Diamond Match Company
Barber Plant and Match Factory

Barber (Chico), California

1906

A

Chronology

1965

Of Events

By

1994

Don Alger

&

Ray Rolls

2019

Table of Contents

I. Acknowledgements

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Don Alger
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II. Introduction

Diamond Match's arrival in the small rural town of Chico in 1901 had a substantial economic impact of industrial development and a steady industrial payroll in a largely agricultural area. During several years of construction, Diamond was spending big money in and around Chico. In 1900 the population of Chico was 4,799. In 1910, the population was 11,775. The arrival of Diamond Match was almost solely responsible for this dramatic population increase. An article in the December 25, 1903 edition of the *Chico Enterprise* described the economic boom in Chico.

> "Two years ago, Chico stood in careless repose, with two straggling suburbs.
> Two years ago, vacant houses abounded, now people are living in tents.
> Two years ago, not more than half a dozen new houses were being erected.
> Today there are over two hundred. Every business place is occupied.
> Two years ago, the Chico school department had three buildings.
> Today it has five. Two years ago, three employees took care of all post office business. Today there are eleven."

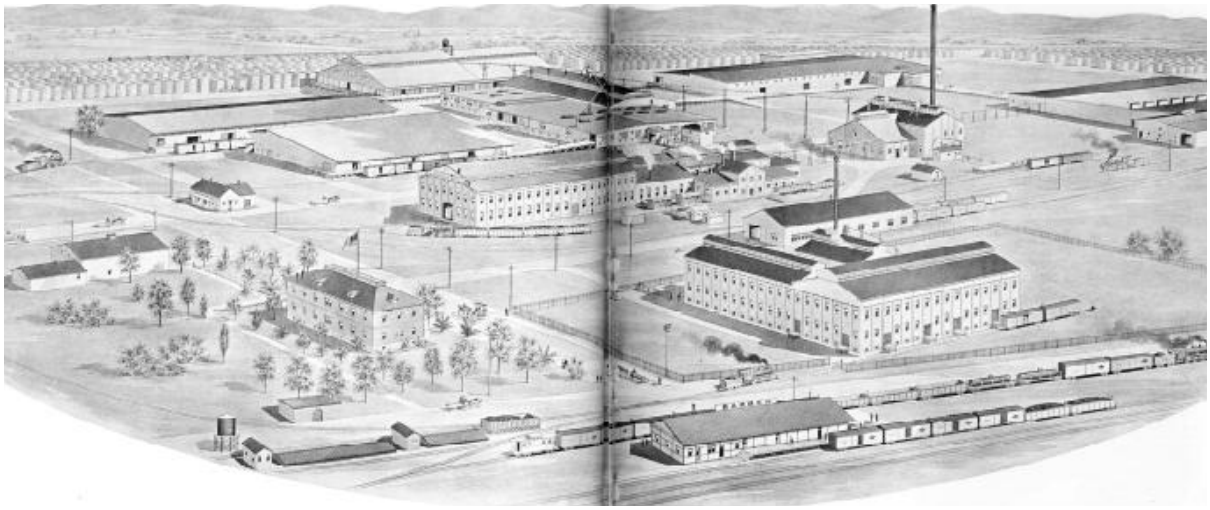
W. H. Hutchinson once described the arrival of Diamond Match as one of the five most significant events that occurred in Chico. The other four were:

1. The arrival of John Bidwell in 1850. (He arrived in California in the early 1940s but settled in Chico later.)
2. The arrival of the California and Oregon Railroad in 1870.
3. The establishment of the Northern Branch of the State Normal School in 1887.
4. The development of the Army Air Base which is now the Chico Municipal Airport in the 1940s.

Despite the great significance and influence that Diamond Match had on the area, a search for an organized, concise, specific discussion of the history of the Diamond Match Factory produced no results. Endeavors to find a speaker on the subject were not successful. Queries at the Chico Heritage Association and at the Butte County Historical Society, led to no results other than that there were unorganized boxes and files related to Diamond Match which people were welcome to utilize. There was certainly no concise pictorial chronology of the history of the factory site.

By 1906 there was a thriving manufacturing factory as indicated in an artist's rendition of the site and a picture shown on the next page.

The question as to what happened to the site of such an important business in the early 1900's to what is now a virtual empty lot was an intriguing question.



This shows a circa 1906 artist's rendition of the site.

This shows a circa 1906 photograph of the site.

This document will endeavor to provide some description of the events with a chronology of the history of the Diamond Match Plant in Chico, California.

Although the initial focus of this research was to simply describe the development and demise of the Diamond Match plant and match factory, the authors have digressed on several additional explorations, when curiosity demanded, and some of these discussions are included.

The following two 2019 satellite views of the property depict the current status and further beg the question as to what happened.

This 2019 satellite view shows a large white structure. It is believed to have been built in the 1980s after Louisiana Pacific (LP) purchased Diamond Match in 1984. It was used for the manufacture of plastic molding. The LP plant was closed in 1989 and at some point the building may have been used for prune drying and packing. In 1994 it began to be used as "Storage in the Yard" and is currently used for RV storage.

Original Engineering Building

Small Storage Building

As a sidelight to the bigger questions, it was noted, in a Chico *Historic Resources Inventory* document, that the small structure to the bottom right in the picture above, which has been sometimes described as a wood/fuel storage building, a storage building for match blocks, a construction building and even totally erroneously as the power house, "was believed to have been built in either 1903 with the original construction of the match factory or **perhaps** in 1916 when the match factory was approximately doubled in size."

Determining evidence of the actual date of its origin became an interesting challenge.

Diamond Match Chronology

Date	Comments
1872	The Butte Flume and Lumber Company started construction of a flume from Butte Meadows down Big Chico Creek, with completion in 1874. This flume would supply the Sierra Lumber Company with lumber. However Diamond Match never used flumes to transport lumber.
1880	Diamond Match Company was created by O. C. Barber, through a merger of match companies.
1903	The Diamond Match Company acquired about240 acres of land adjacent to the California & Oregon railroad tracks and began plans for construction of a match and wood products plant just south of Chico, bringing materials by train from the company mill in Stirling City.
1904	Construction of the Stirling City Mill and the Butte County Railroad (BCRR) was completed and the sawmill began operation.
1904-06	Buildings were constructed at the Barber site.
1907	Sierra Lumber Company purchased by Diamond Match Company.
1907	A plywood and veneer plant was constructed on 9th Street.
1914	The apiary supplies business began.
1916-20	Wood products plant at Barber was closed but the Match Factory remained open with match blocks imported from Idaho.
1916	Expansion began to approximately double the size of the Match Factory
1918	The Barber Neighbohood was annexed to Chico.
1919	The Company restarted a millwork factory on the site.
1920	Powerhouse converted to Apiary Warehouse
1927	The Diamond Match Company at the end of W. 16th Street plant grew to employ hundreds of workers, adding to the thriving Chico economy.
1934	Production of book matches began.
1947	Diamond Match employed ~ 200 people.
1957	Diamond Match employed ~ 125 people.
1957	The Stirling City Sawmill was closed.
1957	Diamond Match Company became Diamond Gardner.
1959	Diamond Gardner became Diamond National.
1963	Fairburn Hall was moved to 1321 Ivy Street.
1964	Diamond National became Diamond International Corporation.
1975	The Match Factory closed and was demolished in 1978.
1978	Fairburn Hall burned.
1984	The Barber site was purchased by Louisiana Pacific.
1989	The plant closed for good.
1997	An environmental and engineering evaluation of the site was prepared.
1997	Barber Land LLC bought the Barber Yard site.
2004	In August and November, two of the oldest buildings, the Apiary and the lumber warehouse were destroyed by vandals with fires.
2019	Barber Yard development plans were still being pursued.
2021	Gonzales Development Company held a community meeting to discuss the development of the approximately 137 acre Barber Yard property.

III. History of Matches, Their Invention, Chemistry and Manufacture

The ability of instant creation of fire was an objective of countless inventors and engineers in the last few thousand years. However, matches were created only when scientists and chemist managed to test all capabilities of sulfur and phosphor elements in the 19th century.

Chronology of Match Development

Date	People/Event	Chemistry	Comments	Results
1805	Chancel	$KClO_3$, Sulfur, sugar, rubber and sulfuric acid	First use of wooden stick match	Violent reaction with relatively unavailable chemicals
1827	Walker	$KClO_3$, Sb_2S_3	friction or SAW (strike anywhere) matches	Uncontrolled, created fire hazards
1830	Sauria	White Phosphorus	SAW	Toxic, explosive, self igniting
1844	Pasch	$KClO_3$ with red P on a separate location	SOB (Strike on Box) safety matches	Inability to mass manufacture
1855	Johan Edvard Lundstrom	$KClO_3$		Developed mass production
1870	Robinson	Patent for diamond-shaped match stick		
1892	Joshua Pusey		Book Matches	
1898	Sevene and Caher	P_4S_3	SAW matches without white phosphorus	Difficult to strike and no sales
1898	U. S Patent obtained	P_4S_3		
1900	DM acquired patent	P_4S_3		
1906	Berne Convention		Banned use of white phosphorus	
1909	Fairburn Hired at Diamond Match (DM)			
1910	DM Patent obtained	P_4S_3 , $KClO_3$		
1911	DM Patent deeded to the public			

What follows is a more detailed description of the various activities involved in the history of match development.

Jean Chancel, a young Parisian, was very interested in discovering easy to produce and safe to use wooden matches. His 1805 method of producing fire involved a violent chemical reaction consisted of dipping the wooden stick, which was coated with a mixture of potassium chlorate, sulfur, sugar, and rubber into an asbestos bottle filled with sulfuric acid. Even though his dangerous and toxic invention did not find much commercial use, it opened the door for other inventors to step up and try to find more chemical friendly solutions to the problem of creating fire matches.

John Walker was an English chemist and druggist that managed to revolutionize modern history of matches by introducing friction-based chemical reaction to the match.

Walker was born in Stockton-on-Tees and became an apprentice to Watson Alcock, the principal surgeon and doctor of the town. He served him for a while as an assistant-surgeon, before finding out that he could not accustom himself to the sight of blood and surgical operations. However, time spent as an assistant-surgeon brought him closer to chemistry, which pushed him to study that subject at Durham and York. After spending several years learning pharmacy and apprenticing as a wholesale druggist, he returned home to his mother and siblings in 1812 and opened his own shop as "chemist and druggist" in 1819.

Experimenting with various chemical elements finally bore fruits when he created paste that could combust into flames when scraped on a rough surface. He first noticed these effects while working on his hearth at his home. This breakthrough led him to create the first simple prototypes of matches which were made from cardboard sticks. By 1824, he started selling those matches, which instantly became very popular in his home town. By changing the design of the sticks into three inch long wooden splints, he soon received offers of purchase from neighboring towns and started selling more and more.

He sold the very first batch on April 7, 1827. Sadly, his design was not perfect. Those bulky three-inch splints of wood, were expensive, unreliable and somewhat tricky to use. Sulfur on the head of the stick sometimes burned so brightly and hotly, that it managed to detach itself and fall on the floor, damaging either carpet or even clothes of the people who were wielding the match.

These first *friction matches* (Strike Any Where or SAW) didn't use any *phosphorus* at all. They were made in 1826 from a fifty-fifty mixture of *potassium chlorate* and *antimony trisulphide*, together with some gum arabic, sugar and starch. Walker didn't bother to patent his creation that he called *friction lights*.

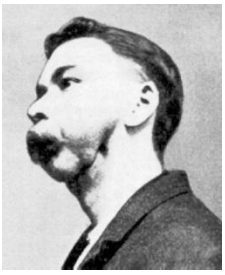
Sir Isaac Holden independently took over the business that Walker left unfinished and started selling his own matches across the world, gaining the fame as inventor of matches.

John Walker was buried on May 1, 1859, at St. Mary the Virgin Church Parish Yard, Norton, England. He was credited with the invention of matches only after his death.

Charles Sauria was a French chemist that is remembered today as a creator of influential phosphorus-based matches in 1830–1831. Even though his white phosphorus matches were dangerous (and very poisonous) and eventually banned from widespread use, their popularization paved the way for other inventors to create less toxic solutions.

Seeing the successful examples of matches made by British chemist John Walker, this young chemistry student had the idea to substitute *white phosphorus* for the antimony trisulfide in Walker's recipe. He finally managed to create a stabile mixture of white phosphorus matches that could be ignited by even slight friction with other objects. Because of their small size, ease to use and lack of hard sulfur gases, white phosphorus-based matches soon became a hit all across the world. Sadly, Sauria never managed to secure a patent on his discovery because of a lack of funds.

The matches could ignite accidentally rather easily (pure white phosphorus can ignite spontaneously in the air above 34°C). It was also soon discovered that *white phosphorus* is highly toxic. Continuous exposure among factory workers would cause a dreaded and often fatal bone disease known as *phossy-jaw*.



Phossy jaw, formally known as **phosphorus necrosis of the jaw**, was an occupational disease affecting those who worked with white phosphorus (also known as *yellow phosphorus)* without proper safeguards. It was most commonly seen in workers in the matchstick industry in the 19th and early 20th centuries. It was caused by white phosphorus vapour, which destroys the bones of the jaw.

White phosphorus became a public health issue on the international scene. This popularity later on received much resistance from population and governments, who saw firsthand negative effects of the toxic white phosphorus. Finally in 1906, international Berne Convention banned the worldwide use of white phosphorus matches.

Charles Sauria died August 22, 1895, in Saint-Lothain, France as a poor man, at the moment when annual worldwide production of white phosphorus matches reached 3 trillion.

One solution for the problems with these matches came from Sweden.

Gustaf Erik Pasch was a Swedish chemist who managed to completely change the modern match industry. By moving phosphorus from the top of the match to the special striking surface, he enabled creation of cheap, safe and easy to use matches that were far superior to the models that were in use before.

The early history of matches was filled with several innovative designs that managed to establish a foothold in the general population who badly needed this kind of device, but their numerous disadvantages (such as powerful odors, toxic ingredients, expensive manufacture, complicated and dangerous use) prevented them from reaching

worldwide fame. One discovery that happened in the early 1840s managed to alleviate the majority of those problems, and introduce to the world matches that would soon became the absolute most famous match design of our history – *safety matches*.

With a patent secured in 1844, Pasch began the production of safety matches in Stockholm, but manufacturing problems and the difficulties in producing cheap red phosphorus forced him to price his matches much more than the public was willing to pay. In addition, it was difficult to produce them commercially.

Gustaf Erik Pasch died September 6, 1862, and was remembered fondly as an excellent professor and a member of a Swedish society. He never managed to get rich from his invention that would become one of the most profitable industries of the 19th century.

John Edvard Lundström, a Swedish industrialist and inventor, took the proven designs of Pasch and in 1845, started to experiment with safety matches in a small workshop he had rented. In 1846, his younger brother Carl Frans Lundström joined his small workshop.

Alexander Lagerman (1836–1904), a Swedish engineer who was employed by the Lundström brothers, invented the first fully automatic match machine. They had improved the product, and in 1847 they were ready to set up a production plant.

They bought an estate on the coast of Lake Vättern where they built a large match factory and started producing safety matches that instantly gained worldwide fame. Today, their original factory is a museum.

The safety match combined with the advanced machines that the company developed themselves, soon made the company in Jönköping the largest match company in Scandinavia and one of the world's largest match production companies.

The Lundström safety match got an award at the "World Exhibition" in Paris in 1855.

The diamond-shaped match splint was patented on July 26, 1870, by **John K. Robinson** of the Barber Match Company. When Diamond Match Co. was formed in 1881, one story is that it took its name from the diamond-shaped splint.

Joshua Pusey: Although paper matches were patented in the 1880s, an early paper match "folder" was patented in September 1892 by Philadelphia patent attorney American Joshua Pusey, however the matchbook as we know it was patented a few weeks later by Charles Bowman of Lebanon, Pennsylvania. Pusey challenged Bowman's patent, but Bowman's patent was upheld. Pusey sold his patent to the Diamond Match Trust in 1896 and then served as the Company's patent attorney. The Diamond Match Company adapted his design into their product, becoming the first mass-producer of paper matchbooks.

The French government had sponsored research to find a suitable replacement for white phosphorus for SAW matches. In 1898, the outcome, of the work of **H. Savène** and **E.D. Cahen**, resulted in using *tetraphosphorus trisulphide* (then called *phosphorus*

sesquisulphide), an inorganic compound with the formula P_4S_3. A paste including 13% of that chemical and 28% *potassium chlorate* worked very well (the rest of the recipe included powdered glass, glue and fillers such as *zinc oxide* and *iron oxide*). It was not spontaneously flammable, not toxic and didn't cause *phossy-jaw.*

P_4S_3 is now one component of "strike anywhere" matches currently sold.

H. Savène and E.D. Cahen obtained a U.S. Patent in 1898 for the P_4S_3 formula.

Diamond Match immediately acquired the patent in 1900.

In 1906, an international treaty (the so-called ***Berne Convention*****)** was signed in Switzerland, obligating the signing countries to *ban* white phosphorus from the manufacturing of matches. The U.S. did not sign that treaty (on the grounds that the required ban would not have been constitutional) but the U.S. Congress created punitive taxes which had the same effect, in 1913. However, the problem had actually been solved in 1911 by the Diamond Match Company.

W. A. Fairburn: In 1909, when O.C. Columbus Barber retired as President of Diamond Match, the company gave the job to Edward R. Stettinius who immediately contacted Fairburn and he joined the Company on October 1, 1909, as General Superintendent in charge of operations.

Serious trouble awaited Mr. Fairburn. The old white phosphorus match was not only dangerous to make because they were explosive (self igniting) but it was also poisonous, particularly to the match workers. So very great was the menace that in 1908 and 1909, the U. S. Bureau of Labor and the American Association for Labor Legislation investigated and condemned the use of white phosphorus and demanded its prohibition. This was the scene when Fairburn entered with his search for a safe match.

Mr. Fairburn and Diamond's chemists had two formulas with which to experiment. The older of the two was that of L. E. Lundstrum, who in the middle of the last century overcame the danger of necrosis by using non-poisonous chlorate of potash ($KClO_3$) in the head of the match instead of white phosphorus and putting a striking coat of amorphous phosphorus on the box. The match was far from perfect. It spread little globules of fire when struck-but it was the predecessor of the *Swedish-type safety match.* Then in 1898, two Frenchmen, H. Sevene and E. D. Cahen had taken out a U.S. patent for the use of non-poisonous phosphorus sesquisulfide as a substitute for white phosphorus in the head of the match and this patent had been acquired by Diamond in 1900 for $100,000. Early in 1910, Mr. Fairburn "discovered" the Sevene-Cahen formula and felt it could be made to work. Numerous efforts were made by Diamond to make the Sevene-Cahen match a success, but it was so difficult to strike that it would not sell. Fairburn started experimentation in collaboration with Diamond chemists and on December 16 of that year announced that Diamond Match had a formula for producing non-poisonous, non-explosive matches. The Diamond formula utilized part of the old Lundstrum method. Sesquisulfide was combined with potassium chlorate and other chemicals to make the match nonpoisonous, non-explosive and easy to strike.

In the U.S., the patent for these P_4S_3 matches was secured in 1910 by the Diamond Match Company. However, the public health issue was such that President Taft publicly urged the company to voluntarily surrender its patent into the public domain, despite its enormous moneymaking potential. The *Diamond Match Company* did so on January 28, 1911, and the menace of white phosphorus was ended.

The heads of *strike-anywhere* matches are composed of two parts, the tip and the base. The tip contains a mixture of phosphorus sesquisulfide and potassium chlorate. Phosphorus sesquisulfide is a highly reactive, non-toxic chemical used in place of white phosphorus. It is easily ignited by the heat of friction against a rough surface. The potassium chlorate supplies the oxygen needed for combustion. The tip also contains powdered glass and other inert filler material to increase the friction and control the burning rate. Animal glue is used to bind the chemicals together, and a small amount of zinc oxide may be added to the tip to give it a whitish color. The base contains many of the same materials as the tip, but has a smaller amount of phosphorus sesquisulfide. It also contains sulfur, rosin, and a small amount of paraffin wax to sustain combustion. A water-soluble dye may be added to give the base a color such as red or blue.

The heads of *safety matches* are composed of a single part. They contain antimony trisulfide, potassium chlorate, sulfur, powdered glass, inert fillers, and animal glue. Antimony trisulfide cannot be ignited by the heat of friction, even in the presence of an oxidizing agent like potassium chlorate, and it requires another source of ignition to start the combustion. That source of ignition comes from the striking surface, which is deposited on the side of the matchbox or on the back cover of the matchbook. The striking surface contains red phosphorus, powdered glass, and an adhesive such as gum Arabic. When a safety match is rubbed against the striking surface, the friction generates enough heat to convert a trace of the red phosphorus into white phosphorus. This immediately reacts with the potassium chlorate in the match head to produce enough heat to ignite the antimony trisulfide and start the combustion.

The striking surface on modern matchboxes is typically composed of 25% powdered glass or other abrasive material, 50% red phosphorus, 5% neutralizer, 4% carbon black, and 16% binder; and the match head is typically composed of 45–55% potassium chlorate, with a little sulfur and starch, a neutralizer (ZnO or $CaCO_3$), 20–40% of siliceous filler, diatomite, and glue. Some heads contain antimony(III) sulfide to make them burn more vigorously. Safety matches ignite due to the extreme reactivity of phosphorus with the potassium chlorate in the match head. When the match is struck the phosphorus and chlorate mix in a small amount forming heat and ignites due to the friction.

