

EARLY SOLAR WATER HEATERS

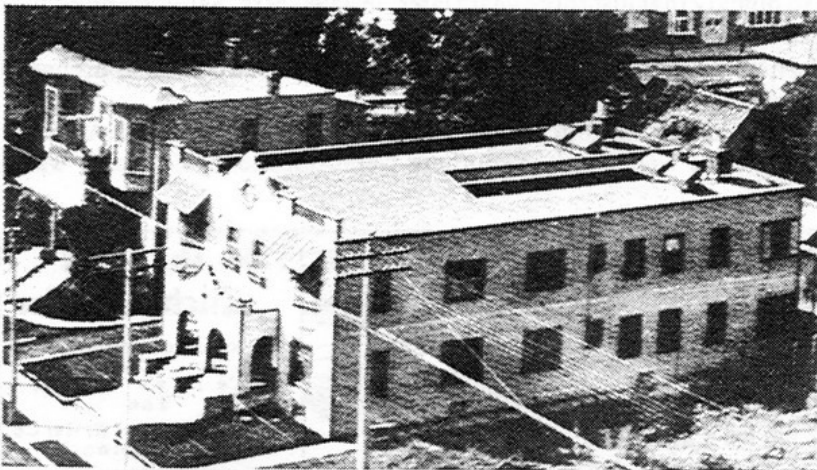
PART-2

A History of the Climax Water Heater in California

prime lure of the Climax. For an investment of \$25, the average homeowner saved about \$9 a year on coal—and more if artificial gas was used for water heating. Landlords also considered the Climax a wise choice—like Samuel Stratton who outfitted his six flats with solar heaters. *The Pasadena Daily Evening Star* called Stratton “a level-headed businessman who knows a good thing when he sees it.”

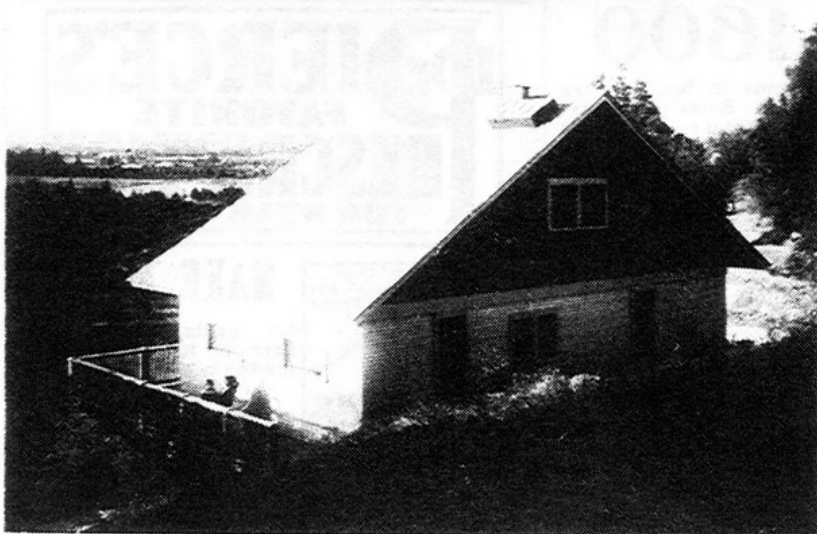
One satisfied Climax household, the van Rossems, had their solar heater on the southwestern side of the roof of their house (located near the present site of the Rose Bowl). Walter van Rossem, who was a child at the time, recalled that solar heaters became so popular that he and the others in the neighborhood did not think of them as anything out of the ordinary. “Everybody had one,” he said. “There was nothing uncommon about it at all. I can’t remember a house on the block that was built at the time or soon after that that didn’t have a solar heater.”

Van Rossem appreciated the Climax because he didn’t have to fire up the stove very often to heat water. “What the heck,” he confessed, “I didn’t like to chop



Left: Four large Climax heaters supplied hot water to apartment dwellers in this building. The water tanks behind the collectors indicate that these were gravity-fed systems.

Below: The Pasadena home of Walter van Rossem, shown here sitting in his mother's lap. As early as 1896, this home had a pressurized Climax solar water heater—seen on the roof in this photograph.



wood any better than anybody else did!" The rest of the family also appreciated the solar heater, though there were a few drawbacks. Van Rossem discussed how well the Climax performed:

On an ordinary sunny day . . . by afternoon, my mother and our housekeeper would have enough hot water for baths and by evening there would be enough for us kids. Whether we had hot water the next morning depended on how much we used the night before. If we didn't use all the hot water up, it stayed fairly warm—enough to wash your hands and face.

