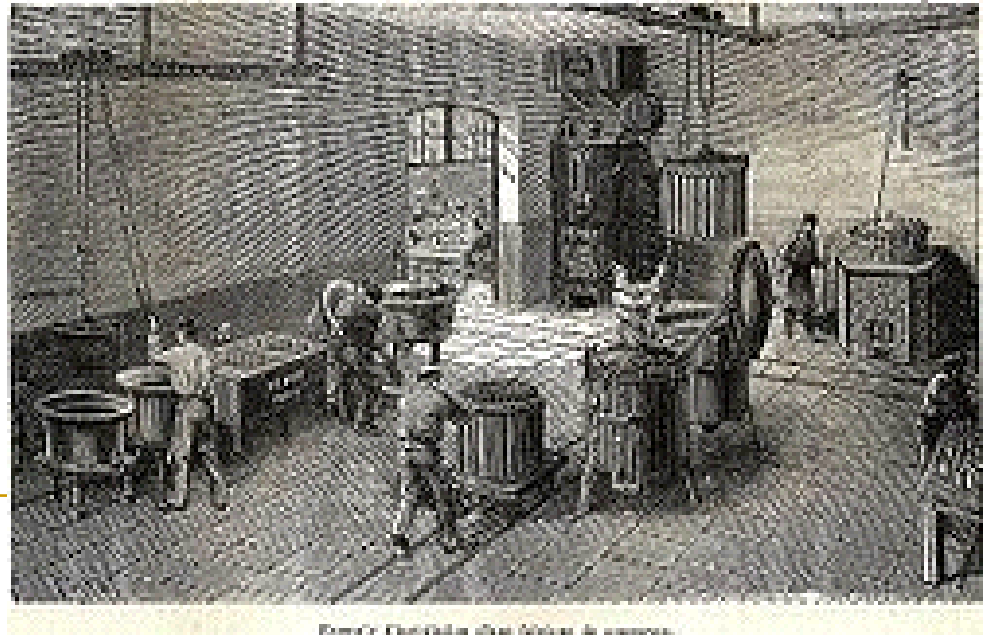
BOARD OF ARTS AND MANUFACTURES.

My Board of Arts and Manufactures\* has reported to me, Sir, the examination it has made of your process for the preservation of fruits, vegetables, meat, soup, milk, &c. and from that report do doubt can be entertained of the success of such process. As the preservation of animal and vegetable substances may be of the utmost utility in Sea-voyages, in hospitals and domestic economy, I deem your discovery worthy an especial mark of the good will of the government. I have in consequence acceded to the recommendation made me by my council to grant you a recompence:

\* *Mon Bureau consultatif des Arts et Manufactures.*

# Peter Durand

- A year after Appert's discovery, another bright mind perfected the process
- The first canning factory was built to execute his plan.
- Rather than glass bottles, Metal containers were used to store food.
- By 1813 canned food becomes available to the public
- The word “can” now became common knowledge.
- (Empire week I)





# Perfecting the Method

- The excerpt to the right explains the method used by Appert to preserve food. As time continues on, the method continues to improve.
- Rather than glass jars, Durant used clean metal containers, which were then sealed and boiled to keep the food fresh and free of bacteria.
- (The Art of Preserving All Kinds of Vegetables & Animal Substances for Several Years)

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## § III.

### *Of Bottles and Vessels;*

I chose glass, as being the matter most impenetrable by air, and have not ventured to make any experiment with a vessel made of any other substance. The ordinary bottles have generally necks too small and ill made; they are also too weak to resist the blows from the bat and the action of the fire: I, therefore, caused bottles to be made for my especial use, with wider necks, and those necks made with a projecting rim, or ring, on the interior surface, placed below, and resembling, in form, the rim which is at the top of

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# The First Tin Canning Factory

- 1812 Bryan Donkin & John Hall: Created first commercial canning factory using Durand's patent for tin cans.
- Canning food allowed the military to travel farther.
- Great improvement for sailors who were terribly malnourished from eating heavily salted food.