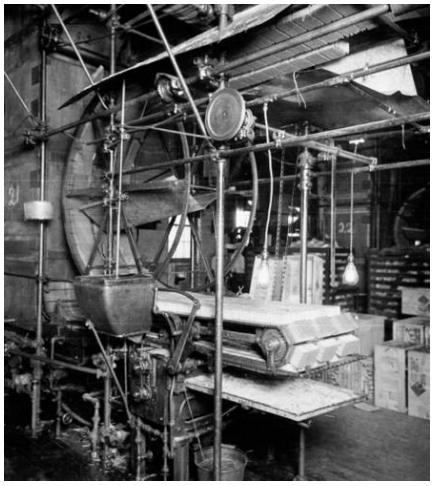
Match Production Procedure

Early match manufacturing was mainly a manual operation. Mechanization slowly took over portions of the operation until the first automatic match machine was patented by Ebenezer Beecher in 1888. Modern match manufacturing is a highly automated process using continuous-operation machines that can produce as many as 10 million matches in an eight-hour shift with only a few people to monitor the operation.

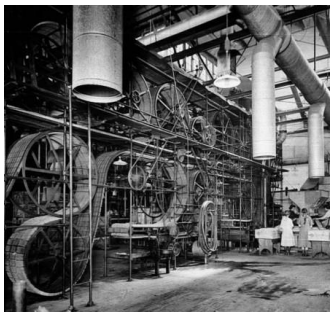
Woods used to make matchsticks must be porous enough to absorb various chemicals, and rigid enough to withstand the bending forces encountered when the match is struck. They must also be straight-grained and easy to work with, so that they may be readily cut into sticks. **Eastern white pine and aspen** are two common woods used for this purpose. However, these were not available in forests in the Chico area and it was necessary to resort to the use of **sugar pine** and **western white pine (Idaho pine)** which was brought in from Idaho**.**

Once the matchsticks are formed, they are soaked in ammonium phosphate, which is a fire retardant. This prevents the stick from smoldering after the match has gone out. During manufacture, the striking ends of the matchsticks are dipped in hot paraffin wax. This provides a small amount of fuel to transfer the flame from the burning chemicals on the tip to the matchstick itself. Once the paraffin burns off, the ammonium phosphate in the matchstick prevents any further combustion.

Here is a typical sequence of operations for manufacturing wooden-stick matches:



The matchsticks are positioned over a tray filled with a liquid solution of the match head chemicals, as shown in this Diamond Match photo. The tray is then momentarily raised to immerse the ends of the sticks in the solution. Several thousand sticks are coated at the same time. This cycle repeats itself when the next batch of sticks is in position. If the matches are the strike-anywhere kind, the sticks move on to another tray filled with a solution of the tip chemicals, and the match ends are immersed in that tray, only this time not quite as deeply. This gives strike-anywhere matches their characteristic two-toned appearance.



After the match heads are coated, the matches must be dried very slowly or they will not light properly. The belt loops up and down several times as the matches dry for 50-60 minutes as shown in this Diamond Match photo.

The Future

The use of matches in the United States has steadily declined in the last few decades. This decline is the result of several factors: the availability of inexpensive, disposable lighters; the decrease in the use of tobacco products by the general public; and the development of automatic lighting devices for gas-fired stoves. Of the matches that are sold, book matches far outsell wooden stick matches because of their advertising value. Worldwide, matches will continue to be in demand for the foreseeable future, although their production will probably follow the demand and migrate to other countries.

IV. History of the Diamond Match Company

Formation and Expansion of the Company

The Diamond Match Company has its roots in several nineteenth century companies. In the early 1850's, Edward Tatnall of Wilmington, Delaware, was given an English recipe for making matches by a business acquaintance, William R. Smith. In 1853, Tatnall attempted to turn the recipe into a business. The first matches ignited with the slightest friction, a problem Tatnall solved by reducing the phosphorous content by 25 percent.

In the next few years, Tatnall was joined by a young Englishman, Henry Coughtrey, who was an experienced match maker, and who changed his name to Courtney. During a business depression in 1857, Tatnall closed his plant, but Courtney continued to experiment with improvements to the safety and quality of his own matches. In 1860, William H. Swift joined Tatnall's firm to provide clerical and financial services. Though Swift saw potential in Courtney's innovations, Tatnall felt he had spent enough on the match business and turned the business over to Courtney and Swift for nothing. In 1861, the two of them created the Swift & Courtney Company. They called their new matches *Diamond State Parlor Matches*, using one of the popular nicknames for the state of Delaware.

In 1850, there were 60 match factories in the United States, stretching from California all the way to New York. By 1860, the number of plants had increased to 75. The industry was booming.

Demand during the Civil War created a large and growing market for Swift & Courtney matches.

By 1880, however, the number of match manufacturers had dropped from a high of 79 to 37. As the larger companies had become mechanized, smaller businesses that used older, less efficient machines had been pushed to the edge of failure. Many had been forced to shut down after the stock market crash of 1873 led to a deep depression. To make matters worse, the nation's two largest match companies were deadlocked in a ruinous price war.

Swift & Courtney & Beecher, a consolidation of three match makers, had entered St. Louis and the Midwest from the East Coast. Accordingly, its arch rival, 0. C. Barber, built a factory in Philadelphia and cut prices even further. Swift & Courtney & Beecher struck back by introducing new and cheaper brands.

Between 1878 and 1880, Barber's company lost about $90,000. He and William Swift, President of Swift & Courtney & Beecher, finally agreed that they were cutting their own throats and that a merger would be the best for everyone. The two great giants of the industry, and ten other companies (although some sources say 13), **merged** to form the **Diamond Match Company of Connecticut** in December, 1880, although production didn't begin until early 1881. For some reason, one of the larger manufacturers was overlooked—the James L. Clark Star Match Company, of Oshkosh. But this oversight was quickly remedied, and by the end of December 1880, not only the Clark Company, but four smaller ones were brought into the consolidation, making its control of the industry virtually complete.

Following the Financial Panic of 1893, Barber moved the Diamond Match Company factory in Akron to the adjacent town of his own creation, Barberton in an effort to revive the town's flagging economy.

With multiple divisions within the corporation, the Board of Directors of Diamond Match Company were inclined to make the corporation completely self-sufficient, with complete control over all phases of their operations … including material supplies. They became concerned about the long-range supply of lumber for construction, as well as for wood blocks for their match factories … and began to look at forests in Canada and in the western states … including Washington and California for possible acquisition.

The Diamond Match Company was the largest manufacturer of matches in the United States in the late nineteenth century.

The California Investment of Diamond Match Company

The generally accepted legend of Diamond's entry into California holds that such entry was made to find a source of match plank lumber to replace the dwindling supplies in New England and the Lake States. The western pine lumber was found to be unsatisfactory for the general match trade and Diamond, thus, was forced to back into the lumber business. This Company legend, also, holds that the California venture was a disastrous one financially for many years.

The investment in California was initially **a joint venture of Diamond Match and Bryant and May**, a British match manufacturer. Bryant and May had no interest in constructing a match factory in California, and was strictly interested in new sources of lumber for match production.

The initial purchase of acreage in Chico comprised 241.61 acres of which **13.00 acres were acquired by Diamond, alone, for the match factory site**. It should be noted in this regard that, except for the 13.00 acres, Bryant & May were in this land purchase jointly with Diamond as they were in all else connected with the early California venture.

In the **Annual Report for 1901**, 0. C. Barber gave a summary of the lumber business as it affected Diamond:

> "We are constantly realizing from our lumber investment, both by the consumption in our own factories, and by the sale of such lumber as is not suitable for use in the match business. From these sales, it is estimated that we can largely increase our holdings this year (1902). We have under consideration several large tracts which can be bought on reasonable terms."

From the **Annual Report for 1902**, the following:

> "Anticipating the future wants of the company, your directors have secured in the State of California a large tract of standing pine of good quality, some 70,000 acres, on which it is estimated that there are now standing two billion feet of sugar pine, white (ponderosa) pine, fir and other merchantable timber. . . Satisfactory arrangements have been made for transportation of lumber to San Francisco for export and also for the distribution of lumber through California and the East, and it is believed

that all the foreign factories in which your company has an interest . . . will purchase their supplies from the California Company."

The Diamond Match Company began building a wood processing mill in 1902 at Stirling City, California. A 42-mile (68 km) standard gauge railroad was built from their manufacturing plant in Chico to Stirling City and created the Butte County Railroad Company.

By 1906, the Diamond Match Company operated plants at Barberton, Ohio; Wilmington, Delaware; Barber, California (later Chico); Springfield, Massachusetts and Cloquet, Minnesota.

Of interest is an excerpt from **a letter written by Stettinius to Bryant & May**, February 21, 1908:

"The (Calif.) property was bought mainly, if not wholly, because we both believed that it was necessary in order that each of us be assured a supply of blocks and lumber for matches, in the future. It has developed, however, that we cannot afford to use this material in matches, and, therefore, we find ourselves with a large investment in an operation which is entirely foreign to the match business."

In this same letter, Stettinius notes that Diamond is negotiating for the purchase of match blocks in Idaho and offers to supply Bryand & MayMay therewith without any investment. This, together with other material hereafter, places Diamond in Idaho at an earlier date than is generally believed.

In the **Annual Report for 1909**, Stettinius has this to say about California:

"Up to the present time, practically none of the lumber from our lands in California has been used in manufacturing matches, except at Chico, as it has been found possible to sell the product of the California mills at a higher price than the Company is required to pay for equally as satisfactory (match) lumber obtainable elsewhere."

In 1909, when Ohio Columbus Barber retired as President of Diamond Match, the company gave the job to Edward R. Stettinius who immediately contacted William A. Fairburn, and he joined the company on October 1, 1909, as General Superintendent in charge of operations. When Stettinius left, Fairburn became President in 1915.

However, Diamond, had become the object of another entrepreneur, Ivar Kreuger. Ivar Kreuger came through the 1929-30 panic in fairly good shape; that is, he fooled the financial district, and Diamond Match as well, into believing he had. He still was the International Match King, a power to be heeded, if not fully appeased. In 1930, he was again demanding an interest in Diamond Match; he was threatening to build plants all over the U.S. and enter into dog-eat-dog competition. So Mr. Fairburn and Diamond Match hit upon a measure of appeasement thus: when Diamond was reorganized in 1930-31 not only was the old stock split up into preferred and common, but 350,000 shares of new common were issued. The sole purpose of this issue was to give Kreuger the voice he demanded in Diamond Match. He owned at least one-third of Diamond's stock, as part of his bid to create a world-wide match monopoly. It became a

part of the Kreuger concern in 1932, when Ivar Kreuger took control of more than 52% of the shares. When he committed suicide in 1932, Diamond bought its stock back.

To make the Diamond-Kreuger episode complete, one thing more should be added to the neat bargain turned in the Ohio Match deal, and to the profit Diamond made by selling the 350,000 shares for $13,000,000 and buying them back in a bankruptcy auction at just under $5,250,000.

Diamond proceeded to expand into a larger Diamond conglomerate. Over the years, Diamond started lumber mills, merged with paper, wood products, printing, and plastics companies, and more. Diamond production sites expanded to keep pace. By the end of WW II more than ten million matches a day were coming off Diamond production lines.

More important than the match business, however, Diamond had also been busy producing a long line of dazzling trademarks which were to mark its position as the premier company in the U.S. industry for most of its 116 years.

However, due partly to an unsettled strike at the Chico Match Factory in 1975, the decision was made to close that match factory facility and demolish the match factory buildings.

And then the domestic match industry plunged into chaos. The mid-1980's saw the collapse of the American match industry. Current conditions saw increasingly rising production costs coupled with steadily decreasing demand. American workers simply couldn't work for the wages received by their peers in Asia. Hence, as the price of American matches increased annually, the gap between American and foreign production costs became greater and greater. Eventually the gap had become untenable. Helping all this to occur, the decline of the cigarette was another major factor. As more and more Americans realized that smoking is, indeed, dangerous to their health, millions of potential smokers (and match cover users) never acquired the habit; millions of others stopped. Add to this, the controversy over second-hand smoke, the growing trend of smoking bans, and the advent of cheap, disposable lighters.

Several match companies disappeared as manufacturers...but Diamond survived. Today, Diamond produces all the box matches in the United States.

Meanwhile, back on Wall Street, Diamond was going through a bewildering array of corporate transformations. Diamond became "Diamond Gardner" in 1957, "Diamond National" in 1959, and "Diamond International Corporation" in 1964. The latter acted as a holding company. By 1980, there was a Diamond Lands Corporation which was purchased by Roseburg Resource Company (Roseburg, Oregon).

At the local level, in 1984, the Barber (Chico) site (the match factory had closed in 1975) was purchased by Louisiana Pacific.

In 1986, "Diamond Brands" took over and then merged with Atlas Match Company, the latter eventually being purchased by Bradley Industries.

Diamond was purchased by Jarden in 2003, and was owned by Newell Brands after Newell Rubbermaid's acquisition of the company in a merger in 2016. In 2017, Newell sold Diamond to Royal Oak Enterprises.

History of the Diamond Match Administration

Ohio Columbus Barber (called O.C.) (April 20, 1841 – February 4, 1920) was an American businessman, industrialist and philanthropist. He was called "America's Match King" because of his controlling interest in the Diamond Match Company, which had 85 percent of the market in 1881. He founded the city of Barberton, Ohio in 1891 and moved his manufacturing plant there in 1894.

He was born the second son of George and Eliza Barber in Middlebury, Ohio. His father made matches by hand, which his sons sold door to door. O.C. received a common school education, and at age 15 began working for his father. At age 16, O.C. Barber became the company salesman. At 20, he was a partner in the business, and by 21 the general manager.

To expand manufacturing operations, Barber purchased a large area from Norton Township founding the city of Barberton in 1891. He intended it to be a model for industrial and residential development. Barber developed its early stages through The Barberton Land and Improvement Company. Within a few years, the city had expanded with industrial and residential areas, growing at such a rate it was nicknamed "Magic City". It attracted many new immigrants to its industrial jobs.

In 1894, Barber moved his match-making plant from Akron to Barberton, which helped the city's economy. The factory produced 250 million matches each day.

He founded the Stirling Boiler Company which was merged with the Babcpck & Wilcox Boiler Manufacturing Company of Barberton and Bayonne, New Jersey, the concern thus becoming the largest manufacturer of steel boilers in the world. For a number of years they constructed four-fifths of the product used by the United States Navy. [Note that Stirling City's name was purportedly derived from Stirling Boilers.]

Barber near Chico, California was named after him. He had the neighborhood built as workers' housing for the employees of the Diamond Match factory in Chico. At its peak, Barber also had orchards, shops, a swimming pool, social hall, and neighborhoods of bungalow houses. The village of Barber was eventually absorbed into the town of Chico, California.

In 1920, Barber died at his mansion in Barberton.

Edward R. Stettinius became President in 1909, when O.C. Barber retired as President of Diamond Match. Stettinius immediately contacted William A. Fairburn, and he joined the company on October 1, 1909, as General Superintendent in charge of operations. When Stettinius left, Fairburn became President in 1915.

William Armstrong Fairburn (October 12, 1876 – October 1, 1947) was a noted American author, naval architect, marine engineer, industrial executive, and chemist.

He was the son of Thomas W. Fairburn and Elizabeth Jemima Frosdick, who married in Leeds, Yorkshire, England, in 1867. William was born in Huddersfield, England, October 12, 1876. The 1891 census showing that he had already begun work as a "Post Office boy" by the age of 14. He emigrated in May 1891 from Liverpool to New York on the "S.S. Servia" with his mother Elizabeth and sisters Alice and Annie, following his father who had emigrated the year before. He attended the public schools in Bath, Maine, became an apprentice, and by age 18 was a master mechanic. In 1896, he went to the University of Glasgow and studied naval architecture and marine engineering for a year.

He returned home to work at Bath Iron Works where he built an all-steel freighter, the first in America. By 1900, he was an independent consultant. In this capacity, he met O. C. Barber and Edward R. Stettinius, Sr., at the Stirling Boiler Company. They were also executives at the Diamond Match Company, and in 1909, they put Fairburn in charge of its operations in hopes of solving some problems it had encountered.

A major problem at Diamond Match was the white phosphorus used in making matches which caused health problems for workers and poisoned children who ate the matches. Fairburn discovered company patents which provided an alternative and, working with company chemists, by 1911, an improved match, which substituted phosphorus sesquisulfide for the white phosphorus, was introduced.

At Diamond Match, Fairburn also discovered and worked out a chemical process for extracting potash from kelp. Owing to this discovery, the price of matches did not increase when the start of World War I shut off the old sources of potash supply. Fairburn later became President of the Diamond Match Company in 1915, succeeding Stettenius.

Fairburn Hall at the Chico Diamond Match Factory was named after him.

Robert Gordon Fairburn was the son of William Fairburn. Upon graduation from Princeton, Bob joined the Diamond Match Co., of which his father was president. Bob succeeded to his father's position in 1947, and later became chairman of the company. Bob diversified Diamond's products and expanded by merger with other companies. The enterprise was renamed Diamond National in 1959, producing lumber, charcoal, cardboard, and numerous other packaging and printed materials. In 1961 he left Diamond to lead another company. Bob Fairburn died Sept. 26, 1992, at the Community Hospital in Monterey, California.

Fred Milton Clough was the Pacific Coast Manager of the Diamond Match Company's interests at Chico and assumed that responsibility in 1902, bringing to the industrial development of this beautiful town and fertile surrounding country a wealth of business sagacity and judgment which it had taken years to acquire. He had learned valuable lessons from association with a number of eastern concerns, all more or less conservative in their nature and enlightening in their reliable and straightforward methods. Mr. Clough was born in West Mount. F. M. Clough was the youngest son in a family comprising of four sons and three daughters, and was educated in the common schools of Maine, at Eaton preparatory school and Wesleyan Seminary.

Starting at the age of fifteen years, F. M. Clough began to work in a large variety of jobs, and in 1877 began a five-year association with the American Braid & Ivory Button Company of West Cheshire, Connecticut. In 1882, he became superintendent of a large lumbering concern in Maine. In 1886, he moved to Pennsylvania and engaged in the lumber business in Lumber City for five years. In 1891, he associated himself with the Lebanon Match Company of Lebanon, Pennsylvania. He then became identified with the Diamond Match Company at St. Louis, in the capacity of traveling machine inspector, and in 1893, was stationed at Chicago as assistant in charge of the German affairs at the World's Fair. During 1894-95, he again traveled for the Diamond Match Company, and in 1896 bought out the Pacific Match Company at Tacoma, Washington, turning over its interests to the Diamond Match Company within a year's time. In 1896, he became manager of the lumber interests of the company at Athol, Massachusetts, and in September, 1902, assumed the responsibility as Pacific Coast Manager for the company's interests, with headquarters at Chico. He was also general manager of the company's railroad, which was thirty-two miles in length. In addition to interests mentioned, Mr. Clough has identified himself with various enterprises which tend to the up building of the town and county, among them being the Chico Investment Company, organized by him in 1903, and of which he was Treasurer. He was also President of the Stirling City Bank, incorporated in December, 1903.

"William B. Dean - A very popular business man of Chico was William B. Dean, manager of the lumber and building material department for the Diamond Match Company. He was born in Dallas City, Hancock County, Illinois, November 24, 1869, a son of Albert L. and Ellen E. (Toof) Dean. The Dean family were farmers in Illinois until 1884, when they migrated to the Pacific Coast, where Mr. Dean entered the employ of the Sierra Lumber Company at Chico, and remained in their employ until his death. His widow also passed her last days in Chico. She was the mother of three children: Nellie A., then Mrs. Harry Moir, of Chico; J. Wilson Dean, M.D., who graduated from the St. Louis Medical College and practiced medicine in that city and then was on the medical staff in the United States Army, with the rank of first lieutenant.

"William B. Dean accompanied his parents to California and settled with them in Chico, where he finished his education in the public school. He then entered the employ of the Sierra Lumber Company as office boy, and advancing step by step gradually and thoroughly learned the business. He was bill clerk, assistant bookkeeper, bookkeeper, and then manager of the Company. He was with the Company on May 19, 1904, when a great fire swept the yards. Within sixty days after the fire the yards were rebuilt and filled, and the entire plant restored. When the Diamond Match Company took over the lumber business, in 1906, he continued as manager of the retail yard system, having nine yards under his supervision. The system by which these are operated together was gradually developed by him; and in time twenty-three yards and two factories were in operation under the same management. The Company manufactured mill work, sash, doors and boxes, and had a large factory at Red Bluff and one at Chico. The Apiary Department grew to large proportions, and there was a large output of beehives and other beekeepers' supplies.

He was President of the Western Retail Lumberman's Association, which had its headquarters in Spokane; and he was a director of the Sacramento Valley Lumbermen's Association.

