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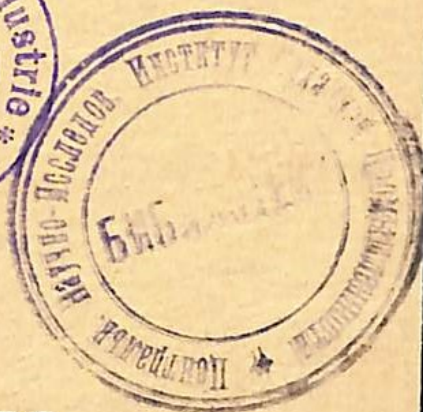
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A Century of Sugar Refining in the United States

(3. ed.)

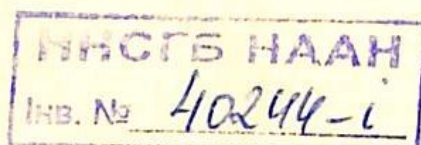
Von Joseph S. Freeman

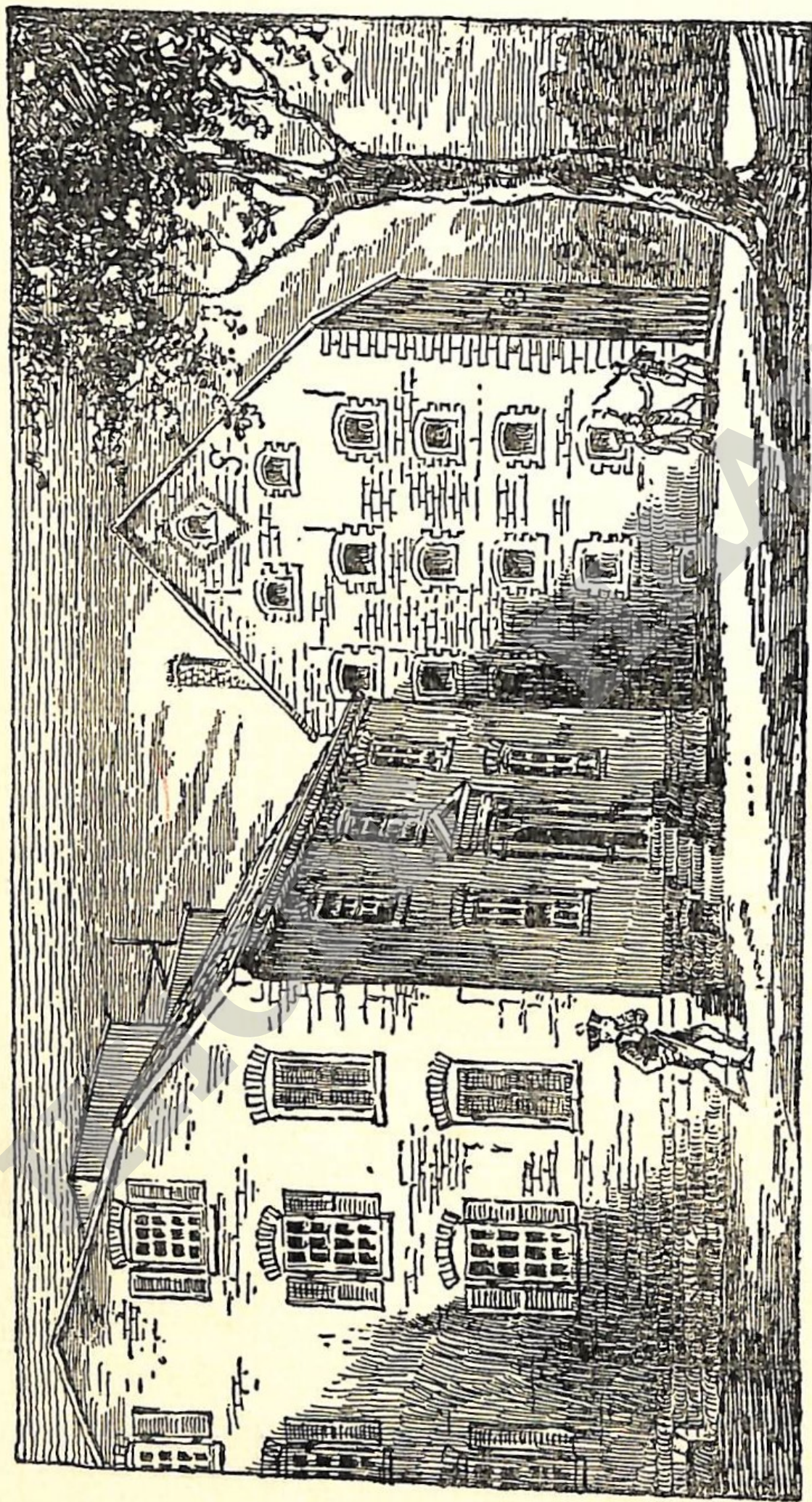


**The
American
Sugar Refining
Company**

1918

A Century of Sugar Refining in the United States





THE RHINELANDER SUGAR HOUSE
BUILT IN 1763
AND USED BY THE BRITISH AS A PRISON
DURING THE REVOLUTION

The American Sugar Refining Company



THE CULTIVATION of sugar cane is almost as old as civilization itself, but the universal use of sugar is a development of the last century. Its pivotal position in the food structure of nations and its effect on the morale of peoples have been fully recognized only since the war.

Food Administrator Hoover says:

"The use of sugar has grown during the last 100 years into our culinary and dietetic life to act as a sort of binding material on which our cuisine so largely revolves. Therefore, maintenance of household consumption is desirable beyond all question; and to cut sugar consumption in the household too low has a more depressing effect, infinitely, on a population than to cut off its manufacturing use."