(Can Central)

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# Early Tin Cans

- The first tin cans were made of iron plated with tin
- Cans are easier to make, and less fragile than jars

- *(History of tin cans and can openers)*

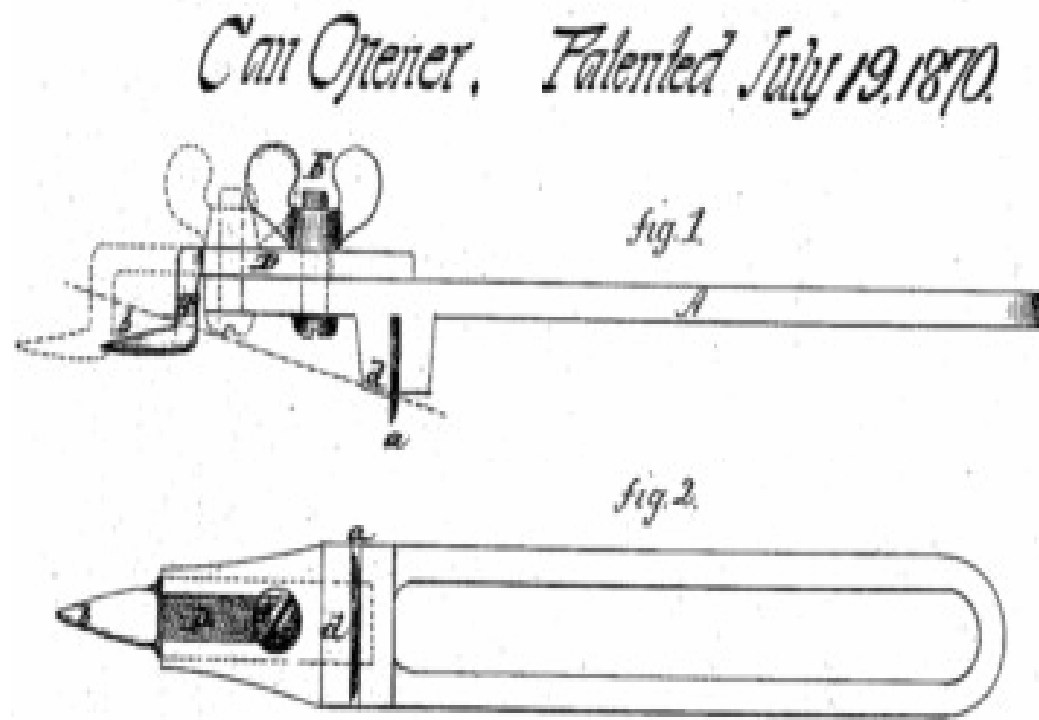


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# The Can Opener

- For over 30 years, tin cans existed with no can opener
  - Experiences of the US military during the civil war led to attempts to design effective openers
  - Tin can with key opener – what you find on a can of sardines
  - The Invention of tin cans had not become popularized for home use until the invention of the can opener because there was no easy way to open them.
  - *(History of tin cans and can openers)*
  - *(Nicolas Appert)*
-

# The First Can Opener



- Invented in 1866.
- Patented in 1870
- (*Early Can Opener*)

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# What can food represents

- 1880's: canned food made widely available
  - canned food represented middle class America
  - Prior to canned food, meat was a luxury. The average person's diet might consist of bread and potatoes
  - In 1914: Average Family spent 60% of their income on food.
  - By 1937: Average family spent 35% of their income on food
  - This is due in a large part to canned food, for making food that does spoil, and is inexpensive.
  - (*A history of food*)
-



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# Soldiers of WWII

- Soldiers of WWII ate the same canned foods as sold in stores
  - When they came home from war, they still wanted to eat these foods
    - Underwood Deviled Ham
    - SPAM
    - Van Camp's Pork and beans
    - Borden Condensed Milk
  - *(A History of Food)*
-



RECIPE FOR

## UNDERWOOD DEVILED HAM-QUICKS

1 cup prepared biscuit mix    ½ cup water  
1 can UNDERWOOD Deviled Ham    ¼ teaspoon each cayenne pepper and salt

Combine ingredients. Drop by spoonfuls on ungreased cookie sheet. Bake in hot oven (400°F.) about 10 minutes. Serve hot. Makes about 2 dozen.