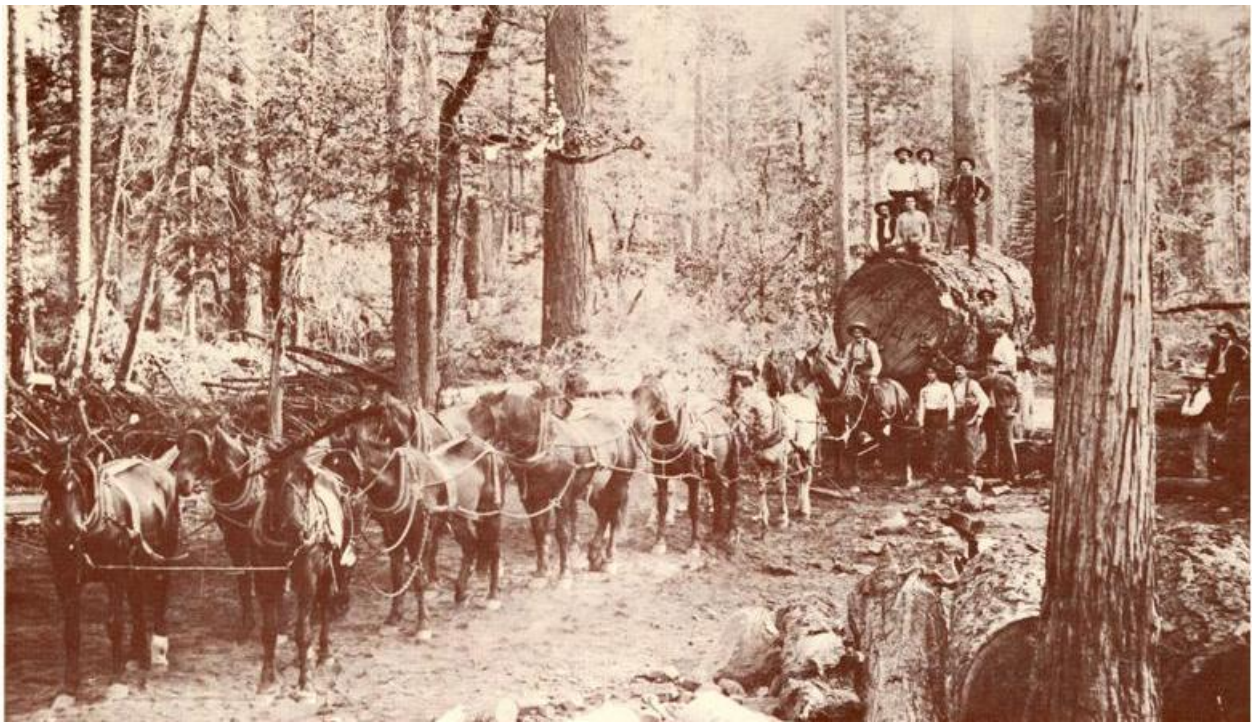
William Barker Dickenson was born in Derbyshire, England, in 1870. Through his interests in beekeeping as a hobby he became an internationally known beekeeper who came to California and ultimately started the Apiary Department at the Barber Diamond Match Factory in about 1914. He was responsible for the first apiary catalog issued by Diamond in 1915. This Department of the Diamond Match Factory grew into one of the largest suppliers of beekeeping materials in the United States and had markets all over the world.

Earl Bechard was the manager of Western Lumber and Logging from October 1949 to early 1959. He was in charge of both wholesale and the extensive retail business for Diamond Match. According to his son he was good friends with Bob Fairburn. Earl's son was Dr. Robert Bechard an orthopedic surgeon in Chico from 1971 to 2003.

V. Early Butte County Lumbering

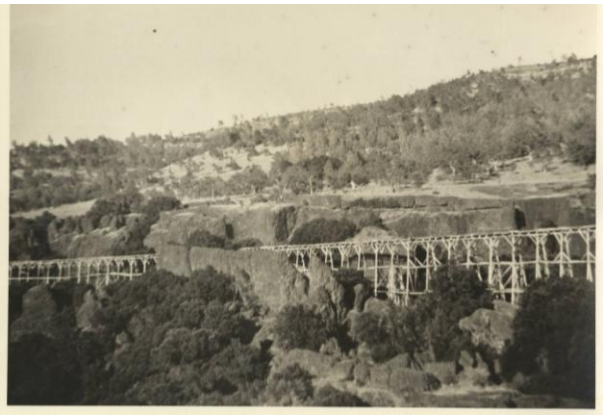
While the primary focus of this project was to provide information regarding the development and demise of the Barber (Chico) match factory and millworks, it was deemed to be of interest to briefly describe some of the early logging operations which provided the basis for later furnishing raw material for the various aspects of the Chico operation.

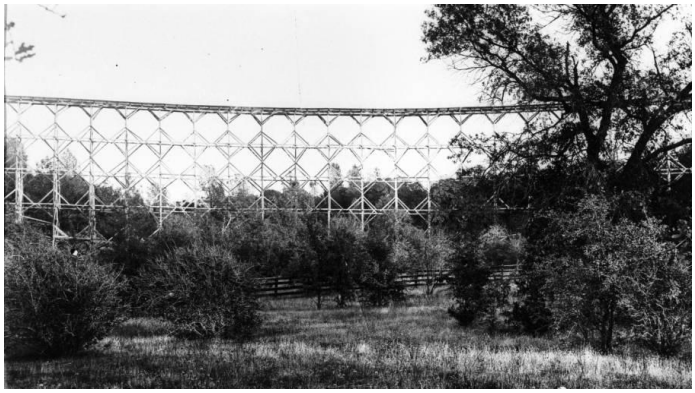
Sawmills were constructed in the mountains, near the locations of trees being cut. The logs were originally transported to the sawmills via solid wheel wagons pulled by horses or oxen.

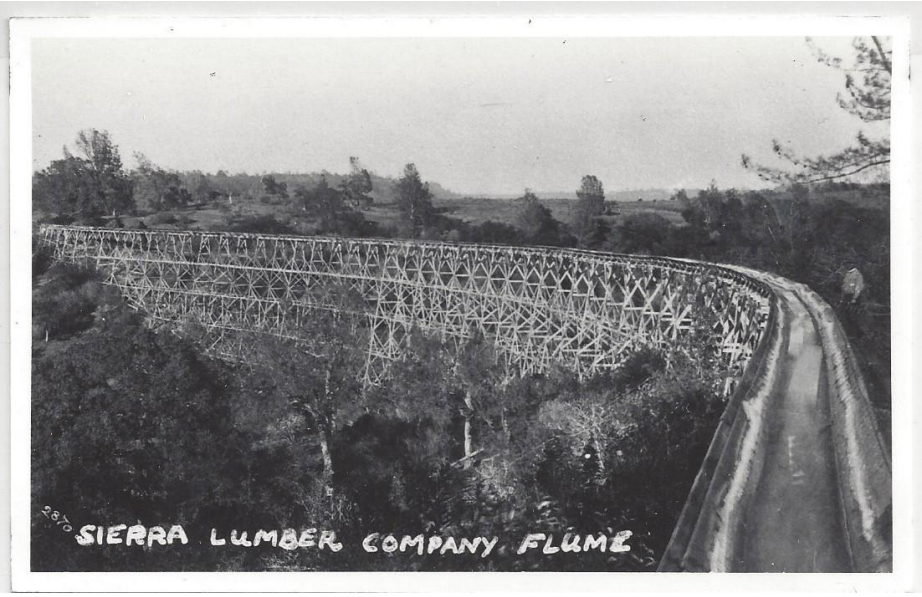


This picture is of a twelve-horse hitch, the long-line skinner riding the near wheeler, brings a log to the sawmill before steam ruled the woods. The log contained 74,000 board feet, enough to build several two bedroom homes with 1,500 square feet of floor space. (photo from Special collections, Meriam Library, CSU, Chico)

Long flumes were constructed to transport the rough sawn lumber from the mountain sawmills to the valley floor … sometimes a distance of 40 miles or more. This was the standard method for transporting sawn lumber from about 1870 until about 1900.







A view of Sierra Lumber Company Flume located between East Eighth Street and Humboldt Road east of Pine Street in Chico in 1907.

The flume was also used on occasion by Sierra Flume & Lumber Company (1875-1878) and then Sierra Lumber Company to transport passengers and/or injured workers rapidly down the mountain for health care … as indicated by the picture of Dr. Newton T. Enloe, his sister Emma, and her family utilizing a "flume boat" in the lumber flume.

While flumes from the mountain forests and sawmills were built in the 1870's and indeed were used to transport cut lumber to the Sierra Lumber Company in Chico**, the flumes were never utilized to bring lumber to the Diamond Match Factory.**

VI. Modernization of Logging Operations

April 1903 Newspaper Article – *Chico Record*

The following article from a St. Paul paper will be of interest to people of this county, because it concerns the big company which is preparing to begin similar operations in the mountains of Butte County:

> "Despite a haul on sleighs of fourteen miles from the place of cutting, the Diamond Match Company is loading pine logs on the cars at Sidnaw, Michigan at the rate of 1,000,000 feet a week. It is working about 400 men and 160 horses in the woods, and will finish the season with a cut of about 455,000,000 feet.
>
> From Sidnaw the logs are transported over the Chicago, Milwaukee and St. Paul railroad to Green Bay, and other points in the South.
>
> An innovation in logging in Northern Michigan --- the use of steam power — is a feature of the company's operations this winter and is aiding materially in getting out the large output.
>
> Engines have been installed at different points along the long route from the timber land to the railroad, and through the assistance given by them much larger loads can be hauled than would otherwise be the case.
>
> In loading the sleighs, 14-foot bunks are being used and the logs are piled high, each load averaging about 5,000 feet, or enough to fill a car. Two teams are attached to each sleigh at the skidway, and haul the load to the first relay camp at the foot of a hill, up the incline of which the sleigh is hauled by steam power. At the second relay camp it is also necessary to detach the horses and resort to a wire cable system, and the performance is repeated at a third hill just before the banking ground at Sidnaw is reached.
>
> It has an ice foundation of 18 inches and sprinklers are driven over it continually as well as snow plows when needed, a large crew being employed in this work."

Diamond Match Company and its Methods

The California Investment of the Diamond Match Company

Certain basic premises seem inherent in the material which follows. The most important of these are summarized immediately below:

1) Diamond embarked upon the California Investment primarily as a LUMBER operation and NOT as a Match operation;
2) For that day and age, Diamond had a remarkably farsighted program of log utilization;
3) The Lumber Division of the California operation was dominated by the Retail Yard operation between 1916-1937, and, in essence, was operated as an adjunct of that Retail Yard operation during this period. A twilight zone of Retail Yard Influence
extends on each side of the above period for some years duration;

4) Diamond was a true pioneer in the field of sound forest management practices, as such were understood at the turn of the century, and, after an hiatus between about 1910-1922, became one of the foremost practitioners of forest management and growth-cycle harvesting, barring another hiatus for some years after 1945;
5) Through its corporate ancestors in California, Diamond traces back to the start of true commercial pine lumbering in the State;
6) Through the acts of its officials and employees, as individuals, Diamond's initial impact upon the city of Chico and the contiguous territory was far greater than would have been the case simply by corporation efforts.

In the Annual Report for 1901, 0. C. Barber gave a summary of the lumber business as it affected Diamond:

> "We are constantly realizing from our lumber investment, both by the consumption in our own factories, and by the sale of such lumber as is not suitable for use in the match business. From these sales, it is estimated that we can largely increase our holdings this year (1902). We have under consideration several large tracts which can be bought on reasonable terms."
> (One of these tracts was in Canada; the other in California.)

From the Annual Report for 1902, the following:

> "Anticipating the future wants of the company, your directors have secured in the State of California a large tract of standing pine of good quality, some 70,000 acres, on which it is estimated that there are now standing two billion feet of sugar pine, white (ponderosa) pine, fir and other merchantable timber. . . Satisfactory arrangements have been made for transportation of lumber to San Francisco for export and also for the distribution of lumber through California and the East, and it is believed that all the foreign factories in which your company has an interest . . . will purchase their supplies from the California company."

In a statement by F. M. Clough, in the Pacific Coast Lumber Journal, January 1904:

> "... 20% of the mill cut will be used for match making and the balance for local and eastern trade, sash, doors and building materials."

It should be borne in mind, too, that Clough's estimate of 20% of annual cut to the match business included the footage necessary to make the wooden shipping cases which then were standard for the trade and which Diamond always had made for themselves from lumber purchased in the pursuit of match plank.

It should be noted that the plans for the sawmill at Stirling City envisioned an annual cut of 60-70,000,000 feet at this time. Thus, by Clough's reckoning, the match business hardly could support or consume this cut and, certainly, on this basis, could not be regarded as the raison d'etre for such a vast investment and operational complex.

In 1901, Diamond Match Company retained J. H. Comstock to cruise the timber in the mountains of northern California to assess the lumber prospects in the area. On June 19, 1901, he arrived in Chico and cruised the forests north and east of the valley. Tragically, he died on August 6, 1901, in Green Bay, Wisconsin before he could submit his cruising report to the Diamond Match Company.

On September 28, 1901, F. M. Clough, accompanied by Robinson, Dakin and Hall arrived in Chico to cruise the surrounding timberlands. Clough was able to personally survey 18-20,000 acres of forest land … and apparently liked what he saw.

On January 2, 1902, the Diamond Match Executive Committee authorized the purchase of their first California timberland, known as the Sierra Estate, and the sale was finalized on January 21, 1902. The purchase included 39,874.60 acres.

The Kimshew Tract of the purchase comprised 14,000 acres of virgin stands of old-growth Sugar Pine and Ponderosa Pine.

It was necessary for the Diamond Match Company to build a mill and the location which became known as Stirling City was chosen. The mill began operation in 1904.

On September 15, 1903 Diamond purchased the Doon Mill, and 1,200 acres of land, which became the site of Stirling City. In keeping with the "self-sufficiency" policy of the Diamond directors, the Doon Mill was operated by Diamond under contract to John Morrison throughout 1903 to provide lumber for the construction of the Stirling City Mill and the community buildings. The following picture shows one view of the mill.

The following picture shows the mill and the lumber train in 1913.

Between 1902 and 1904, Diamond purchased several additional parcels of timberland in adjoining forests … totaling about 30,000 acres … bringing their total California timberland assets to 69,148.07 acres.

A 42-mile (68 km) standard gauge railroad was built from the remanufacturing plant in Chico to Stirling City. The railroad was operated by Diamond as the Butte County Railroad Company.

Scheduled passenger service from Chico to Magalia began on November 1, 1903. The tracks were completed to Stirling City in April 1904, and the mill began operation in 1904.

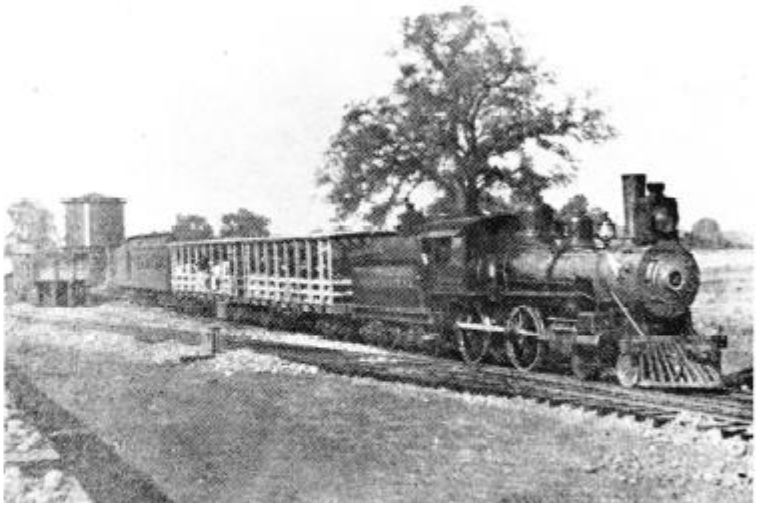
Butte County R. R. Company

TRAIN TIME TABLE

Beginning Nov. 1, 1903

LEAVE	STATION	ARRIVE
7:15 a. m.	Barber	6:00 p. m.
7:27 a. m.	Butte Creek	5:48 p. m.
7:46 a. m.	Crouch	5:28 p. m
8:08 a. m.	Paradise	5:07 p m.
8:30 a. m.	Magalia	4:45 p. m.

Chico & Barber Bus.



Diamond Match Logging Methods

It was first necessary to get the fallen trees to a central location for them to then be transferred to the sawmill. This process is referred to as yarding.

Yard or **Yard out**—A verb that means to drag a log out of the forest to a *landing* for shipment to a mill.

Yarder—A machine used to move logs from one point to another. It can be the stationary machine that powers the *mainline* or a mobile piece of equipment, like a tractor, that hauls logs around.

Scale Model of a Typical "Yarding Site"

The first use of steam in skidding logs came in 1881, when John Dolbeer, an inventive machinist and later partner in the famous redwood lumber firm of Dolbeer & Carson, Eureka, California, put his first "Dolbeer donkey" into the woods at Salmon Creek, Humboldt County, in 1881.

Donkey—A machine, originally steam-powered, that pulls the *lines* used in *yarding* and loading lumber at the cut site; it is a type of *yarder*. Depending on its use, it might also be called a *skidder, loader, roader,* or *flyer*.

This was a "spool" donkey, a single spool or gypsy, vertical, being used by taking several turns of the line around it and the spool-tender taking in the slack as the logs came in. A horse was used to haul the line back into the woods for another "turn" of logs.

The first double-drum, or "bull donkey", using two horizontal drums, with a compound gearing of 9½:1, seems to have been made about 1893, by several firms on the Pacific Coast; Marshutz & Cantrell, San Francisco; Mundy, San Francisco; Washington Iron Works, Seattle, which became known as the "Seattle" engine.
These donkeys, called "bull" because of their power and "broad-face" to distinguish them from the vertical spool of the Dolbeer, extended the logging radius of a "setting" much beyond what had been possible with the Dolbeer. They reduced logging costs as it was possible, because of their power and line capacity, to skid logs from a greater distance to the railroad thus preventing expensive spur or mainline construction. Also, with these donkeys, the line horse was not needed to take the line back into the woods except when the "setting" was being changed and the "haulback line" had to be moved. Thus, one line horse could serve several donkeys.

Diamond Match Logging Methods

Circa 1902 - 1910

Steam powered "donkey" winch with a "line horse."

Logging in the woods - Stirling City

Note the double cable drums. This appears to be a "Whistling Barber" Donkey.

The Barber donkey had a piston valve and a characteristic of this valve is that, when

starting, it will whistle and screech from the steam escaping through the ports in the valve. Thus, this was known in the woods of California as the "Whistling Barber" donkey. It was almost identical with the Seattle engine, and was largely the design and brain child of James Chambers, the master mechanic from Tacoma. A description of this donkey includes:

> 112 horsepower, weight, 40,000# light;
> 60,000# loaded.
>
> 2-11x14 cylinders; 65" diameter boiler.
> capacity, 6,900' of 1" cable.

These donkeys were purchased by McCloud Lumber Company, Standard Lumber Company, LaMoine Lumber and Trading Company and Associated Lumber Company. Diamond, naturally, used them in their own operations and they were sold in the Pacific Northwest.
The question of line capacity, given as 6,900' of 1" cable, seemed a little high but Dana Bailey, Diamond's "Bull Of The Woods," said that he, personally, had seen the Barber Donkey logging out 4,000' from the landing and he believed that the 6,900' line capacity is accurate.

How many Barber donkeys were built has not been determined but in Diamond's operations alone, as late as 1916, there were fifteen of them, with cylinder sizes ranging from 8 x 8½ to the 11 x 14 size.

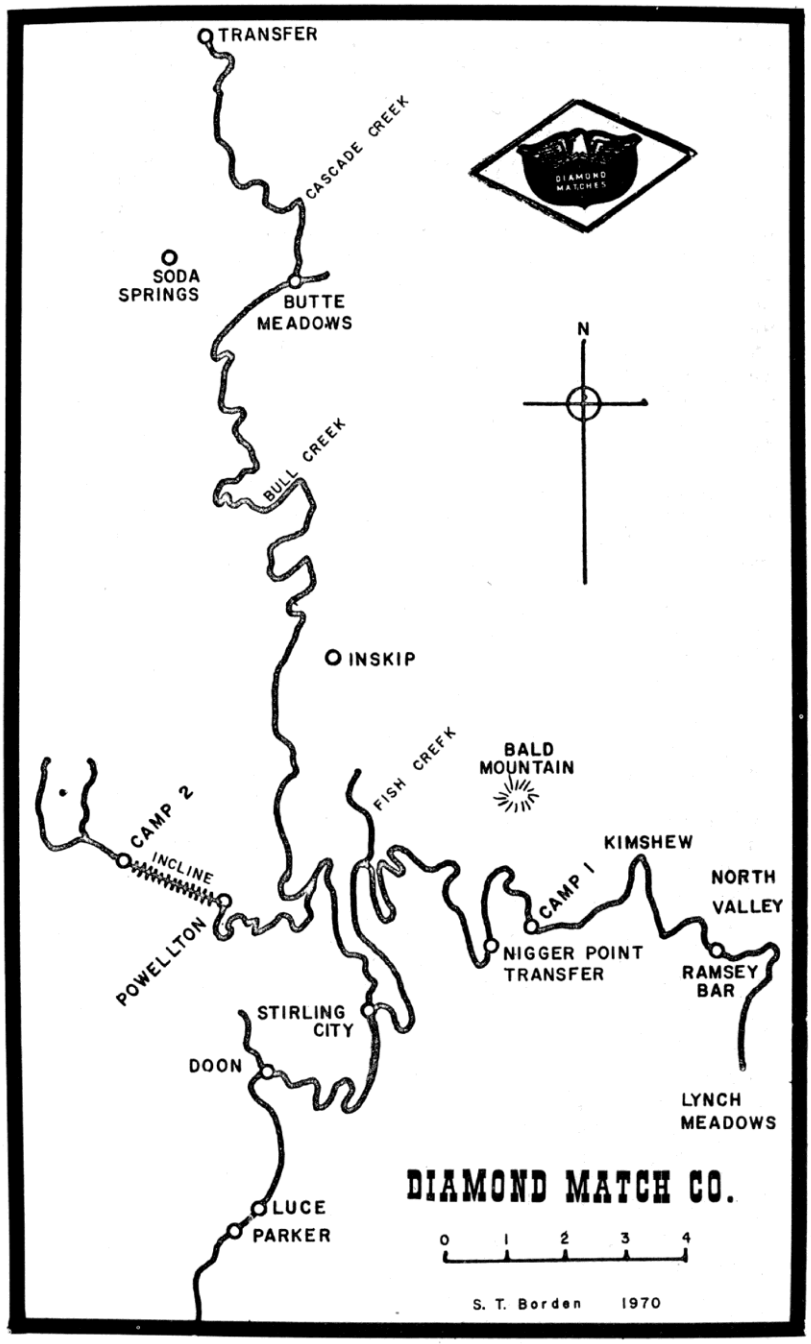
It may have been this operational history that influenced F. M. Clough to decide that it was cost-effective to construct a large centrally located sawmill near the forests, and utilize narrow gauge railroads to transport logs to mill, rather than construct and move multiple sawmills around the vast land holdings that Diamond acquired in California.

