

An Epoch in the Art of Drying White Lead

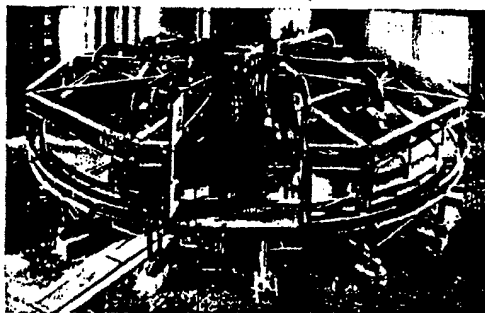
THE art of drying white lead by the pan method has always been unsatisfactory to the manufacturers of such product; mainly due to the effect such process has on the men operating it. In consequence, no expense has been spared to interest the best thought in the art of drying, with the view to developing some mechanical means which would eliminate the danger to the men occupied in such work. However, the past record shows repeated failures, covering more than thirty years, by the various manufacturers of white lead, although they were willing to stand any expense to overcome the difficulty.

Drying experts were also lending their best efforts in trying to solve the problem, but the combined efforts of those interested did not bring about the desired results. With such precedent on record, our Company became interested in the Annular White Lead Drier invented by W. R. Macklind, Manager of the Engineering and Construction Department, and commissioned him to make his ideas facts. The result of which is the wonderful Macklind Annular Drier now

operating at The Ozark Smelting and Mining Company's Plant, Coffeyville, Kan.

The machine solves the problem of drying white lead pulp by doing the work continuously and dustlessly, which means it is not only a great mechanical achievement, but a great achievement in protecting the health of white lead drying

operators, inasmuch as it offers complete protection to the men employed in such work. This fact is a marvelous step forward in the art of



The Macklind Annular White Lead Drier

dry-lead manufacture and is sufficient to commend the Annular Drier to the world.

The machine is also of importance, owing to the fact that it cuts the cost of drying white lead in two, which is another great achievement in the reduction of manufacturing costs. Further its ability to dry continuously as compared with dry pan intermittent drying is a vast improvement.

The development of the Annular Drier was made possible by patience and confidence, to say nothing of the Company's willingness to stand the necessary outlay. However, our officials are happy in knowing that they have made it

possible for Mr. Macklind to give to the world a machine for the drying of white lead which has been sought for, ever since Old Dutch White Lead was made, and further

that the positive of the r of whit

The Why and How of O

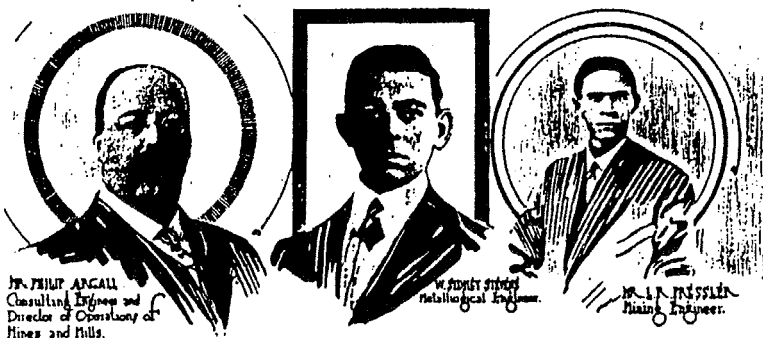
By W. R. Ashbrook

UPON becoming connected with our Company nearly ten years ago, my first impression was one of admiration for its big, fine, broad, honest policy, and the enthusiasm, optimism, and progressiveness of its leaders who seemed always to have our code of principles in mind in the development of our Company to the splendid commanding position it now occupies.

Our growth in the Southwest in the past ten years has had no parallel among our competitors. I have witnessed the addition of a number of territories, a large increase in our force of Traveling Representatives, the opening of new branches, new warehouses and retail stores. The familiar S-W Agency Sign, which a few years ago was counted by hundreds in the Southwest, is now numbered in thousands. This expansion has not come by chance but is the result of an honest, aggressive policy employed in the distribution and sale of high quality products, by

high-gr attracted that s business Since nction enjoyed faction ment, fidence FQ t our ra offer: ples— of yo I have witnessed the addition of a firmly an era our Co believe portun policy You a morrow ment portun ment valuat greater in the

COURAGE is the thing which enable task with ease; NERVE is the thing which it when he's scared to death.—Tips.



MR. PHILIP ARGALL
Consulting Engineer and
Director of Operations of
Mines and Mills.

MR. W. SYDNEY STEVENS
Metallurgical Engineer.

MR. L. J. PRESSLER
Mining Engineer.

The Men Who Do Things

ABOVE are the three gentlemen who are directly responsible for the operation of our mine and mill equipment.

Mr. Philip Argall is consulting engineer and director of operations of our mines and mill in Magdalena. He was born in England and spent the greater part of his mature years in the West, having come to this country shortly after graduating from the leading Mining Engineering School of England.

