

HISTORIC ARTIFACT IDENTIFICATION GUIDE





TIN CANS



TIN CAN CLASSES

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graph TD; A[TIN CAN CLASSES] --> B[Evaporated milk cans]; A --> C[Meat tins]; A --> D[Sardine tins]; A --> E[Food tins]; E --> F[Solder-seam]; E --> G[Sanitary]; E --> H[Can sizes and food contents];
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Evaporated
milk cans

Meat tins

Sardine tins

Food tins

Solder-
seam

Sanitary

Can sizes
and food
contents

EVAPORATED MILK CANS

GENERAL CHRONOLOGY

1856

Gail Borden patents process for condensing milk (U.S. Patent No. 15533)

1866

Borden introduces "Eagle Brand" milk

1885

"Condensed" milk is first canned in the United States

1899

"Family Size" (12 oz.) milk cans introduced

Pacific Coast Condensed Milk Co. (later *Carnation*) produces milk in 16 oz. cans

1900

Vent hole filler can was introduced for evaporated milk

1930

Carnation reduces can size from 16 oz. to 14.5 oz. to maintain the same pricing

EVAPORATED MILK CANS

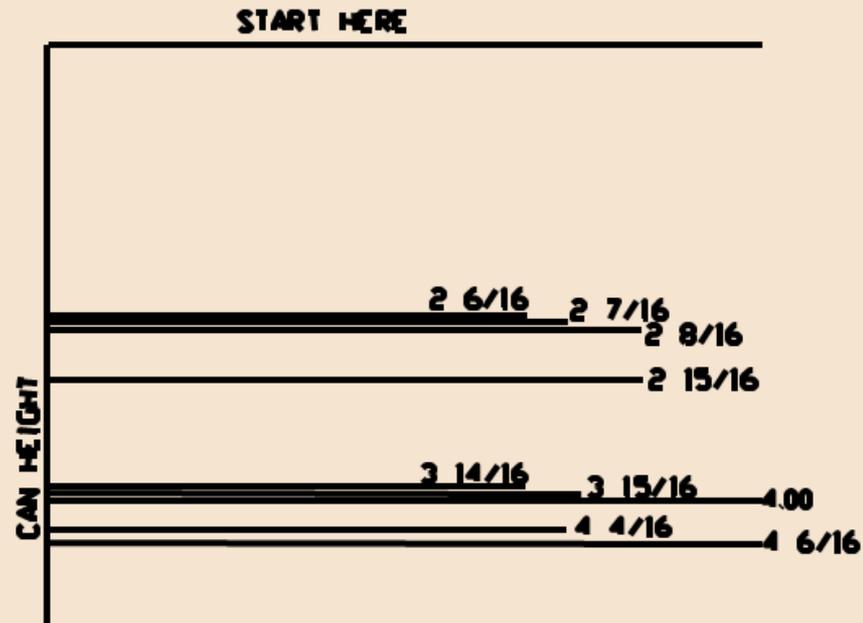
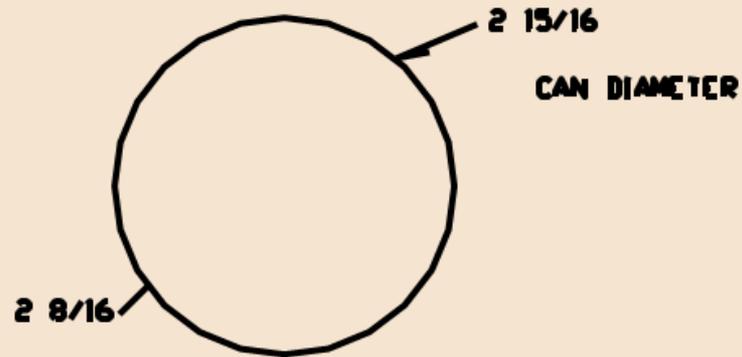
SERIATION

Height (in)	Diameter (in)		
	2 7/16	2 1/2	2 15/16
2 3/8		1917-1930 (w/o rings) OR 1931-1948 (w/4 embossed rings)	
2 7/16	1931-1948	1920-1930	
2 1/2	1920-1931	1915-1925	
2 15/16		1950-1985	
3 7/8			1917-1929 (no text) OR 1935-1945 ("Punch Here")
3 14.5/15			1975-1985 (later end has 3-5 embossed rings)
3 15/16			1930-1975 (later end has 3-5 embossed rings)
4			1917-1929
4 1/4			1917-1929
4 3/8			1915-1930

Matchstick filler /solder dot /
hole-in-top evaporated milk can
(post-1900)

