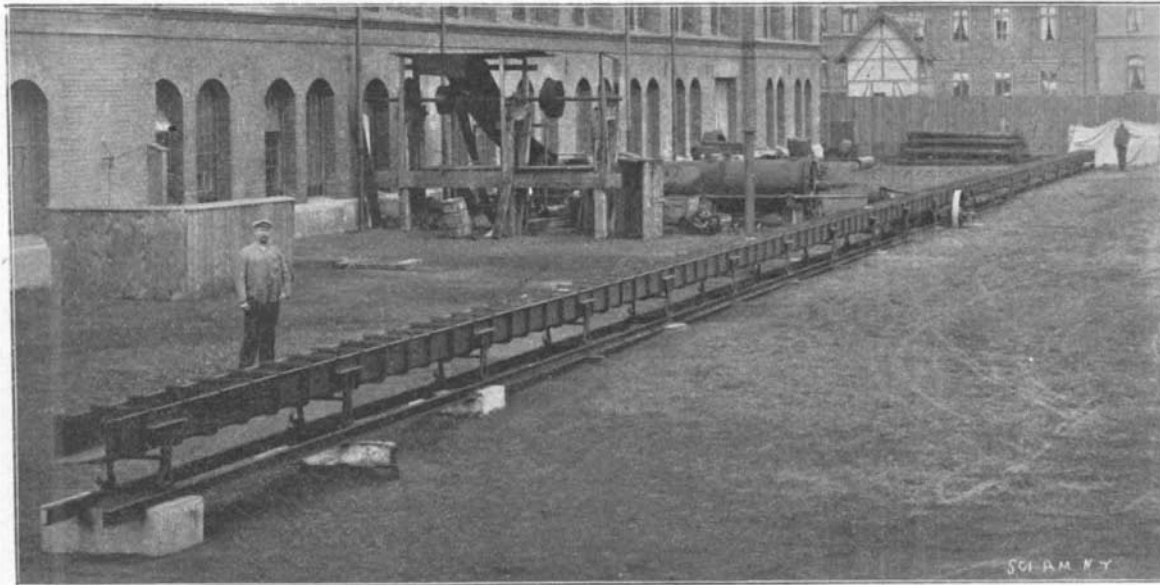


PROGRESSIVE-MOTION ORE-CONVEYER.

A form of ore-conveyer that has met with considerable success in Germany is manufactured by Maschinenfabrik und Mühlenbauanstalt G. Luther, of Brunswick, Germany. The conveyer is made of sheet metal and moves horizontally on roller-bearings. Angle irons are used wherever required. The material to be transported is discharged at one end or at any desired portion of the conveyer, and is moved along in one direction until the point of discharge is reached. The speed of transportation is constantly accelerated, until finally the load is discharged at the turn of the conveyer. Experience has shown that the operation is well nigh faultless, and that during the forward travel of the first period of the return, all the material is thrown off. An amount of material varying from 30 to 150 tons per hour can be conveyed with an expenditure of 4 to 25 horse power. The length of the conveyer is dependent only on the particular cross-sectional form selected. The conveyer is intended for the transportation of coal, ashes, sand, ores, beets, sugar, produce and the like. If coke is to be transported, or some similar material that wears away the metal, a glass bottom is employed. The speed of rotation of the driving-shaft is dependent entirely upon the character of the material to be conveyed, and varies from 60 to 100 revolutions per minute, or about one-third of that of ordinary progressive motion conveyers.

**A PROGRESSIVE MOTION ORE-CONVEYER.**

French Embassy, who as early as 1899 first suggested it. A year later the first bill was introduced in the United States Congress, and on March 3, 1901, a bill was passed and approved appropriating \$7,500, and in the following year a second appropriation of \$15,000 was secured, which amounts have since been further supplemented by other sums for the entertainment of guests sent by France to our shores to celebrate the event.