AMERICA'S FAVORITE SANDWICH SPREAD

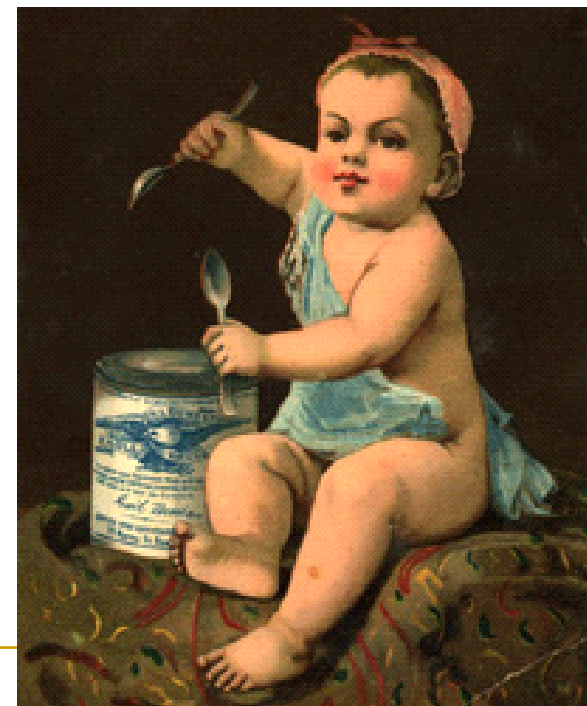
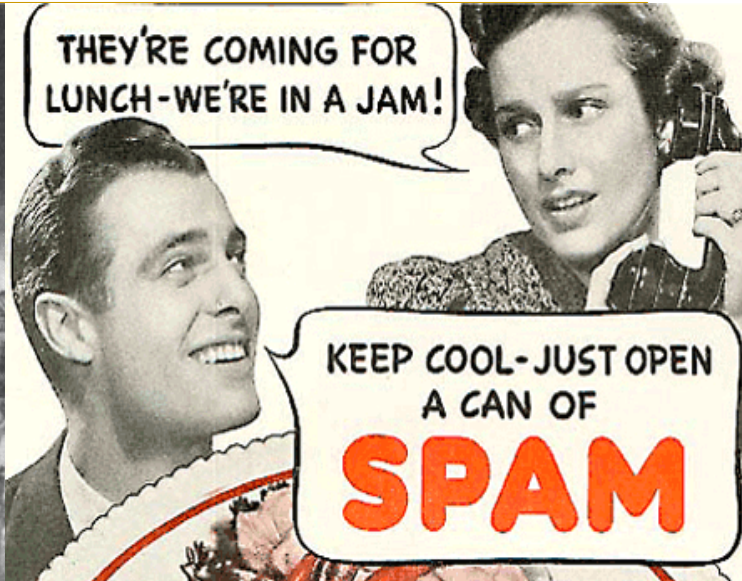


Always look for the Red Devil trademark to be sure of top quality and finest flavor.

THEY'RE COMING FOR LUNCH-WE'RE IN A JAM!

