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ARMCO

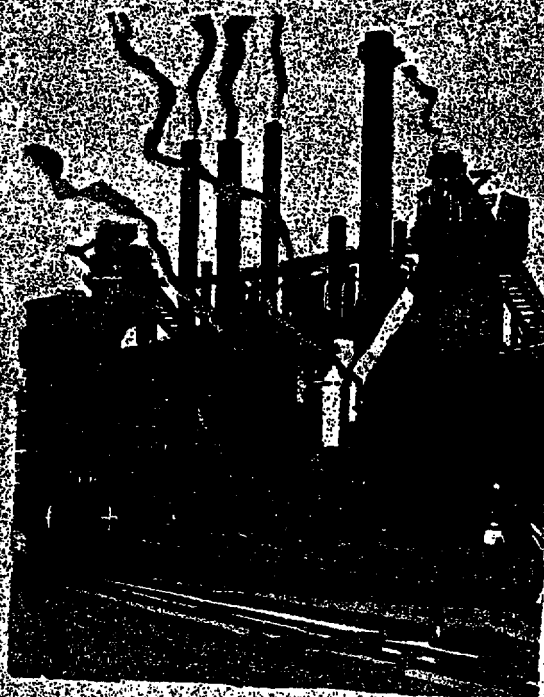
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VERTICAL FILE OHIO ROOM

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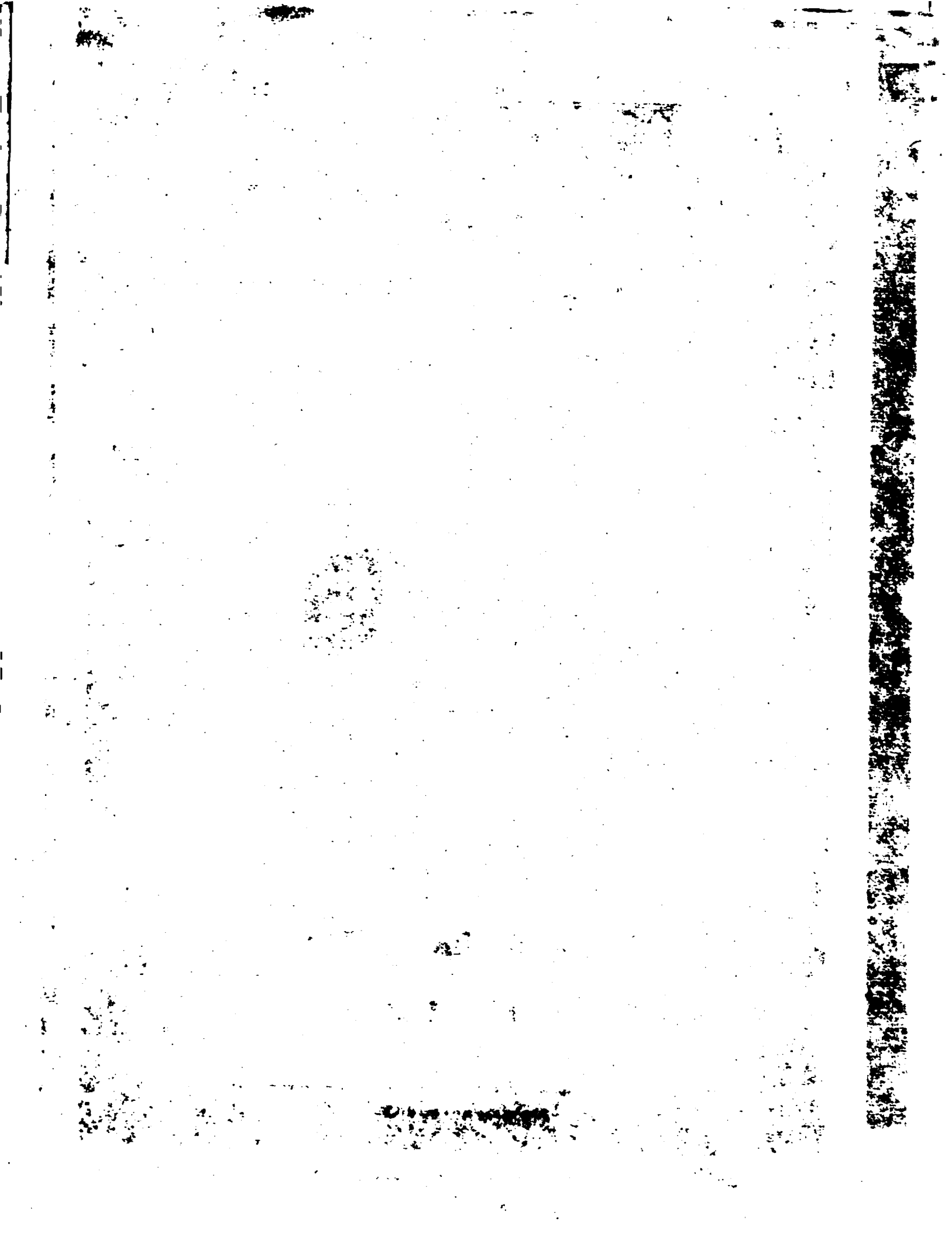
INTERESTING FACTS

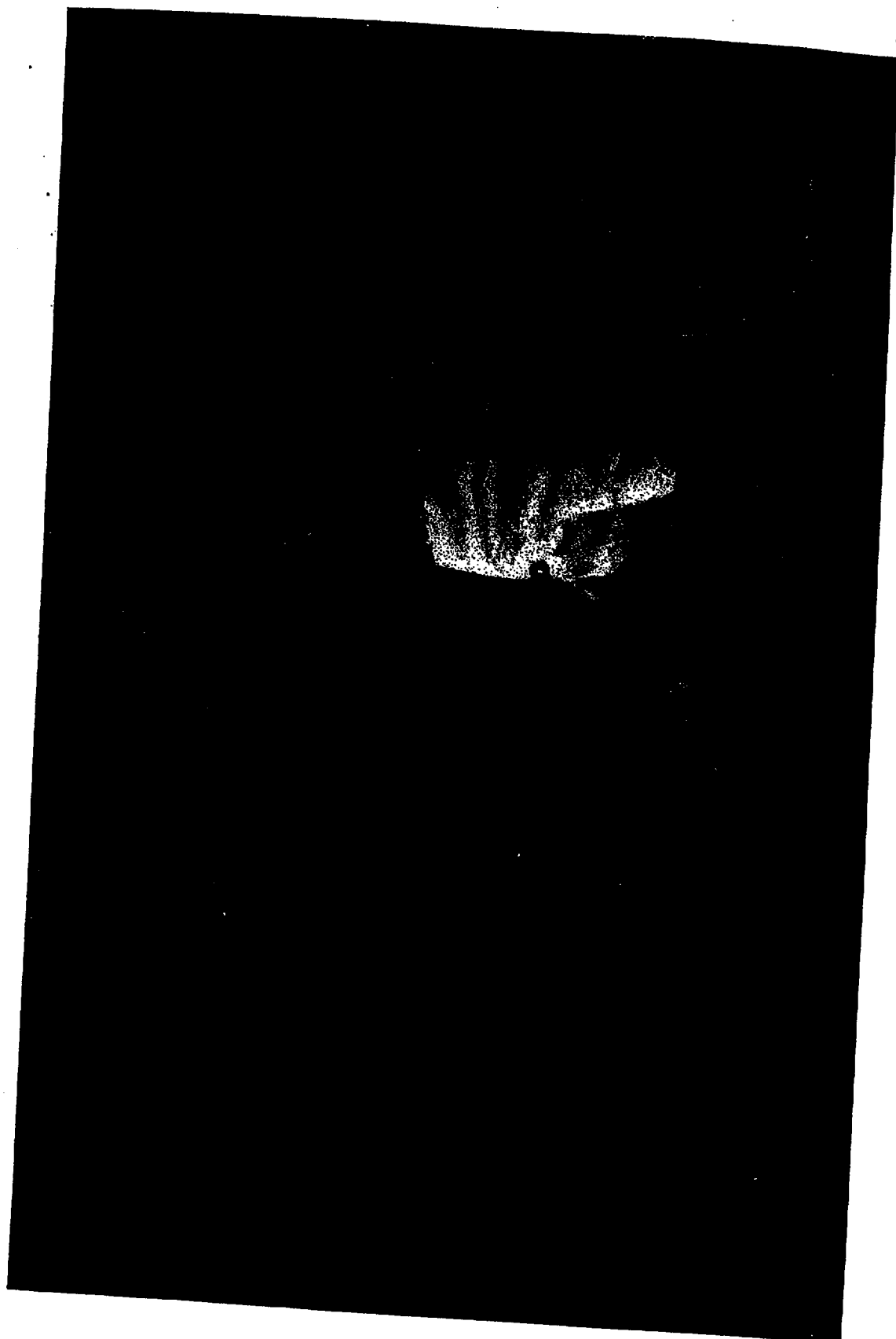


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"ARMCO"

- 1917 -

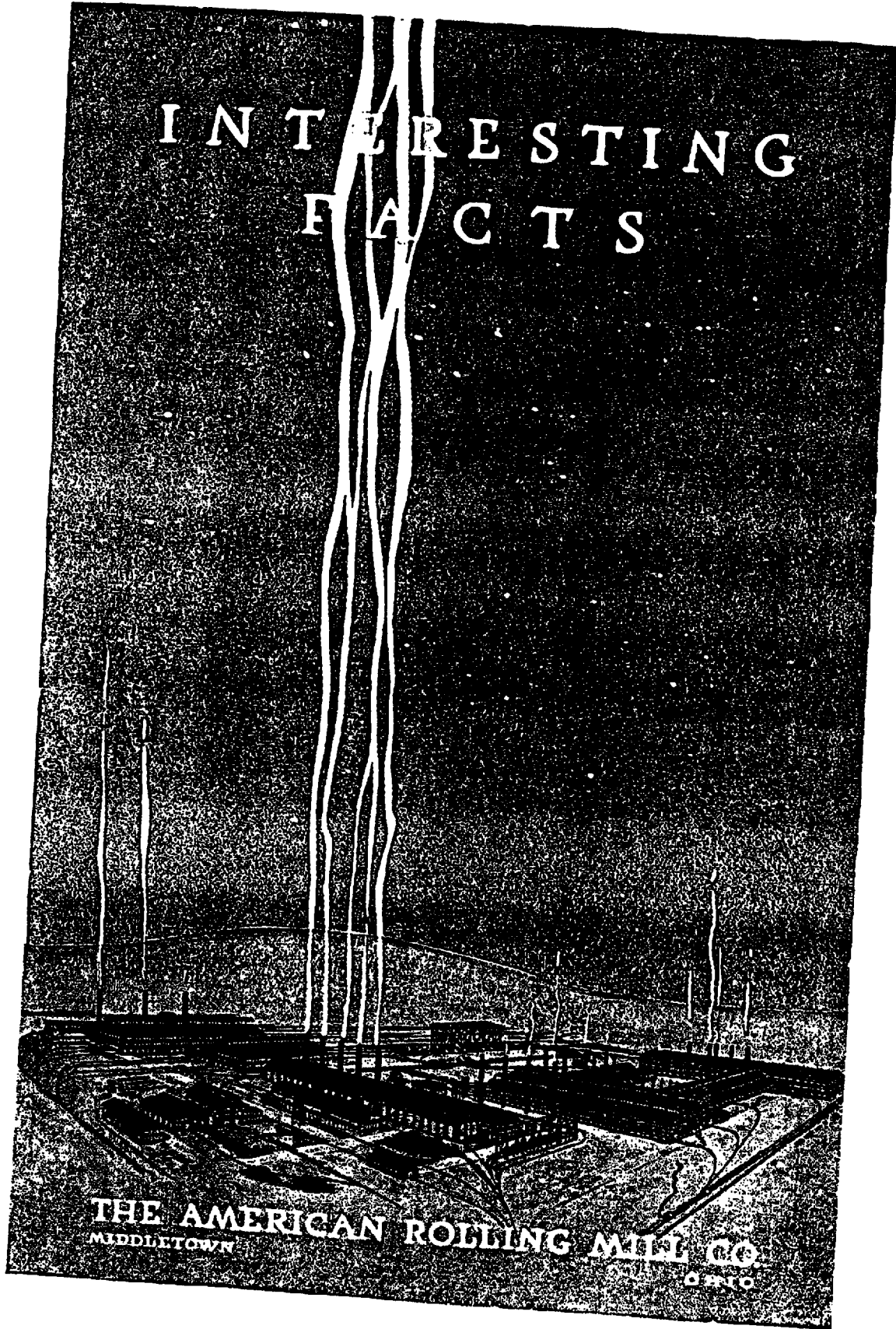




INTERESTING FACTS

THE AMERICAN POLLING METHOD

INTERESTING FACTS



THE AMERICAN ROLLING MILL CO.
MIDDLETOWN OHIO



The American Rolling Mill Co.

:: GENERAL OFFICES ::
MIDDLETOWN, OHIO, U. S. A.

:: PLANTS ::
EAST SIDE WORKS - - - MIDDLETOWN, O.
CENTRAL WORKS - - - MIDDLETOWN, O.
BLAST FURNACES - - - COLUMBUS, O.
ZANESVILLE WORKS - - - ZANESVILLE, O.
COAL MINES - - - MARTING, W. VA.
ORE MINES - - LAKE SUPERIOR DISTRICT

:: BRANCH OFFICES ::
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CHICAGO - - - - - PEOPLES GAS BLDG.
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:: FOREIGN OFFICES ::
THE AMERICAN ROLLING MILL CO.
GUINLE BLDG., CAIXA. POSTALE 19, RIO DE JANEIRO, BRAZIL, S. A.



THIS publication, descriptive of Armco activities, its Property and Plants, its Equipment and of the Human Element which gives it vital force, is printed in the interest of its Friends, its Customers and its Stockholders in order that they may have a better understanding as to just what it is, what it stands for, and what it is doing in the line of *industrial progress*, and in the *making of men* to guarantee its perpetuation.

Successful industry must today take into account many factors that have been entirely overlooked or ignored in the past. The measure of success in industry now depends upon a proper collaboration of property, plant, machinery and equipment, and of the Human Element required in its management and operation.

This booklet will fail of its purpose if it does not impress the reader with the fact that a complete co-ordination of these forces has been accomplished, and that *QUALITY* in plant and equipment, in product and in organization has been the controlling influence in Armco development.

That we may serve successfully, fairly and proportionately our Customers, our Stockholders and our loyal Armco men is our lasting ambition.

Geo. M. Moxley
President.



R. B. CARAHAN, JR.
Vice-President



JOS. H. FRANTZ
Vice-President



GEORGE H. CHARLS
Vice-President



GEORGE M. VERITY
President



C. R. HOOK
Vice-President



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THE AMERICAN ROLLING MILL COMPANY



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Asst. to Gen. Supt.



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Gen. Supt. of Works



J. H. WILSON
Asst. to Gen. Supt.



S. N. HOLSTEIN
Supt. Blooming & Bar Mills



S. C. FOLKS
Chief Clerk, Operating Divi.



CALVIN W. VERITY
Asst. to Gen. Supt.



D. EPPELSHEIMER
Chief Engineer



L. F. REINARTZ
Supt. O. H. Dept.



G. C. BROOMALL
Director Service Eng. Dept.



C. R. HUGHES
Supt. Prod. & Ship. Dept.



WM. STRINGHAM
Supt. Sheet Mills



E. H. YETTER
Supt. Galvanizing Dept.



C. B. PALMER
Supt. Annealing Dept.



S. E. ELDRIDGE
Special Agent



J. A. AUPPERLE
Chief Chemist



W. J. BECK
Director Research Dept.



R. B. DIMMICK
Chief Inspector



S. R. RECTANUS
Director of Employment



A. K. LEWIS
Director of Safety & Labor



T. J. KELLEY
Supt. Safety & Sanit. Depts.



FRED ERNST
Secretary Foreign Club



FRANK E. MORRIS
Safety Engineer



B. G. MARSHALL
Advertising Manager



W. H. MINTON
Office Manager



E. H. WUERDEMAN
Factory Manager



H. O. MILLER
Purchasing Agent



NEWMAN EBERSOLE
Asst. Purchasing Agent



F. M. BATEMAN
Chief Store-Keeper



B. D. HOWE
Asst. Pur. Agent Detroit Office



J. L. RONEY
General Traffic Manager



F. E. VIGOR
Asst. Traffic Manager



W. P. WOODS
Chief Cost Accountant



C. I. SPROWL
Manager Order Dept.



L. F. RAINE
Statistician



C. W. DAVIS
Assistant Treasurer



H. M. RICHARDS
Asst. Manager Order Dept.



W. R. PRICE
Chief Timekeeper



M. A. BRAWLEY
Mgr. Credit & Col. Depts.



F. B. MILHOAN
Chicago Office



G. F. AHLBRANDT
Asst. Manager of Sales



R. C. TODD
Detroit Office



W. W. SEBALD
New York Office



H. A. LORD
Pittsburgh Office



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E. A. EMERSON
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San Francisco, Calif.



GEO. W. DONOVAN
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M. W. TEBYRICA
Rio de Janeiro, Brazil.



C. C. LYND
Atlanta, Ga.



A. F. MURPHY
Supt. Zanesville Works



W. R. BARNETT
Asst. Supt. Zanesville Works



R. E. SHOEMAKER
Supt. Mech. & Elec. Depts.



E. C. HUNTSBERGER
Master Mechanic



GORDON GAGE
Chief Electrician



R. H. SWEETSER
Works Manager, Blast Furnace
Dept., Columbus, Ohio



A. P. McCLURE
Superintendent, Blast Furnace
Dept., Columbus, Ohio



NEILSON DENNY
Master Mechanic, Blast Furnace
Dept., Columbus, Ohio



J. C. MILLER
Gen'l. Manager, Blast Furnace
Division, Columbus, Ohio



C. B. McCALL
Cashier, Blast Furnace Division
Columbus, Ohio



C. J. NICHOLSON
Traffic Manager, Blast Furnace
Division, Columbus, Ohio



H. J. REESE
Auditor & Pur. Agent, Blast
Furn. Divi., Columbus, Ohio



DR. H. S. MURAT
Asst. Physician



DR. H. H. SMITH
Chief Surgeon



DR. C. L. EVANS
Asst. Physician



H. H. KNOWLES
Nurse



MISS F. E. MCGEE
Nurse



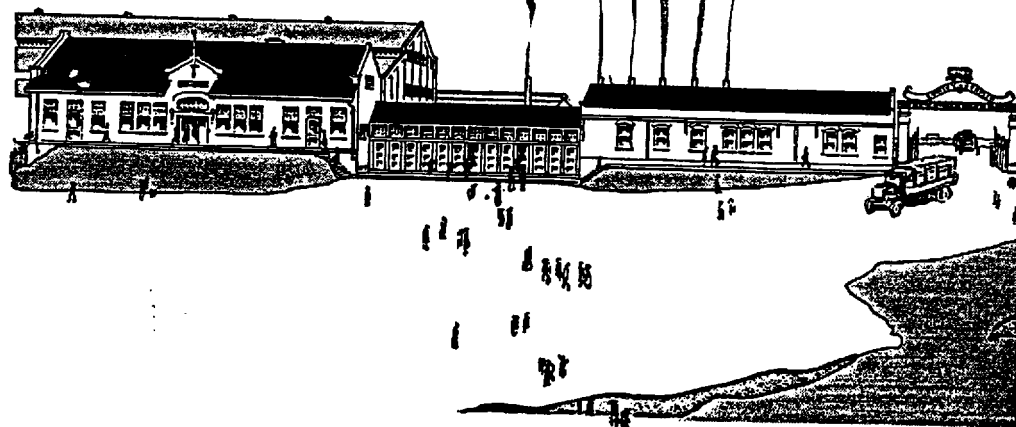
MISS A. I. LEONARD
Nurse



J. R. STURMAN
Clerk



DOCTOR H. H. SMITH AND STAFF.



Employment Bureau
and
Entrance East Side Works.



A BRIEF HISTORY of THE AMERICAN ROLLING MILL COMPANY

THE history of The American Rolling Mill Company at Middletown, Ohio, is one of the romances in modern industrial achievement.

Operations began in 1900 with one 30 ton Open Hearth furnace, a 20 inch Bar Mill, four Sheet Mills, a Galvanizing Plant, and a Factory for making roofing and other sheet metal products.

The company's specialty at that time was a high grade steel sheet, black or galvanized, and this commanded a price slightly higher than the market for standard products.

Expansion began at an early date and it was but a short time before two 50 ton furnaces were in operation. The buildings at the Central Works still show plainly the marks of successive additions.

