The Vulcan Gas Ranges in the Ca' d'Zan

W. M. Crane Company

William Montgomery Crane was born in 1852 in Roselle, New Jersey. In 1887 at the age of 35, he founded the "W. M. Crane Company," a gas range and appliance manufacturer in New York, NY.

Note that this company is ***not*** the same as the "Crane Plumbing Corporation," which Richard Teller Crane began as a plumbing and heating wholesale business in Winnipeg, Canada in 1906. Coincidentally, the bathroom fixtures throughout the mansion were manufactured by Crane Plumbing.

In 1924 the "William M. Crane Company" was acquired by the "Baltimore Gas Appliance and Manufacturing Company." The name of the merged company was changed to the "Standard Gas Equipment Corp." At the time it was the largest manufacturer of gas appliances in America.

In 1949, "Vulcan-Hart" was formed when the "Hart Manufacturing Company" acquired the Vulcan name and its line of commercial products. Vulcan gas ranges have been manufactured from the time of the original William M. Crane Company through to its incorporation as the present-day Vulcan-Hart subsidiary of "ITW Food Equipment Group."

Vulcan Ranges

Vulcan appliances were widespread in commercial kitchens and high-end homes throughout their history. John Ringling likely bought a Vulcan range for Ca' d'Zan because of its reputation for being the best. Early Vulcan ranges like the one in Ca' d'Zan were controlled by manually adjusting lever type gas cocks, much like controlling a modern-day barbeque grill.

In a description of the Vulcan range from the Tribune Institute[1] in 1917:

> *"The head and front of efficiency equipment for the kitchen is the modern gas range. Some day it will probably be superseded by the electric range, but with the prevailing rates for electricity the time is not yet ripe to employ this mysterious current for cooking purposes."*

Testing by the Tribune Institute produced the following assessment:

> *"The modern gas range is so efficient that it will probably hold its own for many a long day. It seems fully to realize that snappy work is the keynote of the twentieth century, for apparently the end and aim of its existence is to do its work as swiftly, economically and effectively as such work can be done.*

[1] "The Tribune Institute is one of the most helpful services offered to the American Housewife. It is to her what the great trade and technical papers are to the businessman."
– The New York Tribune, 1917

"The Vulcan Range lives up to this idea most satisfactorily. It does all that can be expected of a gas range, and in addition it possesses a quick oven that is heated by the broiler. In the test given to this range in The Tribune Institute a temperature of 350 degrees F. was reached in five minutes and 550 degrees F. in just twice that time. These temperatures were attained in less than half the time required by another range of the same type. However, the heat retention properties of the Vulcan oven are not remarkable.

"The cooking top is placed at a convenient working height, and the top burners show good heating efficiency. One quart of water in an uncovered enameled saucepan was heated on the giant burner from 72 degree., F. to 200 degrees F. in 5 ½ minutes. The same test given over the single burner required 7 ¼ minutes."

The first Vulcan products were double-oven ranges, as in the picture below:

Vulcan Double Oven Cabinet Range circa 1917
Image courtesy of Smithsonian Libraries, Trade Literature Collection

In 1910 the company introduced its “Compact Cabinet Range”. By positioning the cooktop above the oven, this style of gas range occupied a space of only 44 by 26 inches, where earlier Double Oven models required a space measuring 66 by 26 inches. Although occupying less space, it provided the same features as the full-sized range; the same number of top burners and full 18-inch square oven and broiler units.

Vulcan “Compact Cabinet” Gas Range with Optional Elevated High-Shelf and Warming Closet
from "Progressive Age" Vol XXVIII January 15, 1910

Advertisement for Vulcan Gas Ranges from the Los Angeles Herald in 1910

“Smoothtop” Range

In 1924 the “Standard Gas Equipment Corp” introduced the “Smoothtop” range, adding to their line of older model Vulcan ranges that had open grates on the cooktop.

From the “Smoothtop” catalog of 1926:

> *“This smooth level top is heated by burners set under removable lids so that the vessels cooking can be brought in direct contact with the hot flame for quick boiling. The waste heat that would ordinarily pass out into the room is retained by the closed top and drawn back to the flue. This heats the entire top so that vessels can be pushed back and kept hot or will continue cooking while others take their place over the burners.”*

The Smoothtop and Other Special Features
Image courtesy of Smithsonian Libraries, Trade Literature Collection

The smooth top of the range could also be used as a warming plate – heated from beneath by a special burner – both to re-heat food and to keep food hot.