Immediately in front of the White House at Washington, and facing its grounds and closer than any

Chevalier de Ternay with five ships of the line, and in 1781 he actively co-operated with Washington in the movements which led to the capitulation of Cornwallis at Yorktown. It is said to be an authenticated fact that just before the surrender of Cornwallis at Yorktown, Rochambeau advanced to Robert Morris, the financier of the Colonies, the sum of \$20,000 out of the French war chest to pay the men under Washington and relieve their pressing necessities. In recognition of Rochambeau's services, Congress gave him a vote of thanks and presented him with two pieces of

cannon captured from the English. On his return to France, in 1783, he was made Governor of Picardy and Artois, and in 1791 was made Marshal of France. Bonaparte also named him grand officer of the newly-created Legion of Honor and pensioned him. During the reign of terror Rochambeau was imprisoned, and only escaped the guillotine by the death of Robespierre.

The statue, which is in bronze and of heroic proportions, is the work of Ferdinand Hamar, the deaf-mute French sculptor, and is a replica of the one erected in France. L. Parent is the architect, and the stonework of the pedestal, which is of French

limestone, is by Ferdinand Gausson. Besides typifying the happy relation of the two peoples, it is a handsome addition to the statuary of the United States capital, graceful in design, artistically executed, and well placed. Its most salient feature is the figure of the general in the uniform of his rank and with arm outstretched in the attitude of command. A symbolic figure below typifies the sentiment and meaning of the monument. A female figure representing liberty, with drawn sword in one hand, extends protection over the American eagle, which as a young fledgling is posed in an attitude of defiance against attack. The left hand of the figure bears aloft the entwined flags of France and of the United States, and the prow of a ship in the background suggests the help from over the sea. Lower on the pedestal is displayed the shield of the United States, bearing the thirteen stars of the original Colonies.

Count Rochambeau was born in Vendome, July 1, 1725, and died at Thoré, near that city, May 10, 1807. He entered the French army in 1742 and distinguished himself in various campaigns, reaching the rank of lieutenant-general. In 1780 he was placed in command of the French army sent to America. He embarked at Brest, May 2, 1780, under the escort of

In recognition of the dignity and importance of the

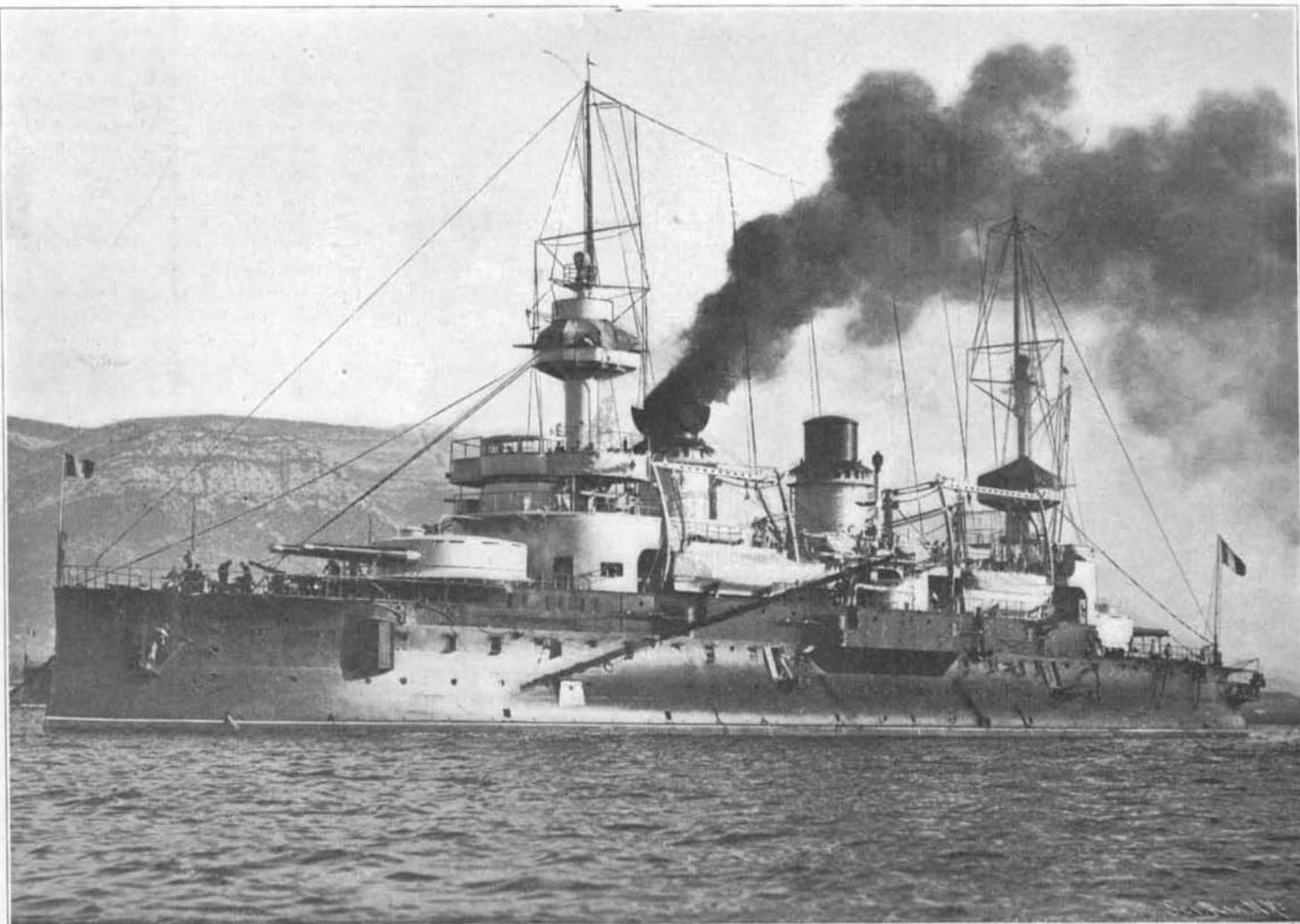
event, France has sent her splendid battleship, the "Gaulois," whose formidable proportions and equipment are so well shown in the illustration. It is an interesting fact that this fine specimen of a modern warship was built at Brest, the very port from which Rochambeau embarked for America in 1780, and she is also the first French battleship of the first class to cross the Atlantic. This ship brought with her, as representatives of the army and navy of France, Vice-Admiral Fournier, Inspector-General of the Navy; Lieutenant-Colonel Meaux Saint Marc, orderly officer and personal representative of