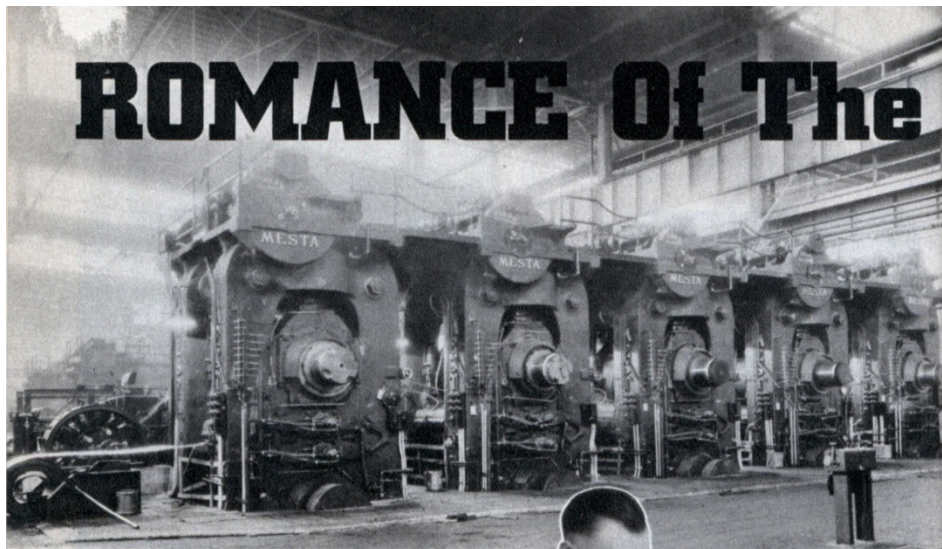
KEEP COOL-JUST OPEN A CAN OF

# SPAM





# ROMANCE Of The TIN CAN



Miles of thin steel sheets being rolled out to be tin-plated and turned into "tin cans" destined to supply the tables of the nation with everything from soup and fish to beer.

**C**UT all the tin plate used annually to make the tin cans of America into a strip one foot wide and you can wind that strip around the earth fourteen times.

Or, to visualize it another way, take the five billion odd square feet of tin plate into which we put our fruits, vegetables, meat, fish, beer, paint, oil, candy, cheese and tobacco each year and it would be a simple matter to *can the moon*. You'd have the biggest cheese can ever made, and still have a lot of tin plate left over.

The vastness of tin can production has brought this familiar article into the lives of nearly every American family, for it is in this country that the greatest volume of tin cans is produced. A good year will find between eight and nine billion cans for the food racks of this country and this is the business that accounts for the major percentage of cans.

Yet, what we call a tin can is not a tin can at all. The lowly tin can—nemesis of the alley cat, object of fun and ridicule—is made of a thin strip of steel, with a film of tin on its outer surface. The tin can is slightly more than 98% steel; slightly less than 2% tin.

In America we refer to the "can" or the "tin can" and to "canned goods" or "canned

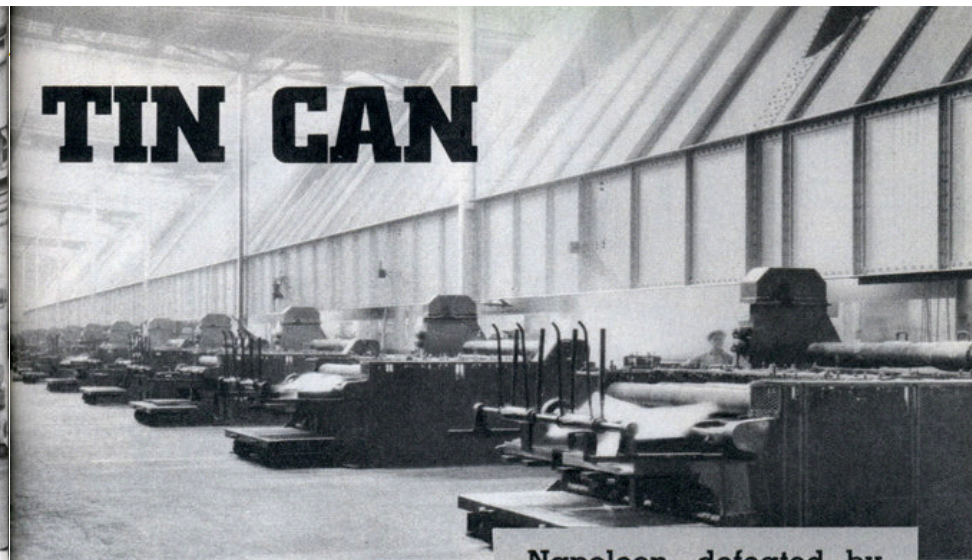


A can of beer these days is a far cry from that long dead era when "rushing the growler" was something pretty vulgar. This is a summer scene on New York's swank Fifth Ave.

foods"; in England the term is the "tin" or "tinned foods." But "tin can" is decidedly a misnomer. We might as reasonably call our bathtubs "enamels."

This is how it came about. Back in the early eighteen hundreds metal food containers were being developed—the ancestors of today's tin can. They were known as tin

Modern Mechanix



What makes the "tin can" tin—tinning machines plating sheets of steel to supply the big canning industries.

by Nelson H. Budd



An antique can of corn, the granddaddy of today's streamlined can (right). This relic of the present industry was handmade in a Maine cannery.