As for laundry, van Rossem said the water was "hot enough for a small amount of washing, the things the women wore, but when we did the heavy washing, the stuff we kids wore like our overalls, we always had to boil water on the stove." Moreover, he noted, the seasons affected the amount of hot water available:

In the wintertime usually there were a couple of kettles sitting on top of the wood stove heating. They were used for dishes and a lot of things because the water in the solar heater never got as hot in the wintertime as it did in the summertime.

Still, even on cloudy days "you'd be surprised how much it would heat up," van Rossem remarked.

The Walker Solar Heater

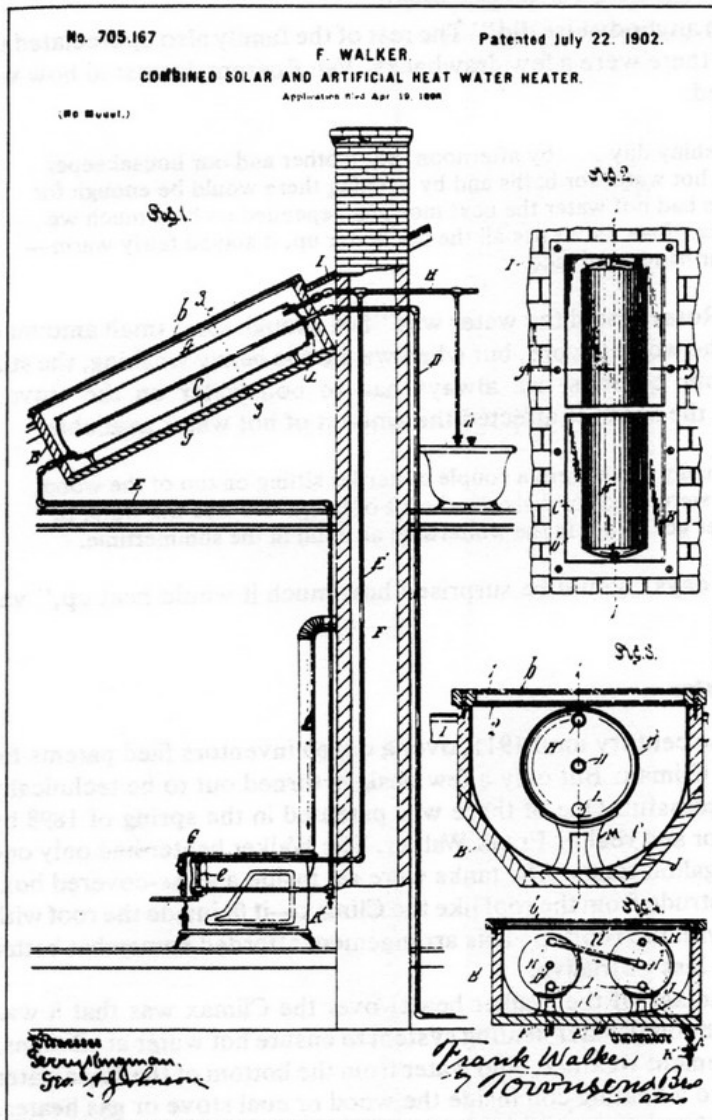
From the turn of the century until 1911, over a dozen inventors filed patents for improvements on the Climax. But only a few designs turned out to be technically and commercially successful. One of these was patented in the spring of 1898 by Los Angeles contractor and realtor Frank Walker. The Walker heater had only one or two cylindrical 30-gallon tanks. The tanks were set inside a glass-covered box, but the box did not protrude from the roof like the Climax—it fit inside the roof with the glass cover flush with the rooftop. This arrangement afforded somewhat better insulation and looked less obtrusive.

But the major advantage of the Walker heater over the Climax was that it was hooked into the conventional water heating system to ensure hot water at all times. At night or during inclement weather, cold water from the bottom of the solar water tank ran down a pipe to a heating coil inside the wood or coal stove or gas heater. Afterwards the heated water—which is less dense than cold water and rises naturally—flowed up through a second pipe leading to the top of the water tank. People found this method more convenient and cheaper because two sets of plumbing—one for the solar heater and one for the conventional heater—were no longer necessary.

The Walker cost less than \$50, including installation. While it cost more than a similar-sized Climax, many customers throughout southern California willingly paid for the additional benefits.

The Improved Climax

In 1905 the rights to manufacture and sell the Climax in California were acquired by a branch of the Solar Motor Company—the firm founded by Aubrey Eneas.



Left: Patent drawing for the Walker solar heater, 1902, showing how it could be linked to an auxiliary heat source—the kitchen stove.

Below: Solar inventor Frank Walker, who moved to Los Angeles from Canada in 1885. Well-regarded in the construction trades, he was a member of the city council by 1900.



Frank Walker

Charles Haskell managed the Los Angeles headquarters of Eneas' business, which was listed under the name of the Solar Heater Company.