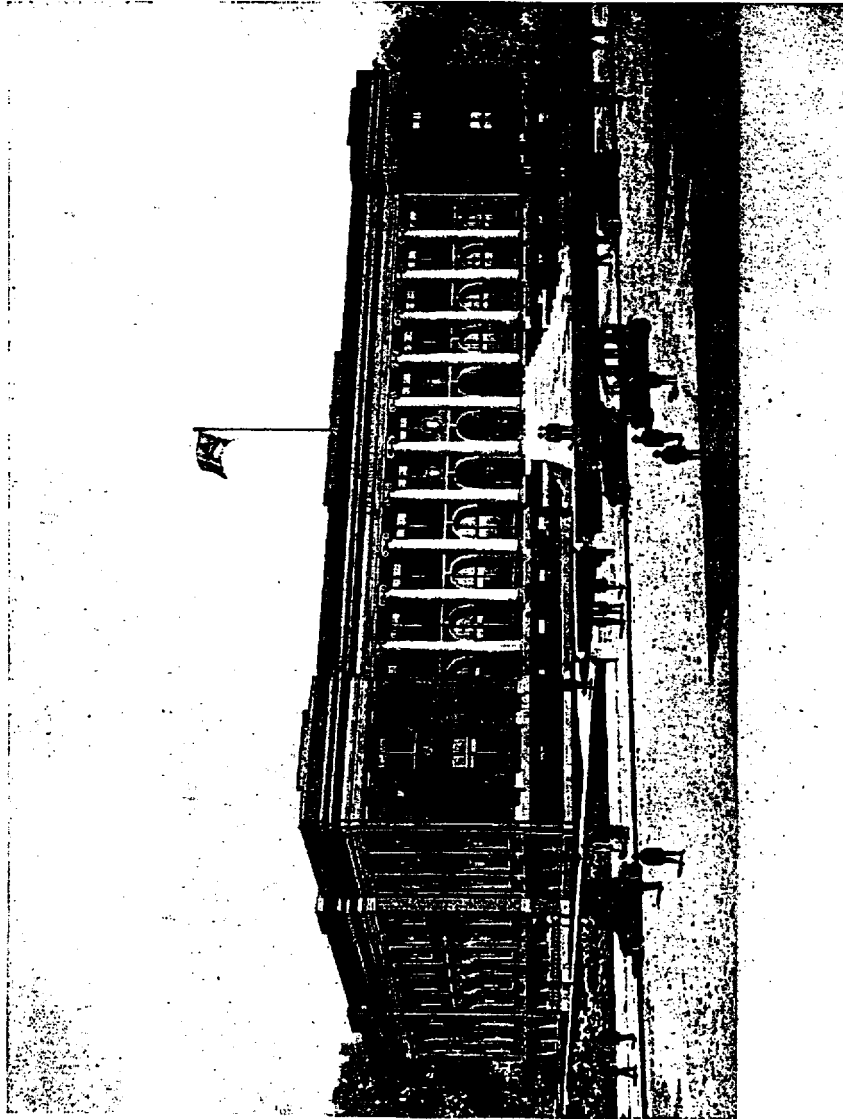
By 1906 several important specialties, for which the company was enjoying a constantly increasing demand, were being produced and others were in course of development, prominent among which was a material to better resist the influences of corrosion. Both Bessemer and Open Hearth Steel sheets had proven to be very short lived where the requirements of service were at all severe and something better was demanded.

The investigation of this important subject, and the development work which followed resulted in the production of what is now known as "ARMCO IRON", the purest iron ever made into sheets and plates on a commercial basis.

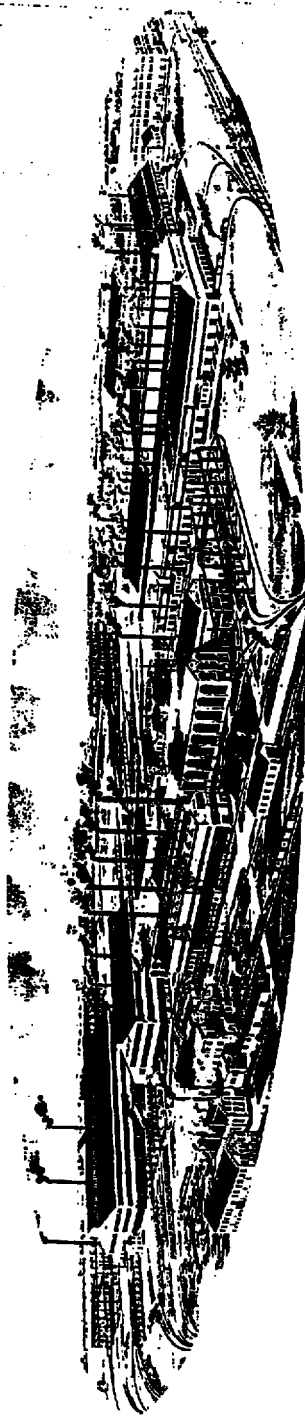
By 1910 the demand for "ARMCO (American Ingot) IRON" and for all of the company's special products had so increased that it was found necessary to again augment its manufacturing facilities.

CAPITALIZATION

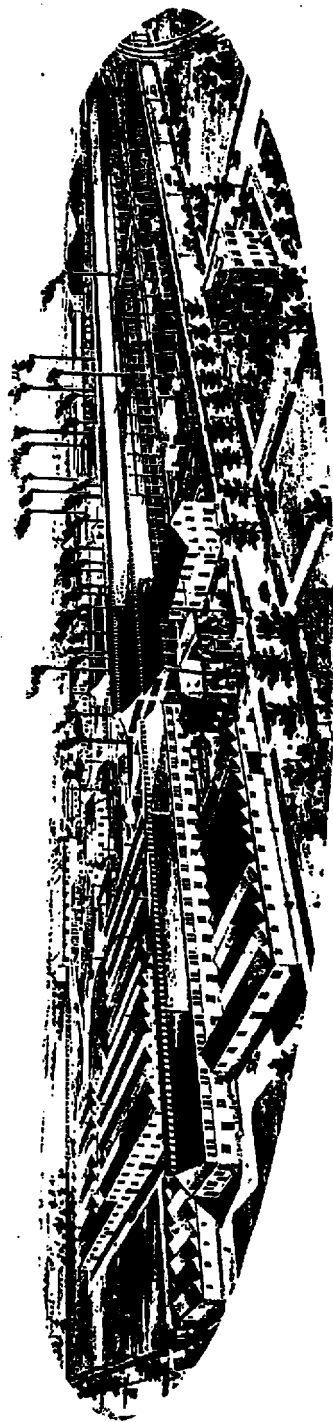
At the time of incorporation in 1900 the company's total investment was approximately four hundred and fifty thousand dollars. By 1905 its capital stock had been increased to one million four hundred thousand dollars. It was increased to six million dollars in June of 1911, and in October, 1913, it was made eight million eight hundred thousand dollars and in August, 1917, the capital stock was increased to *twenty-one million five hundred thousand dollars.*



Administration Building—Middletown, Ohio.



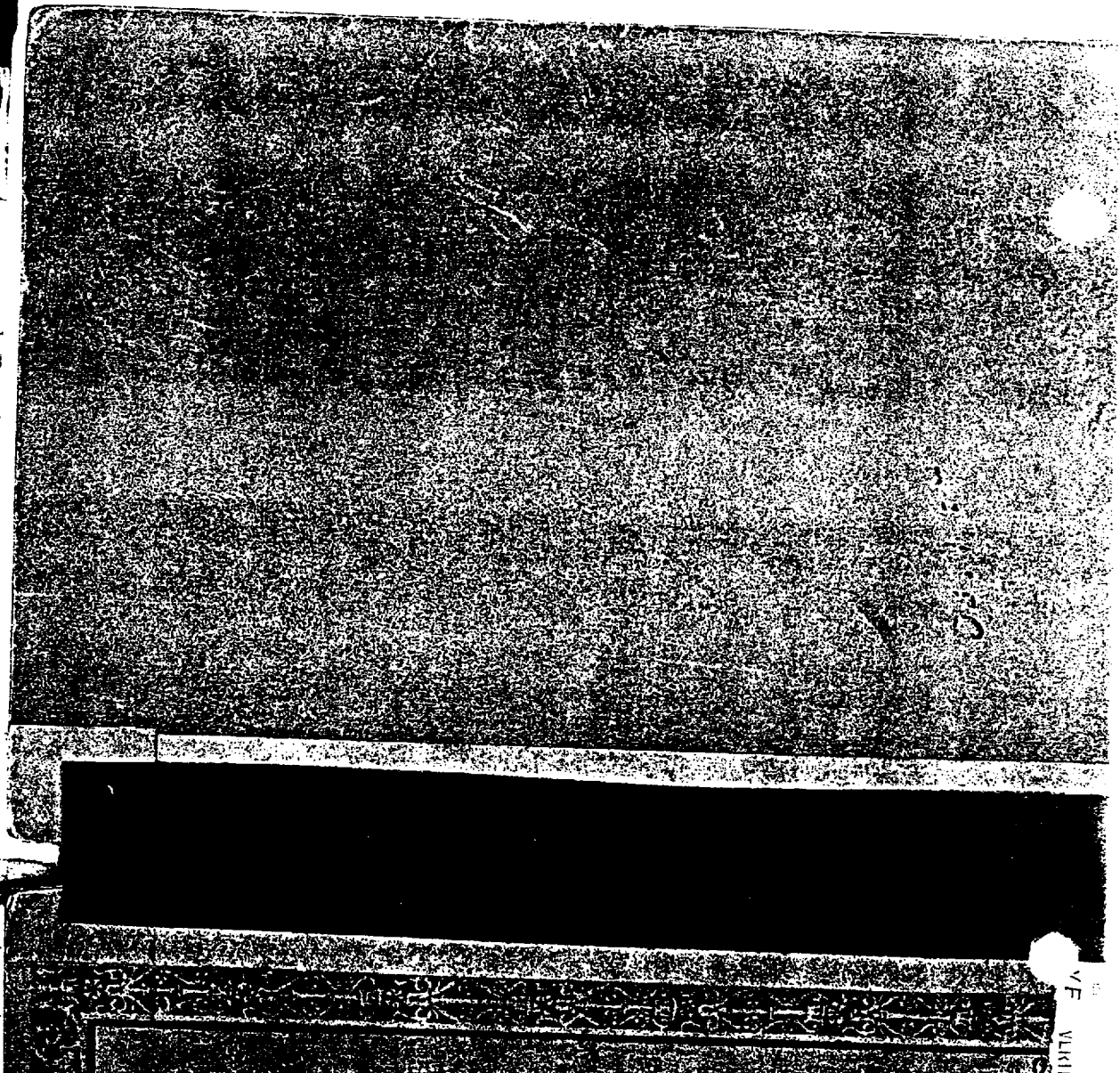
East Side Works, Middletown, Ohio



Central Works—Middletown, Ohio



Grand Prize—Panama-Pacific International Exposition



THE EAST SIDE WORKS

THE EAST SIDE WORKS

THE plan of what is now our East Side Works was conceived and work commenced during the year 1910. In the planning and construction of these new Works the most careful consideration was given to the demands and the possibilities of the future, as well as to the equipment of a mill equal to the exacting needs of the present. The very latest methods of construction were used, and the most modern machinery installed.

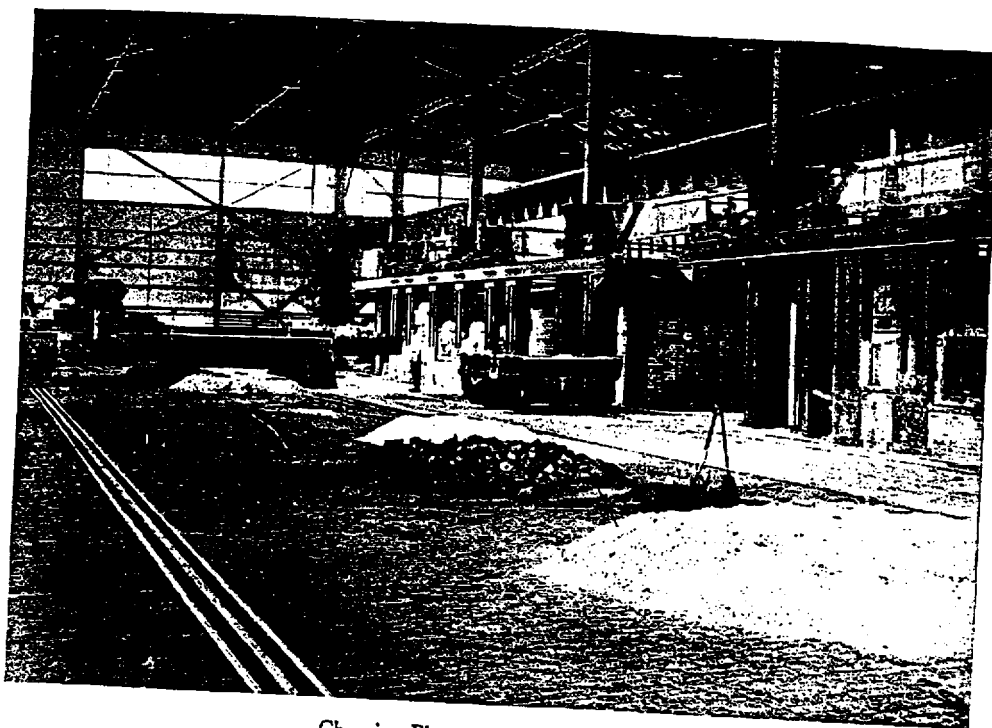
This plant stands almost in the center of a tract of land of about four hundred and ten acres, is bounded on one side by the Big Four Railway, and on another by the Pennsylvania Railway, while the Cincinnati, Hamilton & Dayton Railway is conveniently near, thus providing exceptional shipping facilities.

When the plans for new buildings were being prepared every consideration was given to the possibilities and need for future growth. As the plant now stands each building, representing a distinct department, can be extended almost indefinitely at one or both ends without disturbing the regular operation of that department, or without interfering with any other building or group of buildings, and without changing the original plan of operation.

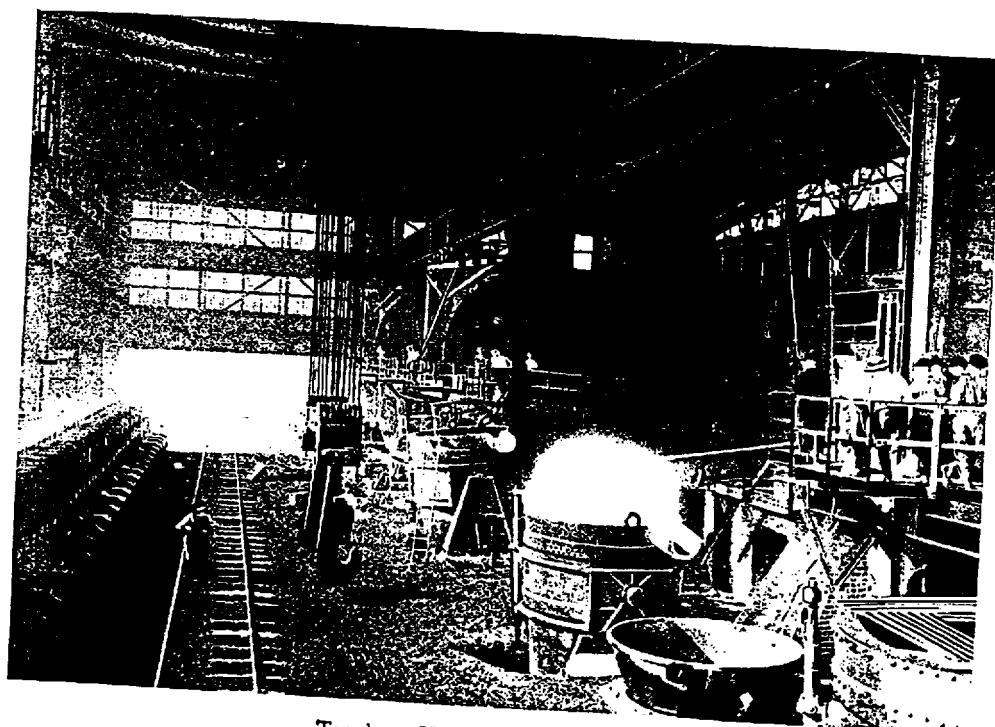
At present the Central Power Station, Boiler House, Machine, Blacksmith and Electrical Repair Shops, and the Store Room, which are the real heart of the plant, seem to be placed rather to one side, but in reality they are at the center of our "Greater Plant" of the future.

In the handling of a product as heavy as iron, and in which great expense is incurred to heat the material in order that it may be properly worked, the ease and quickness with which it may be transferred from one department to another is an important item. This has all been provided for, and as one follows out the line of progress of raw materials to the finished product, it can be seen how easily and efficiently the transfer from one department to another is made.

A short description of the processes involved, and of the different departments through which the product must pass, as we follow the method of manufacture, will be of interest.



Charging Floor—Open Hearth Dept.



Tapping a Heat—Open Hearth Dept.

THE EAST SIDE WORKS



OPEN HEARTH DEPARTMENT—EAST SIDE WORKS

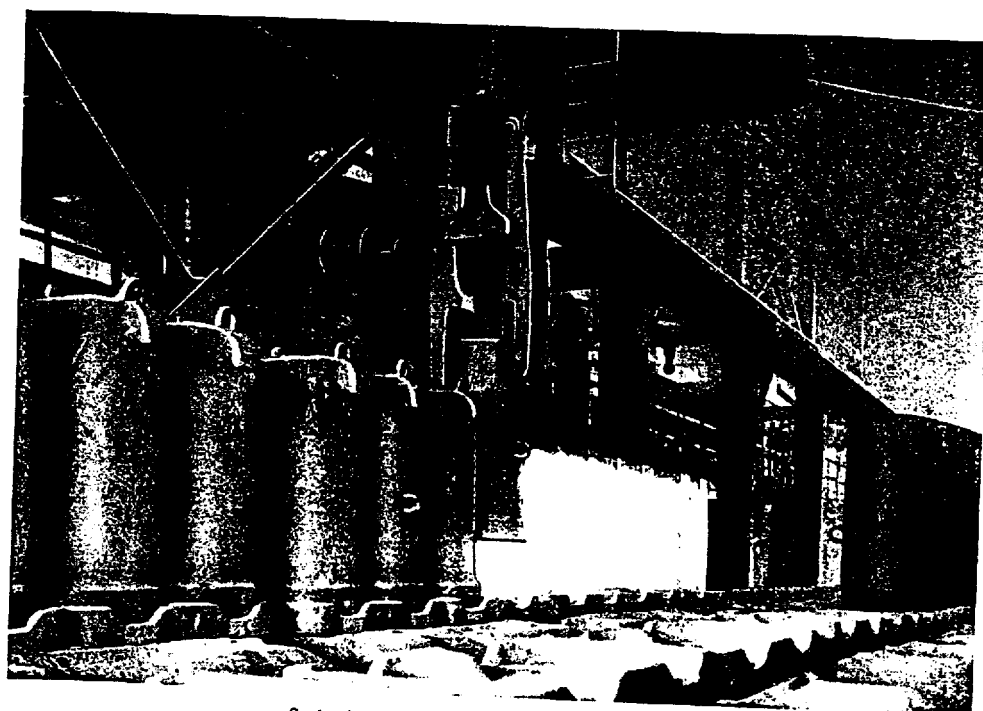
THE Open Hearth Department incorporates the first process in the manufacture of "ARMCO (American Ingot) IRON," and of all the other products of the Works. Here are situated four 75 ton and four 85 ton Basic Open Hearth furnaces equipped to burn oil, natural gas or producer gas. Twenty-four automatic Hughes Gas Producers, to be seen directly in the rear of the Open Hearth building, furnish the necessary producer gas.

Raw materials, such as pig iron and high grade scrap iron, are weighed out in correct proportions and charged into the furnaces. In the manufacture of ARMCO IRON the whole mass is then melted down for approximately twelve hours. During this time the impurities are being eliminated until they have been reduced to a mere trace, and the final analysis shows that their total is less than 16-100 of 1%.

When the chemist has determined that the impurities have been worked out of this mass, the molten metal is tapped from the rear of the furnace into great carrying ladles lined with fire brick, which in turn fill the ingot molds on the trains placed conveniently near. Here the metal becomes solid in the form of an ingot weighing from four to six thousand pounds.



Pouring a Heat—Open Hearth Dept.