The payment of the one hundredth dividend upon the stock of this Company was noted by the distribution of this brochure, prepared by Joseph E. Freeman, Esq., Secretary of the Company. The general interest in the subject and the appreciative responses from readers of the first and second editions have led to the issuance of a third edition.

New York City
March 1, 1918

EARL D. BABST
President



THE AMERICAN SUGAR REFINING COMPANY

NEW ORLEANS

A Century of Sugar Refining in the United States



HUNDRED years ago sugar in any form was a luxury and granulated sugar was unknown. While for many centuries lump or loaf sugar has been in use as a food, it is only within the last century that granulated sugar has become an article of universal consumption.

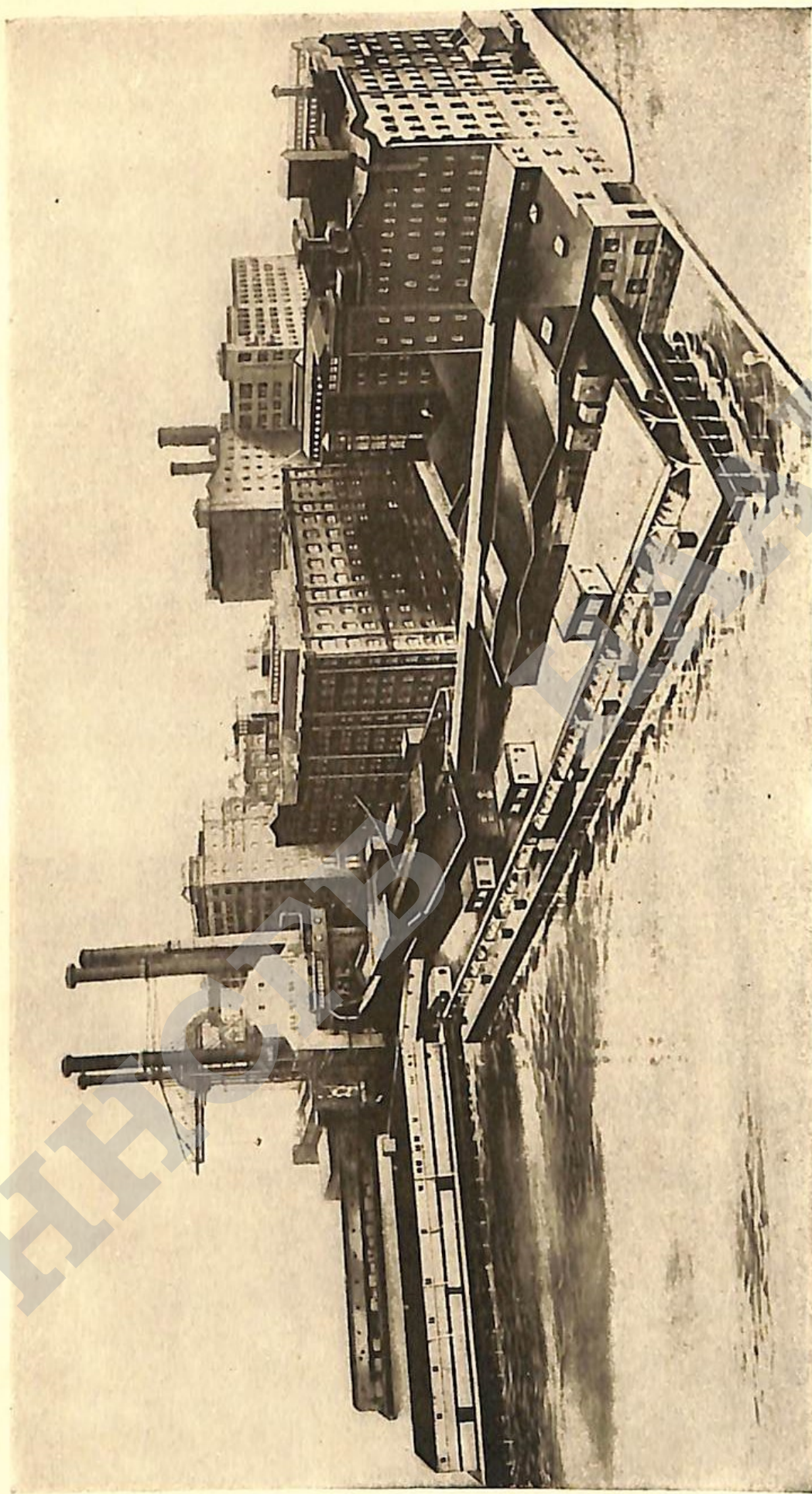
The improvements in operation in the last one hundred years and the advance in the art and science of refining have been such that to-day the consumer can buy his sugar at a price which is less than the cost in 1816 of turning the raw product into refined.

In Colonial days sugar was sold in the loaf, lump or piece, and the purchaser had to break it up for use in the household. Notwithstanding that granulated sugar is a modern article of diet, the making of white

sugar in moulds was practised long before the settlement of the American colonies. And not many years after the arrival of the Dutch on Manhattan Island a sugar refinery was built on Liberty Street which for over a century and a half was one of the leading manufacturing establishments of the city. That there was some sale of sugar and sugar-candy in the early part of the eighteenth century is clear from an advertisement which appeared in the "New York Gazette" on August 17, 1730:

"PUBLICK NOTICE is hereby given that NICHOLAS BAYARD of the City of New York, has erected a Refining House for Refining all sorts of Sugar and Sugar-Candy, and has procured from Europe an experienced artist in that Mystery. At which Refining House all Persons in City and Country may be supplied by Whole-sale and Re-tale with both double and single Refined Loaf-Sugar, as also Powder and Shop-Sugars, and Sugar-Candy, at Reasonable Rates."

At the time of the Revolution there were several refineries in New York City and two of them became famous as British prisons.