Now Top-Stove Cookery is no Longer a Feat of Frantic Dexterity

THE old-fashioned gas range! How busy it kept one removing and replacing pots and pans in a frantic effort to get the whole meal ready at once! Now, all that is past. You get the same easy capacity of a coal range in the new Smoothtop Gas Range. The vessels don't have to sit directly over the burner holes; your cooking surface is not limited to the area of a few burners. It is stove-wide! You cook all over Smoothtop's top! "But what," you say, "heats this top all over so that there are no dead spots?" The answer is: Smoothtop's Super Vulcan Burners!

The Super Vulcan Burner

Underneath Smoothtop's solid top are the revolutionary Super Vulcan Burners. The greatest invention the gas range has ever known. The heat from each Super Vulcan Burner, after it strikes the cooking surface, is caught in a surrounding conduit. A conduit which holds all the otherwise wasted heat and allows it to circulate all underneath the cooking surface. Amazing results follow: You can do speed-boiling, boiling, simmering, warming, all at the one time— over a single burner! Cook a whole meal over one burner! And this is why: Each Super Vulcan Burner produces four perfectly graduated zones of heat!

Perfect Heat Control

Thus, in Smoothtop, you get perfect, top-heat control. And it's automatic!

Note the scientific placement of Smoothtop's oven! Out of the air—and lowered to convenient, non-fatigue table-drawer level. Also—accurate oven-heat control!

No delicate adjustment of the gas cocks needed.

An Entirely New Cookery

Teachers, students and graduates of domestic science regard these results as an entirely new cookery, better, easier. Write for further information and for names of nearest dealers, to Standard Gas Equipment Corporation, 18 East 41st Street, New York City.

Smoothtop

REG. U.S. PAT. OFF.

GAS RANGE

WITH SUPER VULCAN BURNERS

There is only one Smoothtop, a Vulcan product. It is fully protected by patents in U. S., Canada, and Great Britain. Standard Gas Equipment Corp.—Vulcan Division. Est. 1885

Advertisement from the 1926 American Cookery Magazine

Warming Attachment

Vulcan offered a large size Elevated High-Shelf and Warming Closet as a separate attachment, allowing customers to customize their range, or split the cost of the complete appliance over two installments.

"Vulcan" Single Oven Range with Elevated Shelf circa 1917
Image courtesy of Smithsonian Libraries, Trade Literature Collection

Two Vulcan Ranges in the Ca' d'Zan

Although W. M. Crane did market a double range, the appliance in Ca' d'Zan is ***not*** that model. The range manufactured as a double unit does ***not*** have a vertical divider in the upper portion of the unit, as does the elevated portion of the units in the Ca' d'Zan.

"Vulcan" Double Range with Elevated Broiler and Warming Closet
Image courtesy of Smithsonian Libraries, Trade Literature Collection

There are clearly two different model Vulcan “Compact Cabinet” gas ranges in the Ca’ d’Zan, fastened together. The pair consists of a standard oven and broiler with an open grate cooktop on the right, and a newer “Smoothtop” range on the left. Each range has an oven and a broiler unit below the cooktop.

The unit on the right has the optional elevated high shelf and warming closet, and the unit on the left has just the optional high shelf. They are plumbed so both can use the same source of gas.

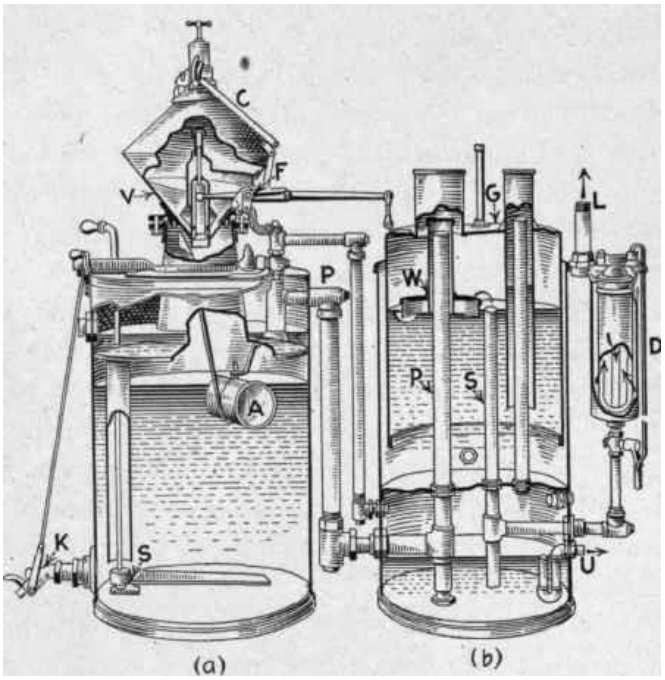
Photo credit: Marc d’Entremont at travelpenandpalate.com