**Napoleon, defeated by Nature—his armies starved on retreat from Moscow, first dreamed of victories by preserving food to feed his men. Had canned rations been available he might have conquered world.**

canisters. Copies of the yellowed order books of the salesmen show that they almost always abbreviated their notes, as "tin cans." or "cans." And thus the word got into the vernacular to stay.

Every now and then a new canned product seizes public acceptance and shoots the manufacture of cans up into the millions. Within the past two years beer in cans has swept the country. Since this has occurred, the consumption of packaged beer, which formerly stood at 25% of the total output, has risen to 35%.

The phenomenal success of beer in cans has led vineyardists to the conclusion that wine also can become a profitable and popular tinned product.

Nine wineries, alarmed at the present exorbitant prices of their product in highly-

February, 1937

69

*(Romance of the Tin Can)*



## Romance Of The Tin Can

[Continued from page 132]

canned foods, and increased their production so much as to inevitably shoot can manufacture up into volume. About 5,000,000 cans were made at the beginning of the war. By 1870, the output had increased six fold.

And it was at this stage that several inventions of importance in canned foods processing acted to increase the volume of tin cans, even to a greater degree than did refinements in the art of can making itself, which were indeed negligible. Cannerymen were still processing (cooking) by boiling the cans for long periods. A Baltimore canner named Isaac Solomon applied an English discovery to the process. He added calcium chloride to the boiling water. Its temperature was increased to 240 degrees plus. Overnight, the time necessary for sterilization was reduced from five or six hours down to half an hour. The canner whose kettle capacity would produce 1,000 cans was able to turn out 10,000. This occurred on the threshold of the Civil War, in 1861.

That great disturbance gave many people their first taste of canned foods. Soldiers ate them in their bivouacs; sailors on their gunboats; the wounded in hospitals. Canning was no longer confined to the seaboard—to centers around Baltimore and in New England. Canneries sprang up inland—at Cincinnati and Indianapolis. Borden found a market for his canned condensed milk, after having failed for 10 years to put it over.

Improvements and inventions in the field of canning machinery also played their part in this expansion. It wasn't due alone to processing refinements and the sole outstanding can-making improvement of the time, namely, the invention of capping seals and a furnace with which a young boy could seal twice as many cans as could the master tinsmith with the old style of soldering iron. This inventor was another Maryland canner, Louis McMurray. He also was the first big corn canner, and a new product leaped into the market, one that was destined to become one of the "big three" packs of canning. Last year, corn canners alone used about 264,000,000 cans.

Peas had to be shelled and picked by hand. E. P. Scott and C. P. and J. A. Chisholm perfected a machine that would shell peas from the pod as fast as 1,000 hand workers. Then Scott went a step further and produced the pea viner which, by using a paddle principle, knocked the peas out of pods and sifted them. Nearly 600,000,000 cans were needed last year to hold all the peas packed in America.

Someone discovered and broadcast the fact that tomatoes, or Love Apples as they were called then, were not poisonous. Nearly 648,000,000 cans of tomatoes were put up last year, with another 192,000,000 odd cans of tomato juice on top of that.

A machine was perfected that automatically peeled and cored pineapples. Again, volume production of tin cans soared. Improvements in

[Continued on page 166]

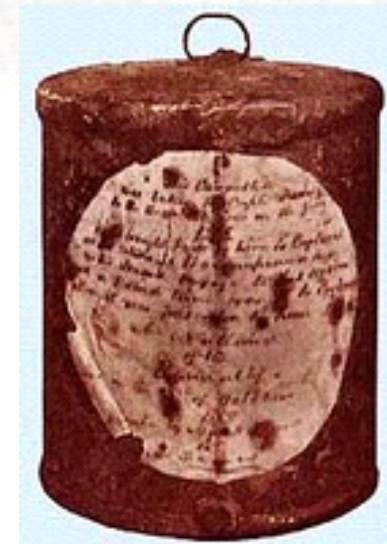
*When Answering Advertisements Please*

(Romance of the Tin Can)



## In Conclusion

Lacquers, enamels and lithography have come along to adorn and beautify cans but their chief value has always been and always will be their practicability, utility and convenience. The perfect vessel for food—they cook and they carry, achieving Appert's dream—to keep foods edible over long periods of time.



(Romance of the Tin Can)

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