THE AMERICAN SUGAR REFINING COMPANY

BROOKLYN

The one on Liberty Street was standing in 1833 and a chronicler of the times states:

“The manufactory is carried on in Liberty Street, in the same building, which was known, during the Revolutionary war, as ‘The Old Sugar House,’ and which, while the British held possession of the city, was used as a prison for captive Americans, many of whose names are still legible rudely cut in the solid walls.”

The Rhinelander Refinery, near the corner of Rose, Duane and William streets, was also used as a jail, and was not demolished until 1893.

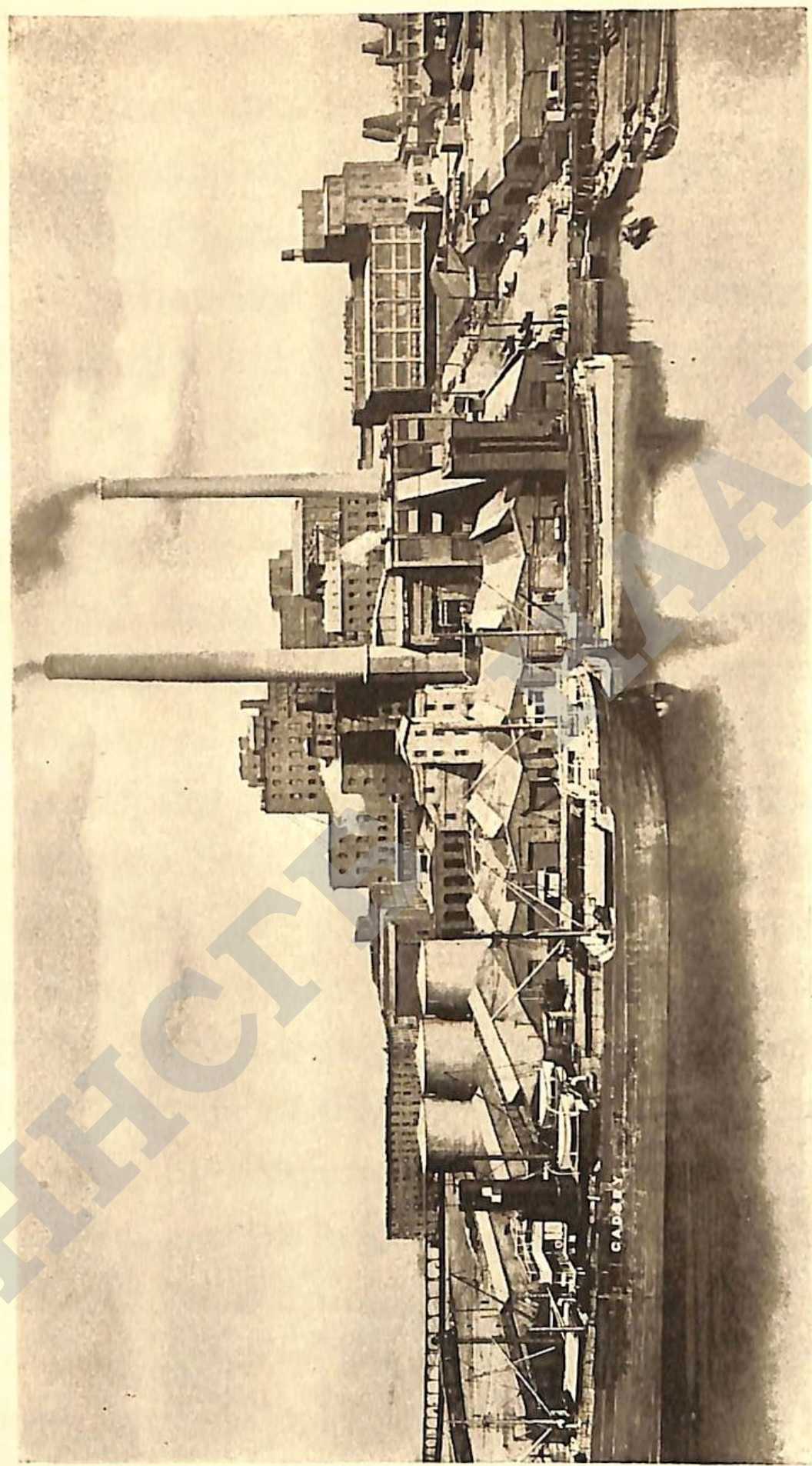
Many prominent American families interested themselves in the sugar business, among them the Livingstons, Bayards, Cuylers, Roosevelts, and Van Cortlandts. All these, by turning brown sugar into clean, white loaves of table sugar, added to their fortunes and helped to establish the refining industry in the United States.

In the early part of the nineteenth century the Havemeyers founded a refinery at Vandam Street, in a little building 25 x 40 feet in size, with only four or five employees.

In this small refinery was laid the beginning of a sugar business which, handed down from generation to generation, expanded until at the time of the organization of this Company it owned the largest sugar refinery in the world. Another firm that became prominent in the refining business in the first half of the nineteenth century was that of R. L. & A. Stuart.

While the details of the industry were not reported with the same exactitude that they are to-day, it is certain that in 1816 the total amount of sugar refined in New York City in a year did not exceed nine million pounds. While this seems to be a large quantity of sugar, the largest refinery of The American Sugar Refining Company can refine approximately that amount in forty-eight hours.