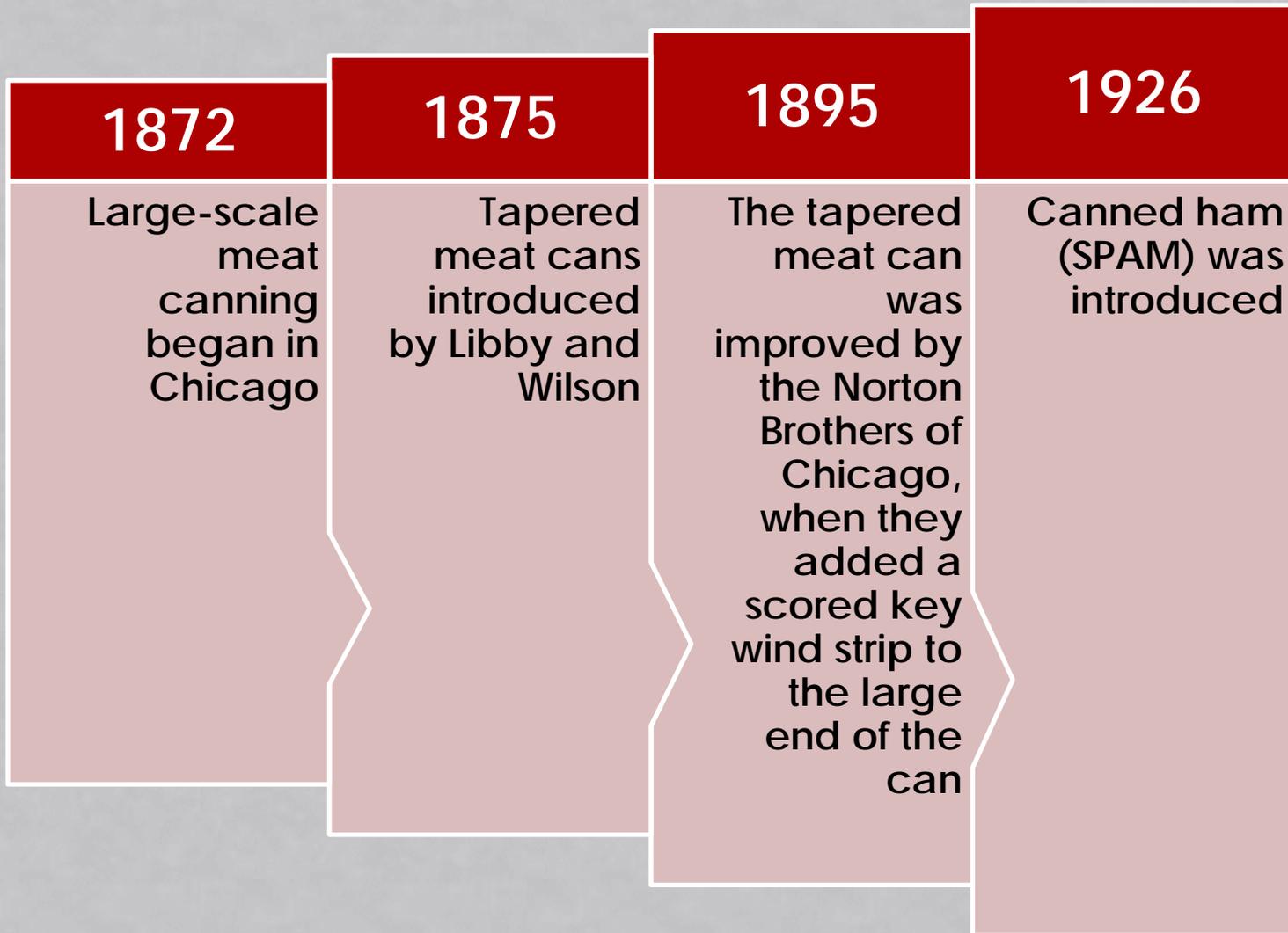


EVAPORATED MILK CAN MEASUREMENT TEMPLATE



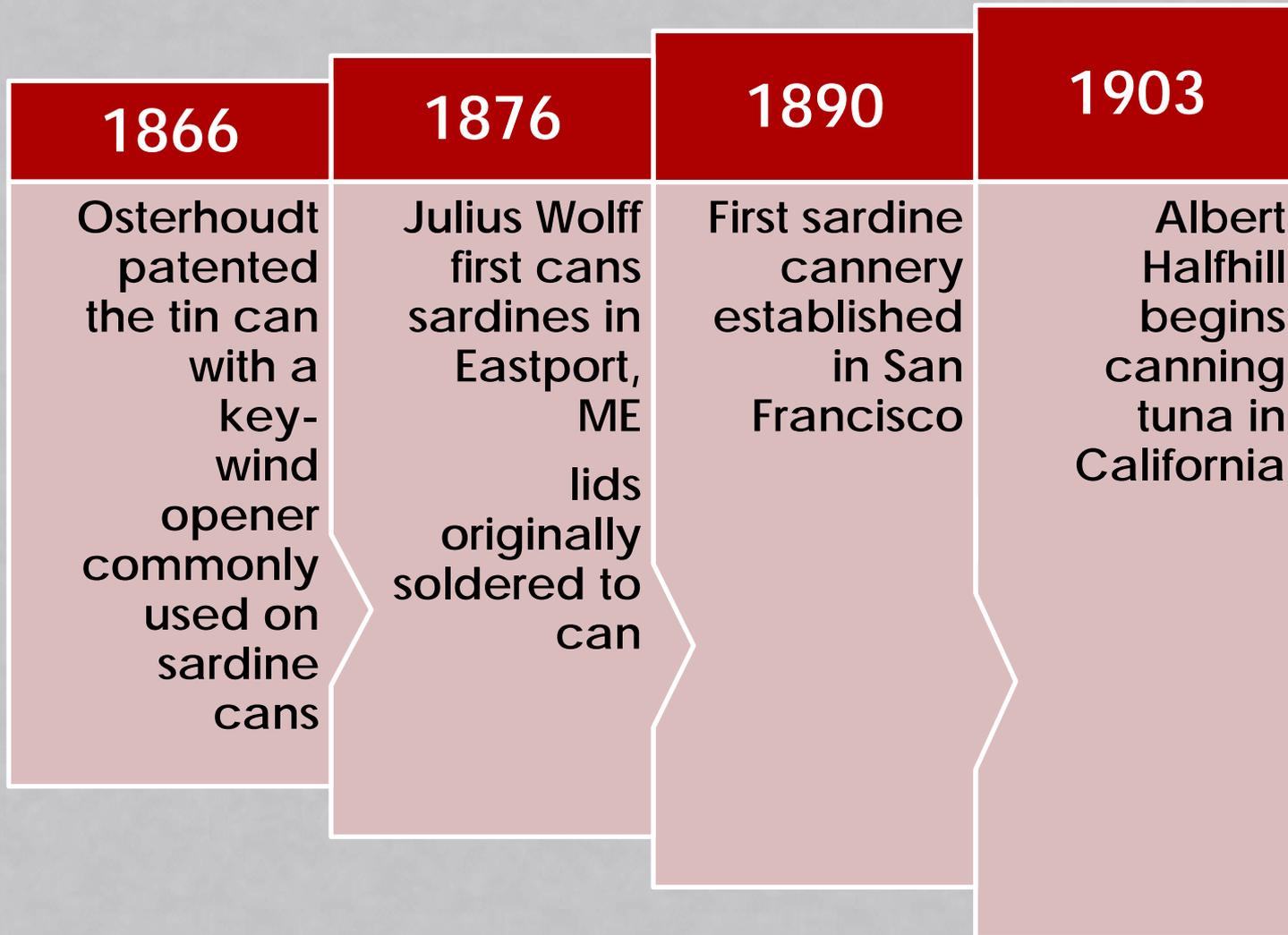
MEAT CANS

GENERAL CHRONOLOGY



SARDINE CANS

GENERAL CHRONOLOGY





Pre-1917 Non-key sardine tin

Label reads:

“HCO/3¼ ozs/MAINE
SARDINES/IN COTTONSEED OIL”

(1919-1928)



Key-wind opening sardine tin

(Post -1917)

FOOD CANS

GENERAL CHRONOLOGY

1877

Simplified "side seamer" for cans is introduced

1894

Ams Machine Co. begins manufacturing locked, double-seamed can

1898

George W. Cobb Preserving Company perfected the sanitary can

1900

The "sanitary" open-top can is developed in Europe for food

Can lids are still soldered by hand after the food has been put into the can

1905

Can seaming machines are invented for sardine tins and soldered lids quickly disappear

1922

American invention for "crimping" lids onto cans is introduced in Europe

The sanitary can was in general use (Fontana and Greenleaf 1962:73)

GENERAL TYPES AND PERIODS

Hole-and-cap

Can lids have central cap where food was inserted before sealing. Because there was no vent hole, cans often swelled or burst during cooking.

1810-1820



Hole-in-cap

Same as hole-and-cap, but with tiny pin-hole in center of cap to act as a vent during cooking.

1820s-WWI



Key-wind

Cans opened by using a “key” to roll or tear away a metal strip from the top or side of the can; often used for coffee after 1917. Still used on some canned meats and fish (corned beef, sardines).

1866-present (key-wind tapered tins after 1895).



Hole-in-top

(also called vent-hole, matchstick-filler or solder dot) Cans have solid lids except for tiny pin-hole vent at center, which was sealed with a drop of lead solder after the contents were cooked.

After 1900

Evaporated milk cans almost exclusively of this type by 1920.



Sanitary

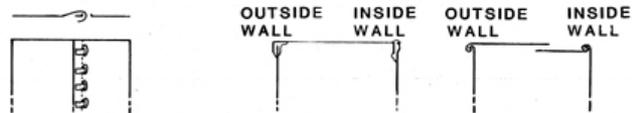
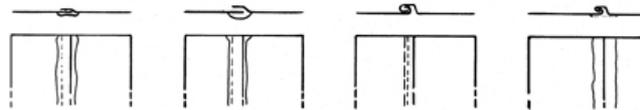
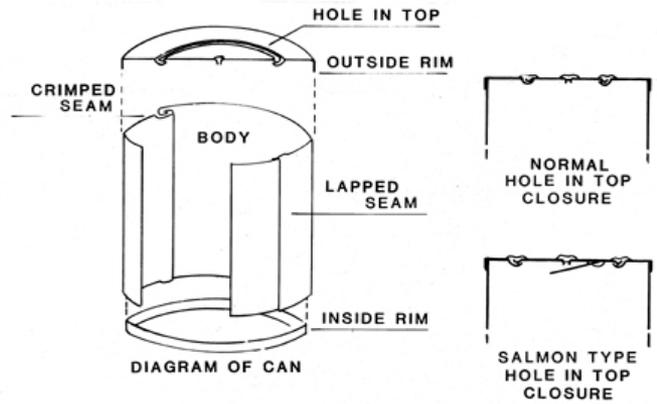
Cans made entirely by machine, with one-piece lids – no caps or vent holes and no lead solder. These are “modern” cans and were commercially available by 1904.