He first located in Leadville, Colo., in the early days, where in addition to developing many mines, several of which are still good producers, he has also the distinction of having designed and constructed the first and only smelter in that district. He has since been active in various mining ventures in the West and has been responsible for numerous successful operations in this line.

One of his most noted works is in connection with Strattons Independence, Limited, which is a gold and silver mine and mill in Victor, Colo., just out of the famous Crip-

ple Creek gold camp. This mine had been a great producer, but was considered completely worked out and there was lying on the waste dump a million tons of "worthless refuse." By the operation of what is known as the "Argall Process of Cyanidation," in connection with a marvelous piece of concentrating engineering, this waste was treated at a remarkably low cost of \$1.32 per ton, against an estimate, before the plant was constructed, of \$1.34. The dump waste contained a total value in gold of only \$3 per ton. With low treatment cost and excellent recoveries the operation was a success and paid for the installation many times over. The treatment of this waste dump was a remarkably low cost and a successful recovery of the gold and silver content of the waste was a great achievement in the metallurgical history of ore dressing.

Our mill at Magdalena, designed and constructed by Mr. Argall, is a step in advance of Strattons Independence, Mr. Argall having put into this new in-

stallation all the good mechanical features used at Strattons with the added advantage of experience gained, and with a man of his ability and experience directing its operations, no fears are felt concerning its success.

Experience thus far proves the wisdom in the choice of Mr. Argall as Director of Operations, for they have already exceeded expectations and success is assured.

After having tried many processes, together with the expert knowledge of a number of leading metallurgists, all with unsatisfactory results, the Company was finally fortunate in securing the services of Mr. W. Sydney Stevens, inventor of the special treating process in our new mill. Mr. Stevens, like Mr. Argall, is an Englishman and a graduate of the Cornwall Metalliferous School of Mines, and afterwards, took a course in the Royal School of Mines, London. On the completion of this course he was appointed on the staff of Penyanze Mining School, a branch of the Metalliferous School, and there lectured and demonstrated in Metallurgy, Chemistry, Mineralogy, Mine Surveying, and allied subjects for three years.

Following this, Mr. Stevens had experience in various milling processes and research work in Australia, Russia and England. After meeting with success in inventing a process for the treatment of our complex ores, as a fitting climax Mr. Stevens was promoted to the position of Superintendent of the

Milling Department. These pages are ready to accept the knowledge and energy, we have things in the

Mr. L. J. Pressler, production of these pages, a brilliant article in the issue of 7 associates, technical man, the Colorado Golden, the highest he had produced gold camp field, Nevada, formia, and our Company Mining Engineer, and since climb to the end of

Mr. Pressler, a professional engineer, having some of the In addition Engineer the Mining Pressler's tire office Constant and improvement, stockholders' establishment office and summary

The first step in progress is discovery

Our Mines and Mill at Magdalena, New Mexico

DUE to its geographical location and the indirect relations to the manufacture of paints and varnishes, none other of The Sherwin-Williams Co. possession is so little known to the general staff as that of the mines and ore concentrating mill at Magdalena, New Mexico.

The space available does not permit of our treating at this time, the details of the mining and milling operations, and it is our purpose to give only a very general outline together with an introduction of our expert mining and milling staff.

The mines are situated on the western slope of the Magdalena range of mountains, Socorro County, New Mexico, near the little mining town of Kelly, which is located on a spur of the A. T. & S. F. Ry., joining the main line at Socorro, 26 miles distant. The mining claims are twenty-three in number covering approximately 227½ acres. In connection with these the Company owns 245 acres and has a lease on 320 acres of non-mineral claims. These are in an altitude of from 7000 to 8000 feet above sea-level and are hemmed in on three sides by high mountains forming what is known in the parlance of the West as a "rincon." These mountains protect the concentrating mill, Company residences, office, corrals, etc., which are located on the non-mineral ground—from the winds, which are very severe in that part of the country at certain times of the year.

The officers' residence, known

far and wide in that part of the country as the "Ozark Club," is the finest building of its kind for many miles around, and has in connection, and of special importance in an arid country, a deep well of pure, sweet water—a rare possession.

The Company mines are known as the famous Graphic group, to which has been added a number of new locations. Since 1850 this group of mines has produced large and valuable quantities of silver and lead, which in the early days was smelted in old Mexican style adobe furnaces, and later in an up-to-date silver-lead smeltery. Smelting at our mines has now been abandoned and in its place the ore is given a preliminary treatment known as "concentration," or separation, and is then shipped to smelteries at other points where refining can be done at a lower cost, due to cheaper fuel, more abundant labor, etc. In the old days the bullion was teamed to St. Louis by ox-power, passing over the romantic Santa Fe trail, and it was necessary in those days to form wagon-trains of twenty or thirty wagons under heavily armed guards as a protection against the Indians, as the trail passed through the very heart of the Apache country.