The art of refining consists in converting raw sugar into refined grades with a minimum loss of sucrose content. To-day a loss of six to seven pounds a hundred made in refining raw sugar of average test is all that is expected. In 1816 a refiner could only

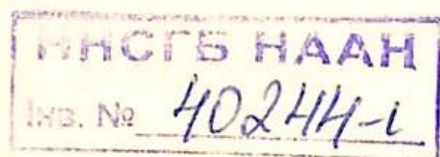


THE AMERICAN SUGAR REFINING COMPANY

JERSEY CITY

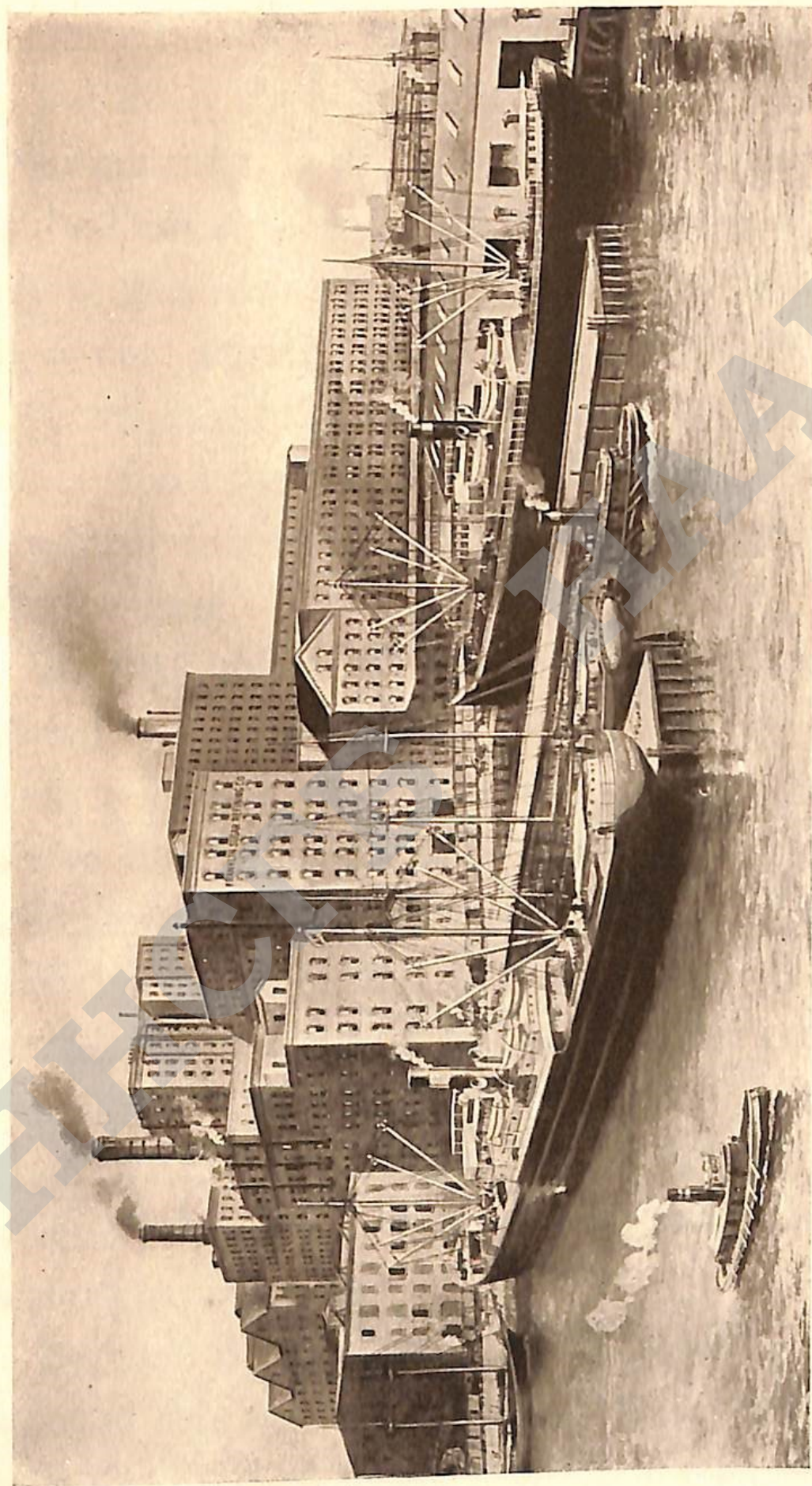
dustry, and to-day considerable capital is required to erect and maintain an establishment capable of turning out sugar in sufficient quantities to be sold on the low margin of profit prevailing in the business. The present method of refining involves between twenty and thirty steps, or processes, depending on the grade or form of the refined product.

In the course of a century the invention of the centrifugal machine, the vacuum pan, the boneblack filter and the polariscope has revolutionized the methods of refining sugar. The fundamentals, however, remain as in Colonial days. It was then necessary to melt, clarify, filter, and crystallize by boiling the raw product. To-day the same steps must be followed, but the methods employed in putting through the various processes have all been radically changed. Formerly the melting was done in a large, open kettle or copper boiler, the filtering accomplished by straining through blankets, and the clarifying by the use of bullock's blood, albumen, and clay. A hundred years ago no centrifugal



or granulating machine was in operation, and sugar was run into moulds and baked in ovens heated to the proper temperature. The invention of the centrifugal machine and modern granulator has made granulated sugar possible. In the former, centrifugal force throws the molasses free and leaves the white granulated sugar. The combination granulator and drier, as the name implies, dries the sugar and screens it.

Since 1816 a Frenchman, one Soleil, invented the polariscope. This instrument, by means of polarized light, makes possible an exact determination of the sucrose contained in any grade of raw sugar. By its use the buyer of raw sugar is able to determine, to a fraction of a degree, the value of his purchase. The use of the boneblack filter has done away with the old clarifying agents, ox-blood, clay, and albumen. Boneblack, an article universally used now, quickly and thoroughly cleans raw sugar. Employing it, together with the bag filters and filter presses which take the place of the old-



THE FRANKLIN SUGAR REFINING COMPANY

PHILADELPHIA
RESERVE REFINERY

fashioned blankets, the modern refiner is able to put upon the market an article free from any impurities. For high-grade sugars, such as the Domino brands, are to the hundredth degree free from foreign matter. Purchased in a neat, strong carton or a stout cotton bag, weighed, packed, and sealed by ingenious automatic machinery, they reach the consumer free from dirt, germs, or infection of any kind.