THE UNVEILING OF THE ROCHAMBEAU STATUE.

BY EDWARD W. BYRN.

On Saturday, May 24, 1902, the two great republics of the world joined in the celebration of an international event which carries the thought of the American patriot back to the struggles of his ancestors for independent existence.

The unveiling of the statue of Jean Baptiste Donatien de Vimeur, Count de Rochambeau, was something more than an ordinary function. It was the occasion of a remarkable gathering of representative men of the United States and France, and one in which the armies, the navies and the civil governments of both nations united to do honor to the soldier who was the official representative of the French government, and who with French money and French arms and French men extended the helping hand to the Colonies. The story of Lafayette's generously volunteered services is already known to every schoolboy, but it remained for the first Congress of the twentieth century to do substantial honor to Rochambeau. The credit for the initiative in this worthy tribute is due to Mr. Jules Bœufve, the French Consul and Chancellor of the



Turret ship (steel). 3 screws. **Displacement**, 11,275 tons. **Length**, 385 feet 6 inches. **Beam**, 66 feet 6 inches. **Draught**, 27 feet 6 inches. **Indicated Horse Power**, 14,500. Built at Brest. Launched 1896. Cost \$5,900,000. **Armor**: Belt, 15¾ inches; gun positions, 15¾ inches; deck plating, ¾ to 1¼ inches. **Armament**: Four 12-inch guns; ten 5.5 R. F.; eight 3.9; sixteen 1.8; ten 1.4; eight machine guns. **Torpedo Tubes**, 6 (2 submerged). **Speed**, 18 knots. **Normal Coal Supply**, 680 tons. **Complement**, officers and men, 632.

THE VISITING FRENCH BATTLESHIP "GAULOIS," IN ATTENDANCE ON THE ROCHAMBEAU CELEBRATION.