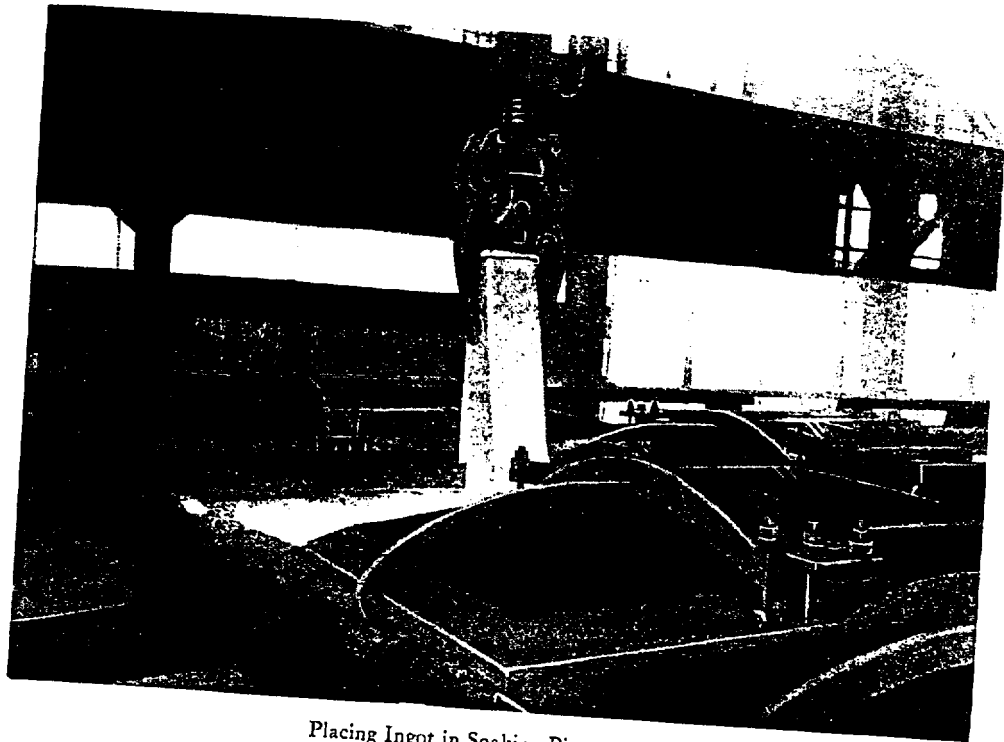
Stripping Hot Ingots—Soaking Pit Dept.

THE EAST SIDE WORKS

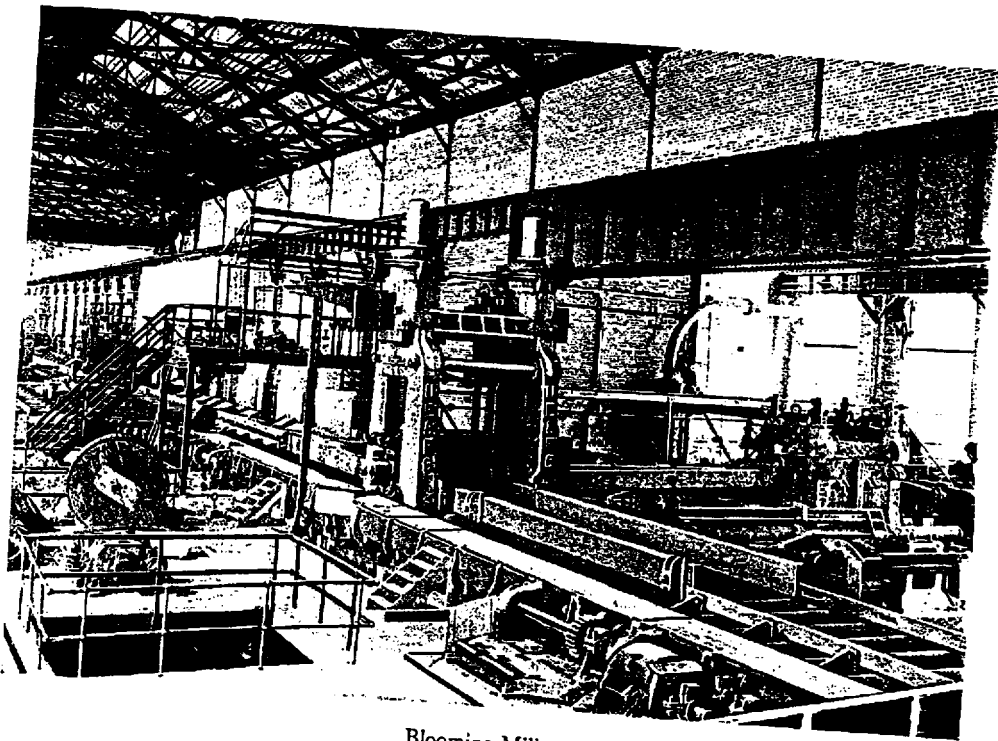


SOAKING PIT DEPARTMENT

THE train of ingot buggies is taken by locomotive to the next building which contains the Soaking Pits. The ingot molds are first stripped off and the ingots, while still hot, are placed in the pit and gradually brought to a white heat in order that they may be rolled with the greatest facility. When the right temperature is reached the ingots are taken from the pits by an electric crane which carries them to the Blooming Mill.



Placing Ingot in Soaking Pit



Blooming Mill

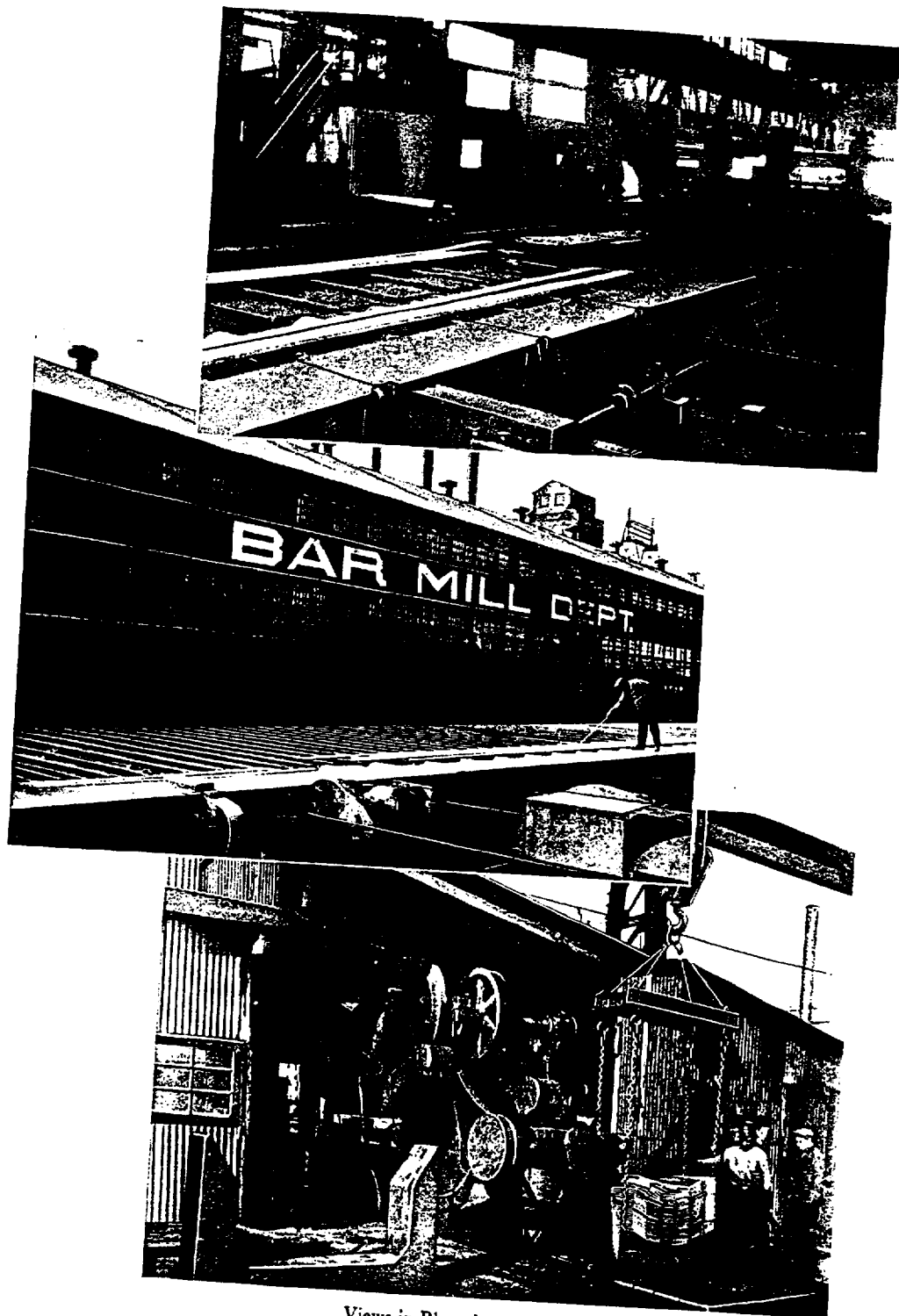
THE EAST SIDE WORKS

BLOOMING MILL DEPARTMENT

HERE are two great 40 inch rolls driven by a powerful two cylinder reversing engine of ten thousand H. P. capacity. The heated ingots are passed back and forth through the rolls, which are gradually moved closer together, until instead of having a short, thick mass of iron, we have a long slender billet or bar. This is again passed on over electrically drawn conveyors to the Hot Shears which can cut a bar twelve inches thick as easily as a piece of paper can be cut with desk shears.

The shorter sections are now forwarded to the twenty-four inch Billet and Bar Mill, of the three-high type, which is driven by a five thousand H. P. engine. Here the bars are reduced to the exact thickness and cut to the exact length desired.

This entire reduction from ingot to sheet bar has been accomplished without re-heating.



Views in Blooming and Bar Mills

THE EAST SIDE WORKS



SHEET MILL DEPARTMENT

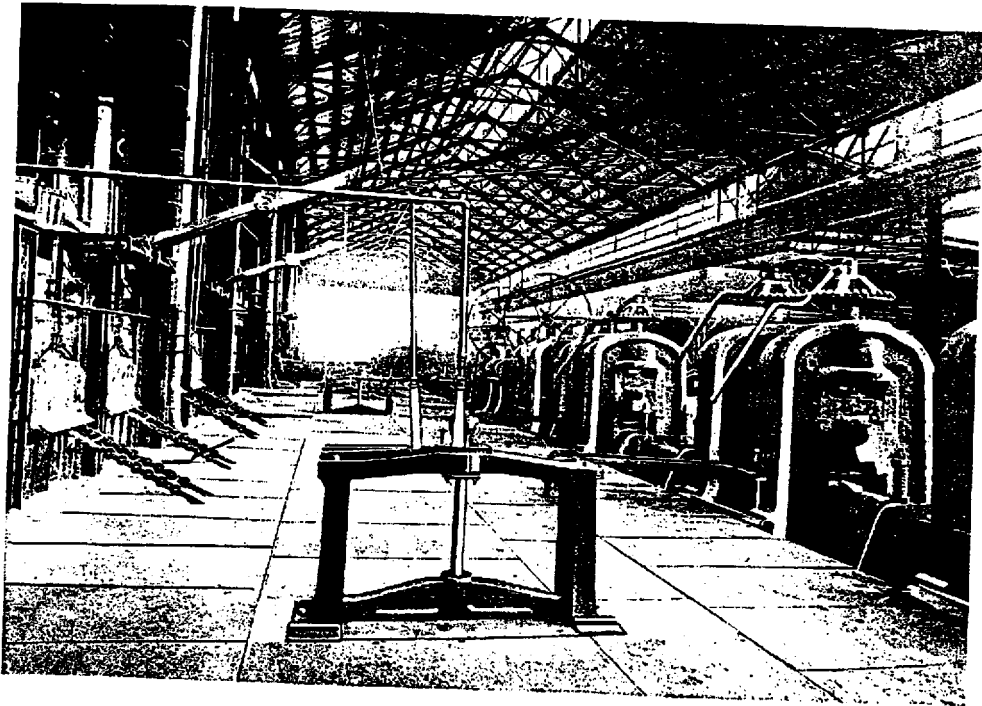
THE next department in the line of manufacture is the Sheet or Hot Mill. Here will be found ten 30 inch sheet mills, and two 30 inch jobbing mills.

The short sheet bars as delivered from the Bar Mill must be re-heated and then rolled into sheets of the various thicknesses required, after which the rough edges are trimmed on large squaring shears, smoothed and flattened on the cold rolls, and finally delivered to the Annealing Department where they are packed in great air-tight ovens, heated to required temperature and then cooled gradually in order that all unevenness of structure and strain may be eliminated.

GALVANIZING DEPARTMENT

FOR some purposes a black sheet is a finished product, but a large proportion is galvanized in order to give it additional protection against weather and other wearing conditions.

In the Galvanizing Department there are seven great pots filled with liquid spelter. The sheets must first be thoroughly cleaned and pickled, and then as they are passed through the molten bath and galvanizing rolls, a coating of zinc adheres to the surface. This gives the sheets much greater resistance to corrosion.



Sheet Mill Dept.



A Group of Inspectors

THE EAST SIDE WORKS



FINISHING DEPARTMENT

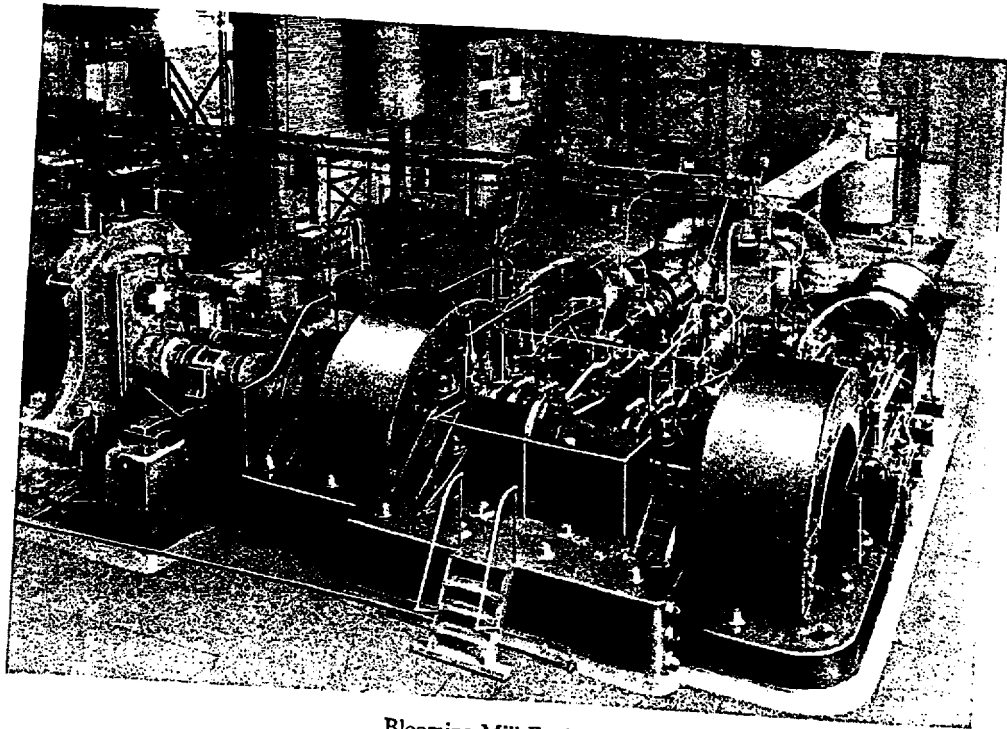
SOON after operations began at East Side Works, the demand for our high finished automobile and stove body sheets increased to such an extent as to make necessary the addition of a larger department for the finishing operations on this class of material. Here all our high finished sheets are resquared, tested and given a final inspection before shipment.

The steel bodies and fenders of nearly all of the well known automobiles of today have passed through this department in the form of flat, highly polished sheets.

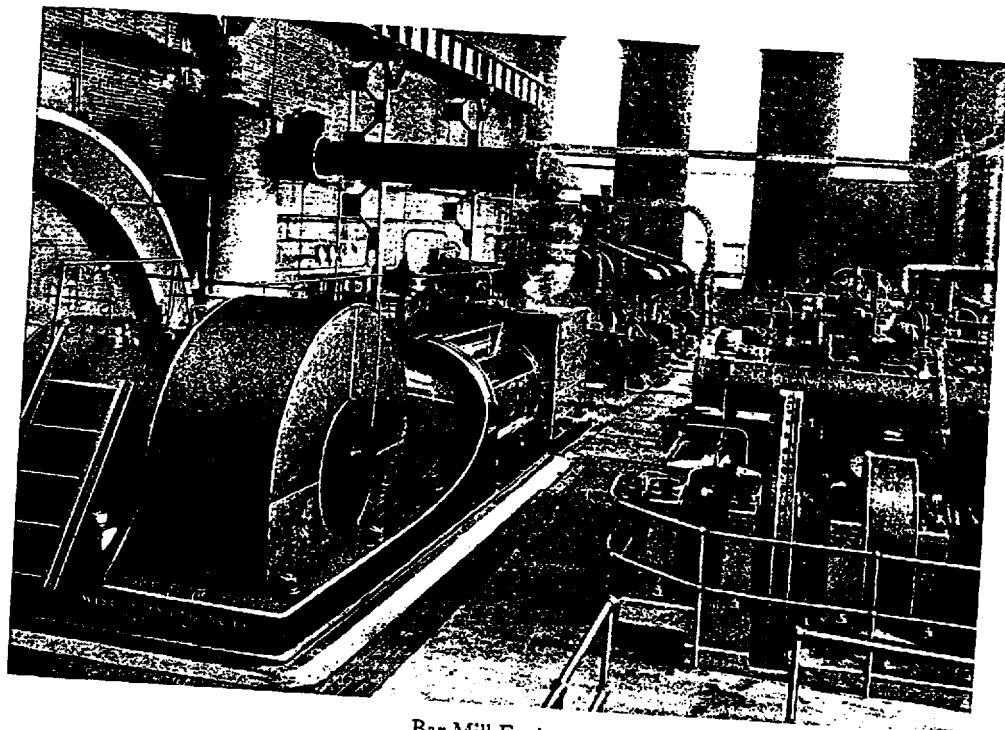
Throughout this department each man is required to wear a pair of soft canvas gloves when handling the highly polished sheets, and extreme care is taken to prevent their being marred or scratched.

INSPECTION

ALARGE and efficient corps of inspectors is kept busy throughout this whole process, as described, watching for defective material and discarding imperfect bars and sheets wherever they may be found, in order that the finished product may prove of the very highest quality.



Blooming Mill Engine



Bar Mill Engine

THE EAST SIDE WORKS

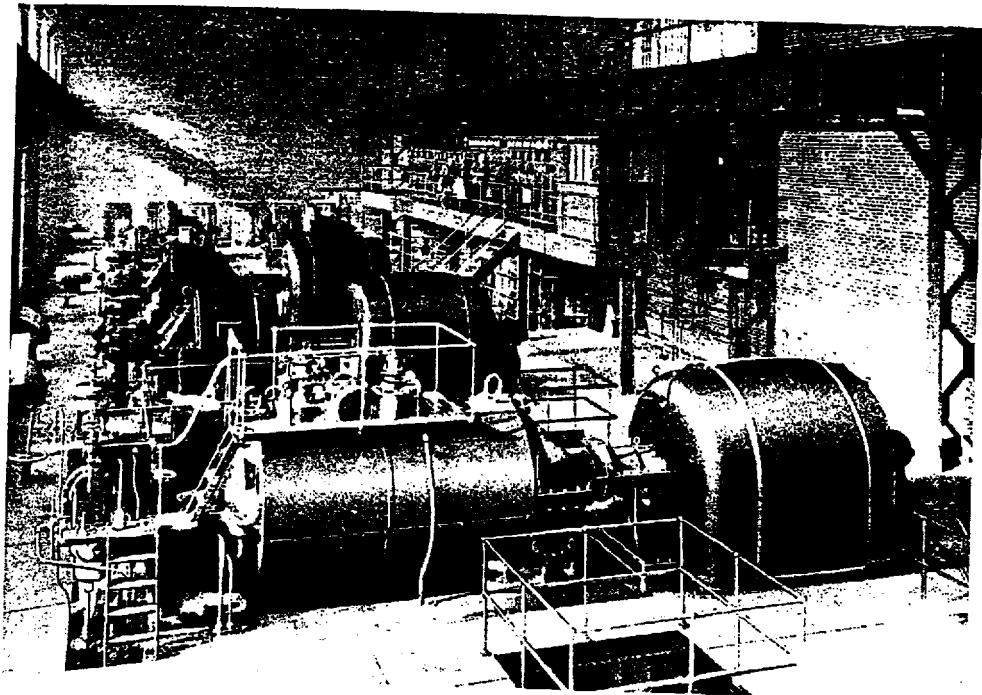
CENTRAL POWER PLANT

THE power which makes all this work possible, as we have seen it, is first generated in the form of steam in the Boiler House where two 1000 H.P. Sterling Boilers, and ten 500 H.P. Rust Coal Fired, Water Tube Boilers, mechanically stoked by the latest Westinghouse Stokers, are at work. Here the coal cars are unloaded by a gantry crane directly into a great hopper on the roof of the building. The coal passes from the hopper through a crusher, and then comes down through chutes to be distributed evenly over the grates of the fire as needed.