In 1816 the tariff upon raw sugar imported into the United States was three cents a pound, upon loaf or refined sugar twelve cents, and its price to the consumer was about twenty cents per pound. The tariff on most of the raw sugar now imported is but a cent a pound, and the protection of 1816 to the refiner of nine cents a pound has vanished entirely. To-day about one-half of the sugar consumed in the United States pays no duty.

Because of abnormal world conditions sugar at the moment is selling on a higher basis than has existed for many years, but

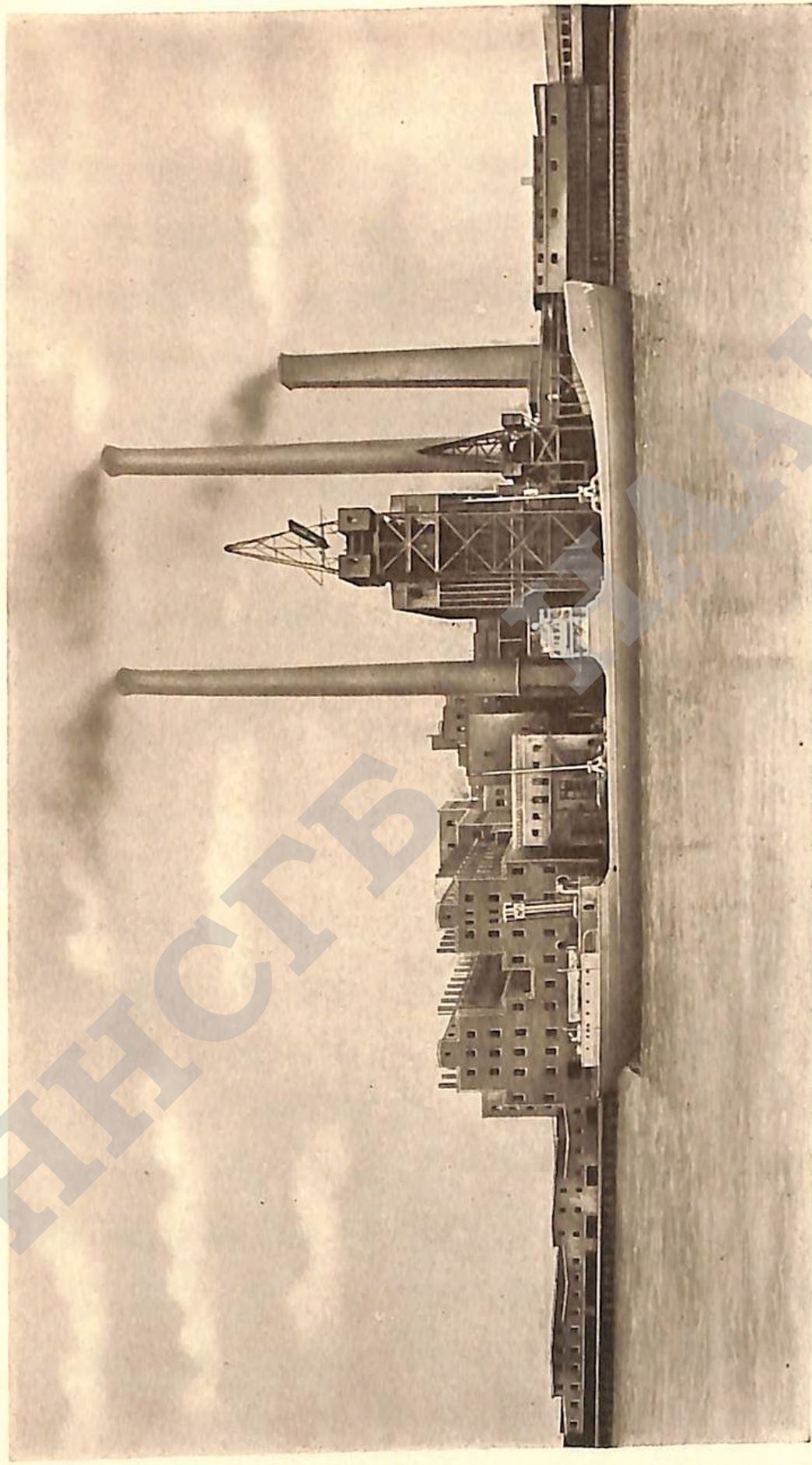
the price now prevailing in the United States is less per pound than that obtaining in any other nation in the world. Sugar is now an indispensable food product for all classes, and no other palatable article of food is furnished the public containing the same amount of energy per pound for a price equal to that paid for sugar. One of England's most competent experts upon diet sums up the opinion of the scientific world as to the great food value of sugar in this way:

"There have been few more important additions to our dietary, or which have done more to promote the health of the rising generation, than our cheap and abundant supply of pure sugar."

And an American authority, in pointing out the value of sugar as a food for children, recently repeated the statement of the English expert and said:

"The prejudice against this most valuable food for children is little better than a superstition."