President Loubet; General Brugère, Commander-in-Chief of the French Army, Vice-President of the Supreme Council of War and Inspector-General; General de Chalendar, Commander of the 14th Infantry Brigade; Lieutenant-Colonel Hermite, Commander of the 6th Battalion of Foot Artillery; Captain of Artillery Peulloux de Saint Mars, and Captain of Cuirassiers Lasson, attached to the General Staff of the government at Paris. Representing civil life, and previously arrived in the passenger steamer "Touraine," were the present Count and Countess de Rochambeau; the present Count de Lafayette; M. Croisset, of the Faculty of Letters; M. Le Grave, Commissioner to the Louisiana Purchase Exposition; and other well-known civilians. In appreciation of the courtesy of the French government Secretary Moody assigned a special squadron from the United States Navy to meet and salute the incoming "Gaulois" and act as an escort of honor. This squadron consisted of the cruiser "Olympia," Rear-Admiral Higginson's flag-ship, and the battleships "Kearsarge" and "Alabama."

The ceremonies at the unveiling of the statue in Lafayette Square included the following programme: Invocation by Dr. Stafford; welcome by the President of the United States; unveiling of the statue by the Countess Rochambeau; music, "The Marseillaise," by the French Band; presentation of the sculptor, M. Hamar; remarks by the French Ambassador (in French); selection by the French Band; remarks by General Horace Porter, United States Ambassador to France; selection by the Marine Band; address by Senator Lodge; "Star-Spangled Banner," by the French Band; remarks by General Brugère; benediction by Bishop Satterlee.

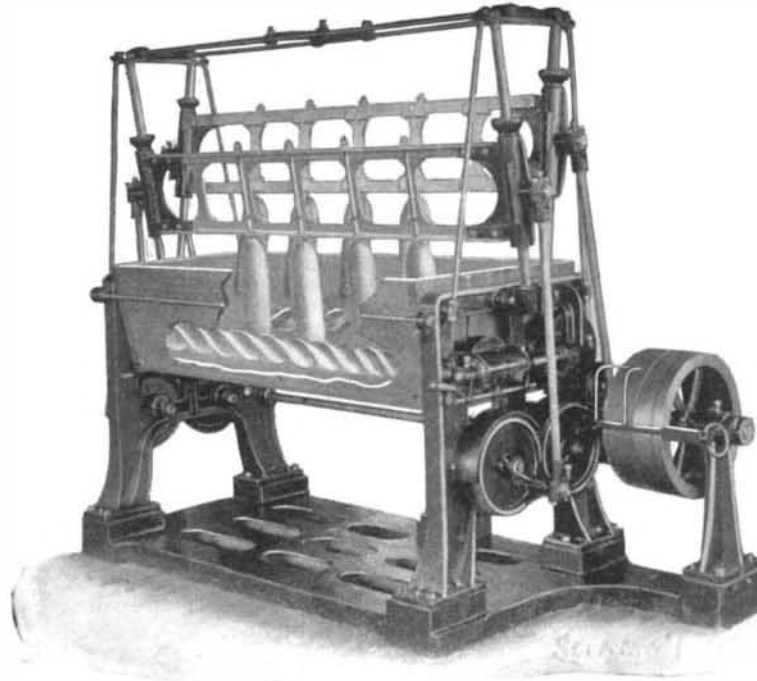
Following the ceremonies of the unveiling, social functions in entertainment of the guests will follow as a pleasant ending of the cele-

bration. It is understood that the guests will visit various points of interest in the United States before returning to their native land.

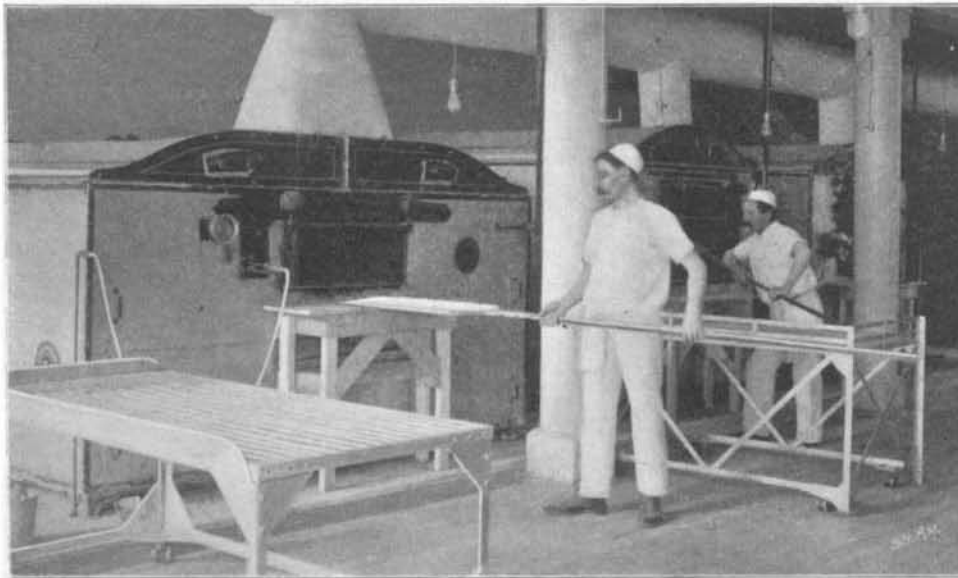
HYGIENIC MECHANICAL BREAD-MAKING.