The steam from the boilers is taken directly to the Power Station where it is used by the Blooming Mill and Bar Mill engines. The exhaust from these engines is then used by two 1500 K. W. low pressure Turbines, which are directly connected to 3-Phase, 25 cycle, 2200 volt Generators, thus allowing this portion of the steam to do double duty. A third Turbine of the high pressure type is similarly connected to another Generator of equal power. A fourth Turbine of 3750 K. W. of the Mixed Flow Type is connected to those mentioned above.

These Turbines, together with the balance of the Electric Power Station equipment, consisting of Rotary Converters, Exciters, Transformers, etc., furnish the electric power which drives the rolls, cranes, shears and other moving parts in all departments, as well as illuminate the entire plant.

An extensive switch board is equipped with switches and meters in such a way that an exact record can be kept of the amount of power used by each separate unit of the plant, and trouble in any department can be quickly located.



Power Plant



Flower of the Iron Age—Hand Forged from Armco Iron

THE EAST SIDE WORKS



STORE DEPARTMENT

A STORE Department is maintained in which over fifteen thousand different articles are kept in stock for use throughout the plant.

Enormous quantities of raw materials and supplies are consumed each year, such as coal, pig iron, scrap iron, spelter, sulphuric acid, aluminum, lubricating oils, natural gas, building and special furnace brick, and hundreds of other materials.

SHOPS

A STEEL Works and Rolling Mill must have shops capable of making necessary repairs at week-ends, when the Works are not in operation.

Large, well equipped Electric Repair and Machine Shops have, therefore, been provided to take care of the company's maintenance and repair work.

FORGING DEPARTMENT

A S we make our own steel and iron ingots, and are in position to roll all standard sizes of billets, it was deemed advisable to establish a department for the making of forgings which would assist in occupying the surplus capacity of these shops, which are fully equipped to do all sorts of machine work.

Crank shafts of all kinds, spindles, connecting rods, cross heads and miscellaneous forgings are here produced in substantial quantities and are either sold in the form of rough forgings, or are rough turned, or entirely finished.

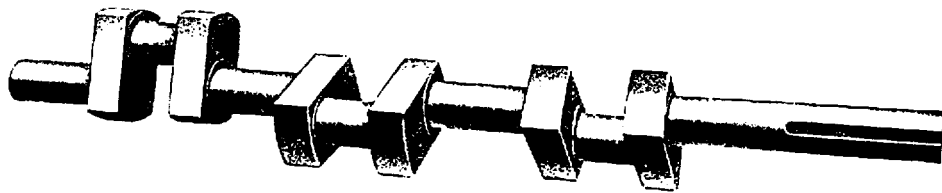
This shop is an evolution in shop practice with the idea of making the Maintenance Department not only self supporting, but profitable.

RAILROAD AND ELECTRIC CRANE EQUIPMENT

FIFTEEN miles of standard gauge track are included within the boundaries of the Mill, and eleven locomotives are kept busy switching cars from one point to another. The Company also owns 75 railroad cars which are used to transport materials from one department to another. Inside the buildings 60 electric cranes are used in the different processes of manufacture.



Store Dept.



A Product of the Forge Shop

THE CENTRAL WORKS



THE CENTRAL WORKS

WHAT is now known as "Central Works" at one time constituted the entire plant, and the buildings show plainly the various changes and additions that have been made from time to time.

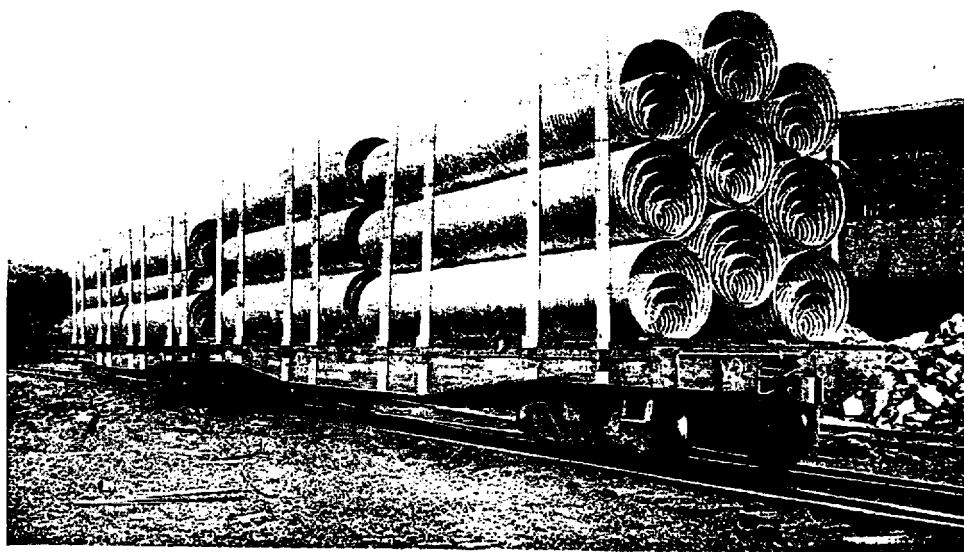
The Main Offices of the company, with the exception of those of the Operating Departments, are located immediately adjacent to Central Works.

The Rolling Mill Department at Central Works is operated as a separate unit, and while all of the process of manufacture involved in the conduct of the business are not represented in this department, there are some which are operated here exclusively.

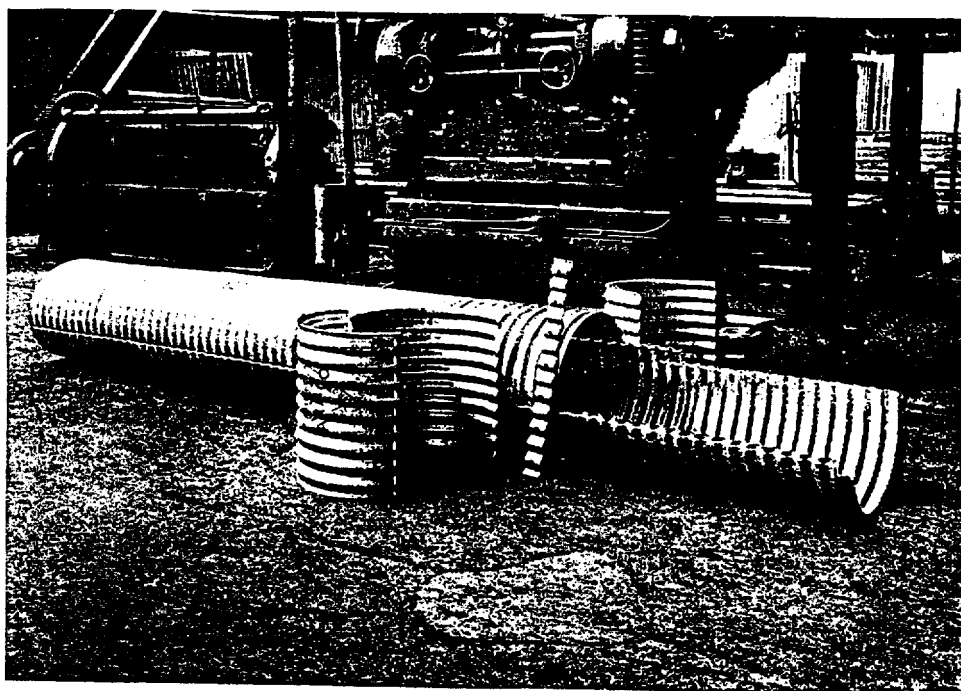
The Open Hearth Department has one 25 ton and three 50 ton furnaces, the former being used for experimental and foundry purposes.

Four Hot Mills and two Cold Rolls produce their portion of the year's output of finished sheets.

A Steel Foundry with a capacity of approximately five thousand tons per year is operated in connection with the Open Hearth Department, and furnishes castings used in construction and repair work throughout the mill, thus eliminating the expense and delay caused by securing these parts from outside sources. Steel castings are also made for the trade.



A Shipment of Corrugated Culverts



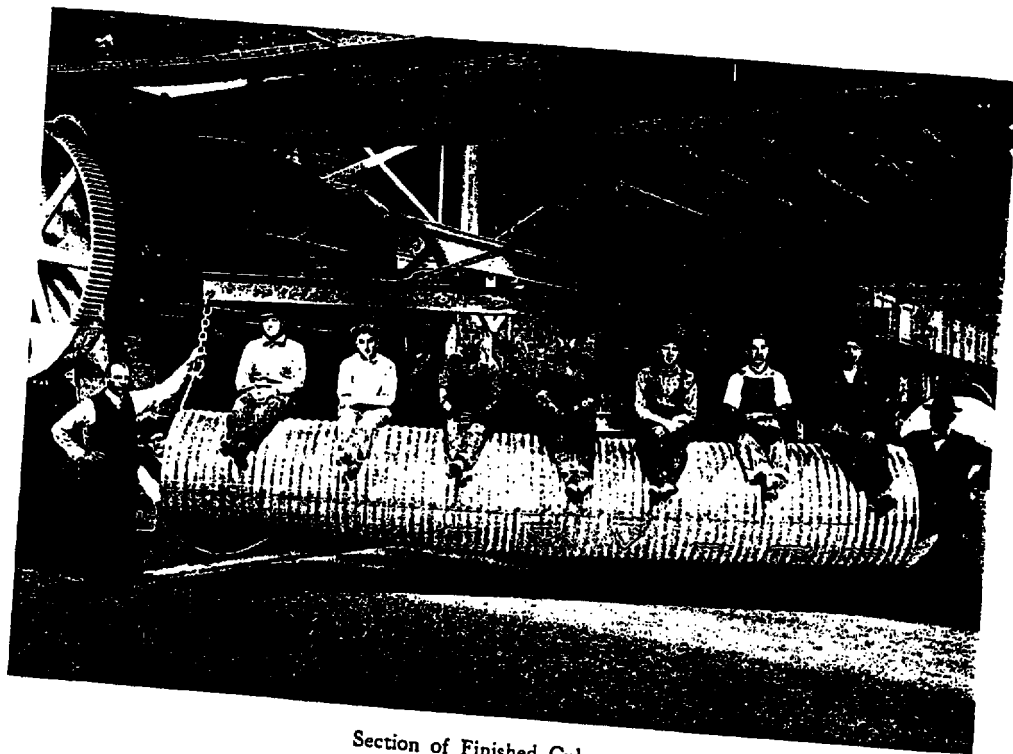
Nestable Culverts

THE CENTRAL WORKS

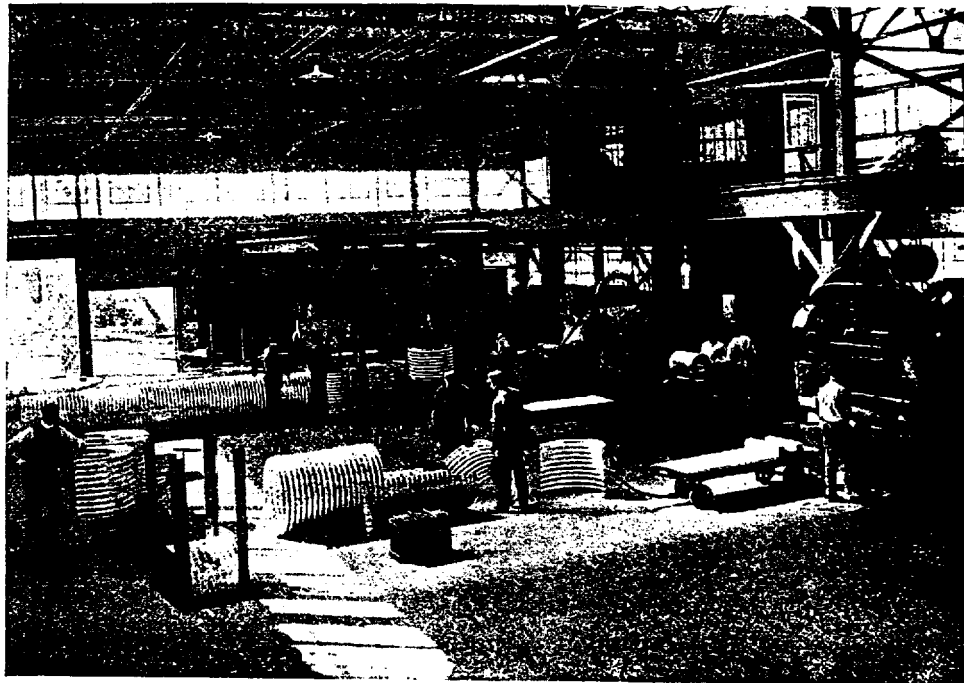


FACTORY DEPARTMENT

THE advisability of having a department capable of fabricating a certain portion of the products of our Sheet Mill and Galvanizing Department into finished building materials justified the continuation and expansion of our Factory Department, which was at one time our entire business. In this department such articles as Culverts, Conductor Pipe and Trough, Roofing and Siding, Shingles, Ventilators, Wall Ties, Metal Lath, etc., are worked up into shape ready for the consumer. The economy of manufacturing a line of finished products directly on the mill premises is largely responsible for the steady growth of the business of this department.