The total amount of sugar imported in the entire year of 1816 would not run all



THE AMERICAN SUGAR REFINING COMPANY

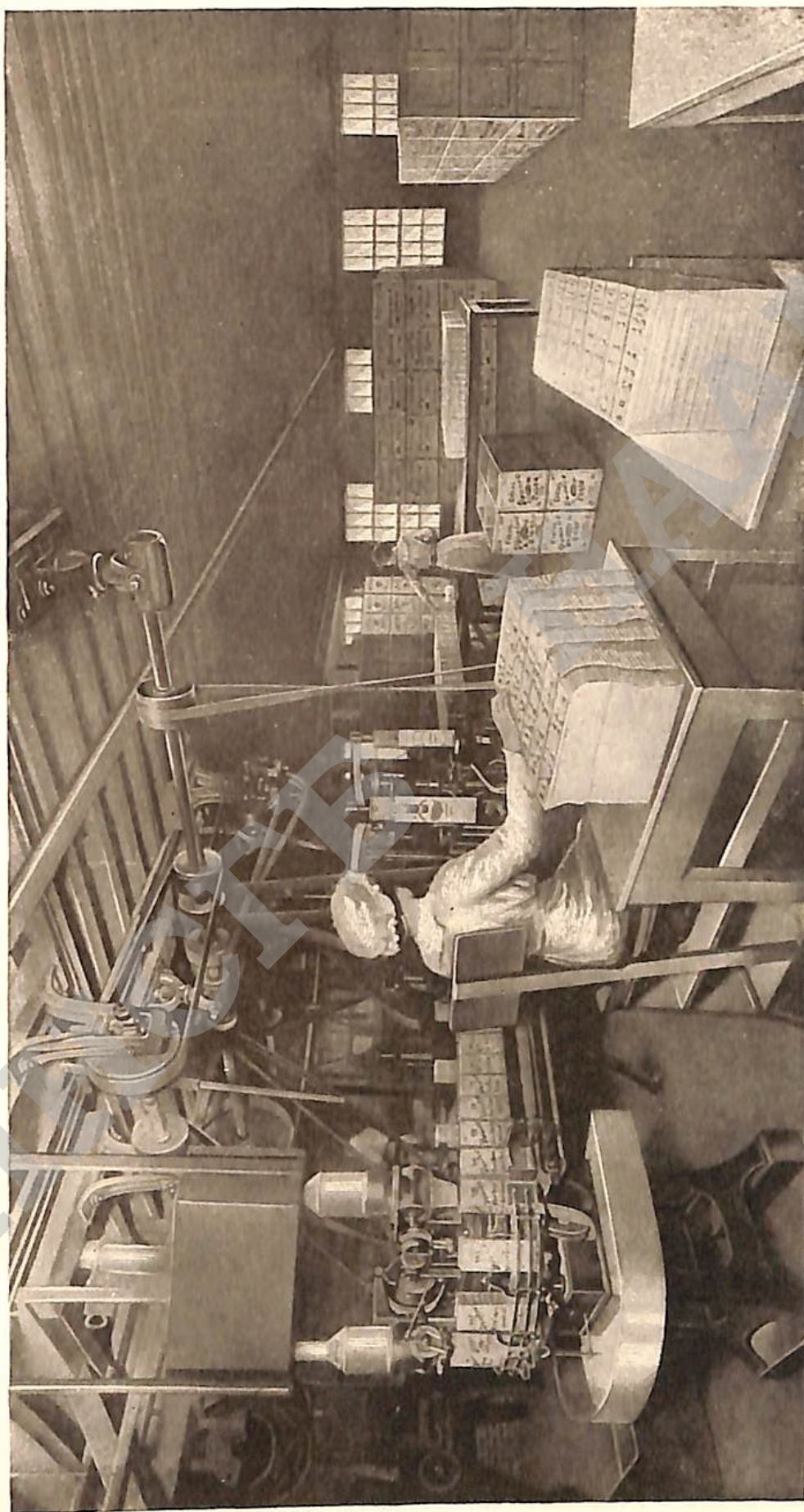
BOSTON

the refineries in the United States forty-eight hours. The amount received in customs duties by the Government for that year is now taken in at the port of New York in the space of a week. Formerly sailing vessels of small tonnage brought the raw sugar in hogsheads and it was then transferred by carts to the refineries away from the waterfront. Now ships of 10,000 tons burden land at the docks of the Company and their cargoes, with a minimum of rehandling, are dumped into the melting pan. Several vessels may dock at the same moment at many of the refineries of the Company. The Chalmette Refinery has a wharf which is 800 feet in length and 80 feet in width and contains extensive warehouses. Railroads bring their cars to the doors of the refineries and take the sugar for direct shipment to any part of the United States.

To-day only a large corporation is able to compete successfully in the world's sugar markets. Severely competitive conditions prevail in the refining business and the

rivalry among the many competing refiners is intense. Not only does it require a large organization, but vast capital, resources, and plants to draw the necessary raw products from all quarters of the world sufficient to make a year-round campaign. Employment of capital in large amounts, construction of extensive plants, and manufacture upon a large scale have enabled the refiner to reduce his cost of operation, improve the grade of the product, and sell the same at a reduced price.

One of the most important items in the distribution of sugar has been the cost of the barrel. The American Sugar Refining Company and its constituent company, The Franklin Sugar Refining Company, in shipping their products to the four quarters of the globe require every year millions of barrels. This one item has necessitated the acquisition through another constituent company of standing timber on lands covering an area of 625 square miles, or more than one-half the size of Rhode Island. The estimated



FILLING DOMINO GRANULATED SUGAR CARTONS BY MACHINERY

timber which may be cut from its holdings amounts to half a billion feet. To insure a constant source of supply on a low basis of cost, this constituent company has five large barrel factories and seven stave and heading mills, the latter with six and one-half miles of stave sheds. To bring the logs to the mills it has had to construct and operate 130 miles of railroad. Built in the first instance for this purpose, some of these roads have developed into interstate commerce carriers with standard freight and passenger equipment. One road already forty-four miles long, and to which extensions are constantly being made, has become the main artery between thriving industrial centers created by it in a region formerly a swamp.