Diamond utilized steam donkeys and the narrow gauge (meter gauge) railroads and multiple "spur" tracks in harvest areas to transport logs to the Stirling City sawmill from 1904 until about 1926 when the first tractors were used with "tracked arches" to skid logs to the railroad landings.

The use of tractors significantly reduced damage to seedlings and immature timber to be left standing for future harvesting, compared to the "highline" and steam donkey methods of skidding logs to the landings. Diamond conscientiously practiced reforestation in conjunction with their logging operations.

Where standard gauge railroads existed in the forest areas, such as in the Ramsey Bar site a "Transfer" was constructed where logs were unloaded from the narrow gauge rail cars, and reloaded on standard gauge rail cars.

Diamond Match Logging Methods



Diamond's Railroad Network
Serving The Stirling City Sawmill

While only cut lumber was delivered by train from Stirling City to Barber, trains were also utilized to get the logs to the mill in Stirling City and to move materials from one logging site to another.

Moving Camp at Ramsey Bar

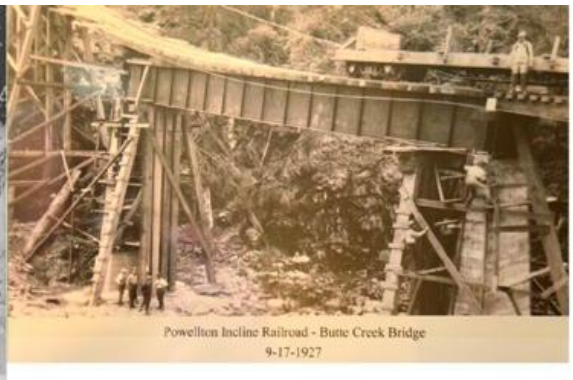
When a logging camp had to be moved, the materials were just loaded on trains and moved to the next site.

Line-up of meter gauge locomotives 6, 1, 2, 4 and 3 at Ramsey Bar camp of the Diamond Match Company.

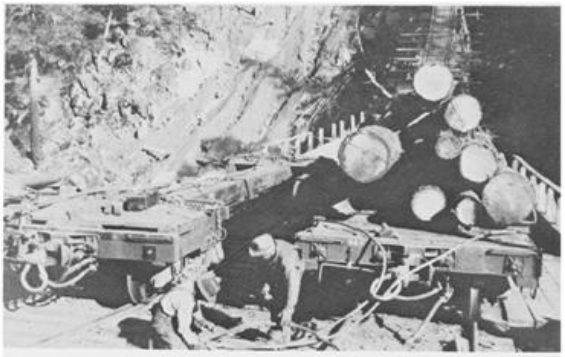
There was no shortage of Diamond Match engines for these necessary moves.

There were always challenges to the logging operations but probably non more interesting than the process of getting logs from Camp 2 to Powellton. Please see the map for Diamond's Railroad Network on page 33. There was a very steep incline both down to Butte Creek and back up to Powellton. In addition, it was necessary to build a bridge to transverse Butte Creek. The following pictures show how this challenge was met.

The "Double Incline" Across Butte Creek Canyon Near Powellton



Powellton Incline Railroad - Butte Creek Bridge
9-17-1927



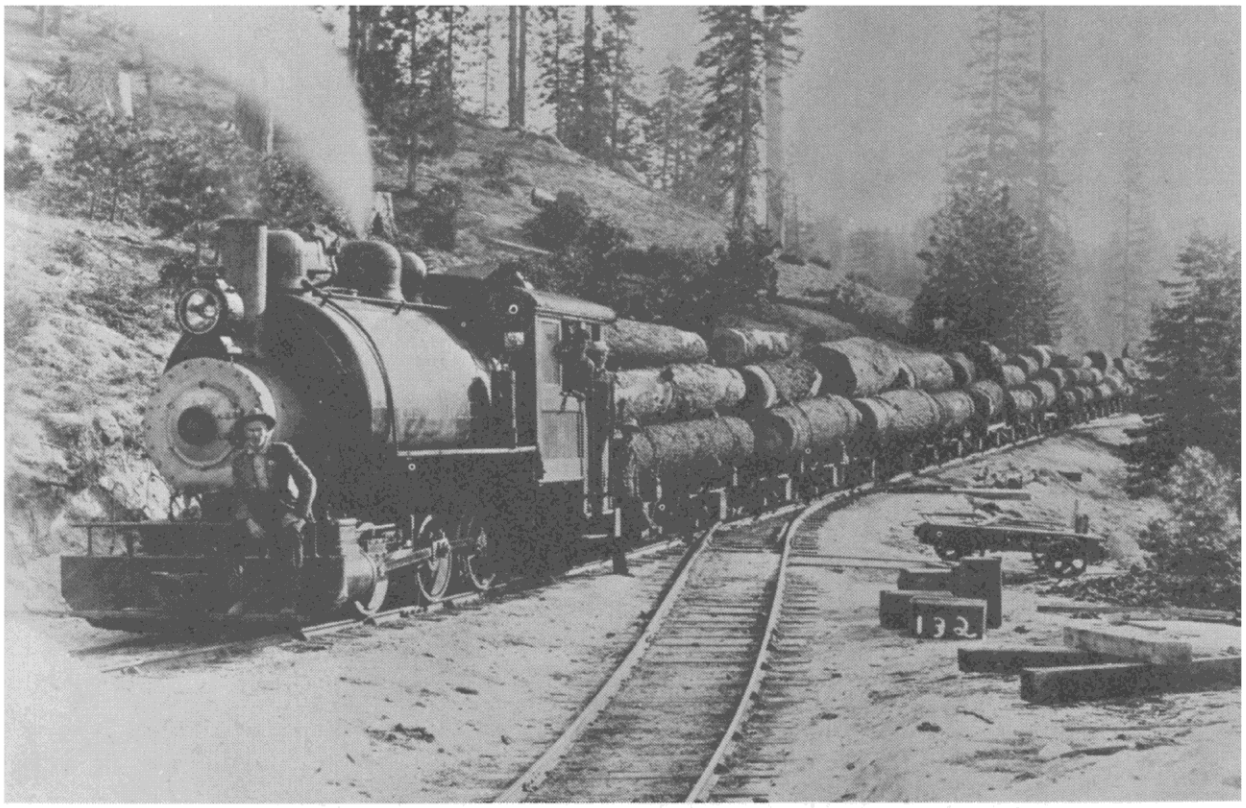
Sequence of moving logs from the West Branch camp via the incline to Stirling City: (Top) Shay No. 102 works up the 2 per cent grade of Carpenter Ridge to the incline with (Center) No. 101 shoving from the rear.
Below is a car being eased over the edge of the west side incline. The "bridle" holding device can be seen here.

Changing cables in the "hole" at the bottom of the inclines. The loaded car at right has arrived from the west side, the empty flat from the east. The cables will be switched on the two cars, which will then continue their respective ways. The car (below) nears the top of the east side.

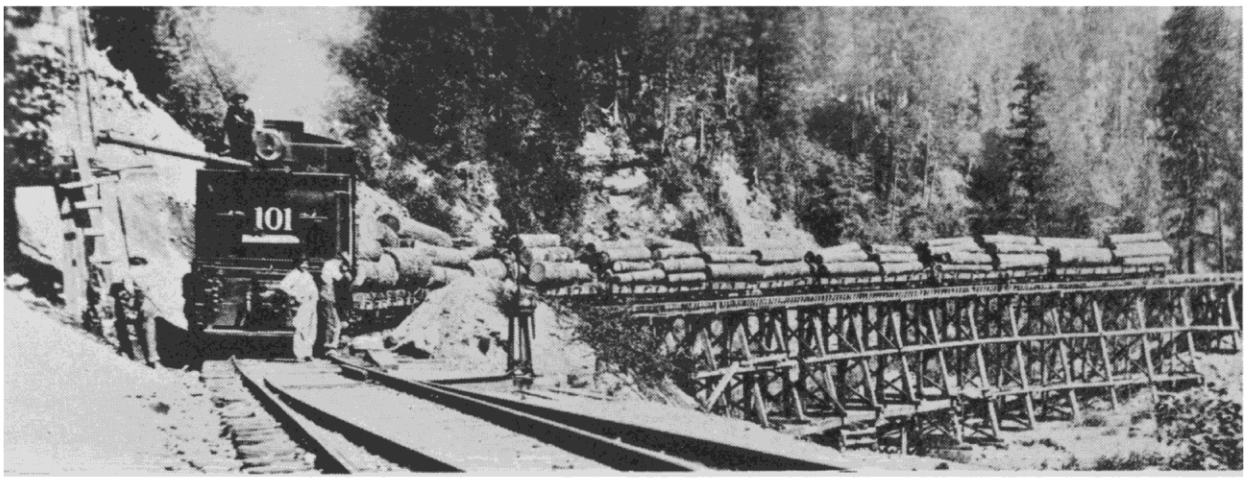
The above pictures show the sequence of moving logs from the yarding site (Camp 2) to the edge of the incline to bottom, over the bridge (top right) and back up the east side of the canyon.

After that adventure, the logs were moved more traditionally by train to the Stirling City Mill.

Diamond Match Logging Methods



Diamond Match Company No. 6 as meter gauge with log train headed for Transfer.



Diamond Match No. 101 taking water between Transfer and Stirling City.

In the mid 1930's Diamond began contracting with "gyppo" independent log truck operators to transport logs from "landings" to the Stirling City sawmill, and by 1940 Diamond had purchased a fleet of log trucks.

Logging trucks dramatically reduced the cost of logging because roads could be constructed quickly and inexpensively compared to the cost of laying (and removing) railroad track in the steep rocky terrain.

By 1932, lumber from Stirling City was transported to the Barber (Chico) plant by a fleet of trucks.

VII. Establishment of the Barber (Chico) Plant

The handling of the Chico real estate transaction was conducted by Barney Cussick, for many years superintendent of the Sierra Lumber Company's mountain operations on the Chico division, who had left the woods for a more lucrative harvest on the valley floor.

Cussick began picking up the acreage in October 1902, by the county records, and on November 1, 1902, the deeds pass from Cussick to Clough, not Diamond per se. These deeds were not recorded until January 29, 1903, and, thus, the valley newspapers still carried speculation as to Diamond's location until the deeds becoming of record made the news official.

The initial purchase of acreage at Chico comprised 241.61 acres of which 13.00 acres were sold to Diamond, alone, for the match factory site. It should be noted in this regard that Bryant & May were in this land purchase jointly with Diamond as they were in all else connected with the early California venture. Approximately 90 acres of this land lay west of the California and Oregon tracks. This is shown in the map which is one which was created by **Scott Blackman**.

Besides being focused on the lumber business, Diamond was very involved with agricultural endeavors with orchards of different types. However this agricultural topic has not been covered in this document

THE CHICO INVESTMENT COMPANY

This was incorporated November 26, 1902, to deal in real estate, mines, power sites and the like. Capitalized at $30,000 of which $18,000 was subscribed. F. M. Clough was the heaviest stockholder with $12,000; the others were John R. Robinson, John B. Robinson, Barney Cussick, Charles A. Dreiss, Major A. F. Jones, and W. P. Lynch.

The primary function of this company was to buy acreage and subdivide it. Including house building, to make the model town envisioned to spring up around the Diamond Match plants at Barber. Three such subdivisions were made by this company; the Davis Addition, April 9, 1903, of 137 lots; the Barber First Addition, August 9, 1903, of 259 lots; and the Barber Second Addition September 10, 1905, of 53 lots. In general, this area is now covered by the property lying south of Little Chico creek, west of Park Avenue and east of the Diamond property line on the west. The south boundary was what is now west 22nd Street.

At this time Diamond established its first office in Chico, uptown, in the Morehead Building on Broadway, between 3rd and 4th Streets, west side.

Since transportation of lumber from Stirling City was to be done by train, it was necessary to build a railroad from Chico up the mountain to Stirling City. This resulted in the formation of the Butte County Railroad (BCRR).

While only cut lumber was delivered by train from Stirling City to Barber, trains were also utilized to get the logs to the mill in Stirling City.

It is interesting to note that at only one time in its history was the Chico match factory under the same overall management as the other Barber Plant facilities. This was during the general managership of F. M. Clough, and ended in 1910.

Bryant & May had no interest in the Chico match factory and the land on which the match factory was built was sold by the joint Bryant & May/Diamond venture to Diamond alone.

It should be noted that Diamond experimented with virtually every kind of wood available on the Pacific Coast for matches. Homan Hallock says both ponderosa and white fir were used experimentally and that while they had fair success with the ponderosa pine, none of the white fir was ever fit to put into production.
The sugar pine was too pitchy, it gummed the dies when cutting splints and the block feeder had to keep squirting coal-oil (kerosene) on the dies to keep them freed. The splints took the paraffin dipping well, also the composition, but they did discolor in storage which did not matter over much in the early years of the Chico factory's operation. This same discoloration factor applied to veneered sugar pine or ponderosa pine when it was used for the skillets on the SOB boxes, although Diamond put up with this long after they had quit using sugar pine for matches at Chico. The sugar pine splint was weaker than either the Idaho or Eastern pine, probably due to its greater incidence of large growth rings giving a weaker cross-section. Its strength-of "splint" was not satisfactory.

The original source of match blocks was to come from the waste of the box factory. J. S. L. Bennett, retired foreman of the Spokane Block Plant, had his first job in Chico, 1906, salvaging waste from the box factory to be cut into match blocks. The original block cutting for the match factory was performed in the Millwork department of the Lumber division and was done there until the block department was established in the box factory in 1911.

It has been well said, by the National Lumber Manufacturers Association, that:

> "No other major business is as sensitive as the lumber industry to the economic cycle, especially when it is on the way down."

Diamond got a sharp lesson in this truth when the 1907 profits in California of $330,026.90 dropped to but $31,312.69 in 1908 and stayed below $100,000 for some years thereafter. It would seem that the psychological impact of this drop colored the California picture for many, many years, and probably motivated the curtailment of all lumber related operations at Barber in 1916 except the Match Factory.

The block department at Chico hit its high marks in 1912 and 1913, using 3,750,000 feet in 1912 and 4,900,000 feet in 1913, being l6% of 1912 sugar pine cut and slightly over 20% of 1913 sugar pine cut. Of course, much of the shipping case shook was derived from lumber not suitable for matches but graded as match stock, and this, naturally, was degraded when paid for to the lumber department.

The sales to the eastern factories were down sharply in 1914 and went virtually to nothing in 1915. <u>There is no evidence that further shipments of either blocks or match plank were made to the eastern factories after 1915.</u> Chico, however, continued to consume between 1,600,000 and 1,900,000 feet of sugar pine annually for some years; this being about 8-11% of the total yearly sugar pine cut, plus whatever was transferred from the box factory for shipping case material.

During the early years of World War I, before American involvement, Diamond was finishing logging in the Ramsey Bar/Lynch Meadows country where the pine was of inferior quality and not too much of it. There was, at this time a concomitant demand for lumber and matches. Diamond, through N. C. Johnson, then Treasurer, made an extensive purchase of match stock from the southern Sierra Nevada pineries around Sanger, California. This stock was brought to Chico and piled for seasoning, which then required about two years. One account says that this lumber was piled without being stickered and that, as a result, it sweat more than usual and became even darker than usual. This lumber, too, was said to be about as poor as sugar pine could get and still be usable. This lumber was made into matches in the Fall of 1917 and sent to Los Angeles, then the major match market in California. The splints had turned "amber" which enabled the Ohio Match people to make a most damaging comparison with their own relatively white splints. Also, the Diamond matches were very weak, had not taken the dipping or paraffin well, and in general were a shoddy product. As the stories were recalled by men working in the Chico match factory at the time, the box cars came back from Los Angeles with their seals unbroken. The matches were used for boiler fuel or burned in a deep pit still visible at Chico. Employees were forbidden under threat of dismissal to salvage any of these matches and the Los Angeles market was lost to Diamond for some time.

VIII. Early Departments and Buildings and Their Fate

The first major project, and the one upon which all else hinged, was completion of the Butte County Railroad to Stirling City. Diamond intended to use its own lumber in building its Barber plant and, for this reason, other construction, with one exception, was delayed at Barber for most of 1903 until it was too clearly seen that the railroad would not reach Stirling within the anticipated time of six months from date of starting construction.

A deep cut at the upper end of the railroad suggests perhaps why the railroad was not completed in the allotted time.

The first building construction work done at Barber, began in February 1903. F. A. "Pop" Haskins, an experienced construction carpenter, established a "Carpenter's Camp", with tents, at Barber and began construction of the first building, an inbound freight shed by the California & 0regon mainline railroad.

Engine House

The first truly permanent structure at Barber was begun almost simultaneously with the inbound freight shed. This was a brick engine house, four stalls, for the Butte County Railroad. It, also, housed Diamond's first machine shop.

The former Butte County Railroad's Barber engine house as it existed in the late 1940's. **The date of the demolition of the engine house has not been determined.**

Fred W. Lane, who had a long and distinguished career with Diamond, arrived in Chico about October 1903 and was the supervising engineer for all of Diamond's initial construction. Lane's arrival, apparently, coincided with Diamond's realization that the Stirling Mill would not be completed in time to provide them with lumber for Barber building construction and alternate plans then went forward rapidly.

The next two buildings to be completed at Barber were a stable, 36 x 80 x l6, including an office, harness room, carriage shed and twenty 5 foot stalls, each with window shutters; and a 20' x 42' office for the railroad. Foundations were surveyed and work begun on the other buildings at Barber during the fall and winter of 1903 and carried on in early 1904 as weather permitted.

By the spring of 1904, the following buildings were under construction: Machine Shop, 75 x 204; Foundry, 86 x 120; Power House, 100 x 150; Sorting Shed, 35 x 186; Dry Kilns, 94 x 220; Dry Lumber Shed, 100 x 286; Planing Mill, l42 x 193; Storehouse, 64 x 250; Second Storehouse, 100 x 250; Sash, Door and Box Factory, l40 x 200; General Offices (Fairburn Hall), 40 x 100.

In addition, there would be built a match factory, a block factory, and a strawboard mill. Plans called for a furniture factory and that another plan would erect a plant for the manufacture of agricultural implements.

Diamond did have a hospital in Chico in a rented building, dwelling, at the southeast comer of West 2nd and Ivy Streets which the Sisters of Mercy manned and for which Dr. Oscar Stansbury was Diamond's resident physician. The hospital usage ceased in 1916 with the curtailment at Barber.

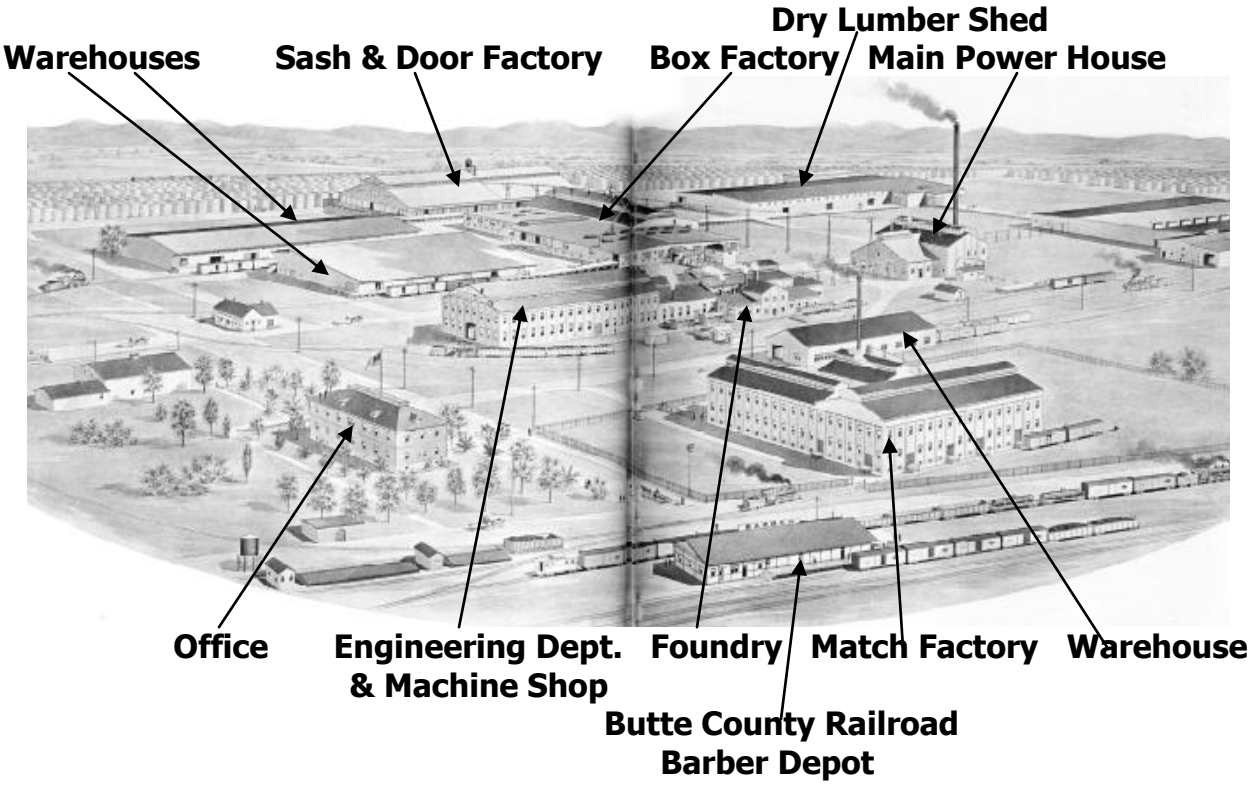
The necessary railroad tracks at Barber were built by the Butte County Railroad, including a great balloon track that enabled an entire lumber train to be turned around.