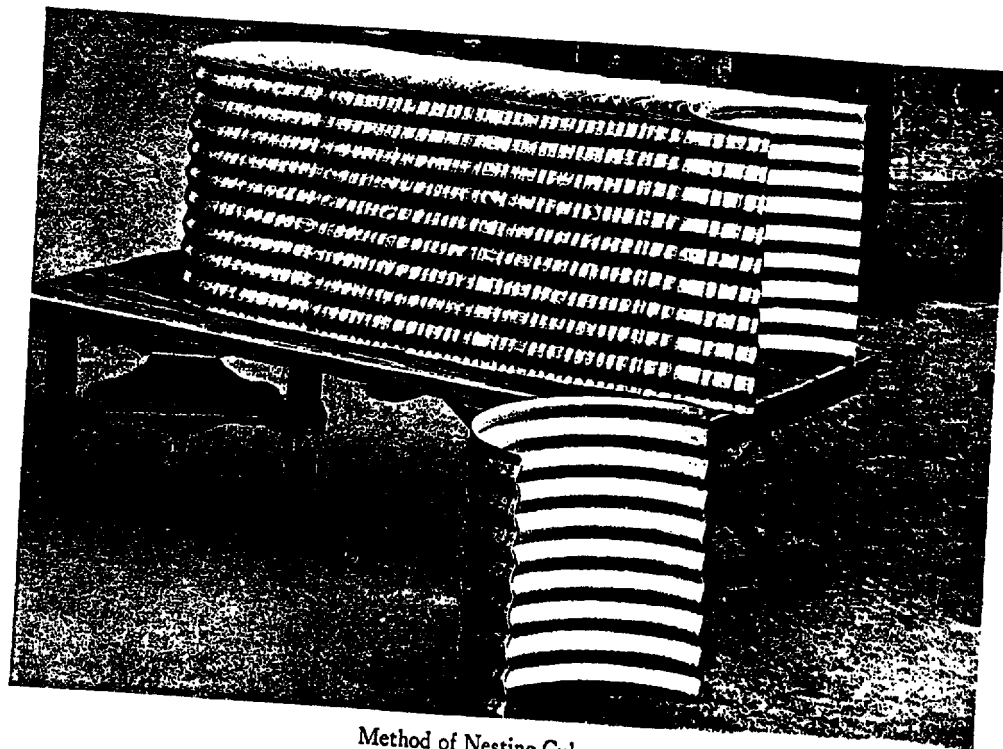
Section of Finished Culvert



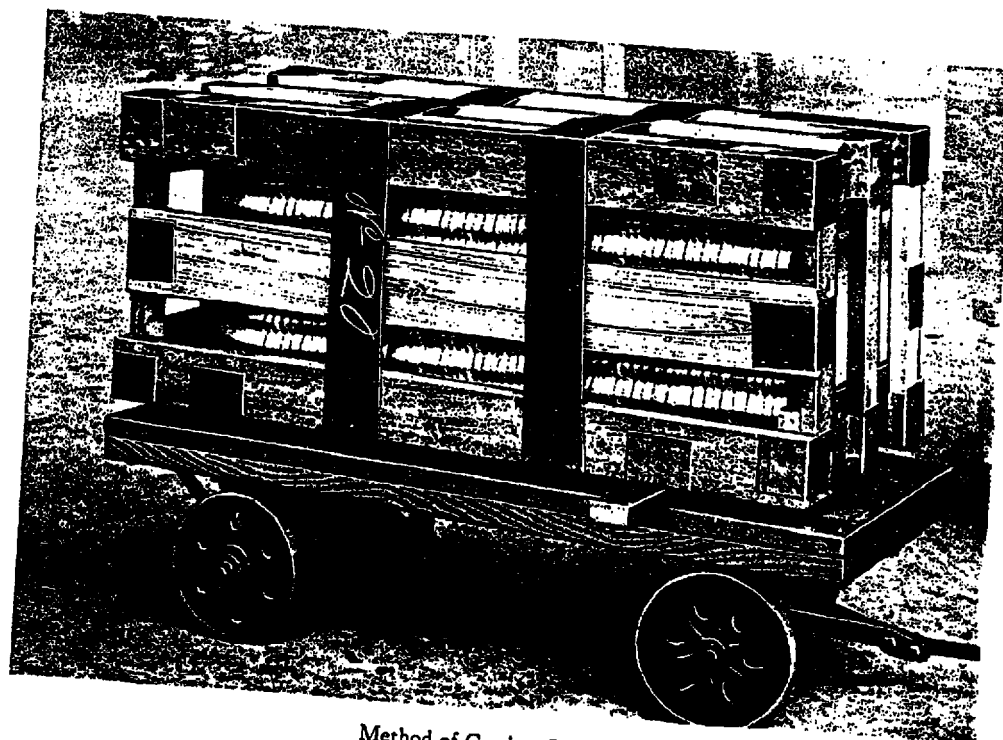
View in Culvert Department



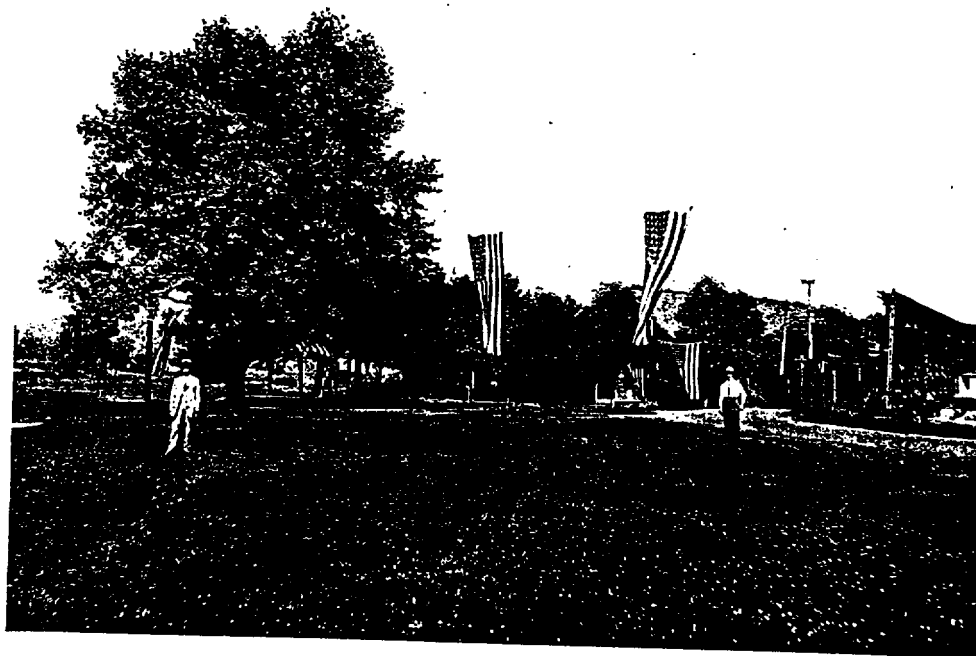
Farm Products Department



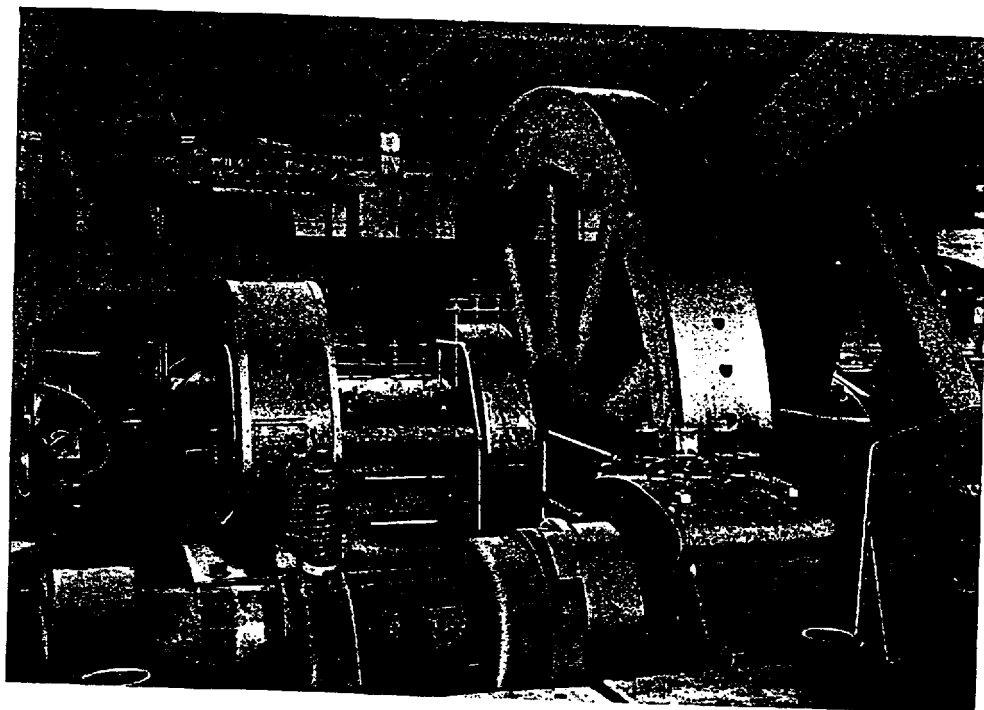
Method of Nesting Culverts



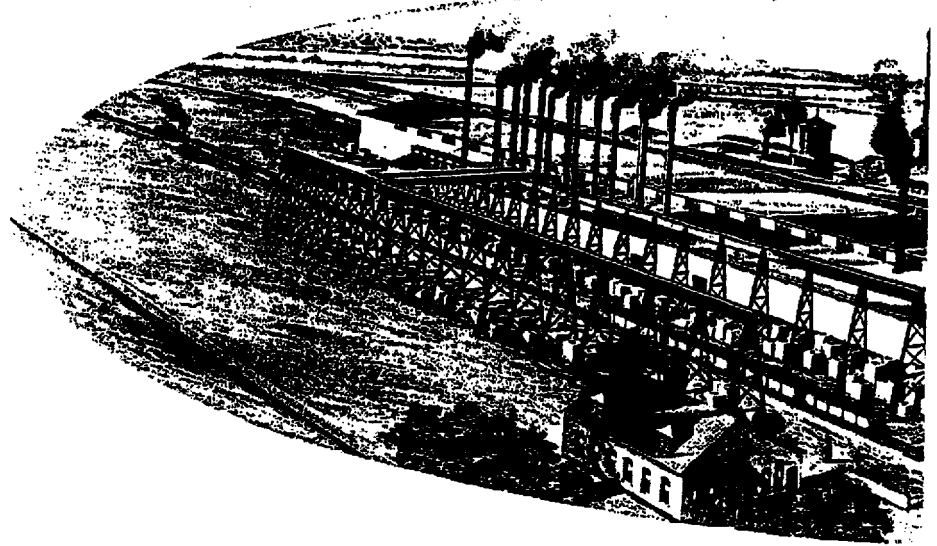
Method of Crating Culverts



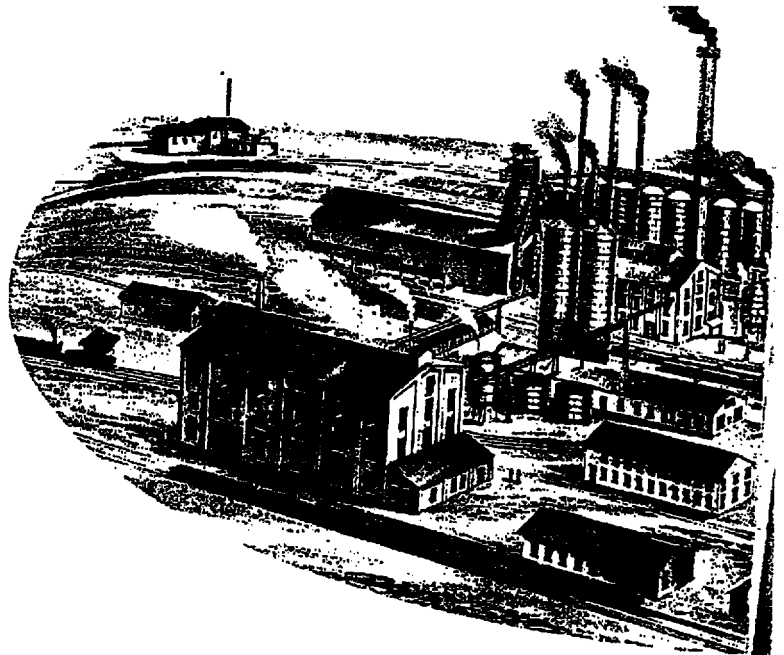
Main Entrance, Zanesville Works



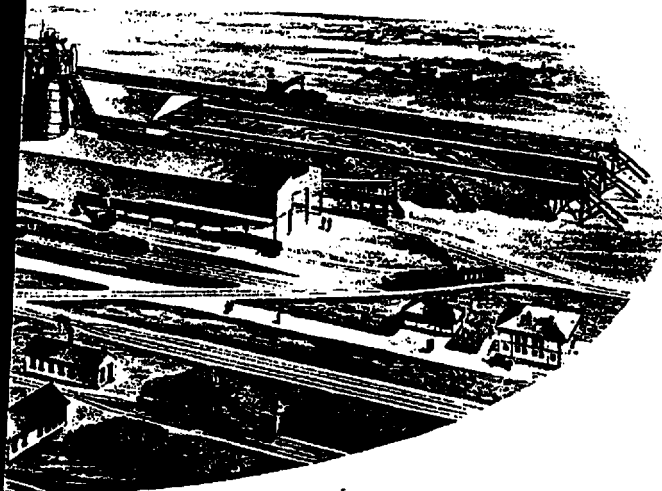
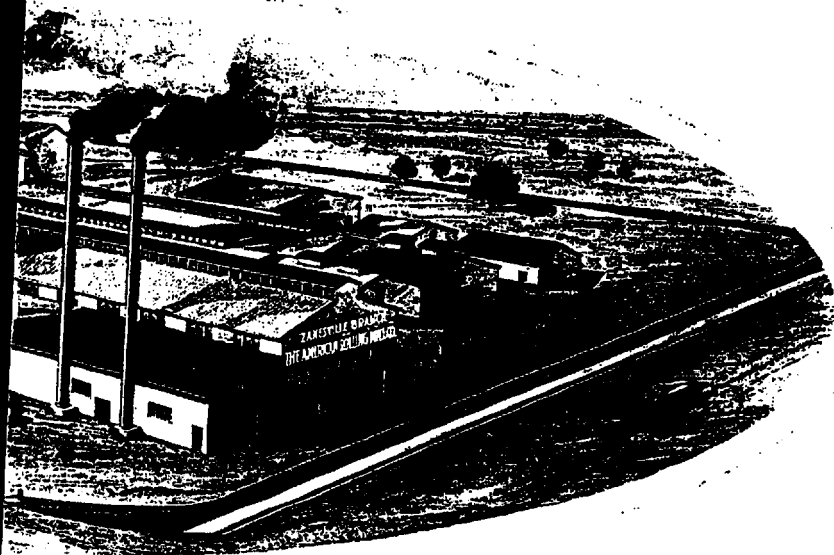
Sheet Mill Engine



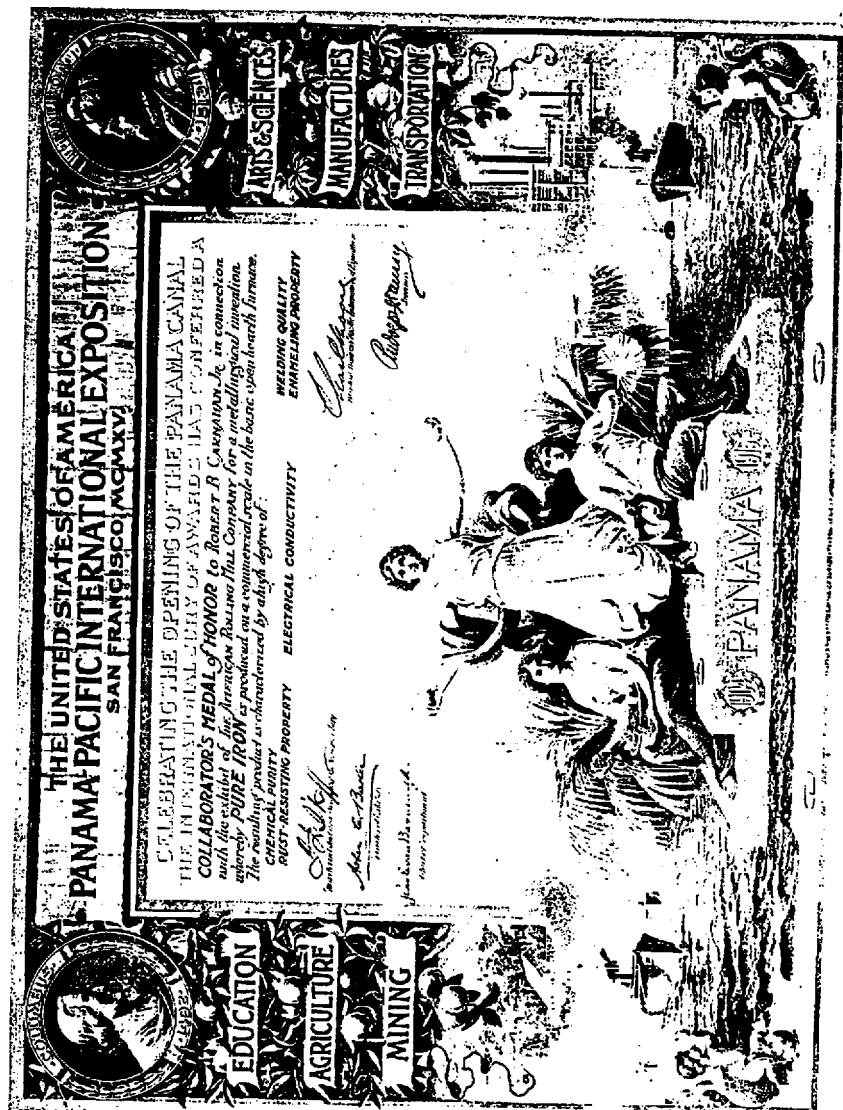
Zanesville Wc



Blast Furnace, Colum



ous, Ohio



Medal of Honor—Panama-Pacific International Exposition

THE SAVANNAH PRESS

THE SAVANNAH PRESS

The Savannah Press, published daily except on Sundays and public holidays, is a leading newspaper of the South Atlantic States. It is published at No. 100 North Third Street, Savannah, Georgia.

The Press is owned and published by the Savannah Press Company, a corporation organized under the laws of the State of Georgia. Its capital stock is \$1,000,000, divided into 100,000 shares of \$10 each.

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THE ZANESVILLE PLANT



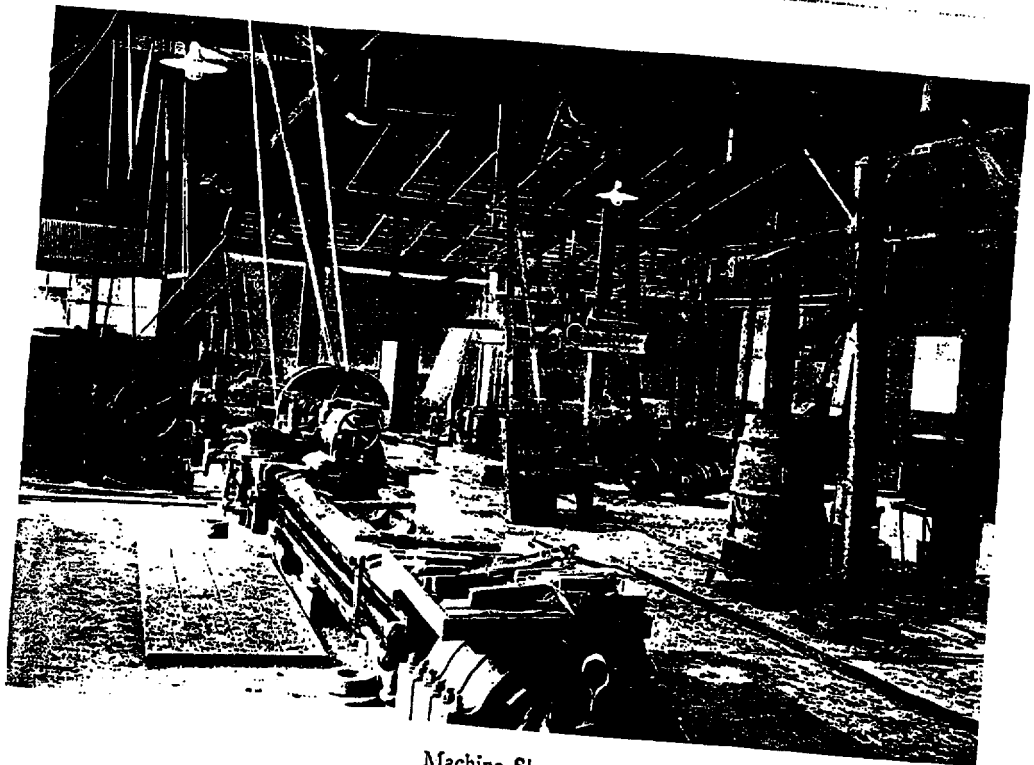
THE ZANESVILLE PLANT

IN 1905 the plant of The Muskingum Valley Steel Company at Zanesville, Ohio, was purchased by this company and has since become a very important unit in the organization.

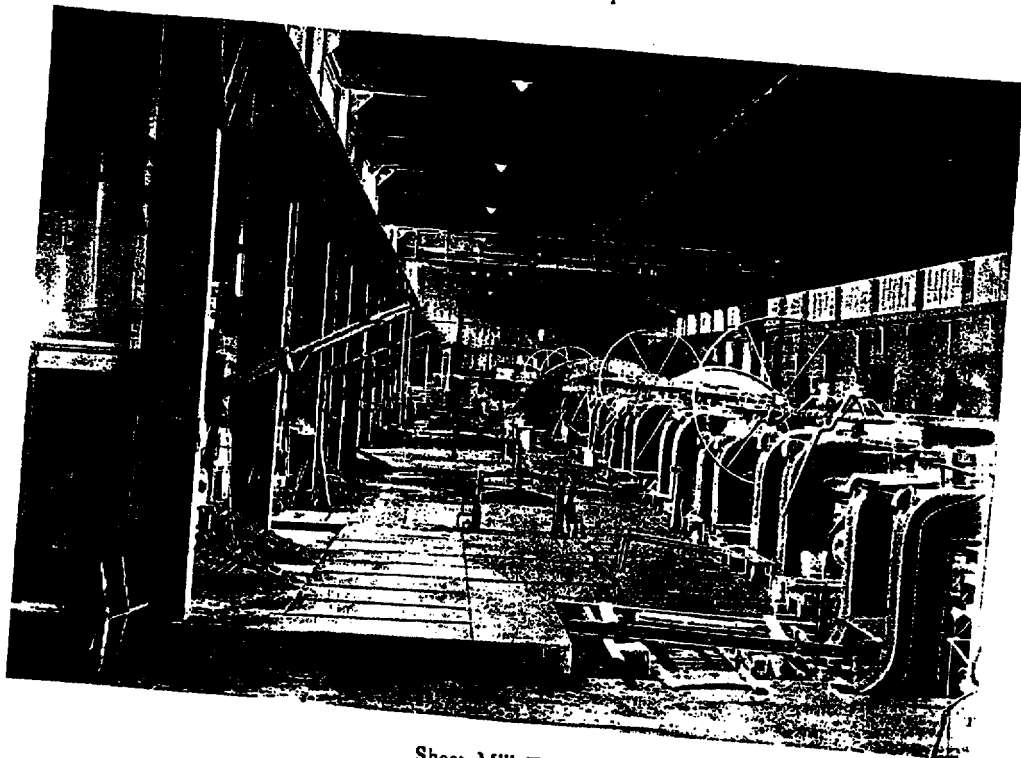
While no Open Hearth furnaces or Bar Mills are included in its equipment, it has the distinction of producing all of the terne and tin plate made by the company, as well as some of the special grades of steel. The sheet bars from which these are made are all supplied from the Middletown Works.

The Zanesville Mill comprises a splendidly equipped unit of six Hot Mills, four Cold Rolls, a large Annealing Department, a new Power Plant of ample proportions, Tin and Terne Plate Department, Department for painting black sheets, commodious warehouses and maintenance shops.

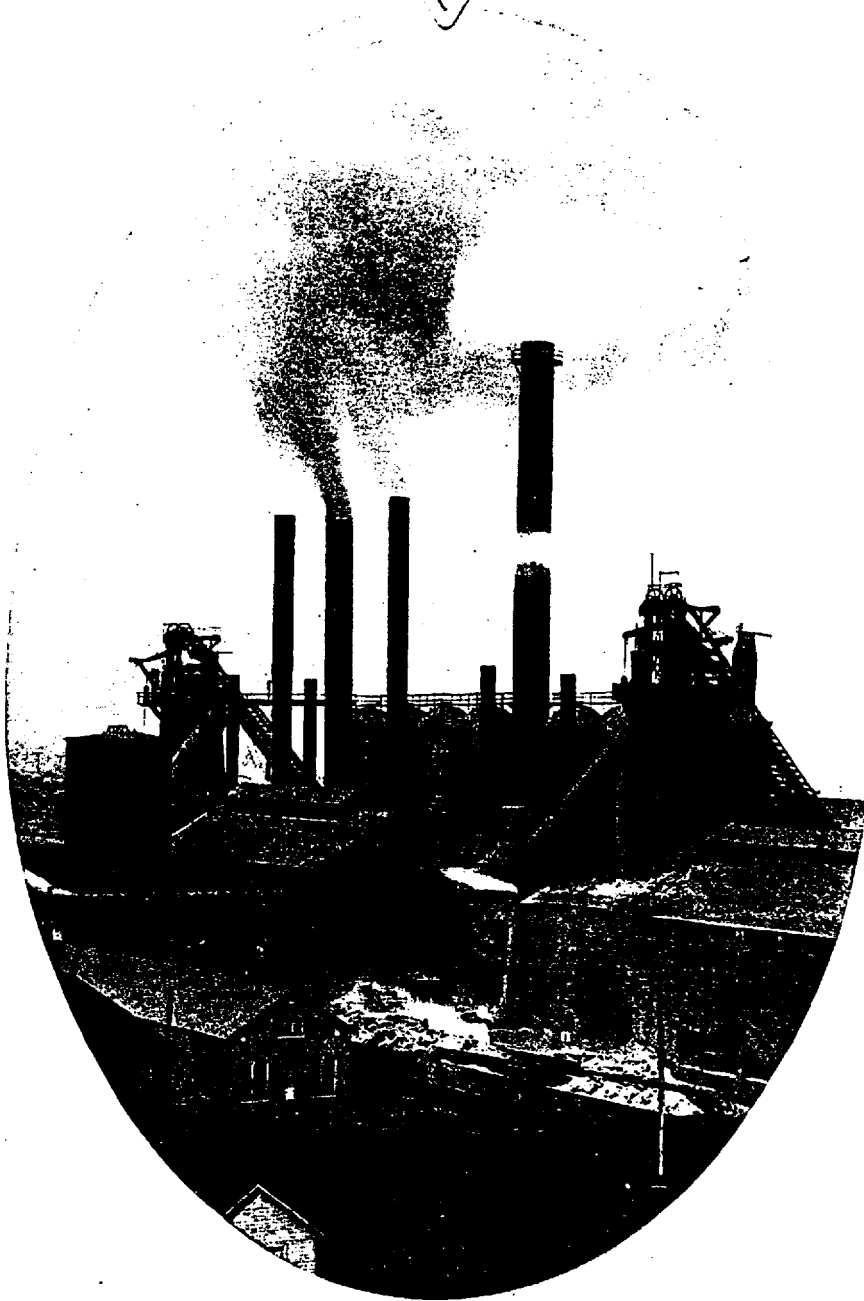
The Mill has been almost entirely rebuilt and re-equipped since it was purchased.



Machine Shop



Sheet Mill Train



A View Showing Center of Blast Furnace Department

THE COLUMBUS FURNACES



BLAST FURNACE DIVISION

THE company's Blast Furnace properties were formerly owned and operated by The Columbus Iron & Steel Company, Columbus, Ohio. They were taken over in their entirety during the current year of this issue.

A unit consisting of two Blast Furnaces is located on 80 acres of land at South Columbus, Ohio, on the Hocking Valley and T. & O. C. Railways and has an annual capacity of approximately 200,000 tons of Pig Iron.

The raw materials needed in Blast Furnace practice are IRON ORE—LIMESTONE—COAL and COKE.

Iron ore and coal requirements for many years to come are taken care of through the ownership or control of a large number of valuable mining properties.