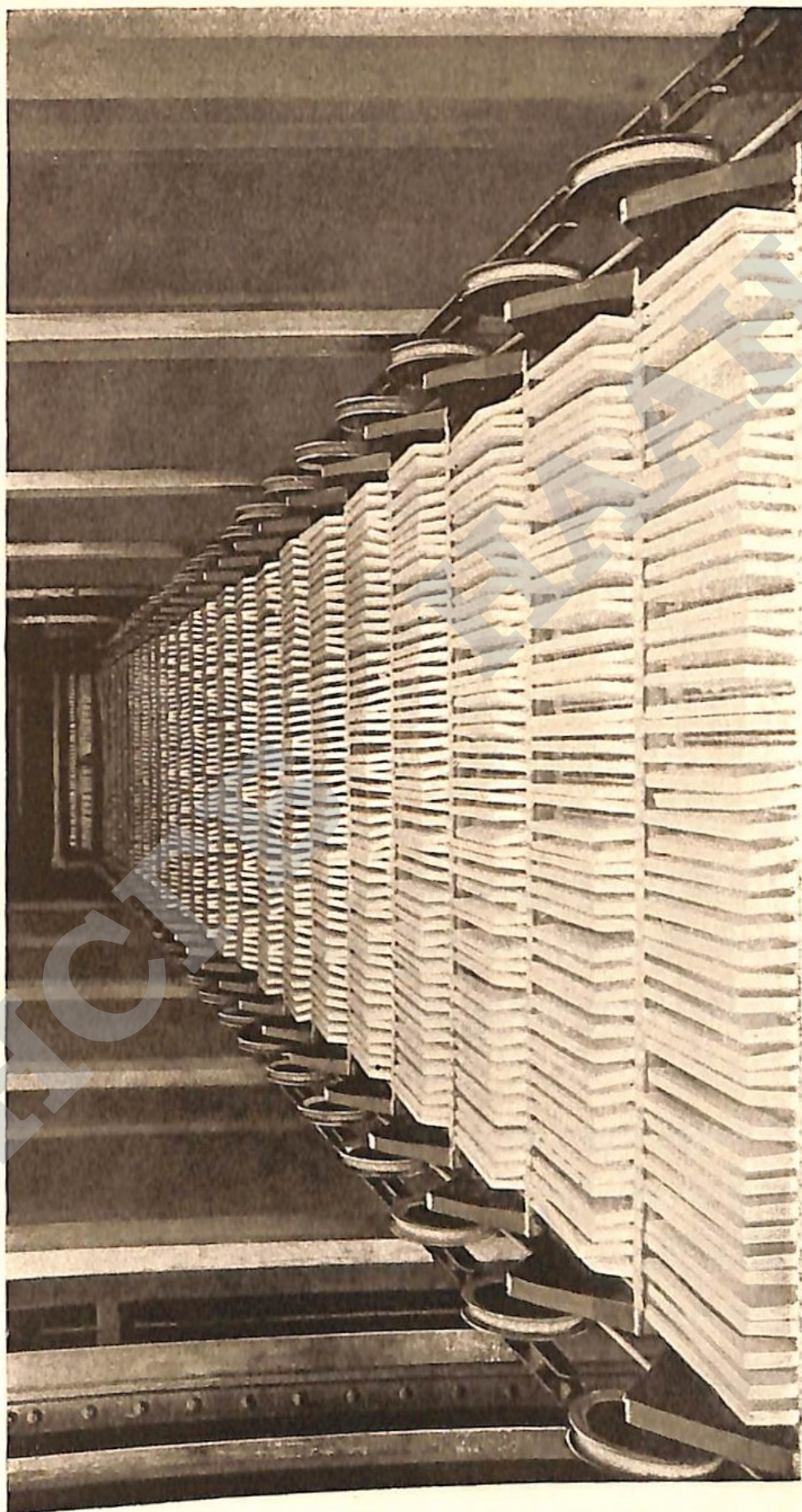
The barrel factories have an annual output of over 7,000,000 barrels, requiring in their manufacture 80,000,000 board feet of timber which is produced in the stave and heading mills of the Company. Prudence has required reforestation on a large scale, and since 1910 about one-half million of white

pine and spruce trees have been planted by the Company in the open forests of the Adirondacks.

Fine table sugars like Domino Cane Sugars are the result of two distinct processes. The first is the manufacture of the raw sugar—a brown, moist sugar, containing impurities—and the second is the refining of this sugar into higher grades of varying degrees of color and crystals.

A refining Company such as the American buys the raw sugar in the open market, and it is transported from its tropical home to the wharves of the Company's refineries located in Brooklyn, Jersey City, Boston, Philadelphia, and Chalmette, just below New Orleans. More than six hundred and fifty ships annually dock at the different refineries of the Company and discharge their cargoes totaling nearly 1,500,000 tons.

The yearly output of the Company in sugar and syrup mounts up to nearly 80,000 car-loads. Placed end to end they would make a train nearly 600 miles long, stretching



DOMINO TABLET SUGAR IN DRYING OVENS

from New York to Cleveland. And this is only a little over one-third of the sugar consumed in the United States. A train reaching from Boston to Denver would be required to move all the sugar so consumed.