Auditors from Bryant & May who visited Barber provided a summary of the buildings there as of December 31, 1905: general office; engineering works; various lumber sheds; dry kilns and cooling sheds; planing mill; box factory; carpenters shop; power house and boiler room; stable. They noted that the sash and door factory was nearing completion. The first door was produced February 1, 1906, thus bringing the whole Barber lumber operation into production before the match factory was completed.

The match factory was the LAST of the facilities at Barber to be started and the LAST to get into production. The most logical reason for this delay is simply that the heat during the summer months in Chico is such as to make match making, under conditions and materials existing in 1904, most hazardous. This, coupled with the small volume of Diamond sales in California for the 20-year period preceding, may have failed to provide any urgency for getting into the actual manufacture of matches.

The daily relations between the match department and the lumber department were marked and marred by petty frictions for many years.

1906 View



2019 Google map of the Barber Site

Match Factory

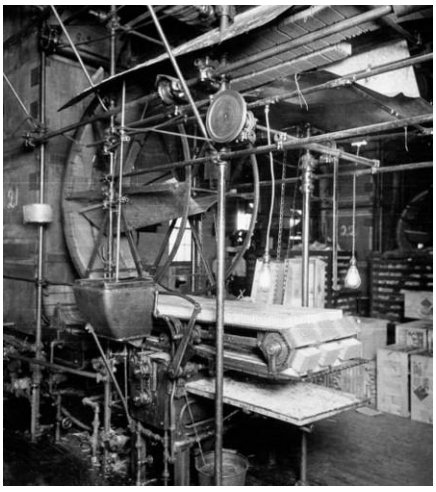
As indicated preciously, the match factory was the last of the facilities at Barber to be started and the last to get into production. This is possibly due to the fact that the heat during the summer months in Chico made match making under conditions and materials used in 1904 very hazardous.
The strike anywhere (SAW) matches made with white phosphorus were subject to spontaneous ignition. There may have been match production occurring in June 1906 but full production did not occur until the cooler months of autumn. There seemed to be full production occurring by late October 1906.

Early matches were made from blocks of wood with cuts separating the splints but leaving their bases attached. Later versions were made in the form of thin combs. The splints would be broken away from the comb when required.

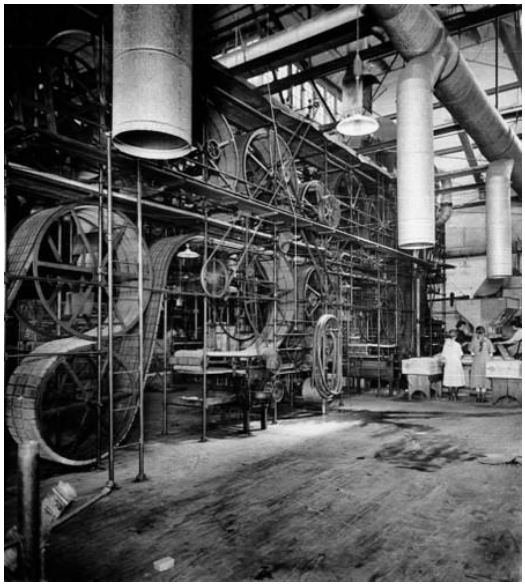
The box factory provided match blocks for the match factory.

By 1911, the factory was also producing safety matches which necessitated striking on the match box (SOB). This was undoubtedly due in part to the health issues with using white phosphorus.

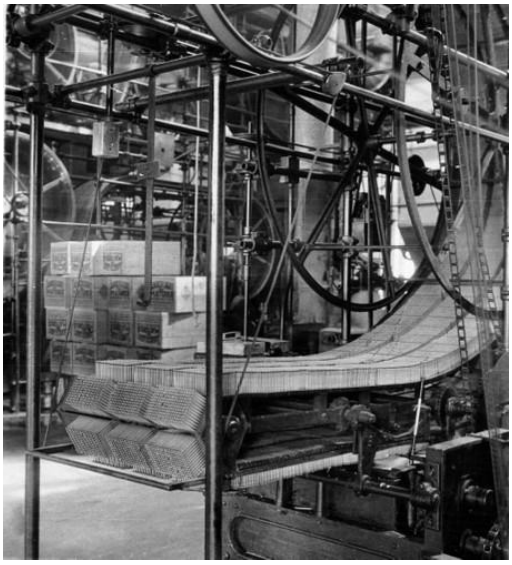
In 1916, the match factory was approximately doubled in size and capacity. Besides economic reasons for this, there must have also been a change in the formulation of the SAW matches. After 1911, when white phosphorous had been banned, phosphorous sesquisulfide and potassium chlorate became the choice for the main ingredients in the match head and new storage facilities were needed which required additional space. Maps of the match factory for 1921 show the new increased storage facilities labeled "sesqui" (P_4S_3), "composition" , "chlorate" (for potassium chlorate, $KClO_3$) and "paraffin" all of which were ingredients in the new SAW match formulation.



Match blocks on the way to the match factory and being dipped after being cut.

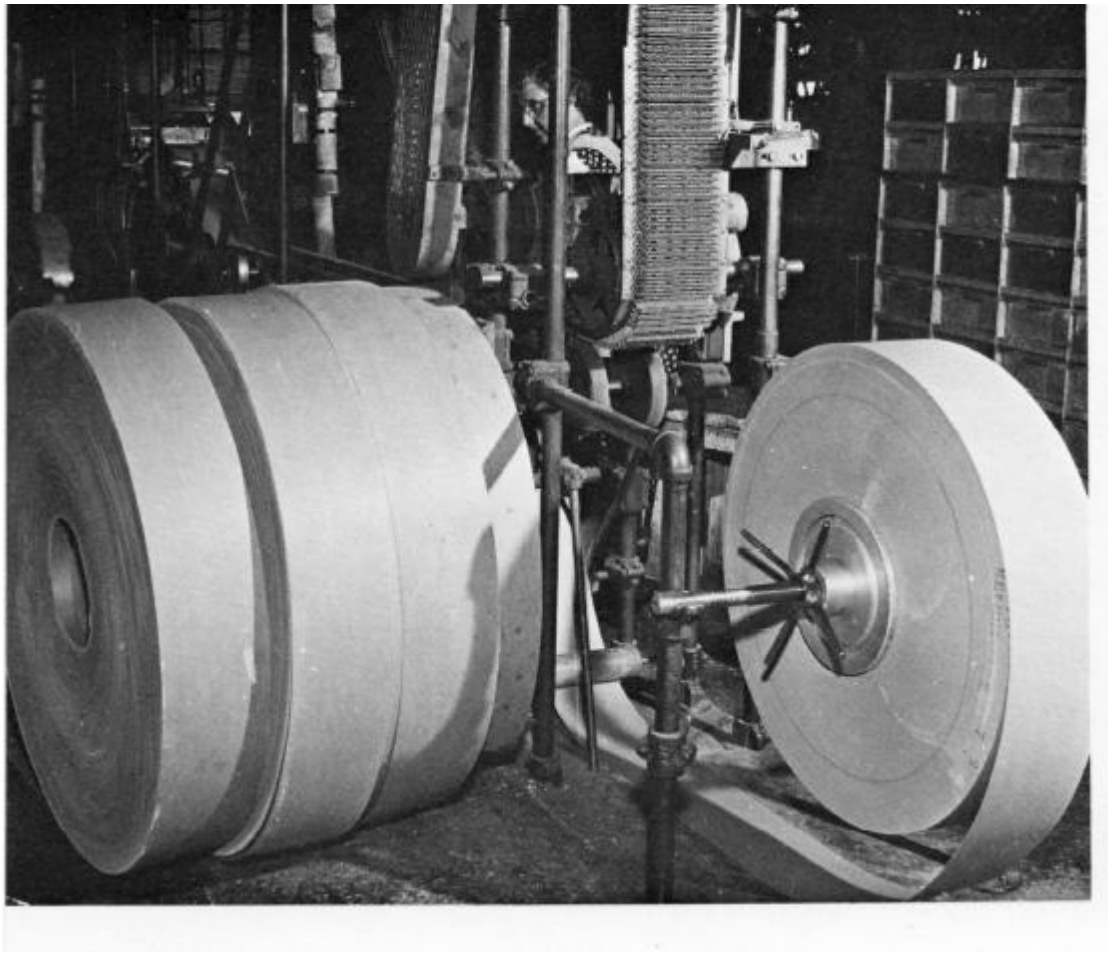


Match blocks with matches being dried

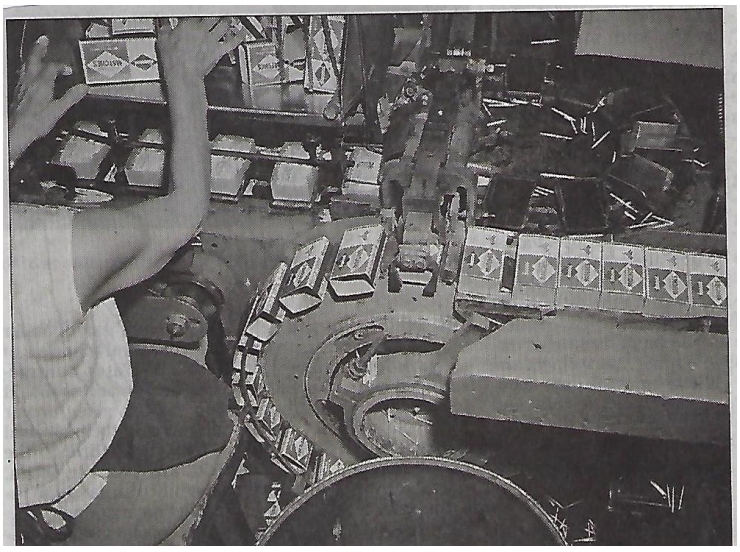


Match blocks before matches were separated

Workers mixing match chemicals



Combs of book matches being produced on a set and dip machine. The large roll of splint board (called paper) on the right is being fed into the machine. The combs are cut from the paper rolls, then go through a pan to be dipped on their striking end. They then continue to a booking machine where they are cut apart and printed covers are stapled to them (courtesy Diamond International Corporation).



A Diamond Match Company machine operator makes match boxes in the Chico factory in 1950 (photo courtesy Randy Taylor).

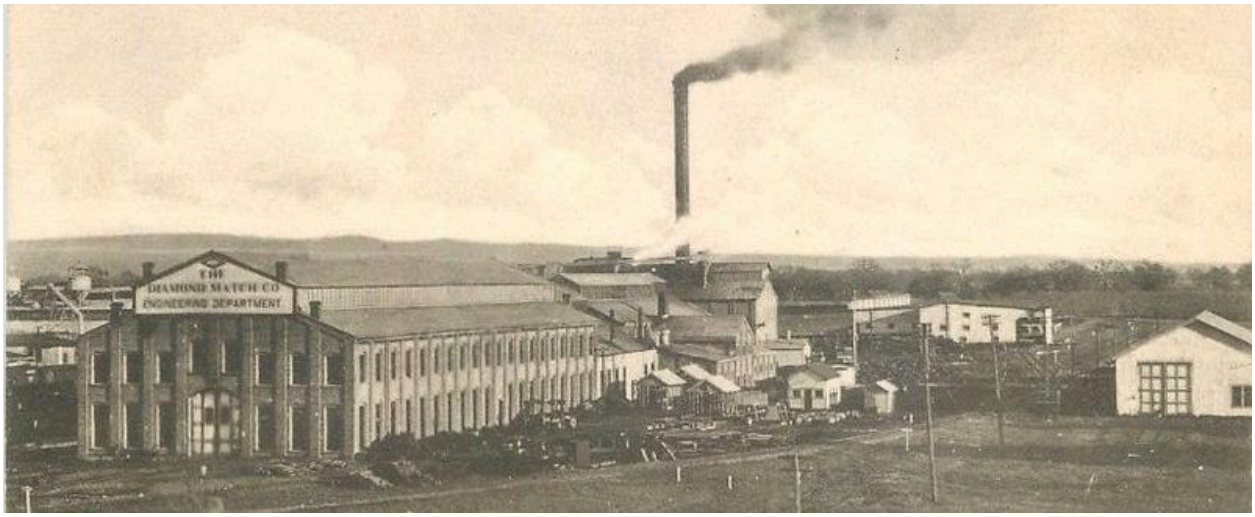
SAW (strike anywhere) kitchen matches being boxed by an automatic packer in the Chico factory in 1957. The Chico factory had eight of these machines at that time (photo courtesy Diamond International Corporation).

In 1975, a strike was called at the match factory. After several weeks at impasse, the Diamond International Corporation announced on October 9, 1975, the immediate permanent closure of the Chico match factory. The abrupt decision affected a number of employees—130 hourly production workers plus 20 management and office employees—and cost Chico a $1.3 million annual payroll. The announcement blamed the closing on a continuing decline in sales of book matches, largely due to the use of disposable lighters. Kitchen matches, once a staple production of the factory had gradually been phased out in the years following the Second World War and the plant had shifted to the manufacture of book matches. Diamond continued to produce matches at two other factories—Cloquet, Minnesota, and Springfield, Massachusetts.

The machinery was removed and the large brick building was being demolished in 1978 (according to a Chico ER article in 1978 entitled "Wrecker Levels Buildings").

Engineering, Machine Shop and Foundry

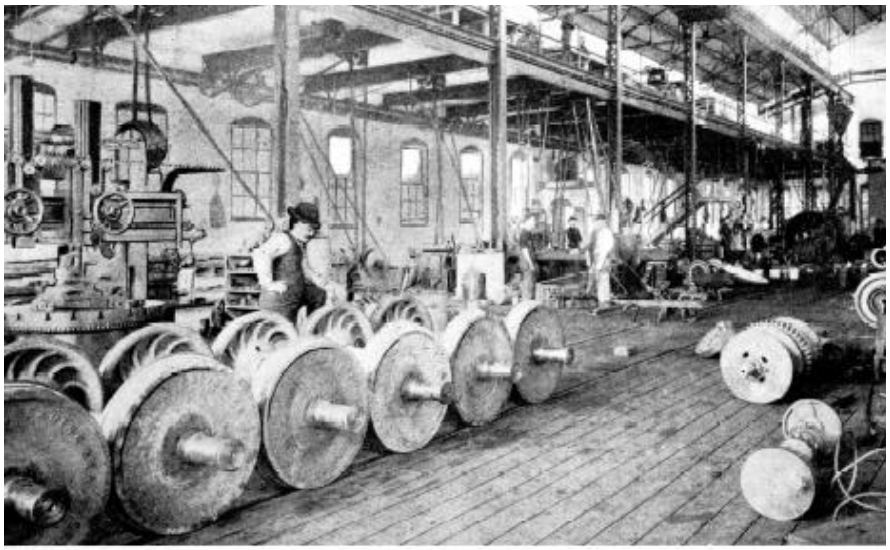
The exception to the delay in construction at Barber was the great Machine Shop or Engineering Department. This brick building began to go up in mid-1903 and this, too, is logical since it was to do the necessary repair and rebuilding for the railroad and the railroad was, as noted, the essential factor in Diamond's commercial start.



Engineering Department 1910

One of the most interesting original facilities was the Engineering Department. It was a large and well-equipped machine shop, black smith shop and a foundry.

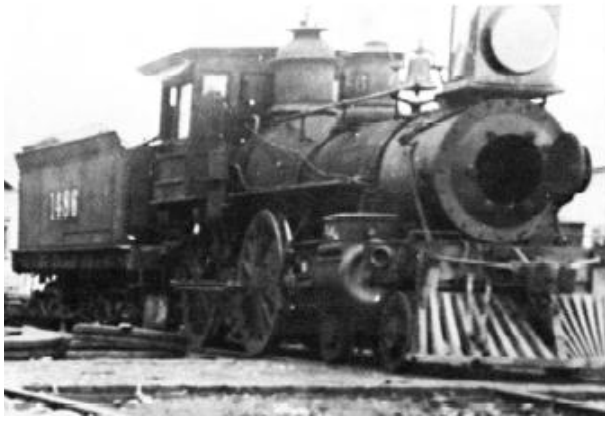
> A **foundry** is a factory that produces metal castings. Metals are cast into shapes by melting them into a liquid, pouring the metal into a mold, and removing the mold material after the metal has solidified as it cools. The most common metals processed are aluminium and cast iron.



The interior view of the Engineering Department shows that it was a well equipped machine shop. The machines were driven by the powerhouse.

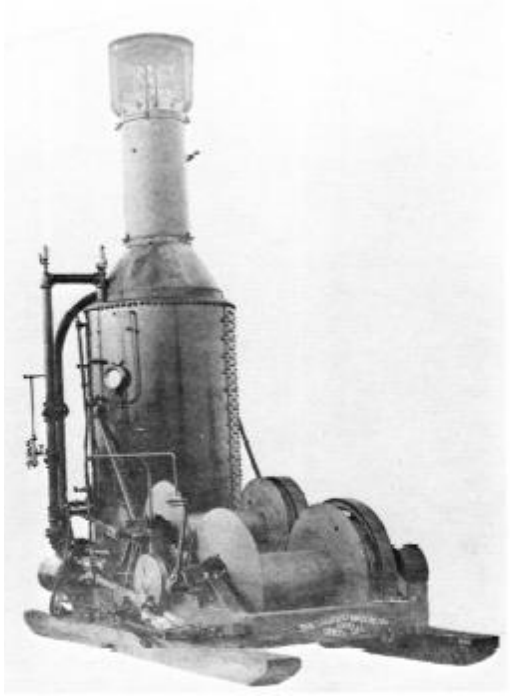
It was an important part of the operation, since it was necessary to repair anything from a factory machine to a locomotive. The nearest large commercial machine shops and foundries were in the San Francisco area. In addition, the Company knew that they could do their own work at a savings and with a minimum of delay, and they could also compete for outside business that would bring in profits.

Within a few years, the Engineering Department had built a large volume of business with outside jobs which included repair work on locomotives and railway equipment owned by other lumber and mining companies.



This shows one of the many locomotives owned by other companies that were repaired by the Engineering Department.

Equipment designed at the site for Diamond's own use was also selected for commercial marketing. This included the "California cut-off" saw originally developed for the Barber box factory.

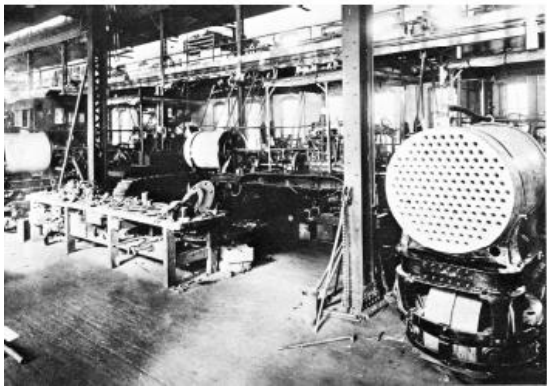


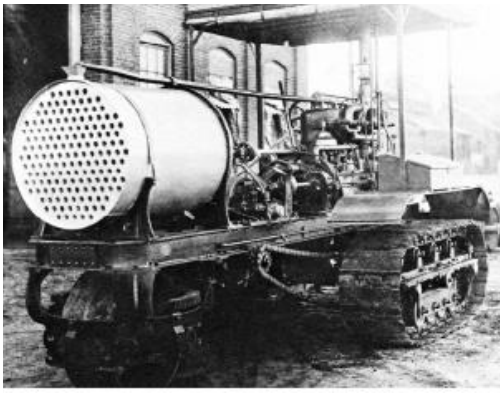
Another product was the "Barber" logging donkey, a double-drum logging donkey. Barber donkeys were sold to a number of northern California lumber companies.

The nameplate of this logging donkey showed that it was manufactured in 1907.

However, a notable and interesting failure involved the design of the "Diamond Creeping-Grip" tractor, which was designed for agricultural use. After initial

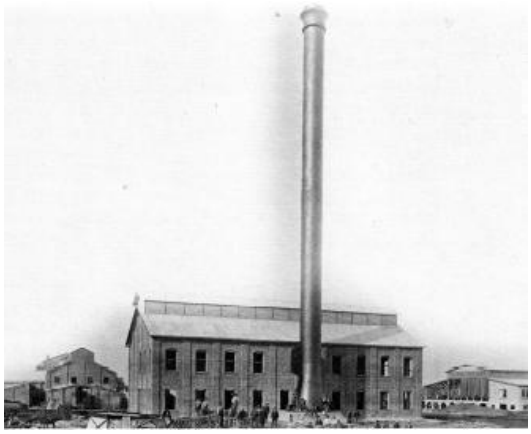
development in 1913 and a number of design problems, the project was discontinued in 1914.





The "Creeping Grip" tractor was designed and manufactured by the Engineering Department and assembled in the machine shop.

Powerhouse



The main powerhouse at the Barber plant was under construction in 1904.The 150 foot stack was an unsupported steel column with an inside access ladder leading to the platform at the top. It was reported to be the tallest structure in Chico at the time and provided a spectacular view of the area.

The powerhouse was one of the first buildings built and provided power for the factory operations. After the construction of the new millwork part of the site and a new power plant for the Match Factory in 1920, the old power plant was converted to the Apiary Department and actually functioned in that capacity until Diamond Match sold the facility. It is believed that the millwork part of the facility was then powered by electricity. The actual building survived until it was destroyed by fire set by vandals in August of 2004.