TIN CAN CLOSURES

471 - Tin Cans (Page 2)

Tin Can Types



TIN CAN OPENERS

1870 - William Lyman patents an opener that rotates around a center hole punched in the can top



“Church Key”

Patented in 1936

Size decreases over time

1925 - The Star Can Company of San Francisco adds a serrated edge to the wheel

BAKING POWDER CANS

- ❑ One of the most common types of tin cans are those containing baking powder.
- ❑ There are a variety of manufacturers including Calumet, Home, Clabber Girl, and KC baking powders.
- ❑ Most archaeologists love finding KC Baking Powder tins since the company was founded in 1890 and regularly rotated their logos in such a way that its possible to micro-seriate the cans for dating purposes. Based on a founding date of 1890, different logos indicate that cans were produced in:

- 1925
- 1928
- 1930
- 1933



KC BAKING POWDER/FOR OVER 35 YEARS



Produced in 1925

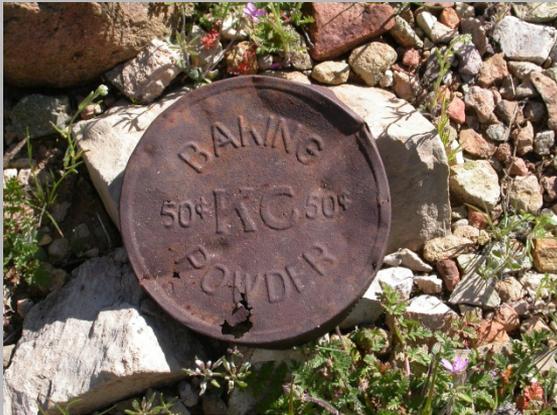
KC BAKING POWDER



For 38 Years (1928)



For 40 Years (1930)



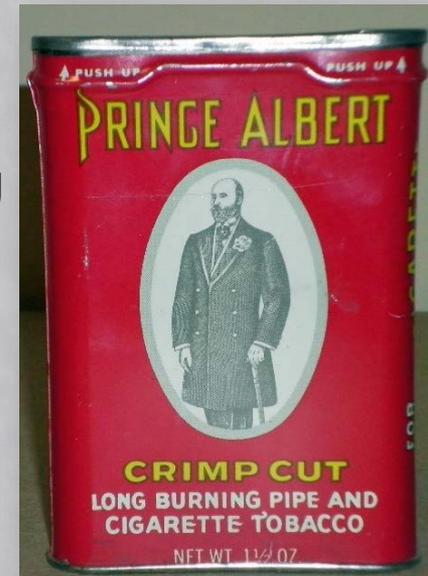
50 cts (age uncertain)



"True Height"
(ca. 1930-1950)

TOBACCO TIN CANS

- ❑ Among the most common types of cans recovered from historic sites.
- ❑ ca. 1892 – tobacco begins to be packaged in tins.
- ❑ ca. 1905-1910 - flat sided, hinged lid tobacco tins first appear.
- ❑ 1907 - “Prince Albert” tobacco tin with it’s snap lid is patented.
- ❑ 1933- Zippo lighter (an improved Austrian design) begins manufacture
- ❑ Tobacco tin lids change over time as follows:
 - ❖ Earlier hinged lids are flat-topped with the edges covering the lip of the body of the tin.
 - ❖ Later hinged lids are indented slightly with the edges meshed into the lip of the body of the tin; these are sometimes marked “Improved Lid”.



MOTOR OIL CANS

- ❑ Ca. 1890 - Oil is discovered in Pennsylvania.
- ❑ Ca. 1910 - A plethora of gas/oil brands begin to appear at both the regional and national level. This is accompanied by the appearance of company logos. Some logos are very stable for long periods, while others undergo regular (and known) changes.
- ❑ 1933 - Quart motor oil can is introduced.
- ❑ Ca. 1965 - Paper-bodied motor oil cans replace the earlier all metal cans; these have only metal tops and bottoms.



STANDARD SIZES AND NOMINAL CONTENTS

Number	Height (in)	Diameter (in)	Contents
5 oz	2 7/8	2 1/8	
6 oz	3 1/2	2 1/8	
8 oz regular	3	2 11/16	Fruits & fruit cocktail
8 oz tall	3 1/4	2 11/16	
Picnic, Oysters	4	2 11/16	Oysters
No. 300	4 7/16	3	Tomato & pineapple juice
No. 300X	4 9/16	3	Tomato juice
No. 1 tall	4 11/16	3 1/16	Fruits, tomato juice, pineapple juice
No. 303	4 3/8	3 3/16	Tomato & pineapple juice
No. 2 flat	2 1/4	3 7/16	
No. 2 short	4	3 7/16	Peas, corn, string beans, fruits
No. 2	4 9/16	3 7/16	
No. 2 1/2	4 11/16	4 1/16	Fruits
No. 3	4 7/8	4 1/4	
No. 10	7	6 3/16	Fruits
Gallon	8 3/4	6 3/16	Limited use for olives, fruits, and vegetables
No. 1 square	3 1/2	3 x 3-1/2	
No. 2 1/2 square	6 1/4	3 x 3-1/2	



GLASS BOTTLES



GLASS BOTTLES

HISTORY OF MANUFACTURING METHODS

- ❑ Bottle manufacturing gradually evolved from hand-blown to machine made containers. The attributes of bottles produced by these different methods are relatively distinctive so that cross-dating (within some broad parameters) is possible.

- ❑ Hand-blown bottles (Roman times to ca. 1860s).
 - ❖ Hand-blown glass bottles were common through the mid-nineteenth century.
 - ❖ Hand-blown bottles typically vary in thickness, symmetry (esp. of the bottle mouth), tilt, and usually lack any seams extending down the sides of the bottle.
 - ❖ Hand-blown bottles usually exhibit pontil marks (ragged concentric scars of varying diameter) on the base signifying where the bottle was physically detached from the blow-pipe used to produce the bottle.
 - ❖ Hand-blown bottles almost always include some striations on the body reflecting the glassmaker's efforts to mold and shape the bottle while still hot.

❑ Transition Period (ca. 1860s -1910s)

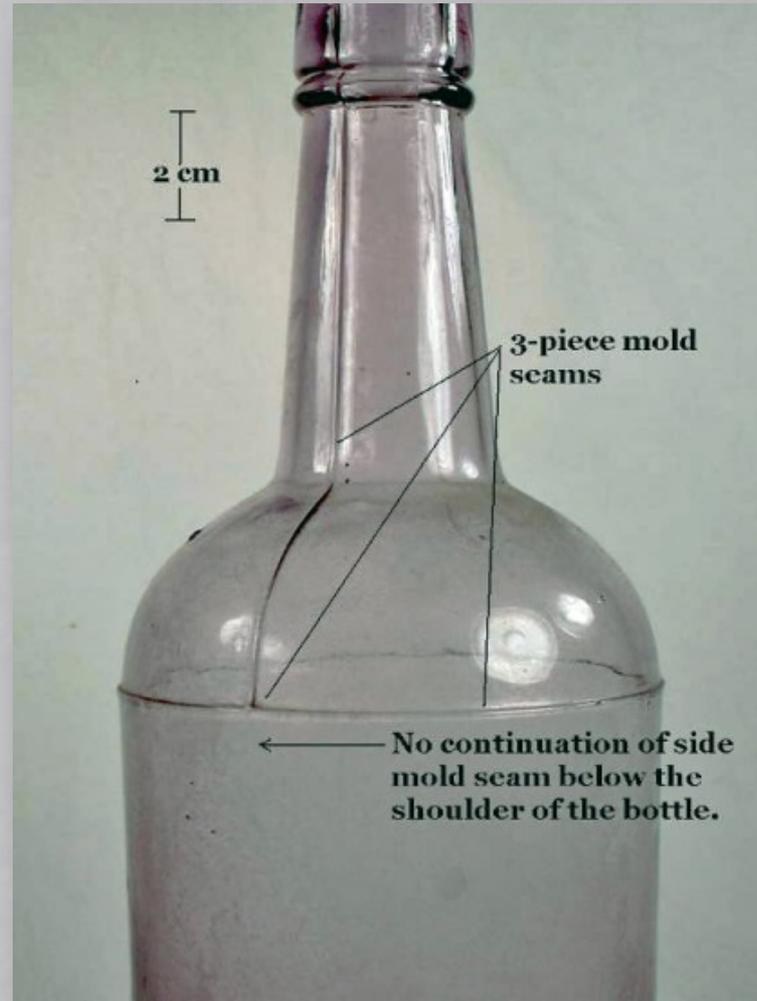
- ❖ Bottles from this period often exhibit a mixture of machine characteristics combined with older hand-blown attributes.
- ❖ Initial “machine” produced bottles relied on snap case molds into which glass was forced forming a relatively symmetric body with consistent glass thickness. Depending on the design of the snap cases, seams of varying patterns may be found.
- ❖ The more common types of snap cases include somewhat earlier three-part Rickett’s snap cases (ca. 1820s -1910s) which has seams extending up the bottle body and a horizontal seam running around the bottle where the body and shoulder meet, as well as a seam where the base plate portion of the mold was located.
- ❖ Slightly later two-part snap cases (ca. 1860 -1900) appeared. Use of this technique is indicated by opposing seams that run down the body, with a single seam across the base where the two parts of the snap case hinged together.
- ❖ Many of the snap-case produced bottles are combined with hand-applied lips. The giveaway? Nicely symmetric bottle bases and bodies having glass of a consistent thickness combined with out-of-kilter openings and clear smearing along the bottom of the lip where the hand-applied lip was finished.