Haskell made a basic change in the design of the Climax water tanks. Noticing that it took many hours for the relatively deep body of water in the four cylindrical tanks to heat up, he decided to replace them with one large but shallow rectangular tank. It held the same total volume of water, but with less water per square foot the sun's heat penetrated more quickly and produced hot water earlier in the day. Like Walker's model, Haskell's was usually connected to a conventional water heating system that took over during unfavorable weather.

The Solar Heater Company called this updated model the Improved Climax. It was usually placed either on or in the roof, facing the direction with the best solar

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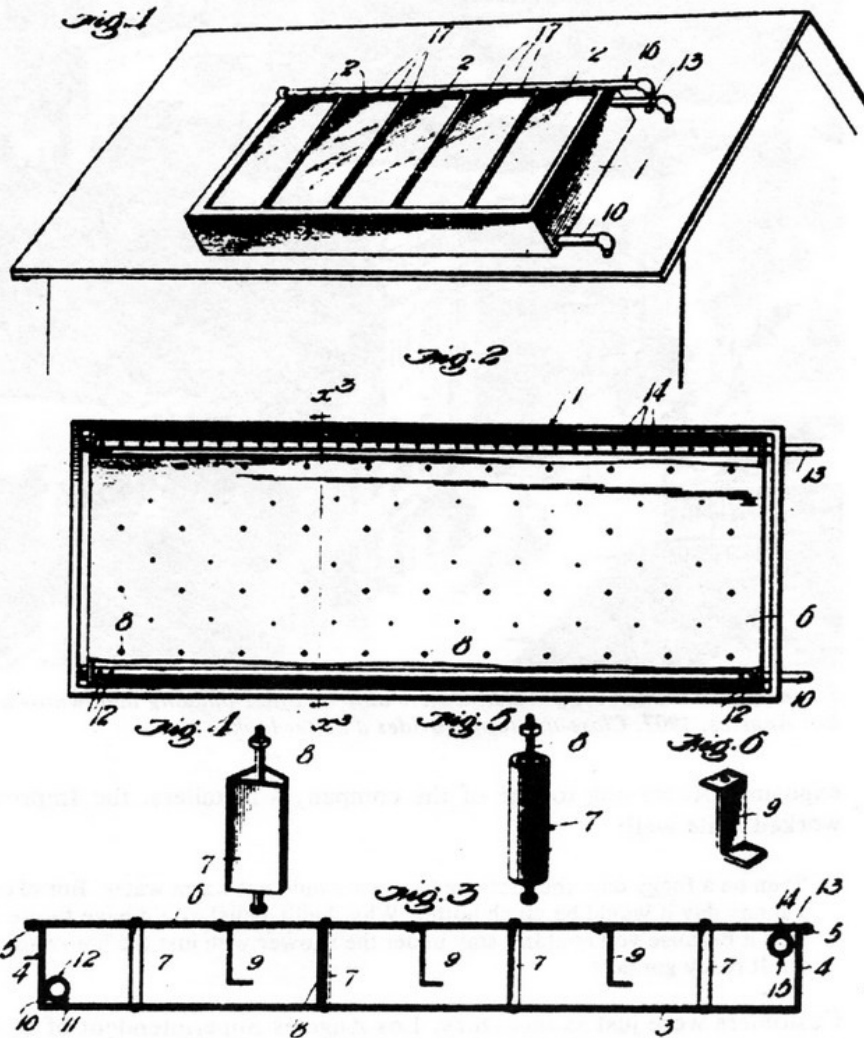
IMPROVED CLIMAX SOLAR HEATER

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WHY let the sunshine go to waste, and your money too, when at trifling expense you can put in your home an IMPROVED CLIMAX SOLAR HEATER that will furnish hot water from sunshine alone - winter and summer - for your bath, laundry, and all domestic purposes, without cost, damage or delay? It can be connected with the range, furnace or gas heater to insure hot water on rainy days, and when so connected saves the expense of a kitchen boiler. It insures a cool house during the hot season. Let us figure with you on your hot-water problem.

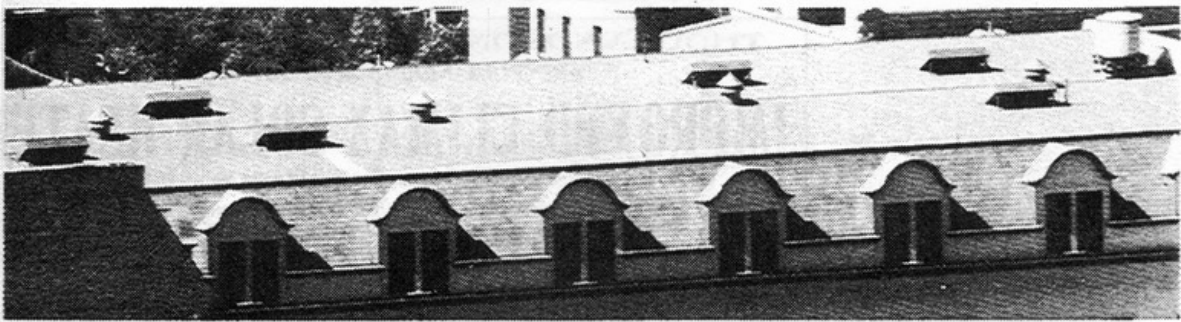
SOLAR HEATER COMPANY

342 New High St. LOS ANGELES



Top: Advertisement for the Improved Climax solar heater.