The entire limestone requirements of these Blast Furnaces are taken care of through the ownership of 137 acres of limestone quarry property at Marble Cliff, Ohio.

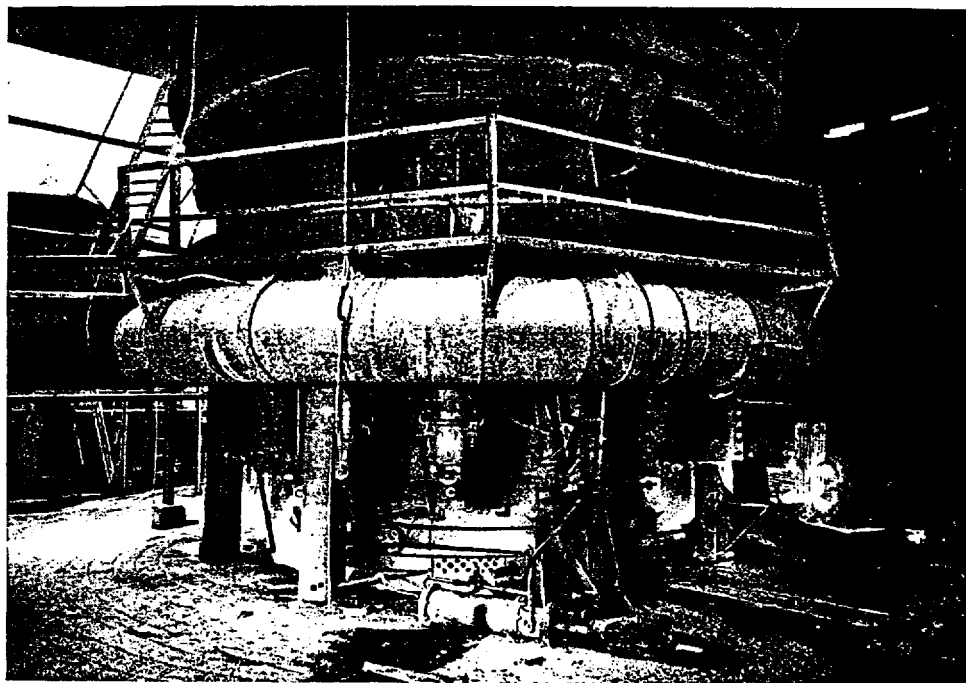
A substantial interest in a By-Product Coke Oven property at Portsmouth, Ohio, provides the needed supply of coke.

Ore transportation facilities on the Great Lakes are taken care of through a substantial interest in three Steamship Companies owning and operating five vessels.

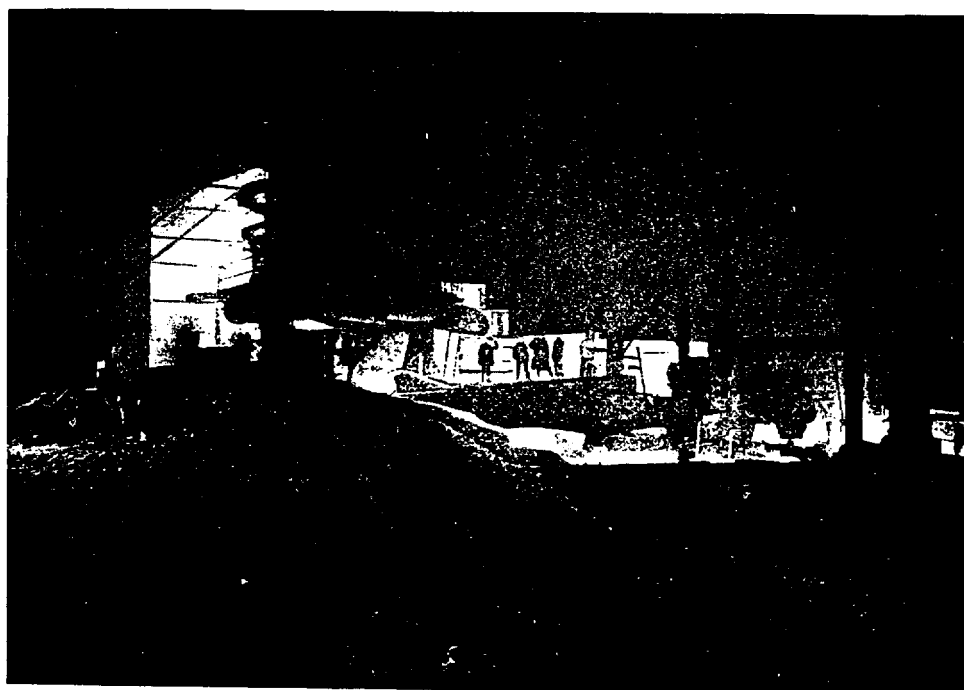
When running full, these two blast furnaces require for each twenty-four hours, approximately 1100 tons of iron ore, 650 tons of coke, and 400 tons of limestone.

The acquiring of this Blast Furnace property and its allied interests represents one of the most important steps The American Rolling Mill Company has ever taken, as it backs up its well developed and comprehensive manufacturing plants in Middletown and Zanesville with an ample and certain supply of pig iron, which is the only manufactured raw material used in the making of Open Hearth iron and steel.

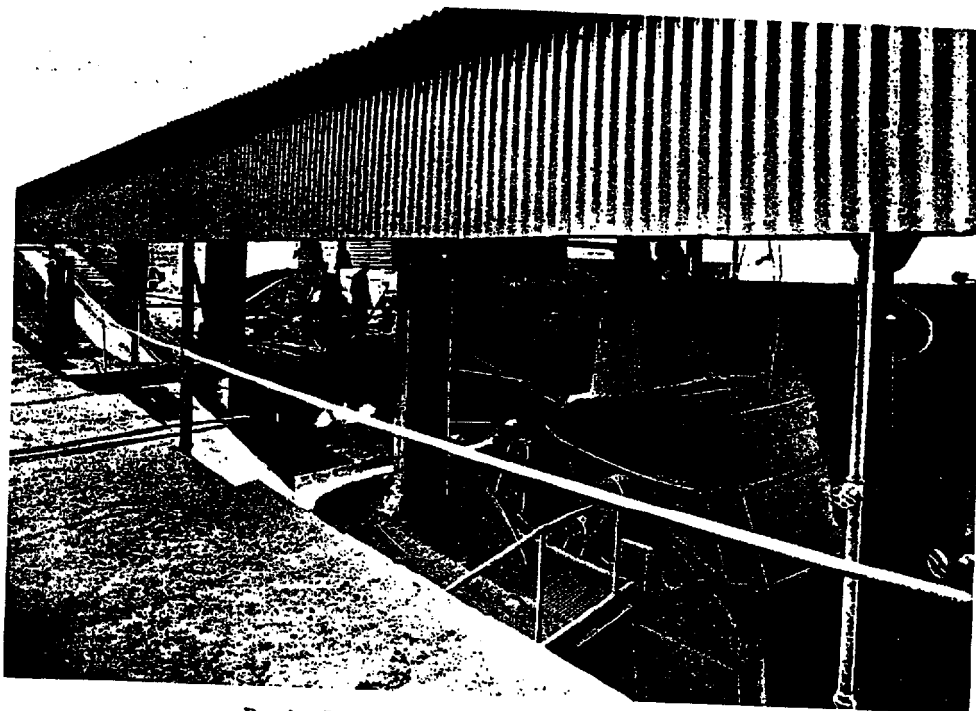
With the acquiring of these properties the process of converting IRON ORE into sheet metal building materials through the long line of manufacture involved from the Blast Furnace to the Factory is entirely completed.



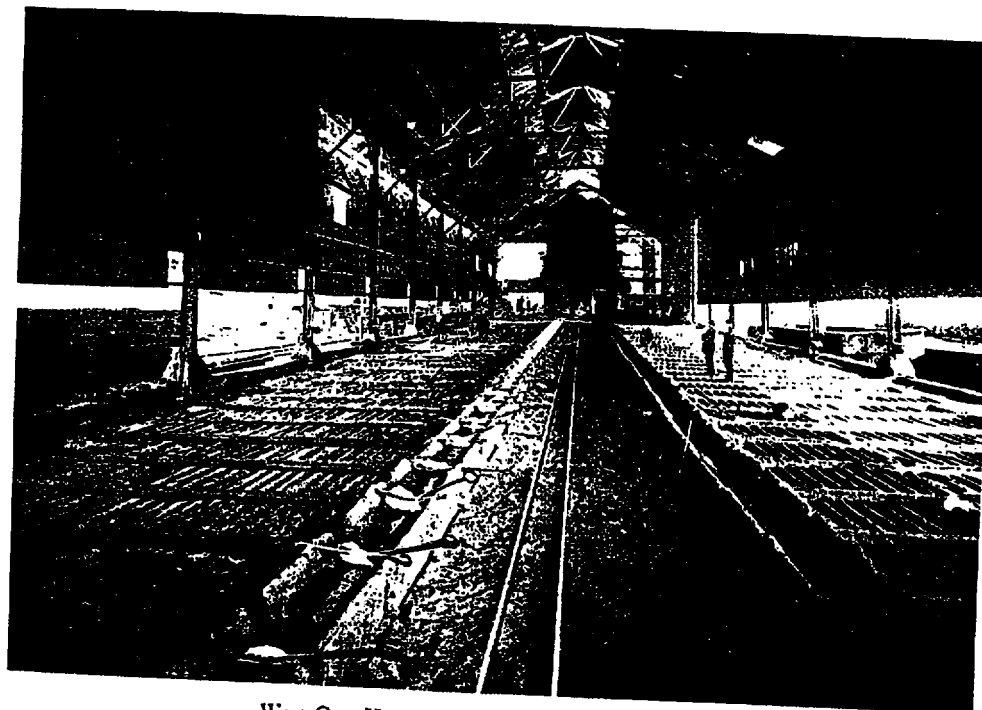
Close Up View of West Furnace



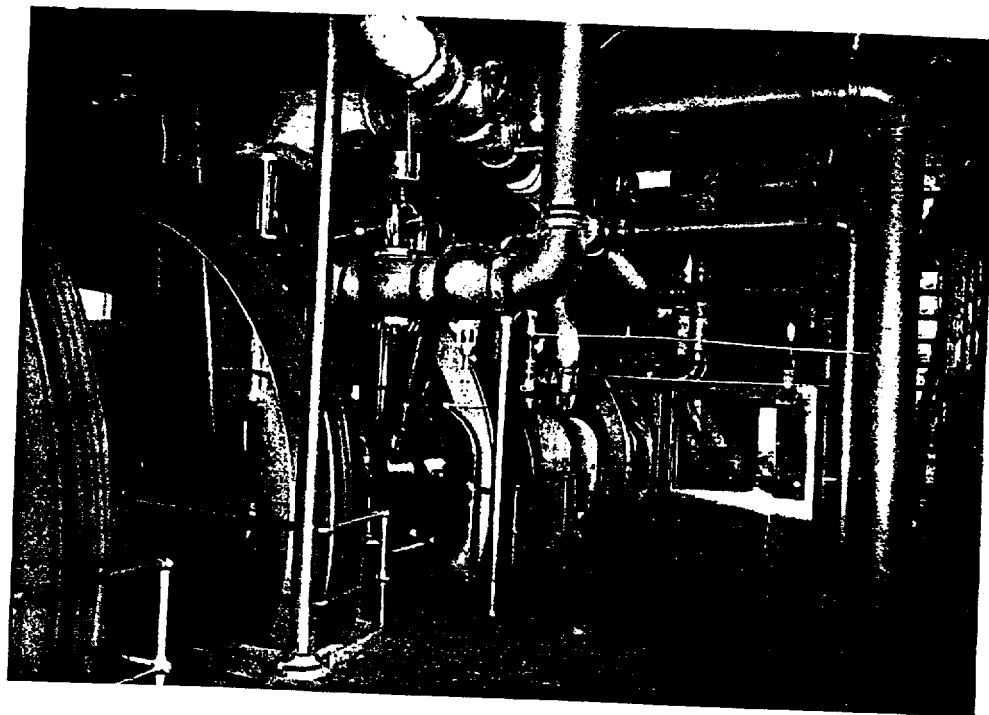
Running Iron Into 75-ton Ladle



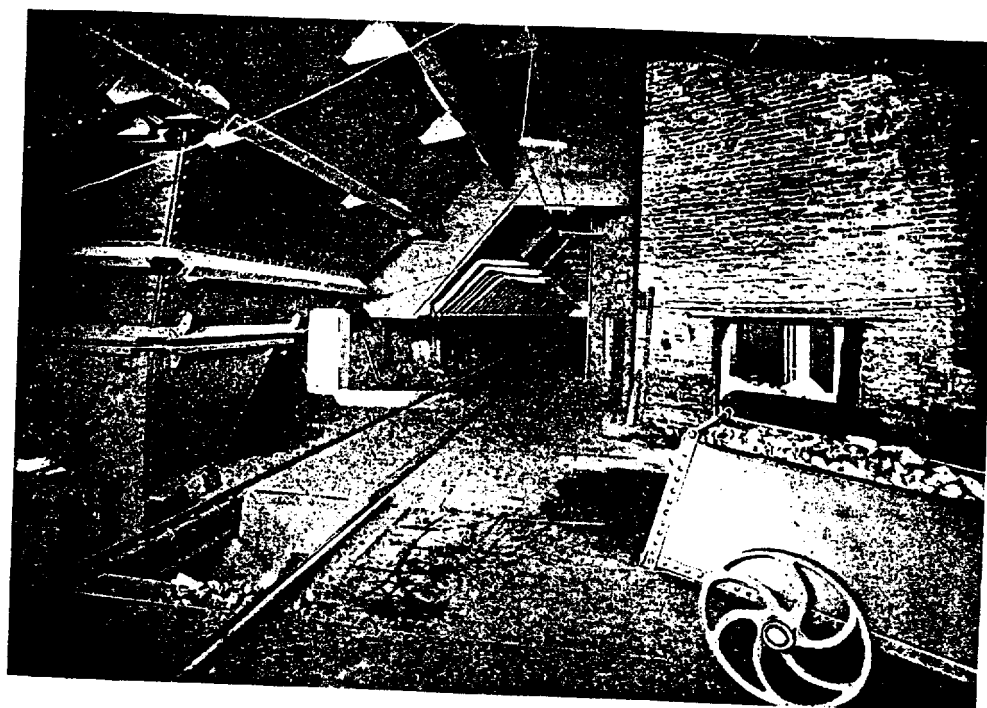
Pouring Iron from Ladle into Pig Casting Machines



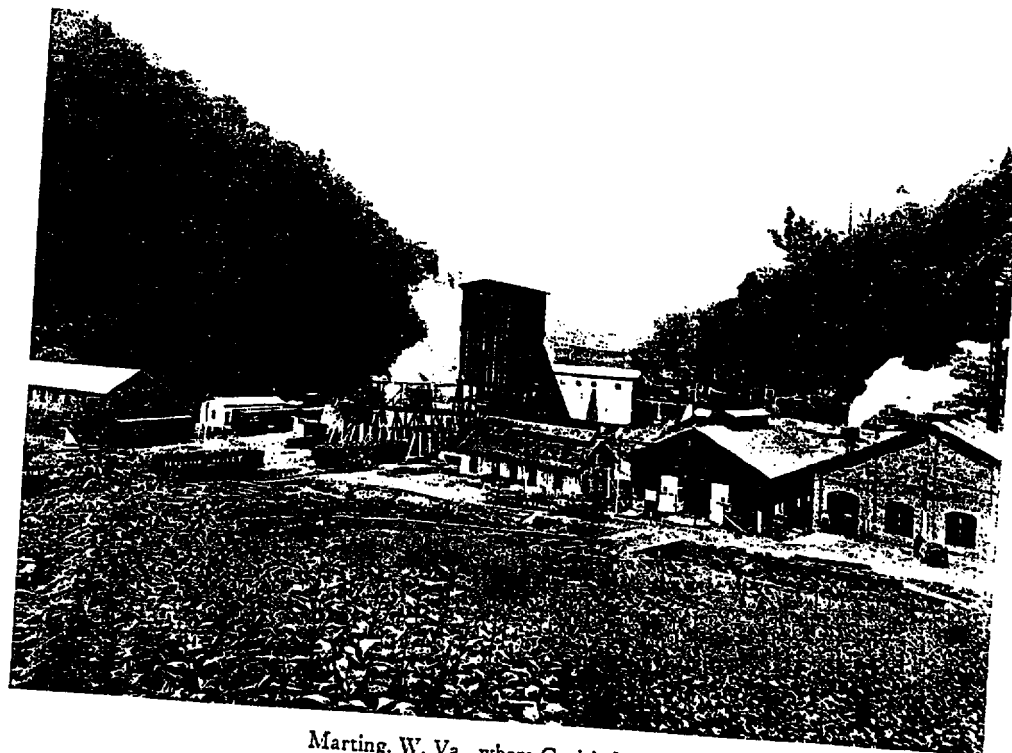
West Cast House showing Pig Beds and Furnace