The man who insists upon eating only the bread that his mother makes probably considers the loaf offered for sale in the grocery stores of the large cities the product of an uncleanly factory, and of the unwashed hands of men reeking with perspiration. Possibly that may have been true some ten years ago; probably it is still true of the little cellar bakery which supplies the bread of the people who live in the poor quarters of a large city such as New York. But home-made bread, good though it may be, has now been almost supplanted by the bread kneaded and baked by modern apparatus, especially designed for its purpose. Furthermore, machine-made bread has the one great merit over its domestic rival that it is absolutely uniform in quality. Each loaf is exactly like its fellow. The ingredients are always the same. The dough is always allowed to "raise" at a constant temperature. If in addition to its absolute uniformity, perfect cleanliness of production could be attained, there would be no reason for using home-made bread. It was the pleasure of one of the representatives of the SCIENTIFIC AMERICAN to inspect a plant installed at 362 West Broadway by the National Bread Company, of 25 Broad Street, New York city, in which bread is made by a system not only efficient, but so clean in its methods that it would meet with the approval of the most exacting physician.

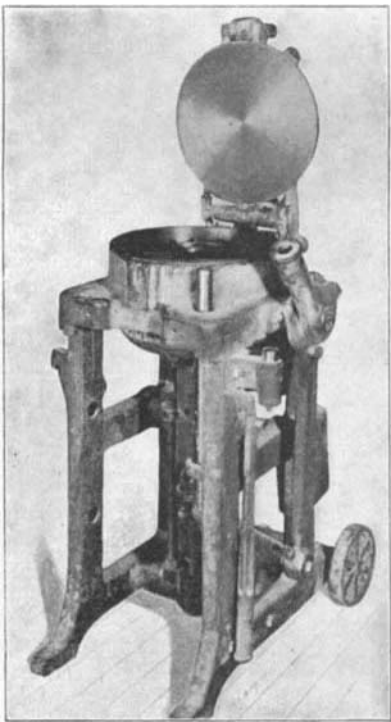
Briefly described, the process of making bread at this plant consists in mixing the various brands of flour—made from spring wheat, winter wheat, and pure rye—by means of a mechanical mixer and cleaner; conveying this mingled flour to a huge storage bin; transferring the flour to scales, by which it is automatically weighed and discharged into machines by which it is kneaded into dough with the necessary quantity of water; auto-



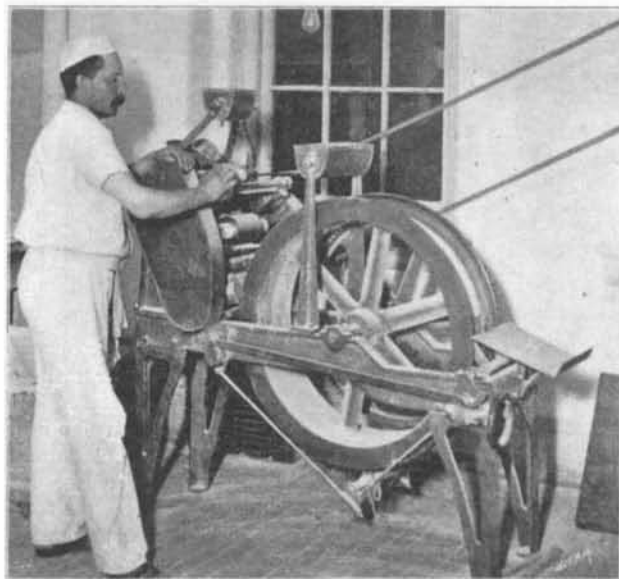
A Kneading Machine, Showing Mechanism.