TWO-PART SNAP CASE



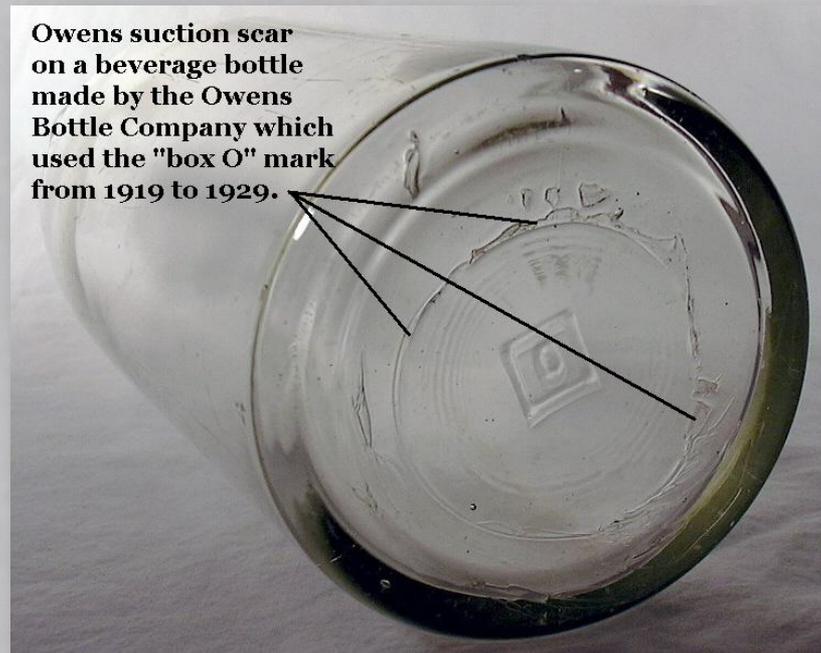
BASAL MOLD SEAM

THREE-PART SNAP CASE



❑ Modern Period (ca. 1905-present).

These are bottles that closely resemble your “Bud” bottle. Most were produced on the Owens Automatic Bottle Machine and early types exhibit a so-called “Owens scar”. As improvements were made, this scar becomes less pronounced, eventually disappearing altogether.



□ Machine-made bottles exhibit a number of striking differences relative to earlier manufacturing types:

- ❖ Vertical side mold seams which run up to, into, and through the finish to (or near) the extreme top surface of the lip. On most early and many later machine-made bottles the side mold seams appear discontinuous and offset from each other.
- ❖ The side mold seams on a machine-made bottle tend to be much finer (i.e. narrower and less distinct) than the mold seams found on mouth-blown bottles. Taking this a step further, earlier machine-made bottles (1905 to 1920s) tend to have more pronounced mold seams than later machine-made bottles; a function of the increasing precision in mold machining and machinery in general as time progressed.
- ❖ Two additional finish (lip) related mold seams: one at the very top of the finish which encircles the bore or opening or sometimes the outside of upper lip portion of the finish; and a horizontal seam immediately below the finish which circles the neck (called a "neckring parting line").

MOLD SEAMS

472 - Bottles/Glass (Page 17)

472.3 TYPES OF BOTTLE MOLD SEAMS



DIP MOLD



HINGED SHOULDER -
HEIGHT MOLD



BOTTOM - HINGED
MOLD



THREE PART
DIP MOLD



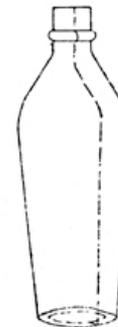
THREE - PART
LEAF MOLD



POST - BOTTOM
MOLD



CUP - BOTTOM
MOLD



AUTOMATIC BOTTLE
MACHINE

GLASS COLOR DESIGNATIONS



Purple ("solarized")



Aqua



GLASS CONTAINER HALLMARKS

- ❑ Manufacturers began to apply proprietary marks to glass containers beginning in the 1860s. Termed “hallmarks” or “maker’s marks,” this practice became more common in the 1880s as a form of advertising.
- ❑ There are numerous guides to maker’s marks on glass containers. The granddaddy of guides is, of course, Julian Toulouse (1971) *Bottle Makers and Their Marks* (recently reprinted).
- ❑ Because glass containers are so widely collected, there are specialized guides for classes of containers (e.g., fruit jars. Depression glass).
- ❑ Maker’s marks typically are located on the bases of bottles/jars which are thickest and more likely to remain intact when the rest of the bottle is in pieces.

EXAMPLES

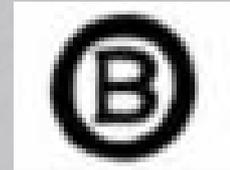
AB (joined) -American Bottle Company (IL)
1905-1929



Anchor-over-an-H - Anchor-Hocking Corporation (OH)
1937-1977



Brockway Machine Bottle Company (PA)
1907-1933



Owen-Illinois Glass Company (OH)
1929- ca. 1954



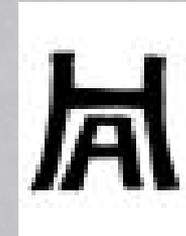
Fairmont Glass Works Company (IN)
1933-1968



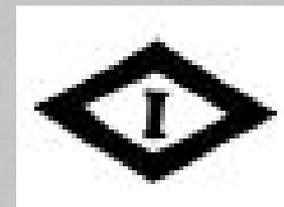
Federal Glass Company (OH)
1932-1980



Hazel-Atlas Glass Company (WV)
1923-1964



Illinois Glass Company (IL)
1915-1929



Olean Glass Company (NY)
1929-1942



Star Glass Works (IN)
1869- ca.1880



PATENT MEDICINES

- ❑ Patent medicines have been around since 1793 when Congress passed legislation allowing manufacturers to “patent” their medicines to minimize potential counterfeiting.
- ❑ Patent medicines began to disappear with passage in 1906 of the Pure Food and Drug Act.
- ❑ Patent medicine bottles typically exhibit flat panels along two or more sides of the bottles. Maker’s marks and information are usually embossed on these flat panels. Analyses are usually organized by the contents of the container.
- ❑ Tip: record letter strings, even if you cannot make out the entire word. You can then go to the patent medicine bottle label index from the National Park Service and search on letter strings to identify (or narrow down) the patent.



SARSAPARILLA



COUGH SUPPRESSANT



LINIMENT



SNAKE OIL



SODA BOTTLES

COCA-COLA® AND OTHERS

- ❑ Bottles holding soda water (spring water) first appeared in 1820 with the advent of Saratoga Springs bottled water in New York.

- ❑ Closure devices for soda bottles were many and varied:
 - ❖ In 1857, Henry Putman of Cleveland, OH, patented the “Better Way” wire retainer for cork stoppered bottles.

 - ❖ In 1873, the "Coda [ball] stopper" was patented by Hiram Cold of England.