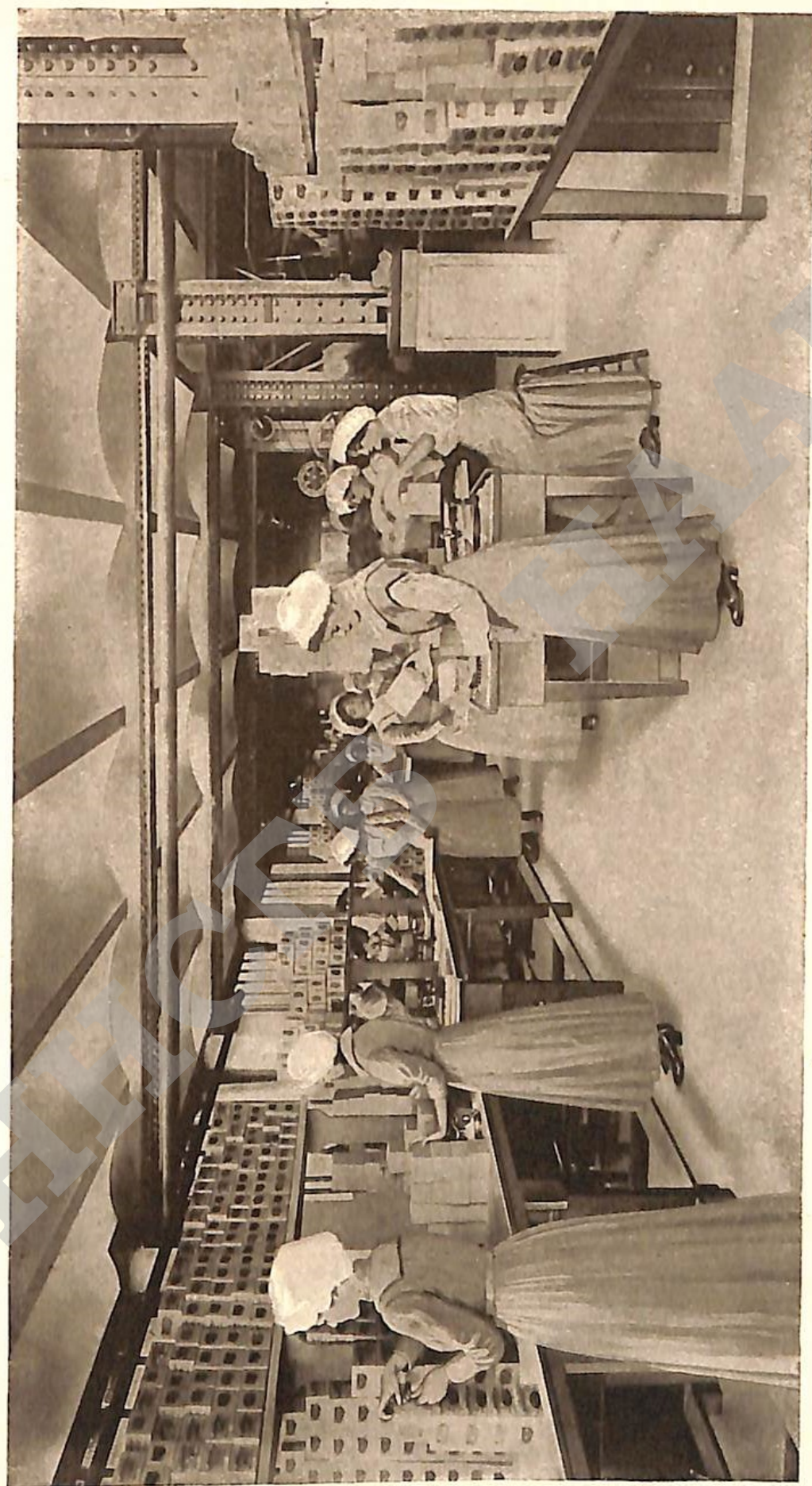
The moving of the refined product is but a portion of the freight business incident to the operations of the sugar refineries in the United States. The refining and cooperage plants of The American Sugar Refining Company alone require the use of approximately 55,000 freight cars each year for their manufacturing purposes. This total of 135,000 cars, necessary to conduct the yearly business of the Company, forcibly indicates the important relation which the sugar industry bears to the railroad systems of the country.

All the sugar refineries a century ago were of small capacity and manufactured but three or four grades of sugar. In one hundred years the advances in the methods of manufacture and the consolidation of plants have enabled the consumer, at a small cost, to

exercise a wide choice in the grade and character of his sugar.

Plants have been constructed for the manufacture solely of certain grades. At Jersey City this Company has erected a modern five-story steel-and-glass building for the production of the variety widely known as "Crystal Domino Tablets." This building, built simply for the purpose of economically producing this form of sugar, is many times the size of any refinery existing in Colonial days.

At prices for the refined product which are less than the sum which was expended by the refiner one hundred years ago to turn the raw sugar into refined, this Company offers for sale over one hundred varieties of grades and packings. It puts upon the market standard, coarse and fine granulated sugars; tablet, cut-loaf and cube sugars; powdered and confectioners' sugar, and fifteen grades of soft sugars—all in various sizes and packed in an attractive form in barrels, boxes, bags, and cartons, making "The Most Complete Line of Sugar in the World."



PACKING AND SEALING DOMINO TABLET SUGAR

From this assortment the consumer can now choose that sugar best suited to his use. He may have his powdered sugar in cartons with wax paper lining, his tablet sugar in large or small pieces, and, if he desires, individually wrapped in paper to insure sanitary delivery—the last refinement in the art of tablet sugar. Or if he favors the old brown sugar of his boyhood days, there are fifteen grades of that from which he may select.

Sugar for tea and coffee; sugar for fruits and cereals; sugar for icings, ice-cream and preserving; sugar for candy and chewing-gum; sugar for chocolate and condensed milk manufacturers; sugar for cracker and biscuit makers; sugar adapted to an infinite variety of uses, specially made and speedily delivered—this is the achievement of a Company owning many plants and capable of turning each to the manufacture of that form of product for which it is best adapted.

Manufacturing on a scale involving the minimum of waste, employing extensive plants and costly apparatus, and commanding the

services of experts of the highest skill, The American Sugar Refining Company has rendered a real service to the consumers of the United States in furnishing them a product rich in food value and within reach of the purse of the humblest laborer.