Right: Charles Haskell's patent drawings for the Improved Climax. This solar water heater had a single shallow metal tank that allowed the water inside to get hot much earlier in the day.

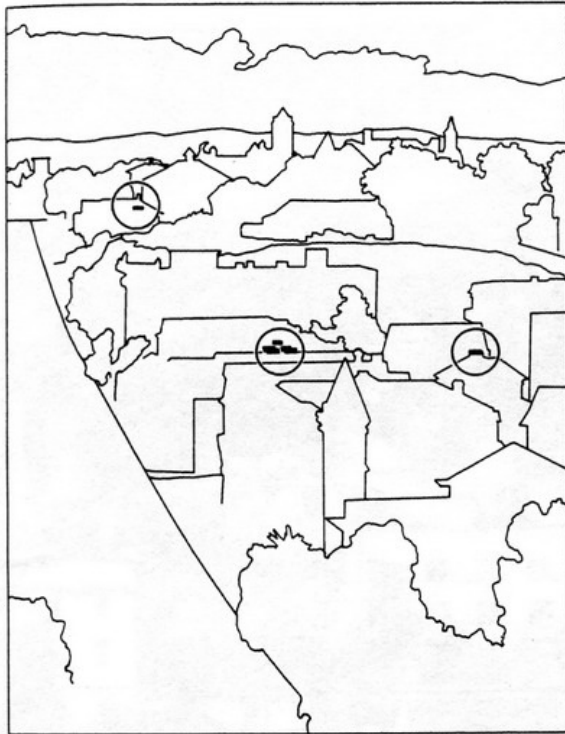


Six Improved Climax solar water heaters atop an office building in downtown Los Angeles, 1907. Close-up (top) provides a better look.

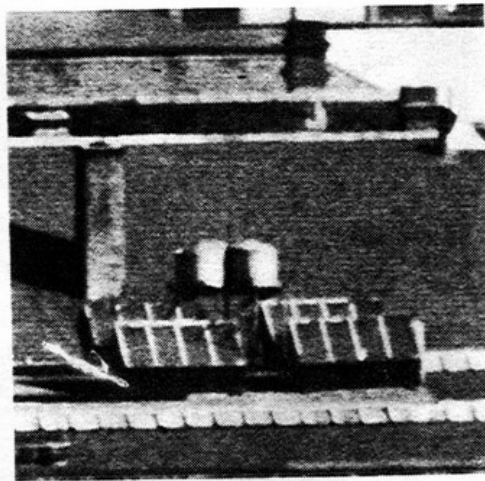
exposure. According to one of the company's installers, the Improved Climax worked quite well:

Even on a foggy day, the first one to use it would get warm water. But of course, on a sunny day it would be much hotter. Why, hell's bells! You'd have to use the cold with it because you couldn't stay under the shower with just the hot water turned on. It really got hot!

Customers were just as laudatory. Los Angeles Superintendent of Buildings, J.J.



Olive Street in downtown Los Angeles, 1900 (opposite page). Note the Climax solar water heaters (diagram, left, and close-up, below) and the clear skies in the distance.



Backus, for example, wrote a testimonial that appeared in a 1907 issue of *The Architect and Engineer of California*:

I take great pleasure in saying that after a thorough trial extending over a year and a half, our solar heater continues to give just as much satisfaction as when first installed. I am ready to admit that [at first] we were unreasonably prejudiced against the heater, and feel that refusing to let you install one in my house for so long a time after you first approached me upon the subject, we lost a great deal of comfort and convenience.

In southern California and in many areas further north, the Improved Climax and its predecessors, the Walker and the Climax, supplied large quantities of hot water for seven to eight months of the year—the Climax and Walker models heating water up to 120°F by late afternoon, and the Improved Climax reaching this temperature earlier in the day. But a serious defect hampered the effectiveness of these solar water heaters. While they lost heat less quickly than the early bare-tank heaters, their insulation consisted of only a pane of glass and a wooden box. The water did not remain hot for very long, especially on cloudy, cool days. Even under the best conditions, the water never stayed hot enough overnight to enable clothes to be washed in the morning. Kemp, Walker, and Haskell had brought the technology of solar water heaters a considerable distance in a decade and a half—but not far enough.