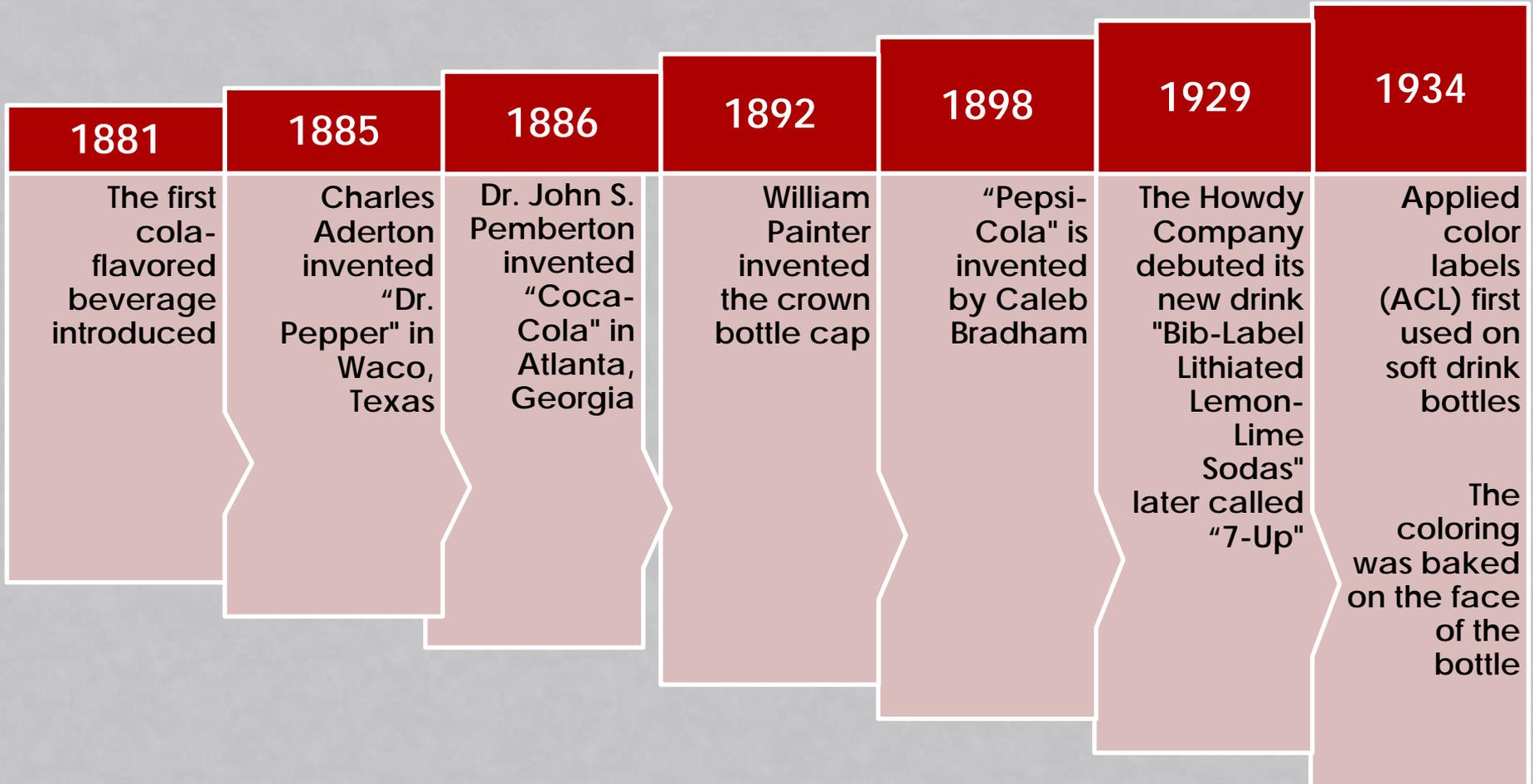
 - ❖ In 1874, Charles de Quillfeldt of New York, patented the "Lightning Stopper".

 - ❖ In 1879, Charles Hutchinson patented his “Patented Spring Stopper” for soda bottles with so-called “blob” necks.



Hutchinson Stopper
1880-1920

TIMELINE OF SODA DEVELOPMENT



SODA BOTTLES

- ❑ As soft drinks were developed, they began to be bottled in containers with proprietary shapes and embossing, although the bottles may have been produced by various manufacturers.
- ❑ Need to check a combination of embossing content, embossing location, patent dates, design patent numbers, and bottle makers to evaluate the age of soda bottles.

SODA BOTTLE SHAPES



Original Coke
Jacob's Pharmacy
1886-1900



Straight-sided bottle

1900-1919
Newport News, VA

SODA BOTTLE SHAPES



Hobble Skirt Design

If patented Nov. 16, 1915, produced 1917-1928

If patented Dec. 25, 1923, produced 1928-1938

If marked,
“Trademark Registered/Bottle Pat.d D-105529”,
produced 1938-1951



NAILS AND FASTENERS

- ❑ Early fasteners manufactured from bronze and, later, iron, appear in Biblical times and became much more common during Roman times.

- ❑ Thomas Jefferson established a nail-making factory at Monticello.
<http://www.monticello.org/plantation/work/nailmaking.html>

- ❑ So-called “cut nails” acquired this moniker since the fasteners were cut from sheet metal and then machined with a slight taper and a flattened head.

- ❑ With the advent of sawmills that could mill lumber to all kinds of dimensions, that overall variety of nail sizes increased dramatically.

- ❑ Wire nails, which were manufactured from extruded wire, began to be produced in the late nineteenth century. By about 1892, they were as common as cut nails and, by the early 1900s, had almost completely replaced cut nails.