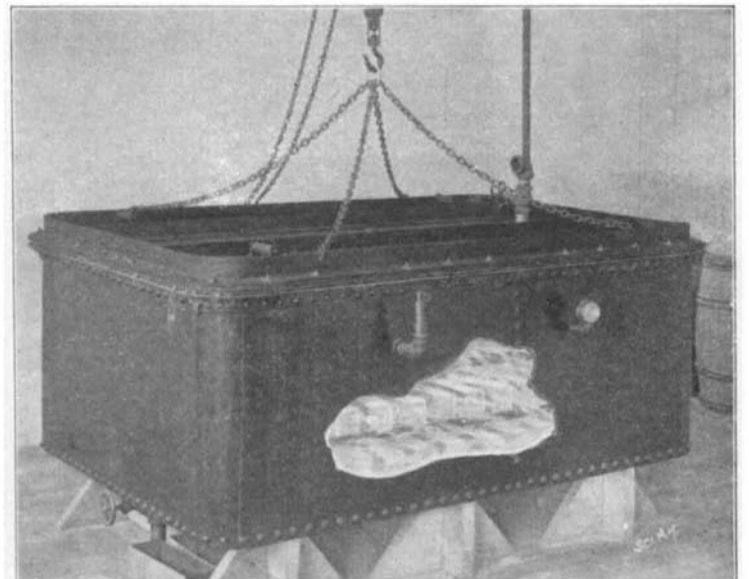
In the Baking-Room.



The Dough-Divider.



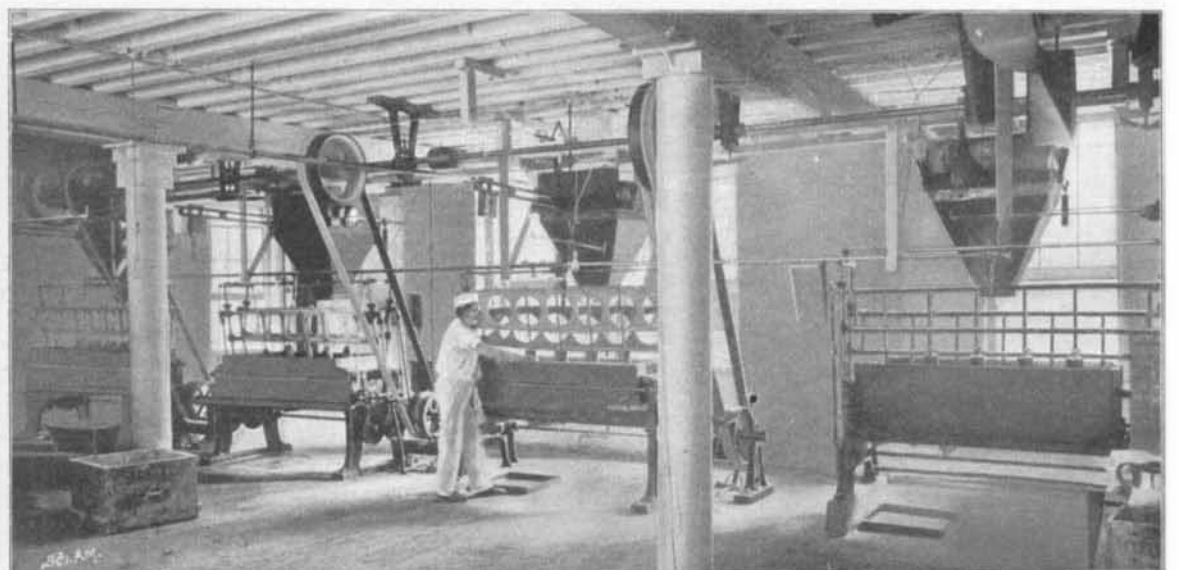
A Machine That Forms Dough Into Loaves



Crustless Bread Oven.



Flour Mixer and Cleaner.



Machines For Mixing and Kneading the Dough.

HYGIENIC MECHANICAL BREAD-MAKING.