Warehouses

There were a variety of warehouses on the site and the details of their various uses have not been pursued. Even the brick building which served as the Engineering Department and Machine Shop ultimately was used as a warehouse.
It is worth noting that the large warehouse building closest to the Match Factory was one of the few buildings which still existed until 2004 when it too was destroyed by fire set by vandals in November of 2004.

Box Factory

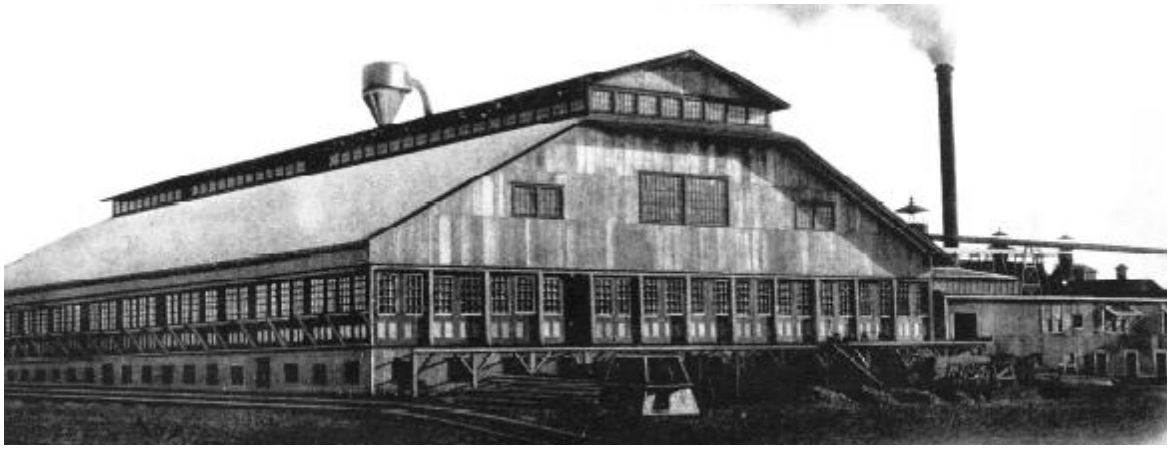
The Box Factory opened in June 1905. The Box Factory performed a variety of functions. It produced the match blocks for the match factory and provided box shook for a variety of purposes.

Shook: A set of components ready for assembly into a box or cask.

Besides providing materials for internal uses for shipping Diamond products, they also prepared box materials for the fruit industry's shipping requirements. The box factory was also involved in construction of apiary materials such as bee hives.

It was part of the Diamond International operation when it was sold to Louisiana Pacific in 1984.

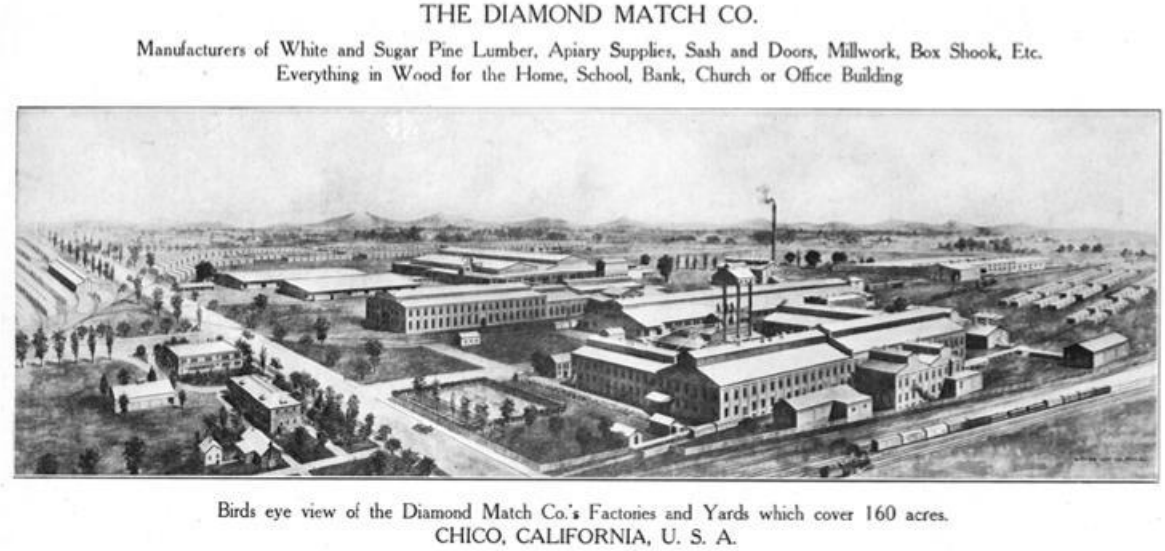
Sash Plant and Door Factory



The Sash Plant and Door Factory at Barber is shown here in about 1908. The factory was about three years old, having manufactured the first door on February 1, 1906.

The sash and door manufacturing facility was not initially rebuilt when the new millwork part was reconstructed by 1920. There is a conflict in information in that one source (Stevens, "Historical Impact of Diamond Match Company in Chico") indicates that the

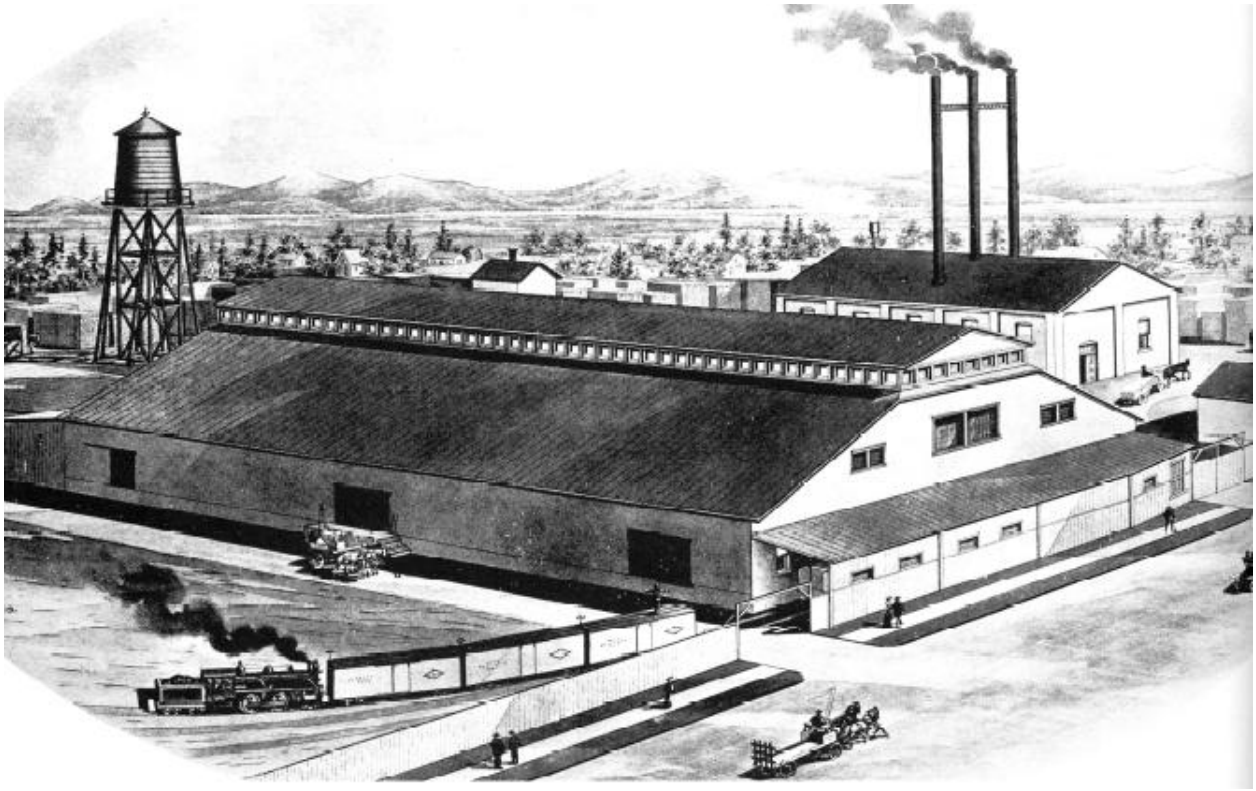
sash and door factory never re-opened. However, the 1949 Sanborn map clearly shows a building labeled "Sash & Door Manufacturing". Also the picture of the Barber plant which is shown in the 1923 "Bee Keeper's Supply" catalog mentions the manufacture of sash and doors.



A Picture from the 1923 Bee Keeper's Supply Catalog. Note the mention of Sash and Door supplies.

Plywood/Veneer Plant

On November 11, 1907, Diamonds' Directors authorized Mr. Clough to purchase veneer machinery for the California operations. After purchasing the Sierra Lumber Company Chico division remanufacturing plant, Diamond promptly closed Sierra's factory, dismantling the machinery and moving stacked lumber to Barber. The buildings, however, were retained for use as a Veneer (plywood) Plant. The veneer manufactured by the plant was to be used in the manufacture of doors, matchwood for Diamond's eastern plants, and box shook for the California citrus industry. The choice of a plant site undoubtedly was made because the former Sierra factory and planning mill provided existing buildings. Location of the veneer plant at Barber would have meant construction of a building. An added factor was Sierra's old 9th Street railroad spur provided a direct connection with the Southern Pacific railroad. This permitted switching lumber from Stirling City directly to the plant. Installation of the veneer machinery started early in 1908 and the plant produced its first veneer on April 4. This places Diamond as the first manufacturer of plywood in California.



An artist's view of the Plywood/Veneer Plant in Chico.
This plant was the first plywood manufacturer in California.

The demise of the plant ... which was carried on Diamond's books as "Idle" during 1910…began in 1911 when the machinery was transferred to the Box Factory at Barber, and in 1912 the buildings were torn down, and much of the material was used in the construction of Diamond's Retail Yard between Third and Fourth Streets and Cherry and Orange Streets in Chico.

The 17 acres around the Veneer Plant were planted in hay and grain crops.

Retail Outlets

One of the very successful features of Diamond Match Company's enterprises was the many retail yards. These were located at Chico, Woodland, Yuba City, Live Oak, Gridley, Orland, Maxwell, Lincoln, Willows, Corning, Williams, Esparto, Germantown/Artois, Hamilton City, Durham, Dunnigan, Richvale, Biggs, Gerber, Roseville, Arbuckle, East Nicolaus, Los Molinos, and Red Bluff, and were operated so that they proved the greatest help to those who would build a home economically.

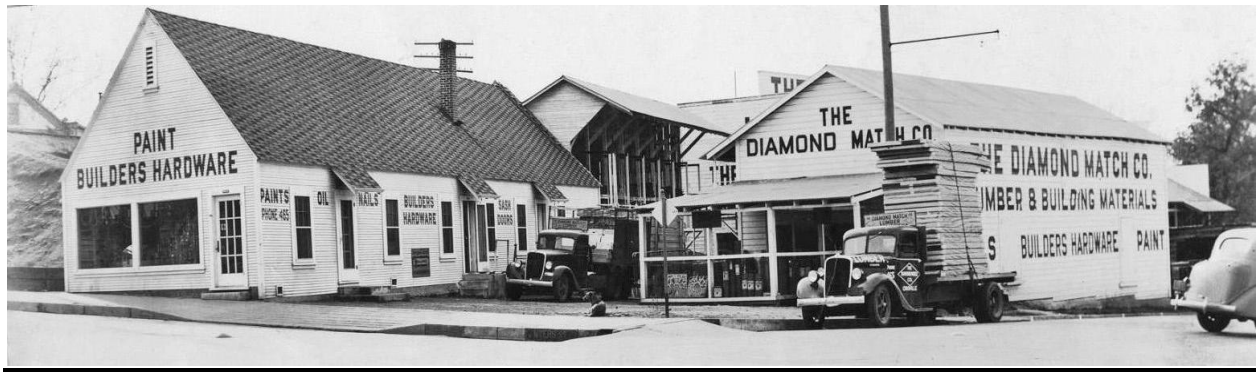
Diamond's Chico Retail Yard was between Third and Fourth Streets and Cherry and Orange Streets. This retail yard was destroyed by fire in 1963.

At some point, a new facility was opened at 190 Cohasset Road in Chico. Its exact span of existence has not been determined other than it was open in 1966 and still existed in 1984 when Louisiana Pacific purchased the Chico millworks site.

As of June 16, 1983, when Diamond International's sale to Louisiana-Pacific was being considered, the *Enterprise Record* indicated that Diamond International maintained retail outlets in Chico, Orland, Paradise, Oroville, Marysville, and Red Bluff. Walt Lowe was then the manager of the Chico retail store at 190 Cohasset Road.

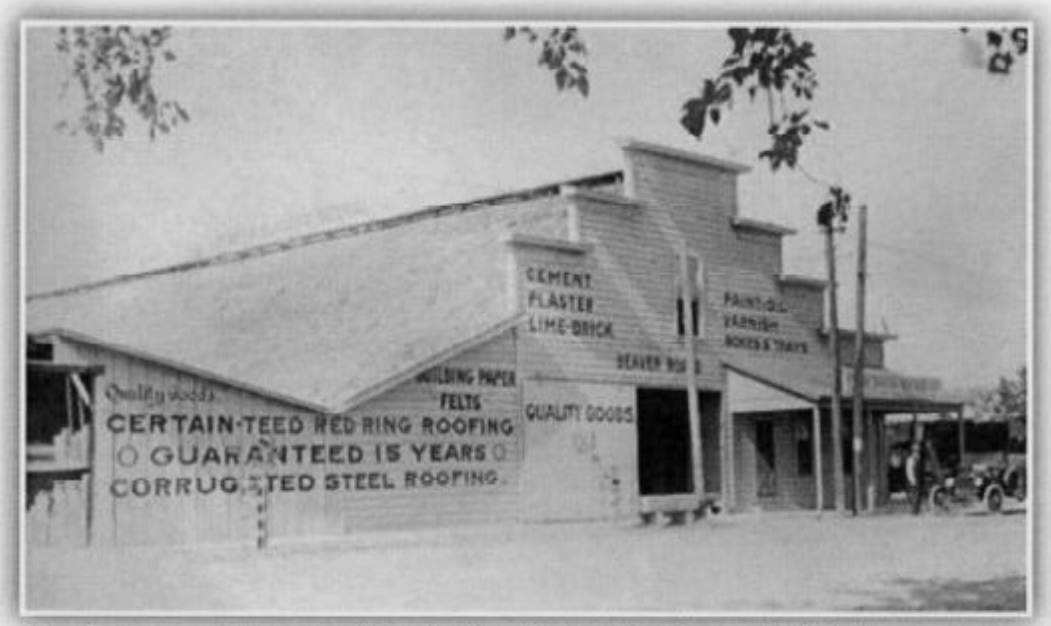
Diamond's second retail lumber yard in Chico is shown here. It replaced the earlier yard at the Barber site. The location of this structure was not determined.

Live Oak Retail Outlet



Oroville Retail Outlet circa 1935

DIAMOND MATCH RETAIL LUMBER YARDS



Sam Benton was Manager of the Corning Diamond lumberyard 1907-17.
–California State University, Chico, Meriam Library, Special Collections

Anderson: Purchased 1924 from Anderson Lumber Company.

Arbuckle: Purchased 1908 from West Valley Lumber Company. Managers: T. Roach 1908-09; Ira E. Brink 1909-11; H.E. Lieurance 1911-16; C.E. Brown 1916-22; C.W. Foreman 1923; C.A. Hancock 1924-25; C.E. Brown 1926-28; Peter Heinrichs 1928-33; Harry K. Stone 1933-to date.

Artois (Germantown): Established 1911. Managers: Ed. N. Thode 1911-12; C.B. Clawson 1912-15; Charles Greenhalgh 1915-19; Ralph Webster 1919-20; Herbert Symonds 1921-22; Ray Bush 1923; Ralph Severns 1923; Harold Hargis 1924-25; Paul Weber 1926-29; Jack Hughes 1930; Jack Grey 1931-26; C.L. Jensen 1936-38; Frank Wood 1938; W. Ray Young 1938-to date.

Auburn: Purchased 1939 from Tahoe Sugar Pine Company.

Biggs: Purchased 1907 from Sierra Lumber Company.

Chico: Purchased 1907 from Sierra Lumber Company.

Colusa: Purchased 1922 from Colusa Lumber Company.
Managers: G.W. Redburn 1922-24; George W. Palmer 1924-29; John W. Schlosser 1930-32; Van E. Johnson 1933-to date.

Concord: Purchased 1928 from Tilden Lumber & Mill Company.

Diamond Match lumberyard in Hamilton City was established in 1911.
–California State University, Chico, Meriam Library, Special Collections

Corning: Purchased 1907 from Sierra Lumber Company. Managers: Sam Benton 1907-17; Harry B. Crego 1917-19; Wilson Strawn 1919-24; F.E. Lehr 1924-26; C.A. Grey 1926-29; John R. Johnson 1929-36; Hugo Erickson 1936-to date.

Cottonwood: Purchased 1921 from McCarley & Smith.

Dunnigan: Established 1913.

Dunsmuir: Purchased 1926 from Anderson Lumber Company.

Durham: Established 1912.

East Nicolaus: Established 1911.

Esparto: Purchased 1919 from Chandler Lumber Company.

Fairfield: Purchased 1928 from Tilden Lumber & Mill Company.

Fair Oaks: Purchased 1939 from General Supply Company.

Galt: Purchased 1928 from Tilden Lumber & Mill Company.

Ed Thode was the Manager of the Diamond lumberyard in Los Molinos 1912-15.
–California State University, Chico, Meriam Library, Special Collections

Gerber: Established 1916. Managers: L.R. Painter 1916; Wilson Strawn 1916-19; Marcus Masterson 1919-22; P.O. Young 1923-26; Guy Bordner 1926-31; J.B. Vallentyne 1931-to date.

Grass Valley: Purchased 1926 from Fowler Lumber Company.

Gridley: Purchased 1907 from Sierra Lumber Company.

Hamilton City: Established 1911. Managers: J.O. Harris 1911-24; Frank Pritchett 1924-28; Fred Heggie 1928-29; L.L. Haywood 1929-31; Wesley Vannote 1932-35; Ray Reading 1935-38; C.E. Netherton 1938-to date.

Lakeport: Purchased 1938 from Prather Lumber Company.

Lincoln: Purchased 1916 from Williamson & Crosby Lumber Company.

Linden: Purchased 1938 from Christensen Lumber Company.

Live Oak: Established 1908.

Livermore: Purchased 1935 from Livermore Lumber Company and Independent Lumber Company.

Lodi: Purchased 1936 from Lodi Lumber Company.

Diamond purchased the Maxwell lumberyard in 1907 from Sierra Lumber Company.
–California State University, Chico, Meriam Library, Special Collections

Los Molinos: Established 1911. Managers: Mr. Jones 1911-12; Ed. N. Thode 1912-15; J.D. Allison 1915-24; Gus E. Schlosser 1924-28; D.R. Travis 1928-31; Jack Hughes 1931-37; William J. Harris 1937-to date.

Manteca: Purchased 1934 from Home Lumber Company and Nason Lumber Company.

Martinez: Purchased 1928 from Tilden Lumber & Mill Company.

Marysville: Purchased 1926 from Shasta Lumber Company.

Maxwell: Purchased 1907 from Sierra Lumber Company. Managers: J.W. Marshall 1907-11; Wilson Strawn 1911-16; Walter W. Thode 1916-23; A.H. Malm 1923-26; E.D. Hineline 1926-to date.

Meridian: Established 1923.

Nevada City: Purchased 1939 from Tahoe Sugar Pine Company.

North Sacramento: Purchased 1939 from General Supply Company.

Oakdale: Purchased 1928 from Tilden Lumber & Mill Company.

Orland: Purchased 1907 from Sierra Lumber Company. Managers: Fred N. Benton 1907-15; Ed. N. Thode 1915-to date.

Orland's Diamond lumberyard was alongside the SP railroad tracks.
–California State University, Chico, Meriam Library, Special Collections

Oroville: Purchased 1923 from Matheny Brothers Lumber Company.

Petaluma: Purchased 1935 from Camm & Hedges Lumber Company.

Placerville: Purchased 1935 from J.B. Blair Lumber Company.

Pleasanton: Purchased 1935 from Independent Lumber Company.

Quincy: Established 1938.

Red Bluff: Purchased 1907 from Sierra Lumber Company. Managers: A.L. Brown 1907-13; Fred J. Anderson (closed up).
Purchased 1916 from Brown & Doane Lumber Company.
Managers: L.L. Dean 1916-17; Sam Benton 1917-20; George W. Redburn 1920-22; Frank Duncan 1922-24; Ralph Severns 1924-28; P.O. Young 1928-36; Jack Grey 1936-to date.

Redding: Purchased 1919 from Turtle Bay Lumber Company.

Richvale: Established 1913.

Robbins: Established 1925.

Roseville: Purchased 1916 from Slocum & Osborne Lumber Company.

Sam Benton was Manager at the Red Bluff Diamond lumberyard from 1917-20.
–California State University, Chico, Meriam Library, Special Collections

Sacramento: Purchased 1928 from Tilden Lumber & Mill Company.

Sebastopol: Purchased 1935 from Colombo Lumber Company.

Stockton: Purchased 1928 from Tilden Lumber & Mill Company.

Sutter: Purchased 1926 from Shasta Lumber Company.

Ukiah: Purchased 1936 from Laport Lumber Company.

Upper Lake: Purchased 1937 from Willets Lumber Company.

Vacaville: Purchased 1919 from Chandler Lumber Company.