NAILS

GENERAL TRAJECTORY OF CHANGE



Pre-1800 Hand Wrought



Type A Cut Nail, 1790-1830



Type B Cut Nail, 1820-1900

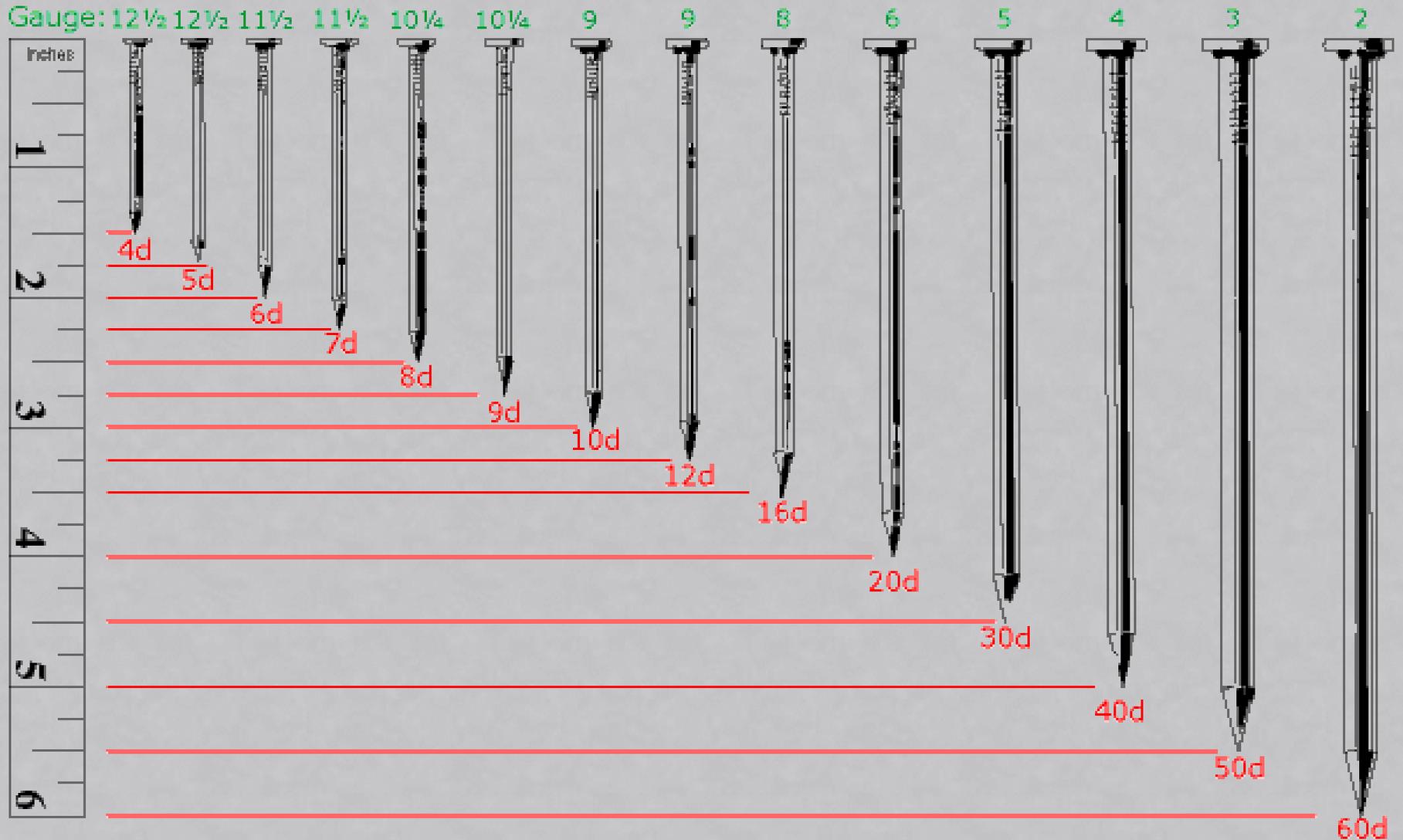


Wire Nail, post-1900

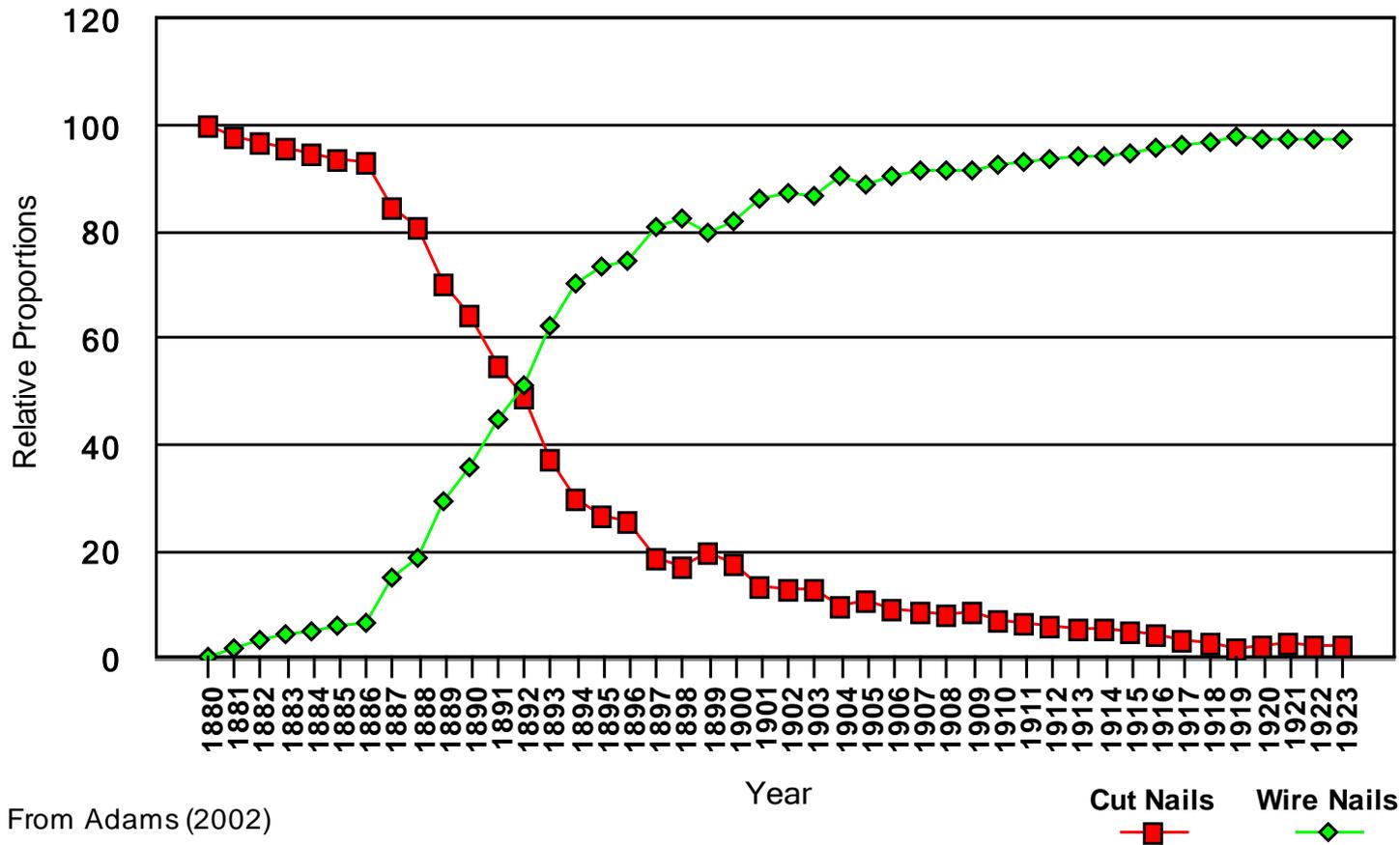
SQUARE CUT NAILS



WIRE NAILS STANDARD SIZES



CUT VS. WIRE NAIL PRODUCTION 1880 -1923



RAILROAD SPIKES AND DATE NAILS

- ❑ So-called “hook headed” railroad spikes were first developed for use on the Camden and Amboy (NJ) Railroad in 1815.
- ❑ One of the earlier patents for a railroad spike (No. 2182) was issued in 1841; many other patented designs followed.
- ❑ Size variations in spikes provide some indirect indication of the stresses to which the rail tracks were exposed, e.g., large spikes for standard gauge rails and progressively smaller spikes as rails shifted toward small gauge tramways.
- ❑ Date nails are a specialized nail of either cut or wire design in which the last two digits-representing the year-are embossed on the nail head. They didn't fasten anything, but rather were used (mostly in the twentieth century) to track when ties were laid or tracks were renovated. Collectors have a system for coding these nails (WESIS system).

RAILROAD SPIKES

DIMENSIONAL DATA

Length (in)	Shank width (in)	No./200 lb keg	Nominal wt (lbs)/spike
5.5	9/16	360	0.56
5.0	9/16	405	0.49
5.0	1/2	505	0.40
4.5 (A)	9/16	460	0.43
4.5 (B)	1/2	535	0.37
4.5 (C)	7/16	690	0.29
4.5 (D)	3/8	780	0.26
4.0 (A)	1/2	605	0.33
4.0 (B)	7/16	780	0.26
4.0 (C)	3/8	1025	0.20
3.5 (A)	1/2	670	0.30
3.5 (B)	7/16	890	0.22
3.5 (C)	3/8	1250	0.16
3.0	3/8	1380	0.14
2.5	5/16	1650	0.12

DATE NAILS

WESTERN DIVISION OF THE SOUTHERN PACIFIC RAILROAD



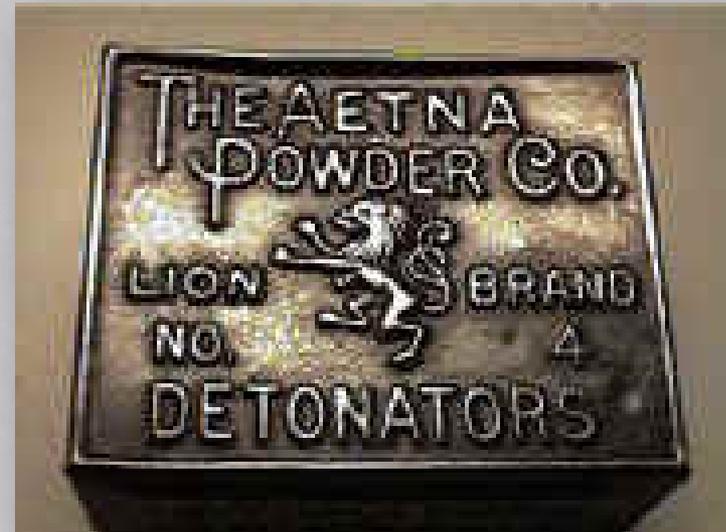


BLASTING CAP TINS

BLASTING CAP TINS

- ❑ Blasting cap tins are common at industrial sites (e.g., mining) and can often be assigned to specific manufacturers and, depending, specific time periods since logos often changed.
- ❑ Some of the logo changes are quite subtle (see California Cap Company), so you have to be careful in recording what you see.
- ❑ Perhaps the best overall guide is Andy Martin's *Blasting Cap Tin Guide*.
- ❑ **BE CAREFUL IN PICKING THESE UP SINCE THEY COULD STILL CONTAIN CAPS.**

EXAMPLES



Aetna Powder Company

1880-1914



Atlantic Dynamite Company,
1901-1903



Burton Powder Company
?-1917



California Cap Company
1880-1950





Repauno Chemical Co.
1880-1903



Union Cap and Chemical Co.
1903-1920



Metallic Cap Mfg. Co.
1876-1969

CERAMIC TYPES AND HALLMARKS

- There are a large number of varieties of ceramic ware types produced by hundreds of makers during the past two centuries. There are three general types:
 - ❖ Earthenware - Earthenware has an initial firing temperature of between 1100°C and 1180°C, and a second firing of between 950°C and 1040°C. The typical composition of earthenware is 50% normal clay, 35% quartz, and 15% chalk spar (Dolomit).
 - ❖ Stoneware (granite ware) - Stoneware has an initial firing temperature of 850°C, and a second firing of between 1180°C and 1280°C. However, when the stoneware is undecorated it is only fired once at a temperature between 1180°C and 1280°C. The typical composition of stoneware is 45% normal clay, 40% quartz, and 15% feldspar or another stone.
 - ❖ Porcelain - It has an initial firing temperature of 960°C, and a second firing of between 1400°C and 1450°C. The typical composition of porcelain is 50% china clay, 25% feldspar, and 25% quartz which gives porcelain its strength.