It is likely that the two units in the Ca’ d’Zan were purchased at different times, with the open grate unit acquired circa 1917 and the “Smoothtop” range acquired sometime after 1924. Sophie Collins, the Ringlings’ German cook, must have required two gas ranges to meet the demands of the large number of guests that would be entertained simultaneously at Ca’ d’Zan.

On the Vulcan ranges in the Ca’ d’Zan the gas cocks are of the lever type, with white porcelain handles. These stoves are made of cast iron, sheet steel, and drawn steel, with an oven-baked “japanned” finish. Japanning is a type of finish that originated as a European imitation of Asian lacquerwork, sometimes called “toleware.”

Acetylene Gas

Due to the more general introduction of natural gas, as of 1910 the W. M. Crane Company began offering conversion kits for its stoves so they could use fuel from a public utility. Up to that time, all Vulcan stoves used locally manufactured (acetylene) gas. Since natural gas was not available in Sarasota until the late 1930s, the stove in the Ca' d'Zan was set up as originally built to use acetylene manufactured in the basement of the mansion.



Schematic of a Typical Acetylene Generator
from "Mechanics Of The Household" by Edward Spencer Keene (1918)

Calcium carbide pellets were delivered to the Ca' d'Zan basement in steel drums. The operation of the acetylene generator would have been like the typical generator illustrated above. The tank (a) is the generator and the tank (b) contains the gasometer marked G. The part C of the generator contains a supply of calcium carbide pellets, a portion of which is dropped into the water whenever additional gas is required. The feed mechanism F is controlled by the gasometer bell G, which is buoyed up by the gas it contains. When the supply of gas becomes low, the descending bell carries with it the end of the lever F, which is attached to the feed valve; this motion raises the feed valve and allows some of the carbide to fall into the water. The gas that is immediately generated passes into the gasometer through the pipe P, and as the bell is raised by the accumulating gas the valve V is closed.

The gas as it enters the gasometer passes through a hollow device W, that looks like an inverted T, the lower edge of which is tooth-shaped and extends below the surface of the water. The gas, in passing this irregular surface, is broken up and comes through the water in little bubbles, in order that it may be washed clean of dust. This device also prevents the return of the gas to the generator tank during the process of charging.

The gas escapes from the bell through the pipe S to the filter D, where any dust that may have escaped the washing process is removed by a felt filter. It finally leaves the machine by the pipe L, at which point it enters the system through which it is conveyed to the stove in the kitchen.

Although it has not been confirmed that the Vulcan gas range in Ca' d'Zan used generated acetylene instead of bottled propane, the New Edzell Castle constructed on Bird Key in 1914 is confirmed to have used an acetylene generator (see http://www.sarasotahistoryalive.com/history/articles/breakfast-and-a-winter-white-house/). It is highly likely that this same arrangement was duplicated in the Ca' d'Zan, as there are no photographs that show bottled gas on the property.

Addendum: The Ceramic Canisters

There are 5 ceramic canisters on the shelf of the stove:

The German labels on the canisters are not a legacy of the Ringling's German cook Sophie Collins. These are only props introduced much later.

The labels and their translations are:

- 1/2 Lit (One-half liter)
- Reis (Rice)
- Graupen (Pearl Barley)
- Sago (Sago Pearls, similar to tapioca)
- Corinthen (Corinthian raisins, also called simply currants)

Zante currants, Corinth raisins, or Corinthian raisins, also called simply currants, are dried berries of the small, sweet, seedless grape cultivar "Black Corinth" (Vitis vinifera). The name comes from the Anglo-French phrase "raisins de Corinthe" (grapes of Corinth) and the Ionian island of Zakynthos (Zante), which was once the major producer and exporter. It is not related to black, red or white currants, which are berries of shrubs in the genus Ribes and not usually prepared in dried form. (https://en.wikipedia.org/wiki/Zante_currant)

Sago pearls, while appearing much like tapioca, are from a completely different source:

A comparison of Sago Pearls and Tapioca
Source: The Spruce Eats https://www.thespruceeats.com/

Sources

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