Vina: Established 1919. Managers: H.C. Foster 1919-24; Walter Kohl 1924-26; Bernard Hansen 1026; Ray L. Mohler 1927-31; Ray Mead 1932-34; L.A. Tibbetts 1934-35; Allen Hinshaw 1935-37; Fred Lemon 1938-to date.

Walnut Creek: Purchased 1934 from Smilie Lumber Company.

Wheatland: Purchased 1926 from Shasta Lumber Company.

Williams: Purchased 1908 from West Valley Lumber Company.
Managers: Mr. Dugdale 1908-09; M.H. Getz 1909-36; Delmar Fahrner 1937-to date.

The West Valley Lumber Company sold their yard in Williams to Diamond Match in 1908. *–California State University, Chico, Meriam Library, Special Collections*

Willows: Purchased 1916 from Brown & Doane Lumber Company. Managers: H.H. Gallagher 1916-20; C.B. Clawson 1920-23; Ralph Hupp 1923-todate.

Winters
Purchased 1919 from Chandler Lumber Company.

Woodland: Purchased 1907 from Sierra Lumber Company.

Yolo: Purchased 1921 from Yolo Lumber Company.

Yuba City: Purchased 1907 from Sierra Lumber Company.

Wholesale Business

While much of the lumber that was produced was used for the match production, millworks activities and retail outlets, there existed a sizable wholesale market. As early as 1908, over 50% of the production was used for wholesale customers. Several wholesale customers were in the Midwest and East. By 1920, 40% of production was sold to wholesale consumers.

A sales department for the handling of wholesale lumber sales was established in 1941 to handle the growing volume of business in the wholesale department. By 1943, 54% of the total pine lumber went to wholesale clients.

Apiary Department

It had its inception in approximately 1914 as a small department tucked away in a corner of the second floor of a warehouse. From this small beginning, it grew almost overnight to become one of the largest manufacturing bee supply houses. There is more discussion of the Apiary Department under the "New Departments and Activities after 1920".

Office

Artists View of Office Building in 1906

Office Building in 1916

IX. Decrease of Millwork Activities

By 1915 top management within Diamond had changed. The management that had started the Barber operations was no longer with the Company. They took over control of a company that was losing money and singled out the California operations as a way to return the company to profitability. They decided the way to reduce some of the losses was to cut back the California operations.

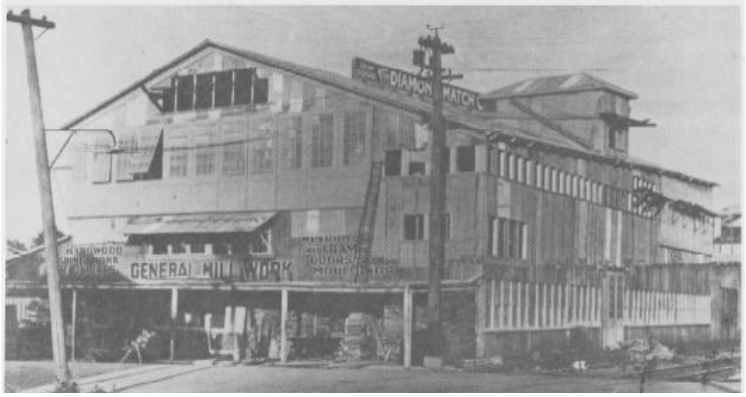
The general cutback started in 1915 with limiting sawmill operations in Stirling City. The Directors declined to renew the contract for operating the Butte County Railroad and the railroad line became part of the southern Pacific railroad, known as the Stirling City Branch.

At Barber, the millwork and Engineering Departments were closed during 1915. A limited amount of millwork activity continued to meet the needs of the retail yards. However, this low level of millwork was at a small building sixteen blocks north of the Barber plant adjacent to Southern Pacific tracks at West First and Orange Streets in Chico.

Remanufacturing Facilities in Chico

After the cutback in 1915, Diamond's "millwork" plant was in this small building on the corner of First and Orange Streets in Chico.

millwork is any type of woodwork that is produced in a mill. This includes molding, trim, flooring, wall paneling and crown molding, doors, windows, transoms, stair parts, and cabinetry to name just a few



This is another view of what was also referred to as Diamond's "remanufacturing" plant between 1916 and 1920.

Remanufacturing is the process where lumber is cut by ripsaw or resaw to create dimensions that are not usually processed by a primary **sawmill.**

Due to a much reduced capacity compared to what was done at the Barber facility, the Chico plant was having difficulty with the decreased space and facilities.

In a June 25, 1916, *Chico Record* article, it was indicated that both the planing mill and bee section were to be enlarged to meet a growing demand. In addition, the lumber warehouse would have an addition in order to keep the large amount of dry lumber which was needed.

The Apiary Department was to be enlarged at Fourth and Cherry Streets. They were filling orders from South America, Honolulu, Hawaiian Islands, Japan and British Columbia as well as New York. There were orders for a wide variety of apiary supplies including honey extractors, glass containers, and honey shipping cases.

X. Increase in Size of Match Factory (1916)

In contrast to the cutback in the millwork area at Barber, the Match Factory had been showing a consistent profit. The Match Factory was expanded, nearly doubling its size, with a corresponding increase in its production. Additional discussion of this occurred on page 46.

New Match Factory Facilities

The 1921 Sanborn Fire Map on page 79 shows the details of the completion of the addition and the additional structures for storage of the new chemicals needed in the Strike Anywhere matches which no longer contained white phosphorus.

Storage Building

Regarding the quest to determine when the small remaining storage building was built, the following information would seem to answer whether it was built in 1903-1904 or circa 1916. The 1906 picture, page 45 and the 1909 Sanborn Fire Map page 78, clearly shows it did not exist at those times. The 1921 Sanborn Map, page 79 show it did exist in 1921 and the real definitive evidence is the 1916 picture of the engineering building shown below. It clearly shows the building in question in the background. Since the match factory expansion occurred in 1916, and it appears that it is not complete, the storage building in question had to have been built in 1915 or early 1916.

Storage Building

Engineering Department 1916

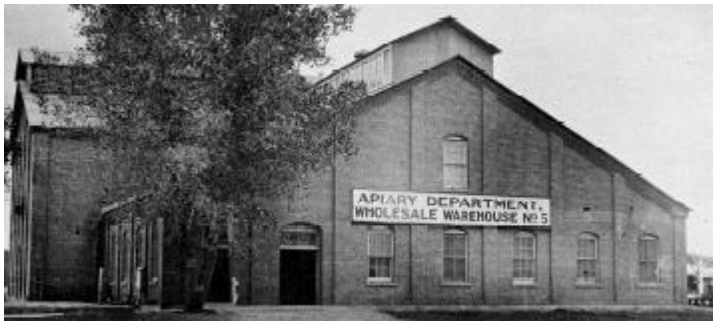
XI. New Departments and Activities After 1920

The abandonment of the Barber facilities ended in November 1919, when the Company started rebuilding the Millwork Factory there. Production started early in 1920. The Millwork Plant at Barber was the only portion that was reactivated. The Engineering Department was never reopened.

There was a sash & door manufacturing facility in 1906, but one was not initially built when the new millwork part was reconstructed by 1920. There is a conflict in information in that one source (Stevens, "Historical Impact of Diamond Match Company in Chico") indicates that the sash and door factory never re-opened. However, the 1949 Sanborn map clearly shows a building labeled "Sash & Door Manufacturing".

The Apiary

When the plant re-opened in 1920, the powerhouse was no longer needed for the Match Factory since it had its own powerhouse. Boilers were removed and it was converted to a warehouse for the Apiary Department. Machinery was installed in 1923-24 in the boiler room for opening of a Wax Department. Beeswax is the raw material for making foundation comb which was manufactured and then sold to beekeepers. In the early 1920's, the Apiary Department was cited as the second largest manufacturing bee supply house in the United States. The Diamond Match 1923 Bee Keepers Supply Catalog claimed it to be the largest "Bee Supply Factory in the World".



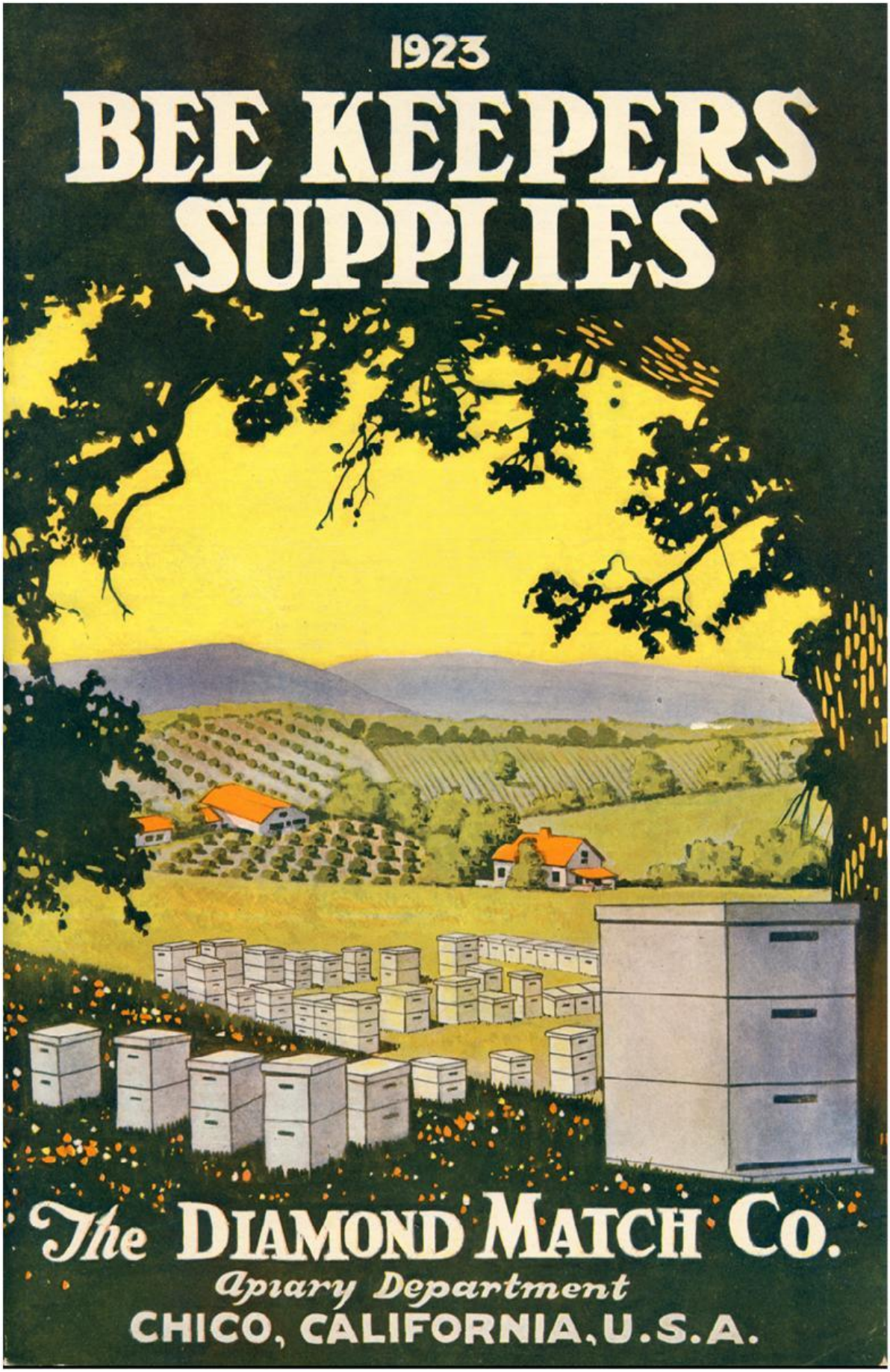
The Apiary Department occupied the old main powerhouse at the Chico plant after 1920.

This branch of the company's activities was part of the retail lumber department, under the direct charge of the departmental manager W. B. Dickenson.

From the ***American Bee Journal, Volume 59, January 1919.***

> "Mr. Dickenson has been in CA for several years and is now in charge of the apiary department of the Diamond Match Company of Chico. He has been in charge since this concern established a separate department of bee supplies and they now rank third in volume of manufacture of bee-keeping equipment. Although the DM line of supplies had only been in the market about five years, it then marketed to all parts of the world, and the volume of sales was increasing at a phenomenal rate."

They produced extensive catalogs with a wide array of items as indicated in the following pages.


1923
BEE KEEPERS SUPPLIES
The DIAMOND MATCH Co.
Apiary Department
CHICO, CALIFORNIA, U.S.A.

INDEX

The following note appeared in the 1923 Bee Keeper's Supply Catalog. This claim has not been verified but it certainly seems possible.

The Diamond Match Company

APIARY DEPARTMENT

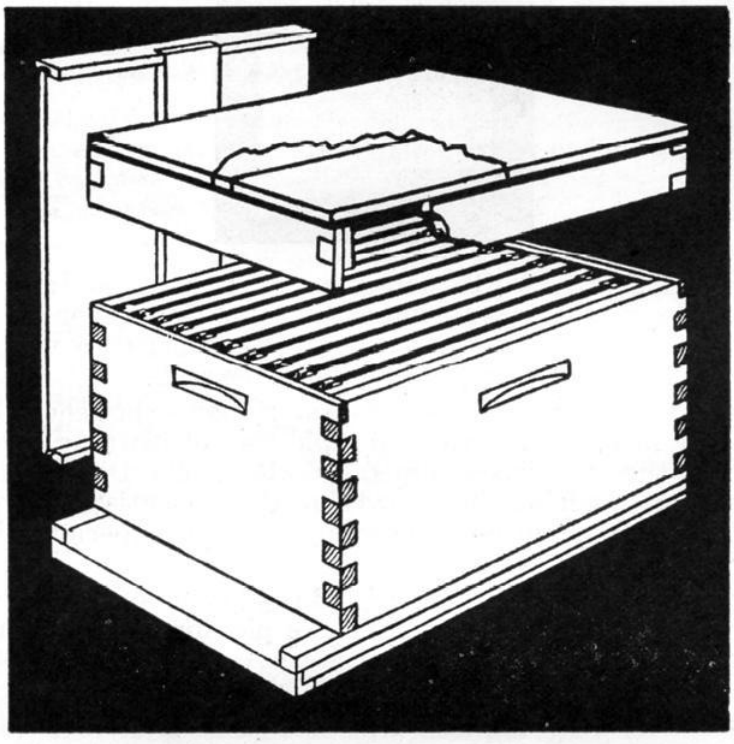
CHICO, CALIFORNIA, U. S. A.

THE LARGEST BEE SUPPLY FACTORY IN THE WORLD

The Apiary Department sold a wide variety of bee hive designs one of which is shown below.

One-Story Dovetailed Hive

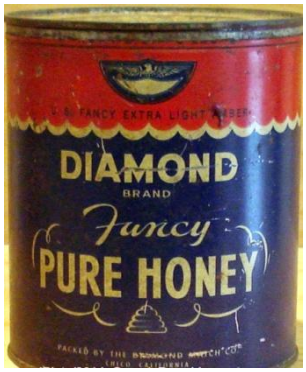
THE DIAMOND HIVE—Showing the Diamond and Stirling Covers



Besides marketing bee hives and numerous other products indicated on a previous page, they also sold honey.

Diamond's first entry into the actual marketing of honey seems to have started during the Depression. A Bee keepers Information Bureau and Marketing Service had been established by Dickenson from the very first catalog but this was exactly what its title implied -- a free service much on the order of the community blackboard in the small-town post office. The extension of this service came in 1932, when Diamond actually began marketing honey as a service to bee keepers, acting as warehouse and intermediary but not involving any Diamond cash.
First actual purchases by Diamond of honey from beekeepers came in 1933, and the apiary catalog for that year noted that Diamond will pay spot cash, cheerfully. This was quite a rarity in 1933.
In 1934, Diamond noted that they would buy honey ONLY in new cans and cases. This was logical and, also, made business for the Apiary Department.
It seems logical to assume that the genesis of this honey business was in Diamond's taking honey from bee keepers in partial or whole payment for the supplies they purchased from the Apiary Department.

By 1938, two carloads of honey a month were going to the Pacific Fruit and Produce Company in Seattle, who marketed it under their own name "Standby Honey."



In 1939, 1,104,000 pounds of honey were sold by Diamond and a similar amount, 550 tons, in 1940.

In 1941, Diamond began marketing honey under the name of DIAMOND directly to the wholesale grocers, rather than through jobbers.

As of June 16, 1983, when Diamond International's sale to Louisiana-Pacific was being considered, the ER indicated that "DI had millwork and apiary divisions on West 16th Street –employing about 160 –plus a sawmill in Oroville."

New Office Building

The administration did not want to rescind the Fairburn Hall gift to the employees so a new office building was built for the Barber plant's resumption of operations in 1920.

XII. Employee Facilities and Activities

Fairburn Hall was built in late 1903 or 1904 and was built by Diamond Match, the forerunner of Diamond National and Diamond International (DI), and served as the Corporation's main office until 1915.

The building had served as Diamond International's employee recreation hall until October 1963 when the Corporation donated the building to the Newman Club of Chico State University. Before the Newman Club took over the Fairburn Hall, the building was moved 400 yards to a 2.2-acre site just to the north of the DI facilities to 1321 Ivy Street.

After the Newman Club moved from the building, the structure served as the main hall for the John Bidwell Parlor No. 21 of the Native Sons of the Golden West. The city of Chico, intending someday to extend Ivy Street, purchased the building and adjoining property in August 1972 from a group know as Global Youth Evangelism.
By 1977, the City had leased the building to the Pleasant Valley Assembly of God Church.

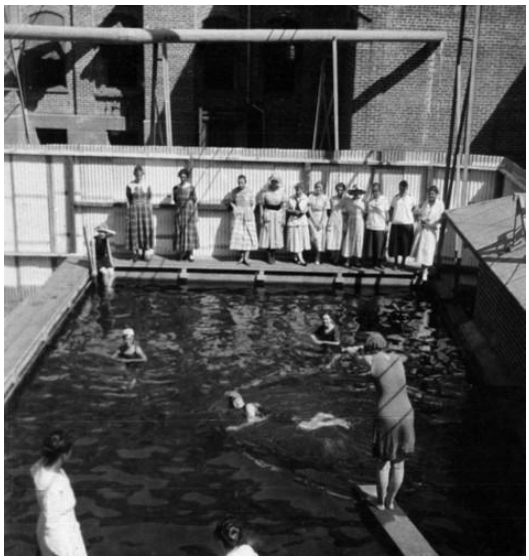
On Monday, January 16, 1978, the *Chico Enterprise Record* carried the story that Fairburn Hall had burned.

Fairburn Hall Fire in 1978.

Fairburn Hall circa 1916

Fairburn Hall was for many years an important part of Chico's social life as well as of the Match Factory. The employees had their own orchestra and amateur theatrical troupe and their dances, performances and receptions were well attended by the locals.

In 1916, three wells were drilled to supply water for the enlarged Match Factory and to provide irrigation to the orchards. The reservoir for these wells was turned into a swimming pool for the employees. It was reportedly very cold!



By 1918, night school classes in stenography, typing, English, mathematics, drawing, grammar, and penmanship were conducted at Fairburn Hall for employees.

Diamond was very generous with space and provided a tennis court for employees.

Tennis court next to the Match Factory

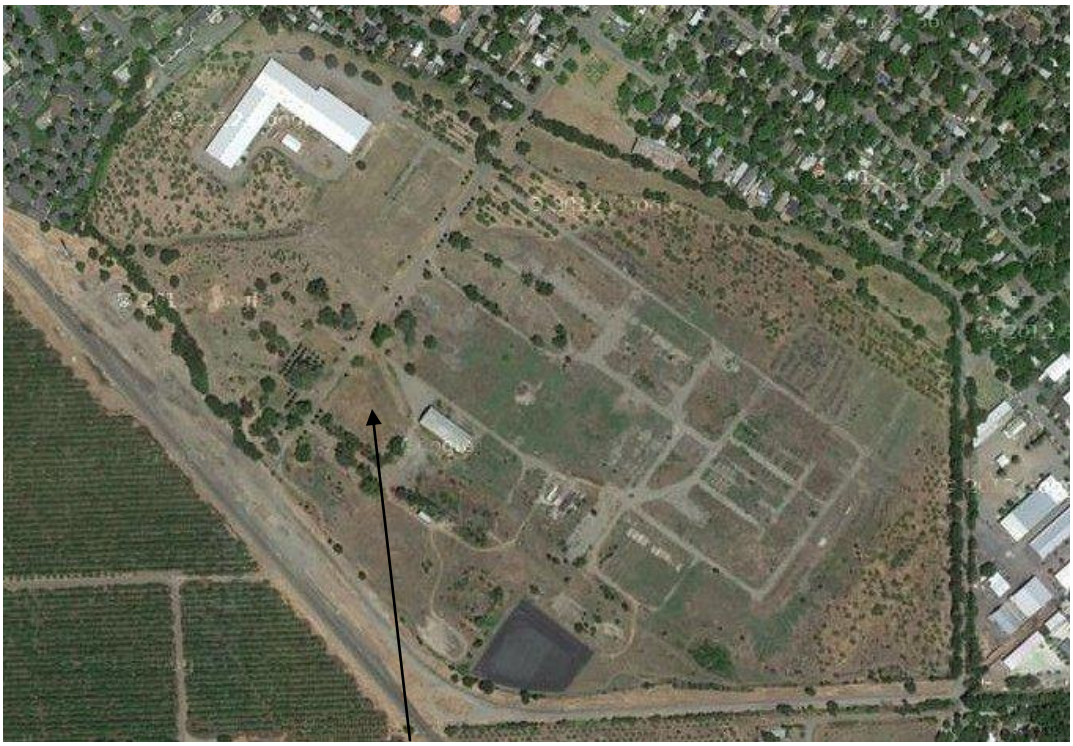
The Diamond Match Company band was organized at the Chico plant in 1935, when it was discovered that there were thirty-two musicians working at the plant. The band played at Company picnics, ball games and local concerts.