❑ Dating tips: After passage of the McKinley Tariff Act of 1891, all wares imported into the US were required to identify the country where they were produced. Prior to ca. 1891, the country of origin was optional and is often missing on the hallmark.

❑ For some countries, the name shifts over time.

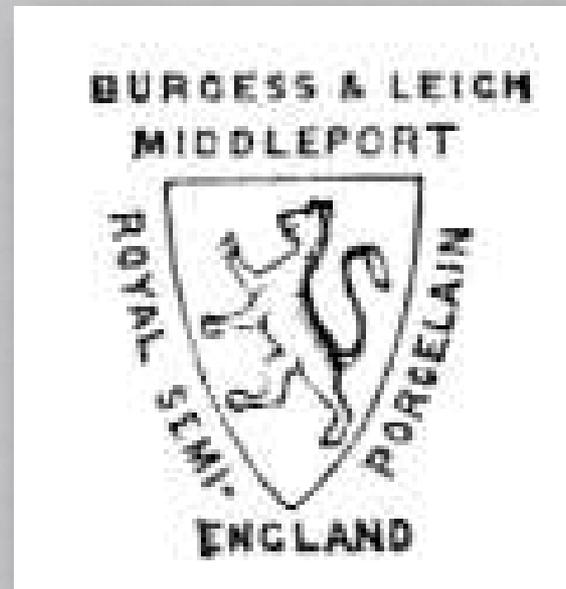
❖ For wares produced in Japan, the country of origin designation is:

- Nippon (1891—1921)
- Japan (1922—1945)
- Made in Occupied Japan (ca. 1945—1952)

❖ For wares produced in Germany, the country of origin designation is:

- Germany (1891—1945)
- U.S. Zone. U.S. Zone Germany (1945—1949)
- West Germany (1949—1990)
- East Germany (1945—1990)

HALLMARKS EXAMPLES



Burgess & Leigh (Staffordshire, UK) 1889-1912

Early date is based on the Middleport factory opening in 1889



J & G Meakin, ca. 1907

The Hanley factory was not opened until 1853, while country designations (England) were required on all export pottery after ca. 1890



J & G Meakin, post-1912

England on this mark post dates 1890, while the “Sol”
(sun) motif was trademarked in 1912



Alfred Meakin, ca. 1897

Note that “England” is missing. The term “Ltd.” was added to this mark in 1897. In 1913, the name changed to “Alfred Meakin (Tunstall) Ltd”



Charles Meakin, 1870-1882

England is missing and the town
of Burslem is shown



Charles Meakin, 1883-1889

England is missing and the
factory moved to Hanley in
1883



FIREARMS



FIREARMS

- ❑ Firearms are curated. The only information about firearms you're ever likely to get is from the spent cartridges.

- ❑ Excluding blackpowder, all cartridges consist of a primer, case, powder, and bullet. However, there are of three general types based on priming systems:
 - ❖ Rimfires (think .22 calibers)
 - ❖ Internal primed
 - ❖ External primed

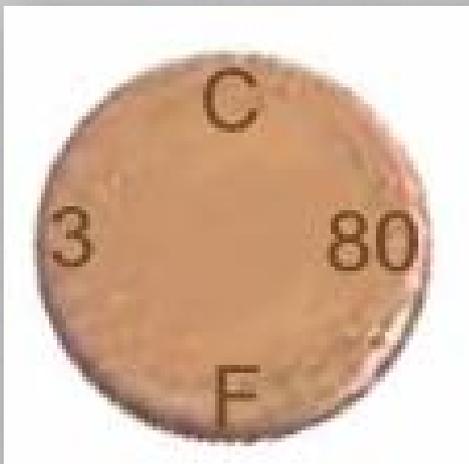
- ❑ There are two ways to gather information on cartridges:
 - ❖ Measurements of cases
 - ❖ Analyses of headstamps

RIMFIRE CARTRIDGES

- ❑ The primer charge is at the base of the cartridge, either within the rim (a "rimfire" cartridge).

- ❑ Although commonly known from .22 caliber cartridges in use today, the late nineteenth century saw rimfire cartridges produced in various calibers including:
 - ❖ .25 Short
 - ❖ .25 Stevens
 - ❖ .30 Short
 - ❖ .32 Short/Long
 - ❖ .32 Extra Long
 - ❖ .38 Short/Long
 - ❖ .41 Short/Long
 - ❖ .44 Henry
 - ❖ .46 Short/Long/Extra Long
 - ❖ .56-46, .56-50, .56-52, and 56-56 Spencer
 - ❖ .58 Miller

RIMFIRE HEADSTAMPS EXAMPLES



Frankfort Arsenal

“C” for carbine; “3/80”
manufactured in March 1880



Early Winchester



Remington Cartridge Co.



Union Metallic Cartridge Co.

1867-1911



Federal Cartridge
1917-present



Winchester variant
note small 'D' below



Phoenix Cartridge Co.

1872-1878



Peters Cartridge Co.

1887-1934



Western Cartridge Company

1898-1931, Logo still used



Winchester-Western

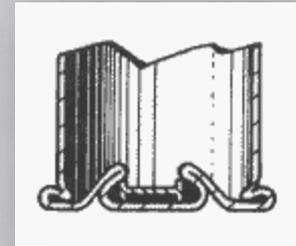
1931-present

CENTERFIRE CARTRIDGES

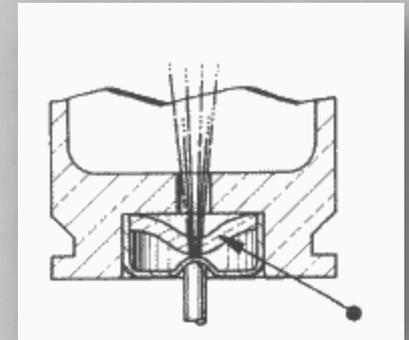
- ❑ As its name implies, the gunpowder contained in centerfire cartridges is ignited by a “central” (on the base of the case) priming system.
- ❑ Priming systems are of two major types, with numerous variants:
 - ❖ Inside primed cartridge - An earlier priming system is characterized by a primer being manufactured inside the base of the cartridge case. This is termed a “Benet primer.” These are common in .50-70 and .45-70 military cartridges produced in the late 19th Century. Variants on this type of priming system include the BAR ANVIL cartridges.



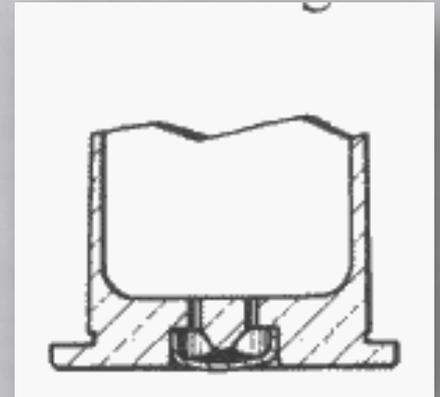
- ❖ Boxer primed - A priming system developed in the late 1860s by Col. E.M. Boxer of England. (U.S. Patent #91,818 of 6-29-1869) as an improvement to Daw's Patent. The primer contained both the priming mixture and an anvil. This system is used in most modern U.S. centerfire cartridges.



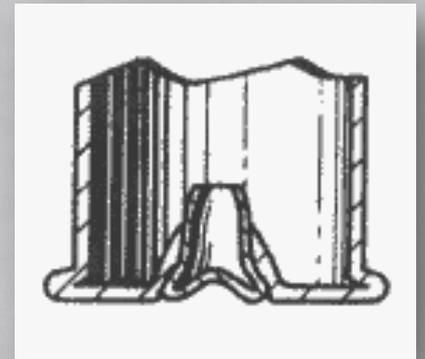
- ❖ Martin primed - A patented U.S. inside-primed cartridge (patents #88,191, 3-23-1869; #111,856, 2-14-1871) with a relatively complex folded case design. Its principal identifying feature is a large, circular primer-like disc in its head. Mostly found in copper-cased .50-70 cartridges, .44, .45 and .50 caliber pistol cartridges. Rarely found in brass, or other calibers.



- ❖ Berdan primed - A centerfire cartridge design by Hiram Berdan (patent #82,587, 9-29-1868). A primer consisting of a metal cup filled with priming mixture and sealed with foil or shellac was inserted into the primer pocket of the cartridge case. The anvil is part of the cartridge case, i.e. a raised portion of the primer pocket which was perforated to permit the ignition to set off the powder charge. Starting in the early 1870s this type of printing system was widely used for both military and sporting ammunition.