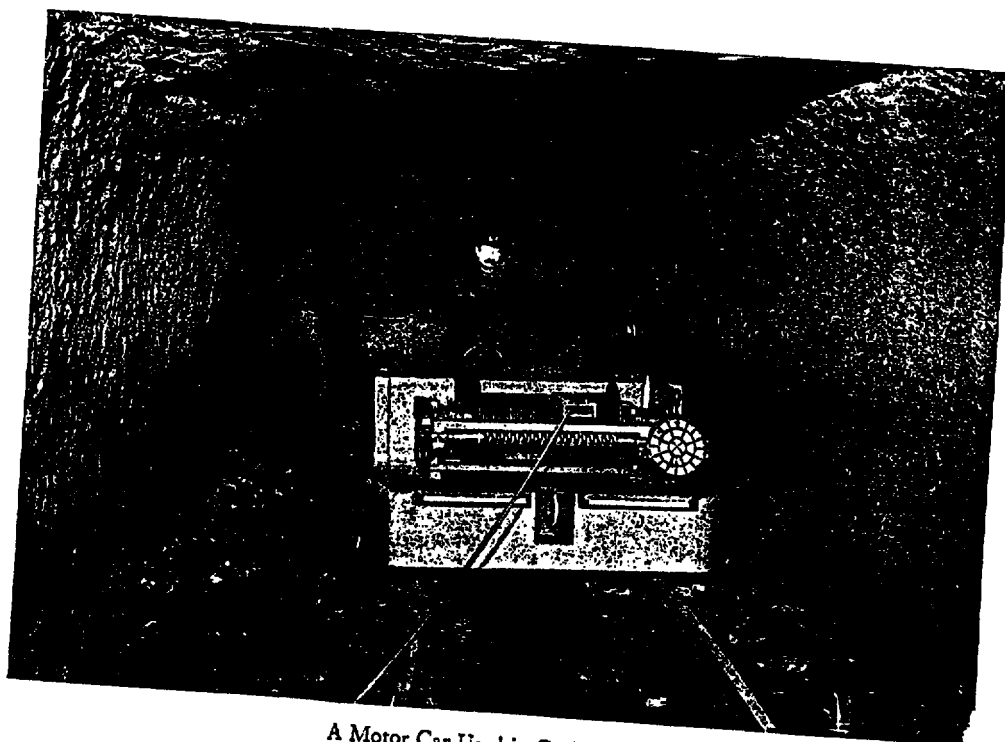
Blowing Engines



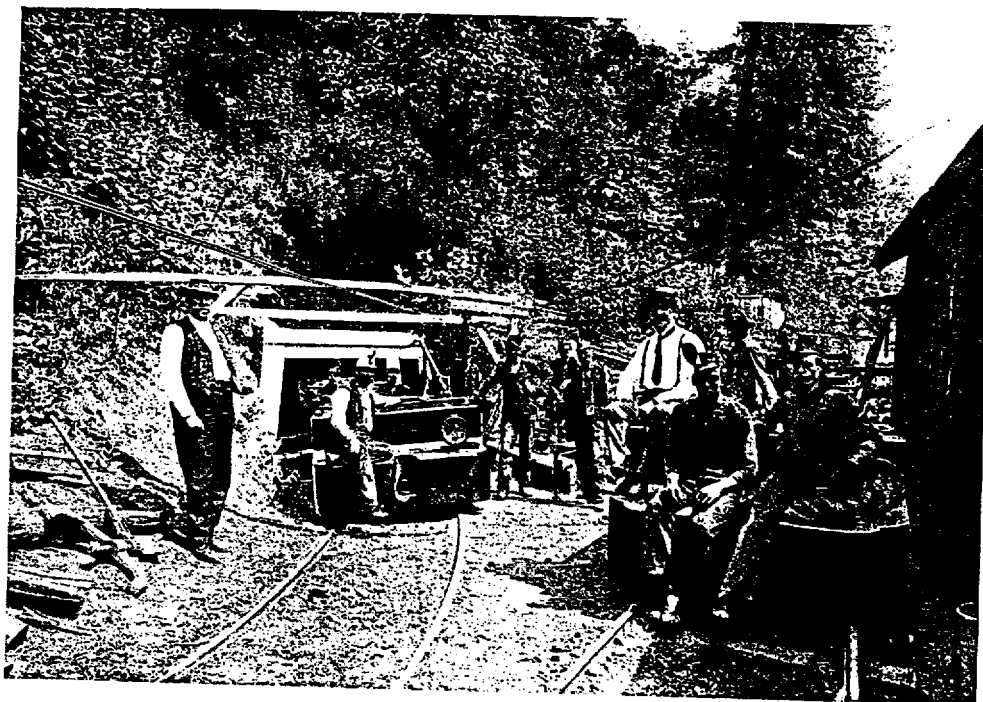
View Beneath Ore and Coke Bins



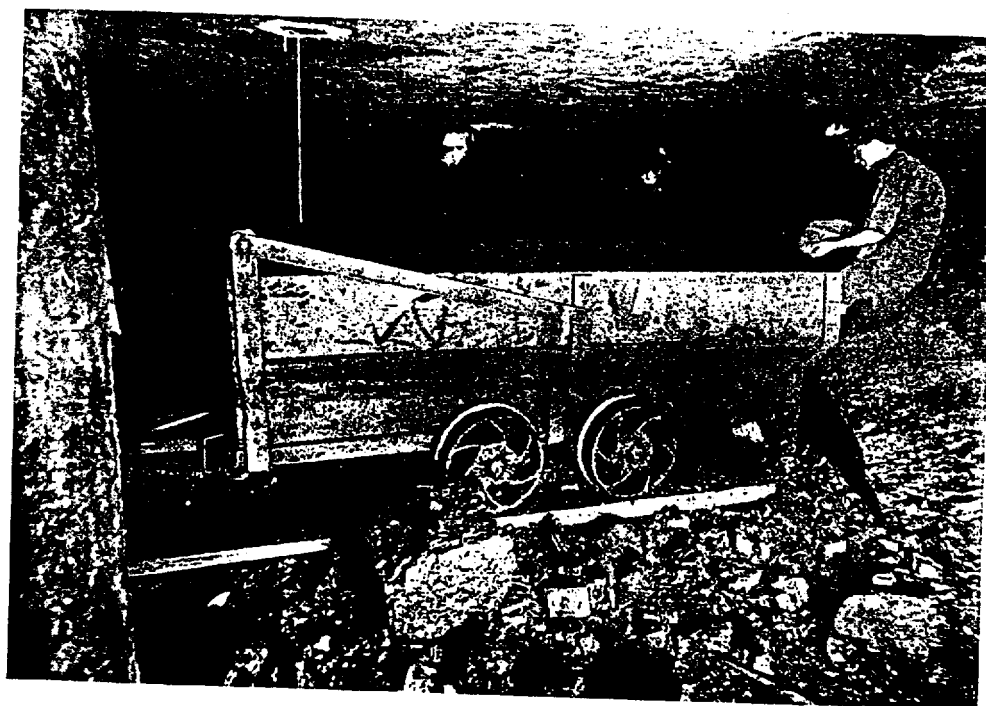
Marting, W. Va., where Coal is Mined



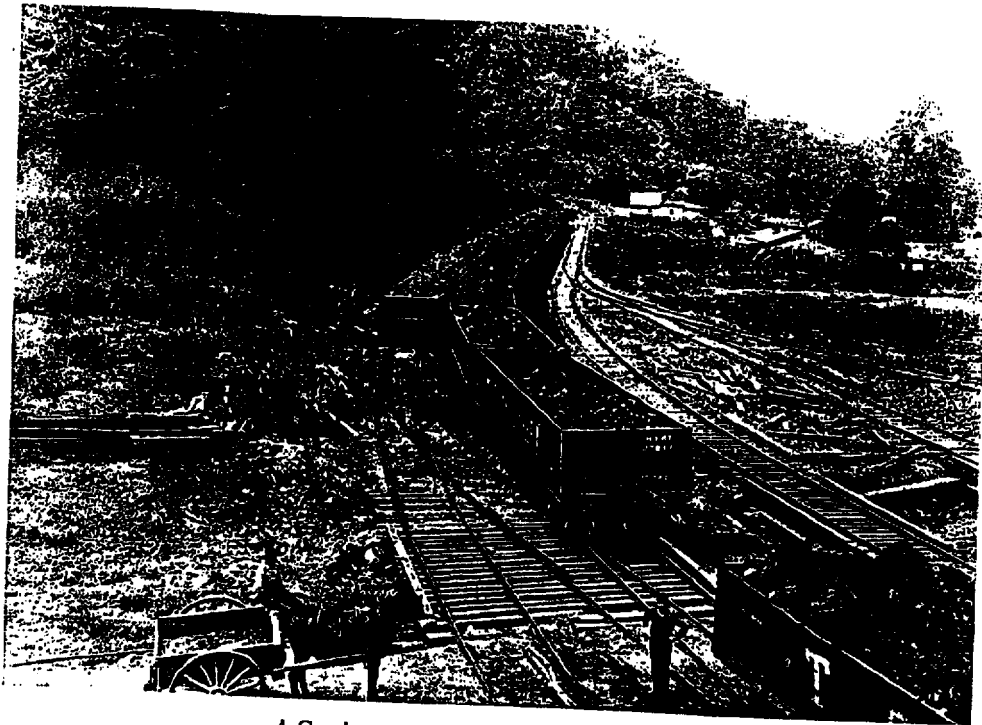
A Motor Car Used in Coal Mines



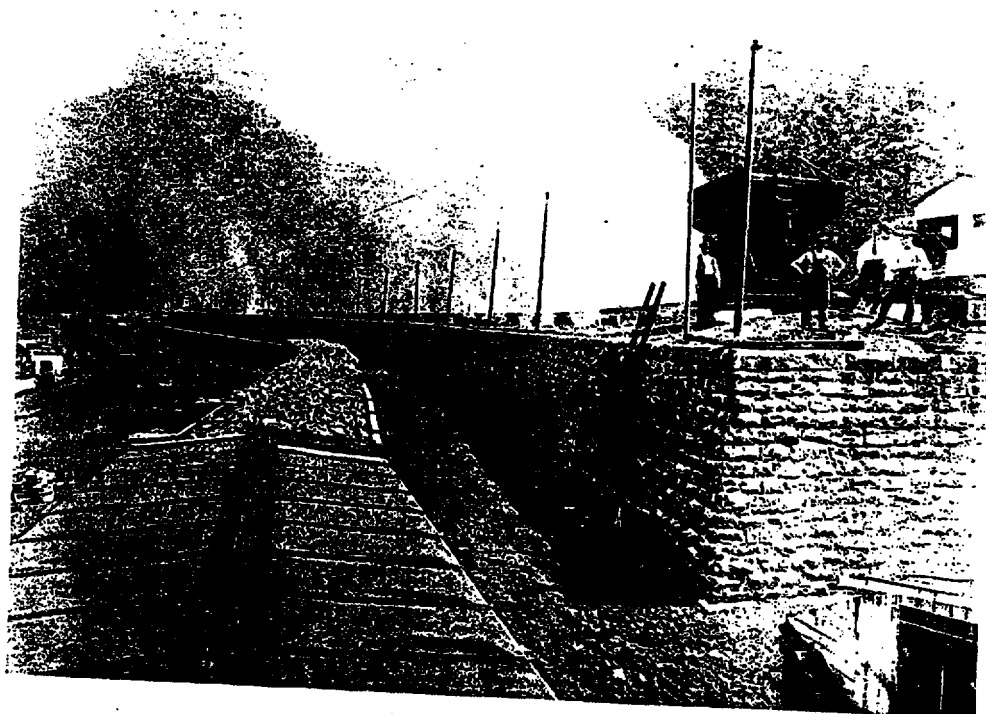
Entrance to Coal Mine



Interior of Coal Mine showing Men Hand Picking Coal



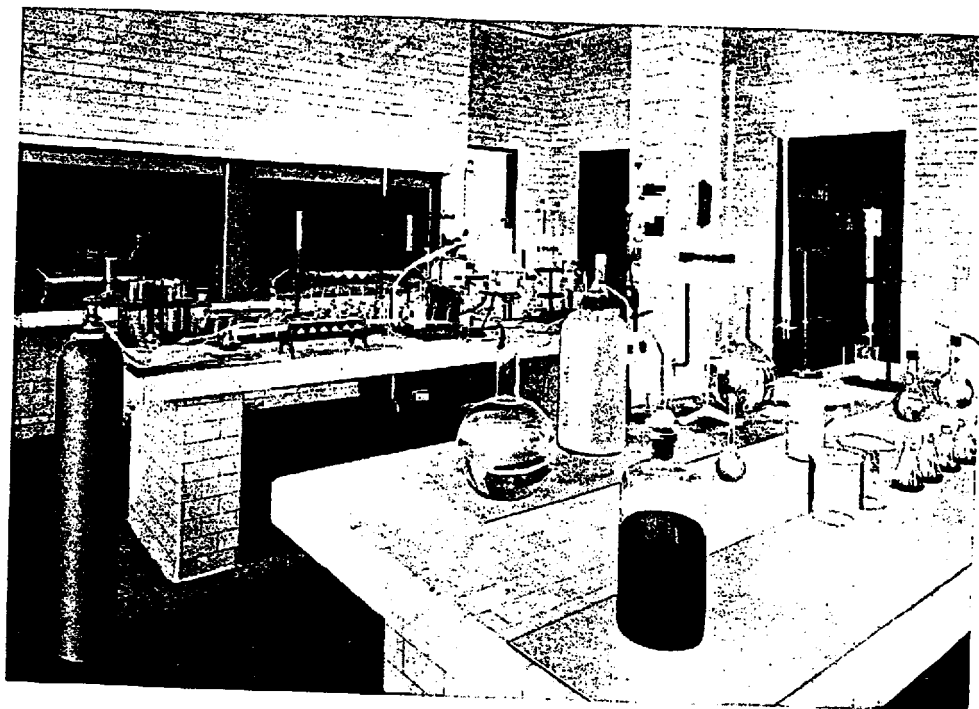
A Consignment of Coal Ready for Shipment



A View of Coke Ovens



ARMCO Research Laboratory



Interior of Laboratory, Research Dept.



RESEARCH DEPARTMENT

THE entire trend and character of manufacture in modern industry is along scientific lines as against the former "rule of thumb" method. In the iron and steel industry this is perhaps more marked than in any other line, as the selection of materials and methods must be based on actual knowledge in order to secure desired results.

In order that this might be accomplished in the most scientific and effective manner, the company established and equipped its new Research Department in 1910. This is one of the most complete iron and steel Research Laboratories in the United States.

A staff of experienced metallurgists and chemists is in charge of the work, and under its supervision experimental work is continually in process.

The Object of its Work is Two-Fold:

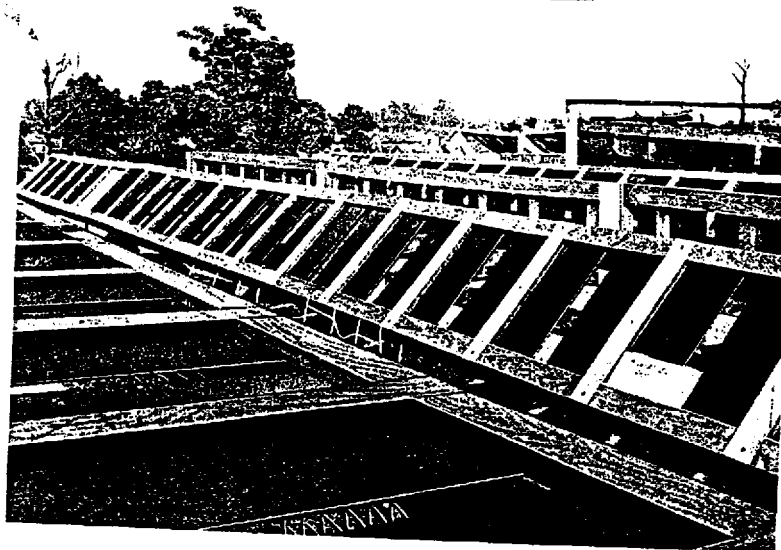
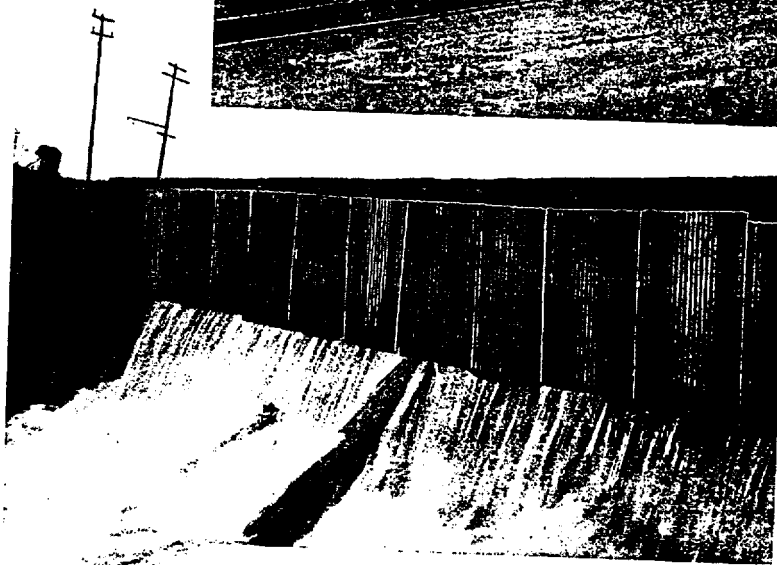
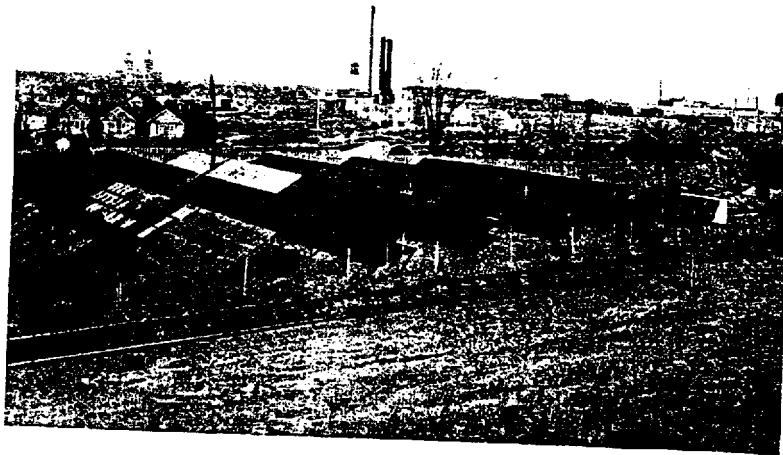
First, it is its aim to carefully check the processes of manufacture to insure the maintenance of the difficult and high standards which have been established by this company.

Second, to keep in touch with the latest developments in metallurgical science in order that all possible improvement may be made in the manufacture of established products; that new and useful grades of materials may be developed as fast as needed in the evolution of industry; and that new applications may be found for materials that have become standard.

The Laboratory is equipped with the latest appliances for chemical, electrical and physical work.

A very important portion of the research work is the supervision of every known form of exposure test in which corrosion is the chief factor.

Comparisons are made between different irons and steels and records are kept not only of the analysis, but of the manner in which they stand the tests.



Testing Fields

THE PRODUCT "ARMCO (AMERICAN) IRON"



IN 1904-5 scientists connected with the Department of Agriculture at Washington were carrying out an elaborate series of tests on the fine old iron of seventy-five to one hundred years ago, to determine if possible the reason for its remarkable resistance to corrosion as compared with modern steel. The results of numerous analyses went to show that the old and durable irons were of a comparatively high purity, being especially low in sulphur and manganese, while the products of modern furnaces nearly always contained a high percentage of these impurities as well as of carbon. The result was that the Department advised manufacturers to produce a purer metal for exposed installations.

Following the line of thought suggested by the Department of Agriculture, The American Rolling Mill Company began a series of careful experiments which were carried over a period of years. The research, development and practical work done during that period resulted in the production of ARMCO IRON, the purest sheet metal ever successfully produced on a commercial basis.

Experience, however, developed a number of interesting facts showing that purity is not the only essential in the production of a rust-resisting material.

In ARMCO IRON we have a thoroughly dense, homogeneous, uniform product, free from gases, dirt and slag; carefully safeguarded in heat and rolling treatment, subject to the most rigid inspection to eliminate even the most inconsequential flaws and defects; thoroughly and scientifically annealed. Not even the slightest detail of manufacture is overlooked, because the importance of each factor has been made clear by ten years of the most active experience.

These brief statements will give some idea as to why ARMCO IRON sheets and products are giving such satisfactory service under varying conditions. They will also explain why the uses for ARMCO IRON are multiplying rapidly in nearly every country in the world.

ARMCO IRON service has made it possible for one of our friends in the Columbia River salmon district to build up a reputation on fishermen's buckets. Another friend has taken advantage of ARMCO IRON service for maple syrup cans and has made his reputation thereby. It has made possible the development of great industries, notable among which is that of pure iron corrugated culverts. It has made possible the distribution of ARMCO IRON products to South America, Africa, China and far-off Australia. It has been the mightiest force in the revival of the use of metal



THE PRODUCT "ARMCO (AMERICAN) IRON"

and tin roofing, and has been one of the enemies of the High Cost of Living.

ARMCO IRON Polished Sheets combine with corrosion-resisting properties a beauty of polish or surface finish and perfect welding properties. At least three score and ten stove and furnace manufacturers are using ARMCO IRON Polished, Galvanized and Black Sheets for heating devices of every description,—from tiny electrical stoves to eighty ton garbage burners. Many of the largest transcontinental locomotives have their throbbing vitals encased in ARMCO IRON Polished jackets.

ARMCO IRON has developed other excellent properties in addition to durability. On account of its freedom from gases and its uniformity, it is absolutely the best base obtainable for vitreous enameling. The most successful companies in this business are using it for enameled products, varying from dial faces and street signs to enameled stove parts, table tops and refrigerators.

The purity and uniformity of ARMCO IRON makes it an extremely good conductor of electricity, and explains its use for a variety of electrical devices, especially for third rails in electrical transportation. For the same reason ARMCO IRON welds perfectly, as it flows freely under the oxy-acetylene flame, and the welded joint is 100% efficient.

New uses for ARMCO IRON are being constantly discovered. A few of the more important of this pure iron can be listed as follows:

Acetylene	Gas and Coal	Railroad Cars
Generators	Ranges	Silos
Baking Pans	Garbage Cans	Street and Road
Boats	Garbage Consumers	Signs
Coal Chutes	Gas Tanks and	Stacks
Culverts	Holders	Septic Tanks
Corn Cribs	Guy Rods	Stand Pipes
Chimneys	Heating and	Stoves and Heaters
Drip Pans	Ventilating Ducts	Sky-lights
Dishwashers	Incubators	Tanks
Enameled Products	Metal Lath	Ventilators
Equalizer Bars	Pipe and Trough	Window Frames
Furnaces	Pole Line Hardware	Wash Tubs
Fence Posts	Roofing	Wire for Fencing
Flumes	Roofing Tin	Wire for Welding
Furnace Pipes	Range Boilers	Wire—
Garages	Refrigerators	high conductivity.

THE PRODUCT "ARMCO (AMERICAN) IRON"



OTHER SPECIAL GRADES OF SHEET METAL

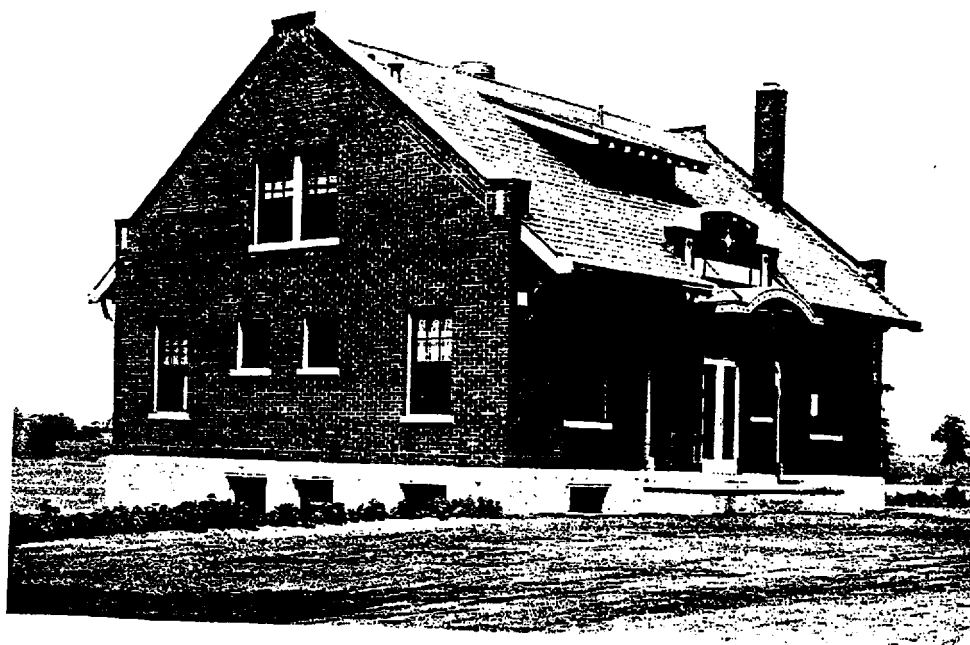
THERE are many demands for sheet metal in which resistance to corrosion is not the chief quality of interest. To meet these demands, The American Rolling Mill Company, with its usual thoroughness, has developed and is manufacturing a number of special grades of steel designed to meet the varying needs of manufacturers, who must have high grade material.