The Barber plant had a baseball diamond as early as 1906. In June of that year, the first formal plant baseball game was held when the finishers played the cutters. The

baseball diamond continued in use for many years. Diamond President, William A. Fairburn, was a baseball enthusiast and all of Diamond's plants had baseball teams. During the Fall of 1916, the Oshkosh plant team was brought to Barber to play the Match Factory team in a "Little World Series" play-off with President Fairburn in attendance.

A "Trolley League" was formed in 1913 which included the Woodland Oaks, Marysville Giants, Oroville Olives, Colusa Prune Pickers, Chico Diamonds and Brooke Realties of Sacramento. The circuit was named after the Sacramento Northern Railway which linked some of the towns of Willows, Marysville, Yuba City, Oroville, Gridley, and Chico. At that time, the team was known as the Diamonds as they were sponsored by the Diamond Match Company. Fans and players traveled to and from games by way of trolley cars. Oroville won the initial championship. The Diamonds finished in second place. The league ended in 1917.

The site of the baseball diamond is still detectable in the 2019 aerial view.

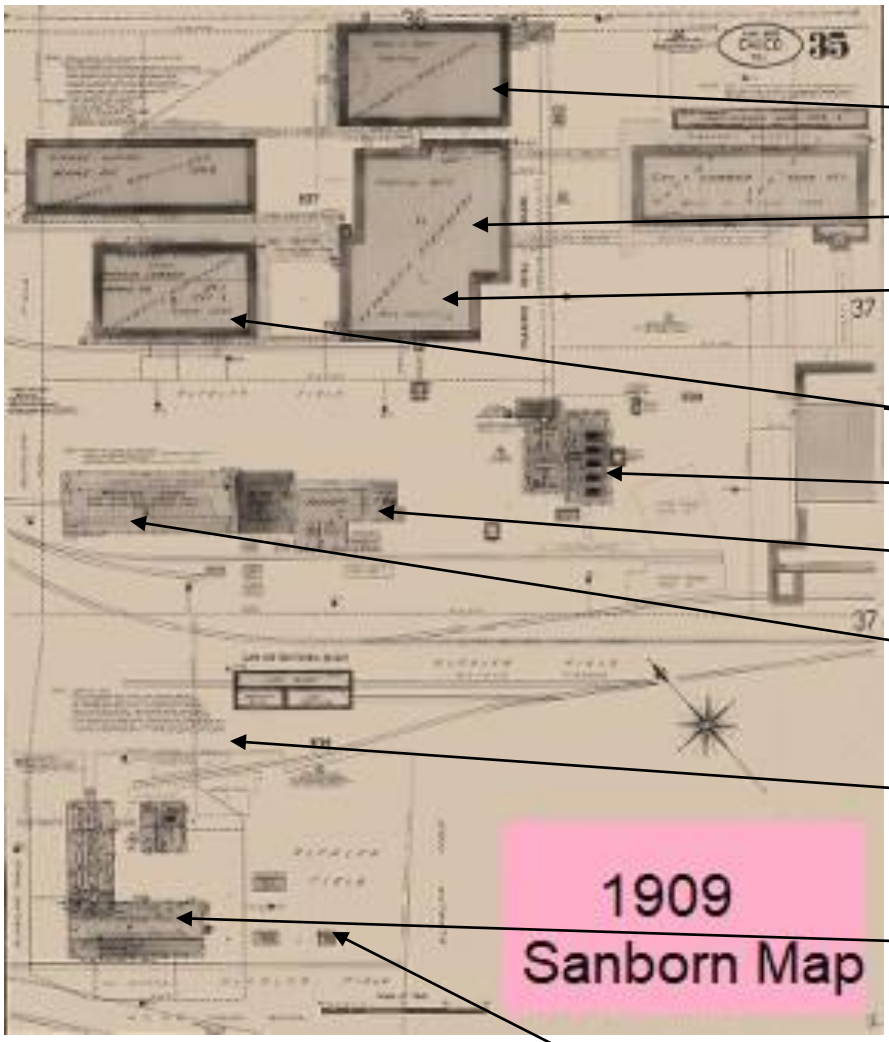


Site of the baseball diamond

(This information was provided by a personal communication with Jeff Greening who owned Barber Yard until his death in 2020)

XIII. Pictorial Chronology

1909 Sanborn Fire Map



Sash & Door

Planing Mill

Box Factory

Box & Shook Shed

Power House

Foundry

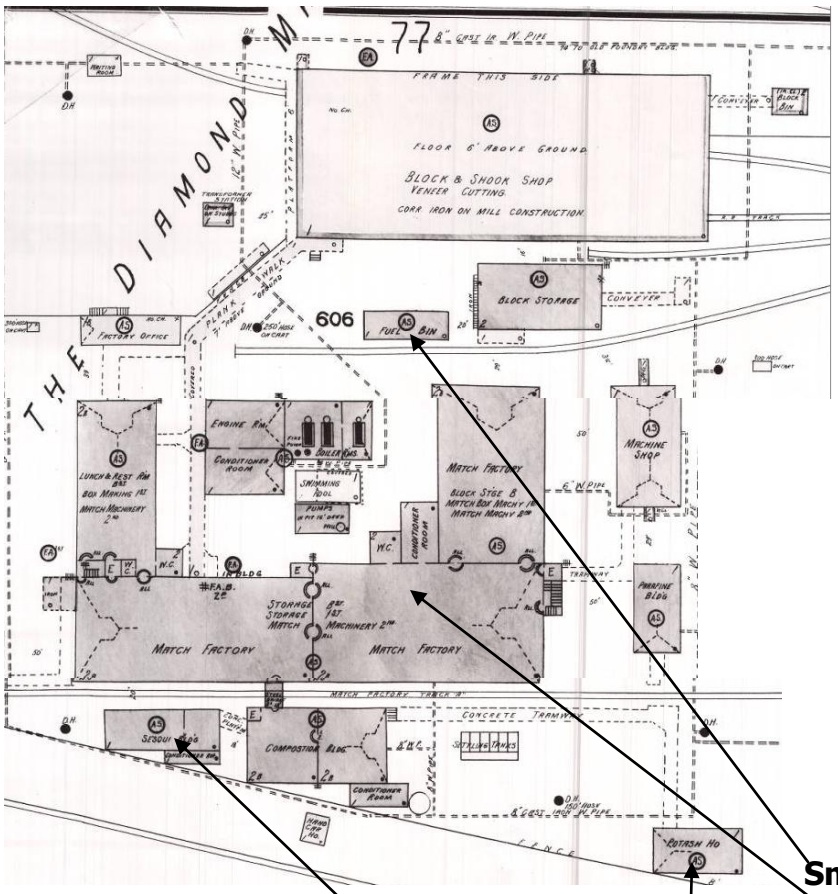
Engineering/Machine shop

No small storage Builiding

Match Factory

Map showing storage for white phosphorus

1921 Sanborn Fire Map



Small Storage Building

Expanded Match Factory

Inclusion of sesqui and chlorate storage facilities for SAW matches with no white phosphorus

Sesqui is an abbreviated term for tetraphosphorus trisulphide (P_4S_3) which was earlier called phosphorus **sesqui**sulphide. This is a component which was critical in the development of safety matches and the elimination of the use of the dangerous white phosphorus.

1927 Aerial View

Circa 1939 Aerial View

This is the picture which was used in the 1939 Fortune Magazine article which means it could be 1939 or before.

Aerial View of unknown date

Judging by the apparent newness of the "tee pee" burner, which was shown in 1949 Sanborn maps, this view was probably circa 1950.

1965 Aerial Views

A 1965 view showing an older burner compared to the above photo.

1965 view clearly showing the Small Storage Building

1994 Aerial View

After the 1984 sale of the Diamond National facilities to Louisiana Pacific, efforts to determine the status or fate of specific millwork activies or buildings were not pursued.

Between 1969 and 1970, Diamond added the Finished Wood Products division to the site and in 1975 the Match Factory closed. In 1984, Louisiana-Pacific Corporation purchased the site and continued to operate the Finished Wood Product Division and remanufacturing portion of the facility until 1989. In 1999, Mr. Jeff Greening purchased the site.

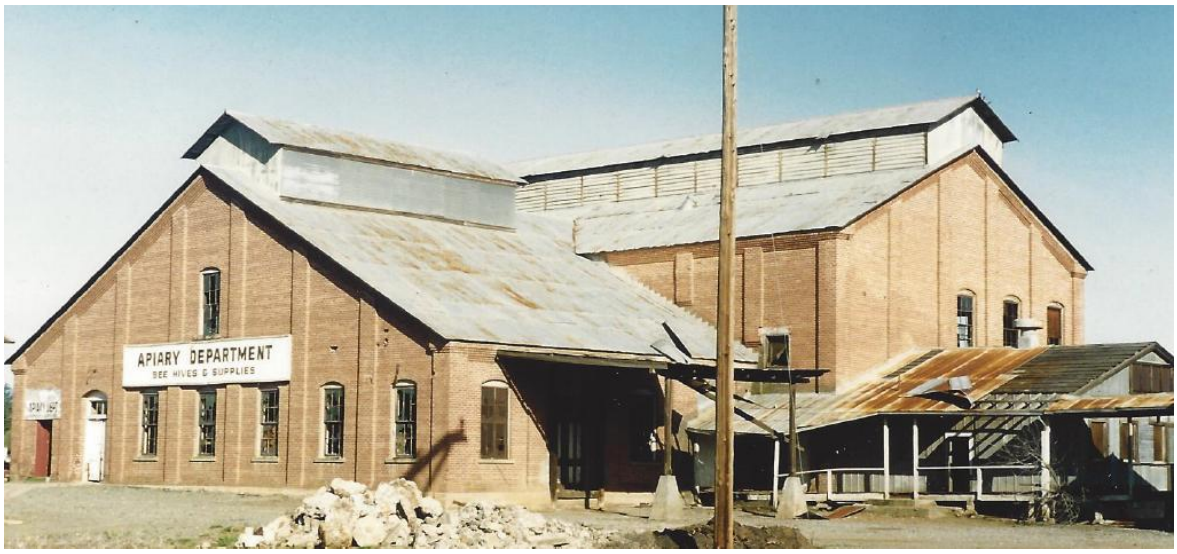
By 1994, the millworks buildings had been mostly removed and only the buildings shown below remained.

Original Engineering Building **Original Foundry** **Storage Building** **Warehouse** **Apiary**

1994 Ground Views

Old warehouse and small storage building

This is the Engineering Building with the Apiary in the Background.



Close up of the Apiary

2003 Ground View

A 2003 view of the Diamond Match warehouse that burned in 2004

2004 Aerial View

Below is a picture of the remnants of the Apiary which was destroyed on August 2, 2004, by a fire set by vandals.

2019 Views

Original Engineering Building **Small Storage Building**

Two Views of the Old Engineering Building

Inside view of the Engineering Building

Two Views of the small storage building

Inside View of the small storage building

XIV. Barber Neighborhood and Houses (Diamond Match Houses)

The **Barber Neighborhood** is a working class residential neighborhood in Chico, California, generally south of Little Chico Creek and west of Park Avenue. It was incorporated into the city in 1918. The Barber Neighborhood Association represents the interests of the neighborhood to the community. This neighborhood was originally the settlement of **Barber, California.** The houses were built to house the employees of the adjacent Diamond Match Factory. The neighborhood was named after Ohio Columbus Barber, president of the Diamond Match Company. Today, the area is entirely within the city limits of Chico, and the Diamond Match property is designated for a future development called Barber Yard.

While most Diamond Match Company buildings have disappeared because of time and fire, the houses built for its executives continue to stand tall.

Houses constructed by Diamond Match in the early 1900's were designed according to the person's hierarchy in the Company. As a result, the Barber Neighborhood has some of the most important and historic homes in Chico.

Four houses along Broadway near 14th and 15th Streets are considered to be "Diamond Match houses," according to the City's Historic Resource Inventory. Each house gives a striking impression of what upper-middle-class life was like in the early 20th century.

One of the biggest houses still standing was made for the first Pacific Manager for Diamond Match, **Fred M. Clough.** Noted architect Julia Morgan made some alterations to the home at 1384 Broadway in the early 1920's.There are five rooms on the bottom floor and four bedrooms on the top. The chimney was made from Chico founder John Bidwell's bricks, she said. Each brick is oddly shaped and bulgy. Spanish tile and a fountain adorn the sunroom, and the light fixtures on the wall and ceiling are the original ones.

Across the street from Clough's home is a house built for his daughter and son-in-law, **William Perley.** The large white home on 1408 Broadway is historically known as the **Perley Home.** The Perleys lived there from 1906 to 1917. After he and his wife moved away, an Episcopalian priest named Walker M. Gage bought the home. The home was empty for about six years until Lloyd M. Cook bought it in 1940.

About a block down from the Perley Home, a Diamond Match manager built a house at 1518 Broadway that is now known as the **Finnel House**. The manager sold the home to livestock ranchers James and Isabel Finnel. Over the years, there have been alterations to the house, including stairs that lead to the attic, as well as the removal of an interior staircase. The house, garage and servants' cottages have been converted into apartments.

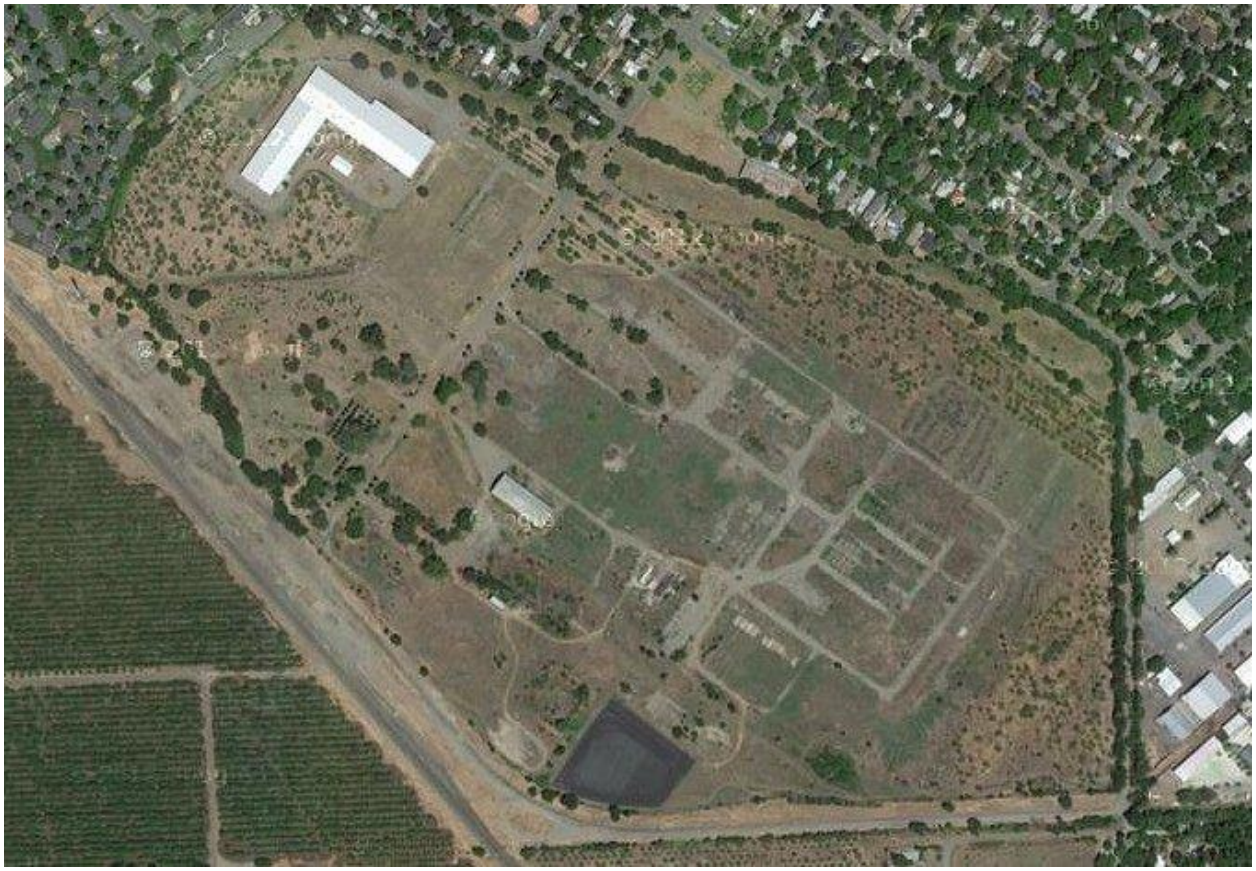
At 1454 Broadway stands a home that was built around 1907 for **J.E. Hibbert,** head filer at the company's Stirling City lumber mill. It is a large, light brown, two-story structure that remains in good condition.

There are several other historic homes in the Barber Neighborhood which are not considered "Diamond Match" houses.

The interested reader is referred to Chico Historic Resources Inventory for additional information on this subject (please see the References section at the end of in this document).

XV. Barber Yard Development Plans

Shown below is what Barber Yard looked like in 2019 and was unchanged in 2021.



Barber Yard Projects

In 1903, the Diamond Match Company bought a large parcel of farmland just south of Chico to build a match factory compound and an adjacent neighborhood to house its employees and their families. This company town was named Barber.

Over 100 years later, plans were being developed to create another largely self-contained village on part of the approximately 138 acres that formerly housed the Diamond plant, and a key goal was to incorporate the remaining Diamond buildings, which were historically valuable, into the project design. Unfortunately, two of the historic buildings were destroyed by fire in 2004.

In approximately 2004, the developer, a limited partnership called Barber Land headed by **Jeff Greening**, expected to present the City with a formal proposal for an ambitious, visionary project called Barber Yard that would create a new, mixed-use neighborhood on what has long been the largest piece of close-in developable land in the city.

The project was planned to create just under 1,200 living units in a combination of single-family homes, town houses and apartments, and loft-style units. There would have been a park-like town center anchored around a central square, called Barber Square, as well as a small "downtown" area with shops, restaurants, coffee houses and a small grocery store. A ball field and a soccer field as well as a 2-mile-long greenbelt path around the perimeter of the project was planned.

In keeping with the historic nature of the site, plans called for a "neo-traditionalist" approach to street patterns and housing styles. Streets would be laid out in a grid pattern that lines up with the existing streets, and the single-family houses would be bungalows with garages in back, accessible through alleyways. Such designs make street fronts more attractive and encourage walking.

The townhouses and apartments in the central part of the project would front a pedestrian-friendly downtown core with shops and restaurants on the ground floor. The two- and three-story loft residences—like townhouses but with a more "unfinished, raw, industrial look," said architect John Shreve—would be above the storefronts and also on the north side of the project.

In 2008, a southwest Chico neighborhood improvement plan was created and published.

As of 2019, the future development of this area was uncertain and was dependent on the economic and political actions of the Chico City Council and city management personnel.

By 2020, Jeff Greening had died and efforts to sell the property were pursued.

In August 2021, there was a newspaper announcement of a community meeting sponsored by the Gonzales Development Company to discuss development plans for Barber Yard. The Company is owned by **Dan Gonzales.** They hope to revitalize Barber Yard as an extension of the current Barber neighborhood with housing and "neighborhood amenities" like parks, trails and commercial use property. The Chico general plan indicates that the Barber Yard has room for 1096 apartments or condominiums as well as room for non-residential uses.

As of September 2021, there have been meetings with interested community members and more meetings are expected.

Barber Yard was designated in the Chico 2030 general plan as a Special Planning Area which will require specific plans for development. Zoning issues must be settled and an Environmental Impact Report completed before any construction could be started. If plans are approved, construction might be able to be started by 2023.

XVI. Main Reference Sources

Unfortunately judicious care in noting sources of specific information was not done. Therefore, what appear below are simply the primary sources of information which was used for the compilation of this document.

1. W. H. Hutchinson: California Investment A History of Diamond Match Company in California (1957)
   Available at the Chico Heritage Association and at CSU, Chico Meriam Library Special Collections.

2. Kent Stevens: Matches, Flumes & Rails: The Diamond Match Company in the High Sierra, Trans-Anglo Books, 1977.

3. W. H. Hutchinson : California Heritage: A History of Lumbering in California
   Available at the Chico Heritage Association and

4. Various Diamond Match Files at the Chico Heritage Association

5. Stevens, Kent: The Historical Impact of diamond Match Company in Chico (1993).
   Available at the Chico Heritage Association

6. Fortune Magazine article on Diamond Match, May 1939 page 89.
   The Chico Heritage Association has a copy of the article.

7. **Sanborn Fire Maps**: Fire Insurance maps are rich in historical information. Originally drawn to assess fire insurance liabilities for any property within city limits, these maps are more frequently used in preservation and restoration efforts. The maps are hand-drawn lithographs, usually include an index of streets and addresses, which show street names, property boundaries, the shapes of structures, identifying what materials buildings are made of, building uses, buildings proximity to fire hydrants, and the location of water and gas mains. These were accessed online through the Meriam Library Special Collection at CSU, Chico.

8. Various files and photos from CSU, Chico Meriam Library Special Collections.

9. Historic Resources Inventory-City of Chico
   https://chico.ca.us/post/historic-resources-
In particular information on Diamond Match Houses and the currently existing small storage building (labeled "carpenter shop" or "Match Block Storage Building" can be found at
https://chico.ca.us/sites/main/files/file-attachments/5_south_of_little_chico_creek.pdf?1577752069

10. I. E. Brinks, Diamond Match Retail Stores.
Available from CSU, Chico Meriam Library Special Collections.