- ❖ Milbank primed - A scarce centerfire cartridge primed with a unique-appearing primer - one which looks like a struck primer. It functions like a rimfire cartridge. These were the subject of one of thirteen cartridge patents awarded to Isaac Milbank. Found in a variety of calibers, most commonly in .58 Musket, .42 Russian, .43 Spanish and .45-75. Rarely in a few other calibers such as .50-70.



MICRO-SERiation OF WINCHESTER PRIMERS

Color	Primer Ring?	Primer Marks	Size	Diameter	Period of Use	Used for?
Brass	No	None	1	0.175	1875-1885	.38 & .44 Marlin/Bullard rifles
Brass	No	None	1 1/2	0.175	1878-1885	Small/Medium Handguns
Brass	No	None	2	0.21	1875-1885	Large Handguns & Shotshells
Brass	No	None	2 1/2	0.21	1879-1885	Medium/Large Rifle
Copper	No	None	1	0.175	1885-1894	.38 & .44 Marlin/Bullard rifles
Copper	No	None	1 1/2	0.175	1885-1894	Small/Medium Handguns
Copper	No	None	2	0.21	1885-1920	Large Handguns & Shotshells
Copper	No	None	2 1/2	0.21	1885-1894	Medium/Large Rifle
Copper	No	None	4W	0.177	1895	Shotshells
Copper	No	None	4	0.177	1896	Shotshells
Brass	No	W' on primer	2 1/2W	0.21	1894-1920	Medium/Large Rifle
Brass	No	W' on primer	3W	0.21	1894-1923	Handguns & Shotshells
Brass	No	W' on primer	1W	0.175	1894-1923	.38 & .44 Marlin/Bullard rifles
Brass	No	W' on primer	1 1/2W	0.175	1894-1923	Small/Medium Handguns
New Non-fulminate Brass	No	W" on primer	1NF	0.175	1908-1923	General Use
New Non-fulminate Brass	No	W" on primer	1NF	0.175	1908-1923	General Use
New Non-fulminate Brass	No	W" on primer	1NF	0.175	1908-1923	General Use
Brass	Yes	None	5W	0.21	1895-1932	No. 1 1/2 primer inside ring
Brass	Yes	None	5 1/2W	0.237	1904-1932	No. 2 1/2 primer inside ring
Copper	No	None	4 1/2	0.227	1903-1932	Shotshells
Copper	No	'New No. 4'	4	0.227	1904-1932	Shotshells
Copper	No	None	6	0.175	1896-1932	Shotshells
Copper	No	None	209	0.24	1933-present	Shotshells
New Non-fulminate Brass	No	None	1NF	0.175	1923-present	Replaces No. 1W for Ballard/Marlin
New Non-fulminate Brass	No	None	17NF	0.21	1923-present	Replaces No. 3W for Handguns/Shotshells
New Non-fulminate Brass	No	None	24NF	0.21	1920-present	Replaces No. 2 1/2W for Medium/Large Rifle
New Non-fulminate Brass	No	None	35NF	0.21	1923-present	Replaces No. 2 1/2W for Military Loadings

BRICKS

- ❑ Bricks are one of the lesser recognized artifact categories that can provide considerable information about participation in regional, national, and international trading networks.

- ❑ Depending on availability of suitable clay sources, bricks were sometimes produced locally and other times imported.

- ❑ Mid-late nineteenth century mining sites, many of which were capitalized and run by British entrepreneurs, often imported bricks from the UK in lieu of those rotten American firebricks. These include:
 - ❖ Benson (Scotland; 1873-1915)
 - ❖ Bute (Scotland; 1885-1915)
 - ❖ Cardowan (Scotland; 1852-1880)
 - ❖ Craigend (Scotland; 1851-1885/1897)
 - ❖ Garnkirk (Scotland; 1831-1901)
 - ❖ Gartcraig (Scotland; 1872-1921)
 - ❖ Patent/R Brown & Son/Paisley (Scotland; 1867-1902)
 - ❖ Walbottle (Scotland; 1825-1920)



Carnegie Brick & Pottery Co., Carnegie, CA (1904-1912)



Denver Fire Clay Co., Denver, CO (1886-1900)



Golden Fire Brick Co., Denver, CO (1917-1943)



Denver Fire Brick Co., Denver, CO (1886-1895)



Smelter of "Patent/R. Brown & Sons/Paisley" Bricks
(Term "Ltd" added in 1902, bricks date 1867-1902)



SILVER

SILVER HALLMARKS

Attleboro Chain Company (MA)
ca. 1915



Baker-Manchester Company (RI)
1914-1929



The Fine Arts Sterling Silver Company
1944-1979



International Silver Company (MA)
1898-present



Mauser Manufacturing Company (NY)
ca. 1885-1905



National Silver Company (NY)
1910s-1955



Middletown Silver Company (CT)
1899- ca.1934



Reed and Barton (MA)
1840-present





LANTERNS AND LAMPS



LANTERNS AND LAMPS

- ❑ In the mid-nineteenth century, Americans began moving away from reliance on candles into lighting apparatus that relied on various oils.

- ❑ The granddaddy of lamp manufacturers was R. E. Deitz. In 1840, Dietz began marketing lamps that used sperm oil, whale oil, camphene (distilled turpentine), and other oils. With the discovery of coal oil (kerosene) in 1856, Dietz quickly adapted his lamps to burn petroleum products.

- ❑ Lantern general types.
 - ❖ So-called “hot blast” designs based on a J. H. Irwin’s (1867) patent (No. 65229).
 - ❖ Conventional designs without forced air.

LANTERN MAKERS

Dietz “Victor” Lantern
(1897-1939)

This is a typical “hot blast” design lantern, originally patented in the 1860s, with a forced air tube feeder above the globe

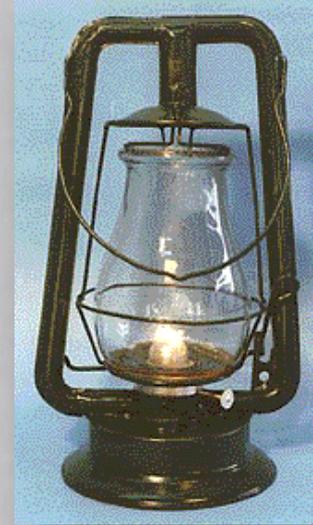


Dietz “Little Wizard” Lantern
(ca. 1913)

This is also a “hot blast” design



Defiance Lantern & Stamping Co. (NY)
1914-1930
Another “hot blast” design



The Mantle Lamp Company of America
(1908-1949)
Then Aladdin Industries (IL/TN)

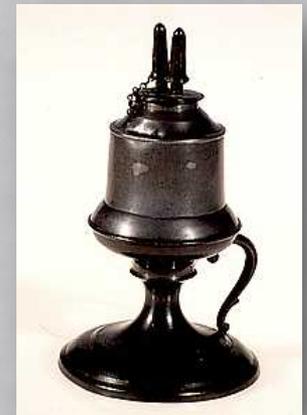


BURNERS AND FUELS

- ❑ The general character of fuels used in lanterns can, in the absence of the complete lantern, be used to identify the kind(s) of fuels used.

- ❑ Burners are of four general types including:
 - ❖ Whale Oil: These burners commonly consist of one or two tubes made of tin set in a base of brass, tin or pewter. They may be threaded or drop-in. Whale oil burners characteristically have a large portion of the wick tube that extends **downward** into the oil fount. Because whale oil was quite thick, especially at cold temperatures, this design helped to transfer heat from the flame to liquefy the oil.

 - ❖ Burning Fluid: Camphene burners are distinguished by the presence of tapered wick tubes extending away from the lamp. There may be between one (most common) and six (rare) tubes. Camphene was highly volatile and this design transferred heat *away* from the fuel.



❑ Kerosene burners: Consist of so-called 'prong' and 'coronet' styles. This is a familiar burner style whereby four distinct prongs extending upward are designed to hold the chimney in place. The chimney style corresponding to this burner style is called a "slip" chimney. It has straight (flat and parallel) sides near the base and can be 'slipped' into or out of the burner.



❑ Argand/Central Draft burners: The Central Draft burner is characterized by a central air intake tube surrounded by a circular wick (similar in design to the Argand burner). Combustion air is provided by a series of holes or perforations in the burner sides and top as well as through the center tube (from the bottom of the lamp or fount).

