

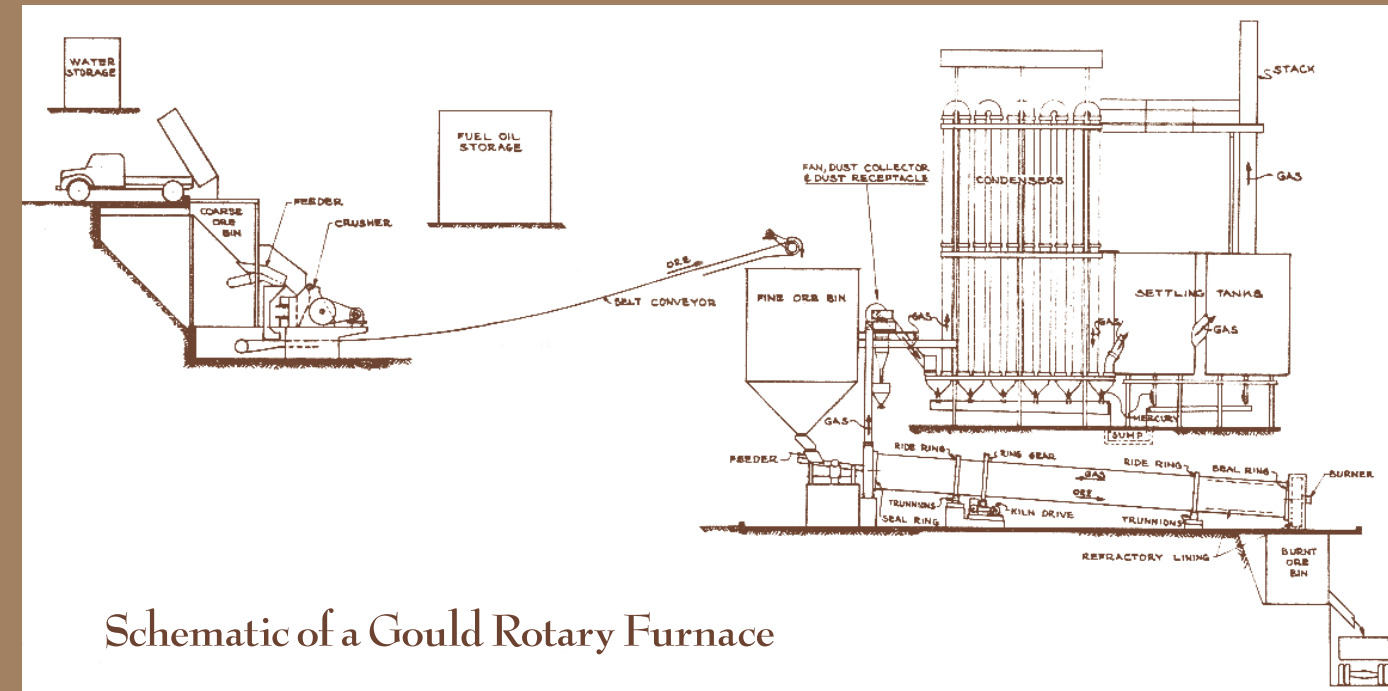
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MINE HILL

ROTARY FURNACE BRINGS NEW ALMADEN INTO THE 20TH CENTURY

In 1939, engineer H.W. Gould designed and built the first rotary furnace. The onset of World War II created a new interest in mercury because of its use in munitions. Gordon I. Gould, H.W.'s son, first showed a model for this continuous furnace at the 1939 World's Fair in San Francisco.



Schematic of a Gould Rotary Furnace

The rotary furnace worked by tumbling crushed ore down a pipe heated to 1,700 degrees Fahrenheit. Two gases were released, sulphur and mercury. The sulphur was allowed to pass through the rest of the system, while the mercury vapors were cooled within the condenser pipes. These vapors turned into liquid mercury and dripped down the pipes into buckets. The buckets were then dumped onto a table filled with lime powder, which absorbed any water or impurities from the liquid mercury. Seventy-six pounds of mercury were then poured into an iron flask and sealed for sale.



A 100-ton rotary furnace and condensing system was installed here in 1940. The furnace proved too large and this 50-ton furnace, which worked best when processing about 35 tons of ore, replaced the first one. Gould's furnace technology brought the New Almaden Mines into the 20th century, winning worldwide recognition for productivity. This furnace was used until 1976, when the property was purchased by the Santa Clara County Parks Department.



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