As explained in Mr. L. P. Pressler's able article published in the December issue of *The Chameleon* of 1911, the immense ore bodies which we have uncovered are of a very complex nature, and mixed metals are rarely of great value in their original state for the reason

that the lead-silver smelteries will not only not pay for zinc but penalize it, and the zinc smelteries, on the other hand, penalize for lead. There are rare exceptions to this statement, such as our smeltery at Coffeyville, Kansas, where the combined metals may be used by our special process, in the manufacture of a high-grade leaded zinc oxide.

For the past several years, the Company's energies have been devoted primarily to the development of the ore bodies, with a view to having a reserve available at all times, and in an effort to determine the best method of treating the ore so as to eliminate as much as possible of the valueless material, thus saving freight from mines to smeltery, and to the separation of the various values with a view to being paid the highest price for all.

Our development of the mines consists of nearly 25,000 feet of tunnels, drifts, cross-cuts, raises, winzes, and shafts, and the uncovering of many hundreds of thousands of tons of ore, and new discoveries are being made at frequent intervals, the latest being a copper stope which we are just now entering. The main values of the large body are zinc and lead, with lesser quantities of silver, copper, and occasionally, gold.

In our search for a satisfactory process for treating this very complex ore we sent samples for tests by practically every known method for the treatment of this class of ore, none of which were successful. We, therefore, launched into original research on our own accord, and for this purpose secured the services of the most expert mining,

milling, and metallurgical obtainable. We have made and the finishing process have, is due to a W. Sydney Stevens was accomplished and a half of the and conscientious of Mr. Stevens.

The design of the concentrating tramway is the mining and metallurgical Mr. Philip Argall & Sons, Inc.

While some used in our process make a considerable invention and patent, while the gall, while the gall is all of special cable to the tramway.

The very best type of material, rendered durable and in

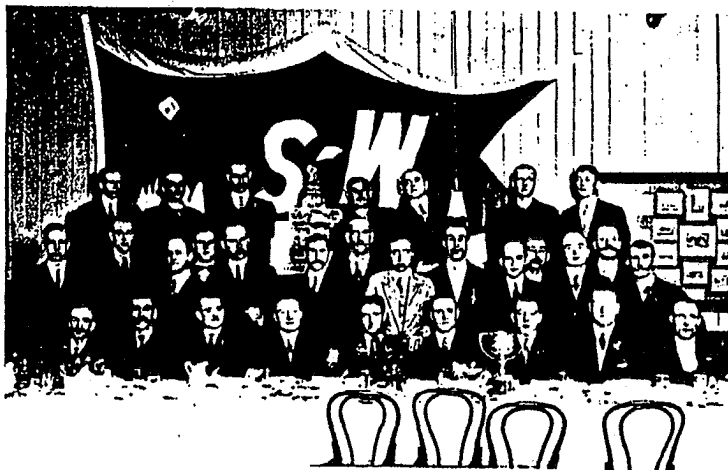
Our process of treating the ore is known as the "Stevens System," which is being broken in by gravity into the chutes, st

mining cars, motor" (horse-power) portal and dumped into feeders from these to From the coarse proceeds to the out over a pick-tain parts of are sorted out waste dump.

rial, containing a high enough percentage of metal to make any further special treatment unnecessary, is sent directly to the shipping bins, to go from there to the smelteries. The balance of the ore is dumped into buckets, and conveyed by aerial tram down over the mountains for over a mile, and dumped into the receiving ore bins there at the Mill. From these, the ore proceeds to the fine crushing machines by gravity, passing from there by conveyor to the concentrating and finishing departments, and from there, still by automatic conveyor to the shipping bins. Throughout the entire process, a shovel is unknown, except to pick up loose material here and there which may have dropped off the conveyors. The mill has a capacity of 150 tons per day, and is so

arranged that if necessary it can be worked to exceed that tonnage. There it stands, out in the wide, rough Western country, a veritable monument to the ingenuity of man; to the aggressiveness of our Company, and as a *successful completion* of a very difficult and perplexing undertaking.

From the shipping bins at the Mill the concentrated ore, after having been reduced from three tons of rough crude ore, to one of fine, high-grade concentrates, is loaded into cars and shipped to the Zinc and Lead Smelteries, where there is always a ready demand for such material. From these high-grade Zinc Concentrates is made pig Zinc, or Spelter, used commercially in many different trades and branches of life.



Newark Foremen's Club Members

Foremen's Club at

WITH this Expansion number of *The Chameleon* we are glad to announce that Newark now has a Foremen's Club, having just been recently organized. The minutes of the Club's regular monthly meetings have been coming to the Editor and show that good work is being done and that the meetings are being well attended.

At the first meeting held April 20th, Constitution and By-Laws were adopted and the following



WITH O FACTORY EXPER

Chicago

The factory at July 1st showed a slight increase in output over the same period last year, and the month of July indicates approximately the same business as we had the same period a year ago. We are in good shape as regards stock, maintaining a limit consistent with our giving prompt shipment on all orders received.

Cleveland

The Liquid Paint Department still remains busy. We have received an exceptionally large order for Metalastic from one of the Railways; also one for Mine, Mill and Factory Color and Bridge Paint.