A very large tonnage is now being produced, a substantial part of which is being used by automobile manufacturers for Bodies, Fenders, Hoods, Radiators and Cowls. In all of these instances a material with a mirror-like surface that will withstand the severest deep drawing operations, is absolutely essential.

We are producing a number of other grades of special steels which are particularly adapted for use in the manufacture of Sheet Metal Stoves, Buggy Seats, Wagon Panels, Metal Lockers, Filing Cabinets and Metal Furniture of every description.

Our Research Department has made possible our production of the highest grade sheets for electrical purposes. Our production of electrical steel sheets for the construction of pole pieces of Generators, Dynamos, Motors, etc., has attained a world-wide reputation, and in the manufacture of such material science and practice are combined exactly in the proper proportion.

Along with these major lines, we produce limited quantities of High Carbon Steel for Hoes, Harrow Discs, Scrapers, etc., as well as Black and Galvanized Steel Sheets. Even in the production of such material, quality rather than tonnage is our aim. Our Miami brand of Galvanized Steel demands a premium over many other makes, due to its superior uniformity and working properties.



ARMCO Hospital



Visitors Day — Research Department



THE HUMAN ELEMENT

IN the development of a manufacturing business, splendid manufacturing facilities may be provided, the best obtainable for purposes required, valuable and profitable products may be developed for which there is an assured demand, ample working capital may be available, but in the final analysis the success or failure of the enterprise depends upon the successful handling of the "Human Element" necessary to a proper conduct of the business.

The American Rolling Mill Company has been and is endeavoring to build a sound, effective, forceful

WORKING ORGANIZATION

that will be fully equal to its exacting needs.

SAFETY FIRST

A COMMITTEE, the personnel of which is changed every month, composed of representatives of both the heads and members of the various departments, is constantly working to bring about the best possible conditions as to "Safety" in the Works. They are absolutely free to make any recommendations they think proper or necessary that will insure greater safety for both employees and visitors. Conditions as to "Safety" should, therefore, be improved with each passing month.

Employees are, however, given to understand that there is more danger for a CARELESS EMPLOYEE in the best organized and best guarded Works in the country, than there is for a CAREFUL EMPLOYEE in a Plant where no attention is paid to safety appliances; in other words, that the greatest responsibility lies with the individual himself.

SKILLED WORKERS



Open Hearth Dept.

Sheet Mill Dept.



Electrical
Dept.



Mechanical
Dept.

New Americans of Foreign Birth

THE HUMAN ELEMENT



CARE OF SICK AND INJURED

THE company has provided a modern, fireproof hospital, located just outside the entrance to the Works, surrounded by a beautifully parked space where every possible convenience and appliance has been supplied for the care of injuries, either slight or great, and where minor injuries can have the best of daily treatment. The equipment of this hospital is such that from four to six individuals can be cared for continuously for weeks, if it were necessary. Light, ventilation and sanitary conditions are the very best, and a competent surgeon, an assistant and a nurse are constantly available so that either sudden sickness or injury can receive immediate and careful attention.

WORKING CONDITIONS

THE company has endeavored to create the very best possible working conditions in and around its plants. All departments, even its Rolling Mills, are exceptionally well ventilated, and the very best of sanitary conditions prevail. Toilet rooms, shower baths, dressing rooms and every reasonable convenience has been supplied to the end that every man may be able to do his BEST WORK comfortably and safely.

The company believes that both employer and employee are the product of the environment in which they live and work. With this idea in view, a substantial amount of work is done each year in bringing about the most attractive and ideal exterior conditions in and around the works, the offices and auxiliary department. Trees and flowers are planted from time to time wherever available space is found.

The employees of the company as a whole have been found to be both appreciative and helpful in carrying out this policy, and we believe the result is reflected in their work and in the character of their homes and their surroundings.



Homes of ARMCO Foreign Men

THE HUMAN ELEMENT



THE MUTUAL INTEREST DEPARTMENT

THIS department has been created to carry on real mutual interest work among Armco men and their families. The children receive Kindergarten instruction daily and a visiting nurse takes care of the homes. Special attention is given to the living conditions of all Armco men.



MARGARET JOHNSON
The Children's Friend



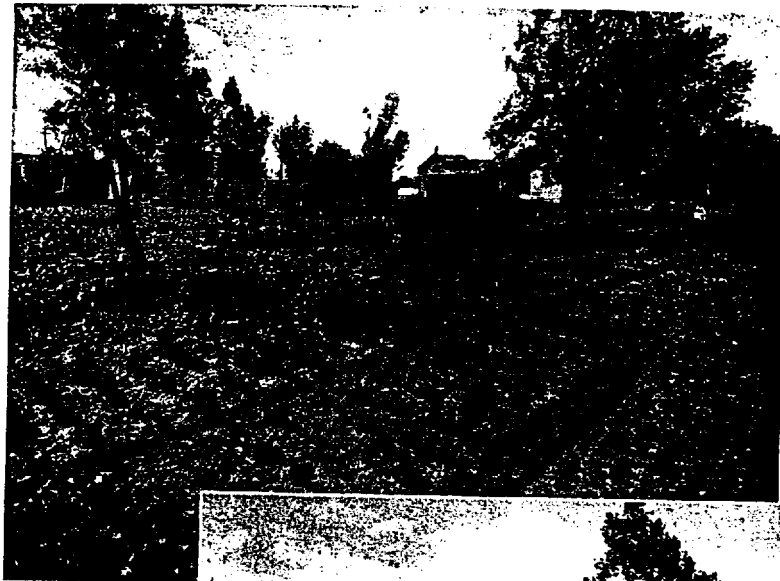
CHAS. C. COWGILL
Supt. Mutual Interest Dept.



ANNA C. HANSEN
Visiting Nurse



ALICE E. NEWELL
Nurse



Vegetable Gardens

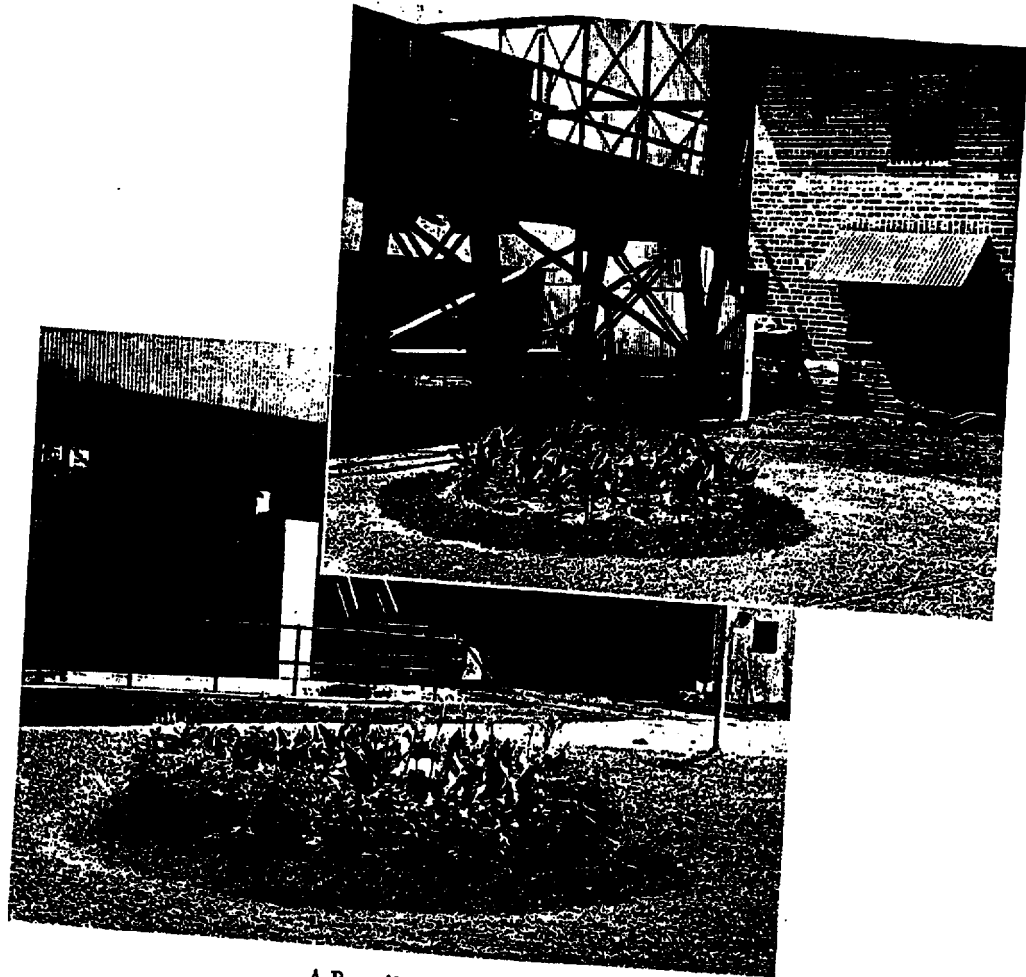


GARDEN PLOTS

THE company has reserved several large tracts of land, at least two hundred acres in all, for use of employees for individual gardens.

The use of a plot of land, about a quarter of an acre in size is given free to every employee who desires it; the only requirement being that application is made before a specified time and the land cultivated in a thorough and business-like manner.

These garden plots are very popular, and men of many different races and nationalities, and from nearly every class of employment take advantage of this opportunity.



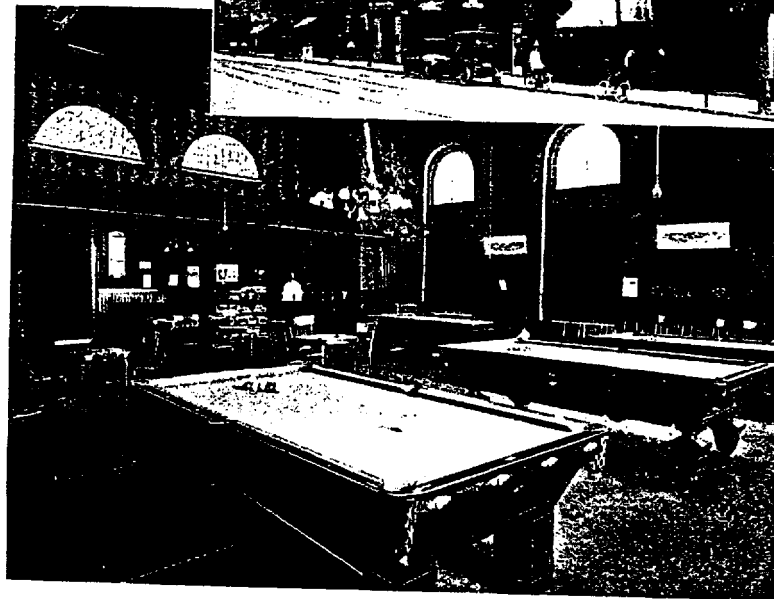
A Beautiful Corner at Blooming Mill



ARMCO
Foreign
Club



ARMCO
Hall



Interior of ARMCO Club



LIVING CONDITIONS OF ARMCO WORKERS FROM FOREIGN LANDS

OUR company appreciates the fact that the Hungarians, Slavs and other foreigners who come to us to help us in our work are just as necessary and important as any other class. It also appreciates the fact that they are men like ourselves, and that they deserve just as good treatment and as healthful living conditions as other Armco men.

The company endeavors to provide homes for all the foreign labor which it employs, with the exception of those who own their own property, in order that such homes may be cared for under its own supervision. We have found that they are very appreciative of better living conditions than those to which they have been accustomed at home, or than they have been in the habit of finding in other places.

Prizes are offered for the best kept houses and yards, and a constant effort is being made to bring about gradual improvement in everything that goes to make up the living conditions of these sturdy people.

A new colony to be known as "Garden City" has been started, wherein every house is to be an attractive bungalow especially designed to meet the needs of these people. Each house is to be provided with its own garden plot and a certain amount of assistance to be given by the company in order that the yards and grounds may be kept in first class condition.

We find that the providing of good living conditions enables us to secure and retain a better class of labor and to enjoy MORE EFFICIENT and DEPENDABLE SERVICE.

ARMCO FOREIGN CLUB

AN old but commodious homestead has been converted into a Club House for foreign employees, near Central Works, and is operated as a branch of the Armco Association. Here reading rooms, pool and other games are provided; the ground being of sufficient capacity to provide for outdoor entertainments during the summer months.

The company maintains a competent man in charge of this Club, and assists in providing entertainment and recreation whenever and wherever possible.



ARMCO ASSOCIATION

NEARLY all of the fifty-three hundred employees of the company are members of Clubs which are maintained in both Middletown and Zanesville for their benefit and pleasure.

"The object of this Association," to quote from its Constitution, "is to afford relief to any member, who, while in the employ of The American Rolling Mill Company, may, through sickness or injury be rendered incapable of performing his duty; to enable him to avoid the necessity of appealing to his fellow-workmen for aid; and also to promote the general welfare of its members and to bring the workmen of the various departments into closer relationship."

In addition to what the company does for its employees under the Ohio State Plan in case of injury, this Association pays its members both sick and death benefits, so that between their own Association and the State Insurance Plan operated by the company, every possible sickness or injury is taken care of.

The Armco Association through its Armco Club provides social, physical and intellectual recreation and entertainment, and with very small assistance from the company maintains well equipped club rooms, where members may gather for social purposes at any and all times.

This Club assures a better acquaintance among the employees of the company, and gives them an opportunity to meet the executives, superintendents, and heads of the various departments on common ground.

All classes of employees, with the exception of the foreigners, including the officers of the company, belong to this Club, which is operated in the interests of all.



Armco Field



ARMCO FIELD

THE company has provided a park and athletic grounds of some twelve acres, which gives opportunity for baseball, tennis, football and other outdoor sports.

A separate field for trap shooting is also provided.

PROFIT SHARING PLANS

IN order to give Armco Men every possible proper incentive to do their best work, and to encourage loyalty and company spirit all salaried men who have any part of the burden of management are included in Profit Sharing Plans, which give them an added interest in results secured, and a share in the fruits of their labor and co-operation, over and above regular compensation received.

Profit Sharing Plans and methods of application are being studied constantly in order to reach the most equitable ground between the rights of the worker and the stockholder.

INSURANCE PLAN

THE company has now provided Life Insurance for Every Armco Man and Woman, who is in the continuous service of the company for one year or more; the amount of insurance, representing one year's wage or salary (not exceeding \$2400.00), to be paid in twelve monthly payments. The entire cost of this insurance is borne by the company.

SKILLED LABOR

THE wage paid to skilled workers is very much greater than that earned in the average industry, and the accepted method of fixing compensation does, in reality, give such return for effective work performed and actual results obtained, as does "fixed salary and profit sharing" in other lines of effort.

COMMON LABOR

TO foreign or common labor we offer a better understood and more direct award of an additional rate per hour over and above established base rates to all who have been in the service of the company for one or more years.

We pay this extra rate on the theory that those who stay with us one or more years become more efficient through having a better understanding of our work and requirements, and as a consequence show greater ability and dependability.



T H E H U M A N E L E M E N T

The entire business of The American Rolling Mill Company is operated on the principle that the best interests of the Buyer and Seller—of the Employer and Employed, are conserved when each recognizes the needs and rights of the other, and when each endeavors to accord the other the *fullest measure of justice*.

We have in this booklet endeavored to give a brief synopsis of the development of our Company, the location, character and scope of its *Plants*, their *equipment* and the *character* of its *products*.

The slogan of our organization is—

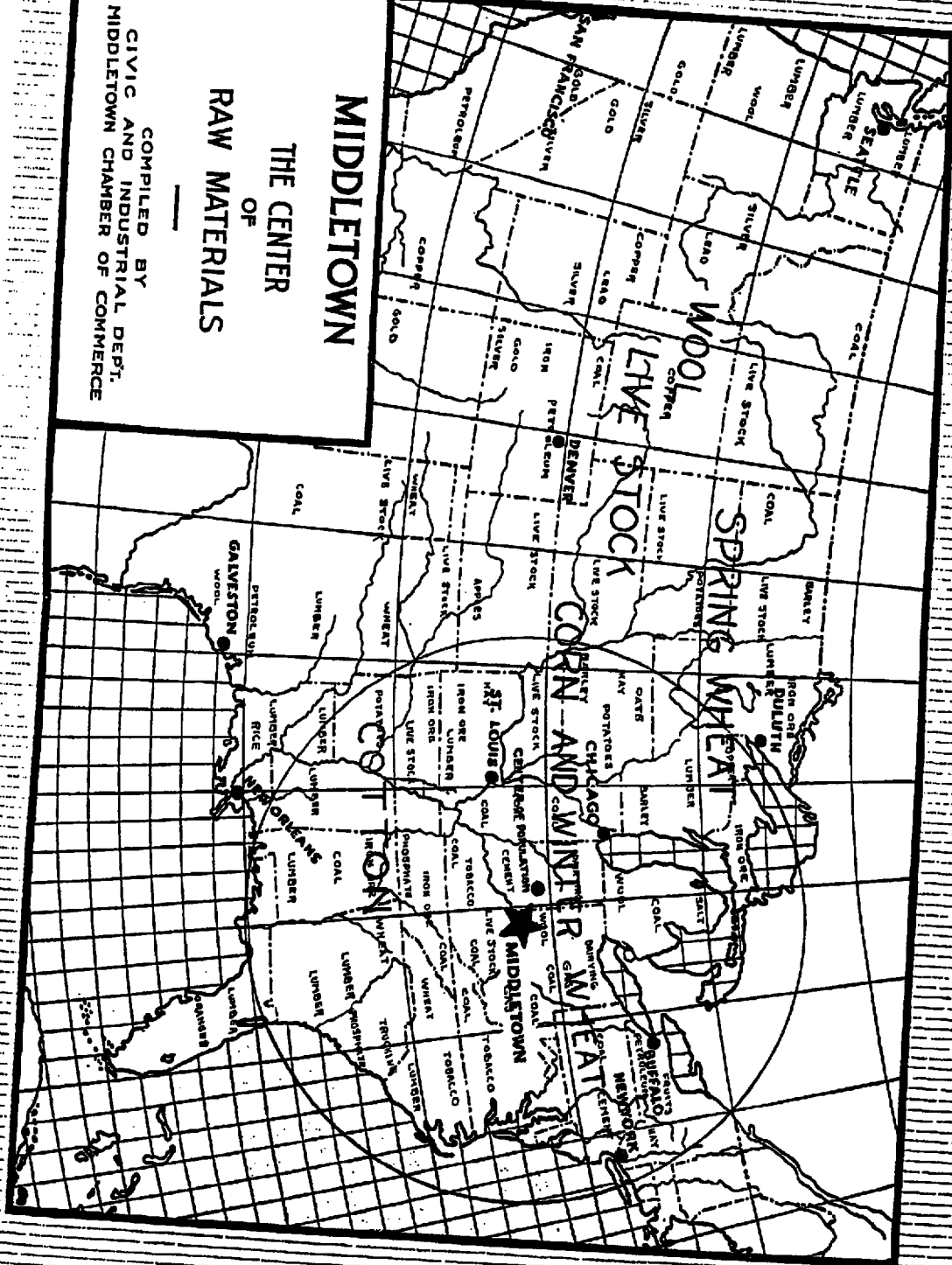
QUALITY
of product

and

SERVICE
to customers

THE CENTER OF RAW MATERIALS

COMPILED BY
CIVIC AND INDUSTRIAL DEPT.
MIDDLETOWN CHAMBER OF COMMERCE



Name: Bill Boggess

Client No.: 96-0054

Date: 10/19/96

<u>Item</u>	<u>Year</u>
<u>✓</u> Arm-co-operator Magazine	<u>1944, 1946</u>
<u> </u> Newspaper Clippings	<u> </u>
<u> </u> Old Plant Records	<u> </u>
<u> </u> Storeroom catalogs	<u> </u>
<u> </u> Order Cards	<u> </u>
<u> </u> Business Cards	<u> </u>
<u> </u> Old pictures of the plant, plant maps	<u> </u>
<u> </u> Other <u> </u>	<u> </u>