

**THE GRIFFIN ROLLER MILL AT THE FAIR.**

In the Mines and Mining building are two exhibits of the Bradley Fertilizer Company, of Boston. One is in group 63, where an elevator for roller mill is shown for moving, storing, and delivering ores, and the other is a roller mill exhibit, in group 64, shown in our illustration. These mills have fully proved themselves to be among the most successful machines known for pulverizing all refractory substances, such as quartz, ores of all kinds, etc., effecting a great saving in working expense as compared with stamp mills and other appliances for reducing ores, while the first cost of the mill is only about a quarter of that of a stamp mill. The mill is constructed upon a new principle, which involves the use of a ring or die, on the inner surface of which a roller runs, the roller being carried by a rotating shaft hung on a universal joint. This joint is inclosed in the driving pulley, which revolves in a horizontal plane. The ring or die is inclosed in a pan in the base of the machine, and the roller carries shoes or plows, which throw up the material contained in the pan below the ring, so that it is acted upon by the roller. As the lighter portions of loose material come in contact with the screens arranged above the ring or die, they escape through the screen into the annular casing surrounding the space above the ring. The operation of grinding is continuous, the material being constantly agitated and thrown up, so that it is acted upon by the roller as it travels around the inner surface of the ring. As the grinding is done by the pressure of the roller against the ring or die as it travels around, no power is wasted, and the product secured is in the most satisfactory condition. It is found upon microscopic examination that, whatever the nature of the substance treated in the mill, there is always a clear fracture, thus securing results that for nearly every purpose are superior to those obtained by rubbing or abrasion. The range of work of the mill is very great, and many of them are now employed on phosphate rock, carbon foundry facings, plumbago, Portland rock, cements, etc. It will work either wet or dry, and operates equally well on substances as hard as flint or as soft as lime, grinding them to any desired degree of fineness. Grinding to 60 mesh or finer, its capacity is two to four tons per hour.

**CREAMERY AND DAIRY APPARATUS AT THE FAIR.**

The large exhibit in the Agricultural building of the Vermont Farm Machine Co., of Bellows Falls, Vt., well displays the leading productions of what is said to be the largest manufactory of dairy and creamery apparatus and supplies in the United States, if not in the world. The company was incorporated in 1873, and manufacture everything for handling milk and cream in the dairy, creamery and cheese factory—creamers, churns, butter workers, all styles and sizes of cream separators and butter extractors

for dairy and factory, the Babcock milk testers, etc. The company fit up dairies and butter and cheese factories with every article needed to run them. A leading specialty of their manufacture is the Cooley creamer, seen near the right in the picture. It has proved to be the leading milk-raising apparatus in the world, having taken first place in all dairy countries. The butter made by this process has been awarded twenty-five gold medals at the fairs and expositions in the different parts of the world. It received the highest award at the Paris Exposition, and scored the highest points at the July exhibit of the Columbian Exposition at Chicago. The Cooley system of setting

box churns have two features that creamery men find to be very desirable. One is the square openings that are placed at the corner of the churn. These are so large that it practically amounts to taking the side of the churn off, and are more popular than the trunk churns, from the fact that they answer all the purposes of the trunk churns, and at the same time are less liable to leak. Another feature is the building of the wood pulley around the body of the churn. This is becoming very popular among creamery men. All iron parts of the cover are galvanized.

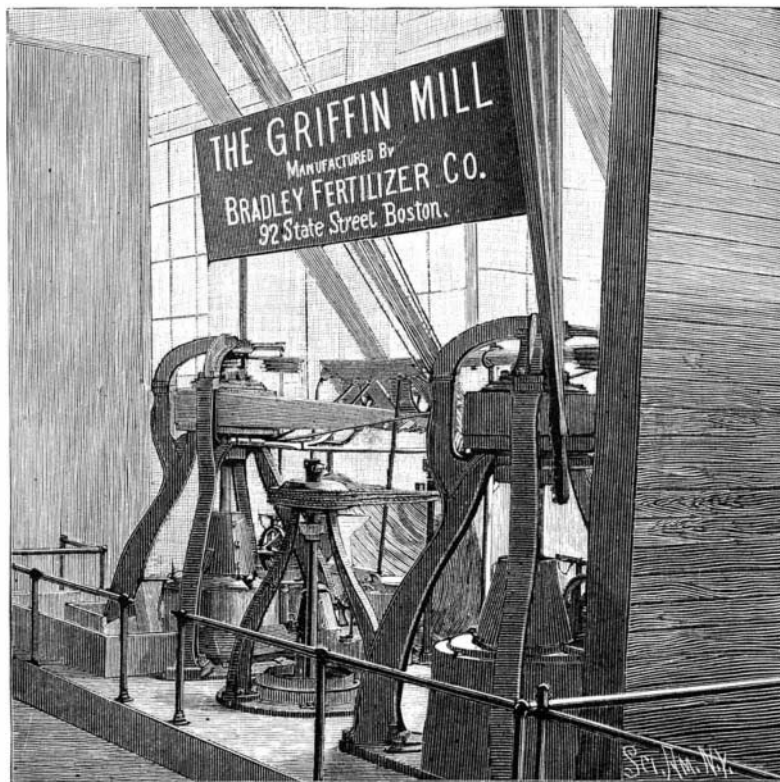
The United States cream separator, shown at the extreme left of the picture, furnished only by this company, has not been on the market as long as some other devices of this character, but it is claimed to be superior to the older machines. It is a centrifugal machine which is said to separate the cream from the milk so thoroughly that the skimmed milk will in no case show more than a trace of fat, and in many cases absolutely no fat. The capacity of the creamery machines of this class runs from 1,300 to 2,300 pounds of milk per hour, and the dairy sizes from 300 to 600 pounds of milk per hour. The skim milk is discharged from the bowl at the bottom, and is delivered from a spout at the side of the frame into a tank, obviating the necessity of siphoning the milk or water out of the bowl.

All who are in any way interested in the business of handling milk or cream should send for one of the company's illustrated catalogues.

**Fall of a Meteor.**

At 4 o'clock in the morning of July 29 the heavens above Suffern, N. Y., became suddenly suffused with an unusual glow. Soon a large bluish-tinted ball made its appearance, high in the northwest, and pursued an apparently slow but steady course earthward to the southeast; lighting up the whole neighborhood and leaving in its wake a long, bright, gauzy tail. As it approached the zenith its speed seemed to increase. Suddenly it burst into a multitude of variously colored fragments, which were dispersed in all directions. The glow ceased a moment afterward, and then the report of the explosion was heard. One of the pieces of the meteor fell, north of Mahwah and two miles south of Suffern, in a field of oats belonging to Farmer Conrad. It formed a hole in the ground, four feet in diameter, like a newly-dug well, the sides of which had fallen in. The grain round the edges of the cavity was burned to a crisp, and the leaves on one side of an apple tree in the vicinity were shriveled as if by intense frost. Three miles north of Suffern another piece of the shattered visitor fell. Two pieces only of the remains have thus far apparently been discovered.

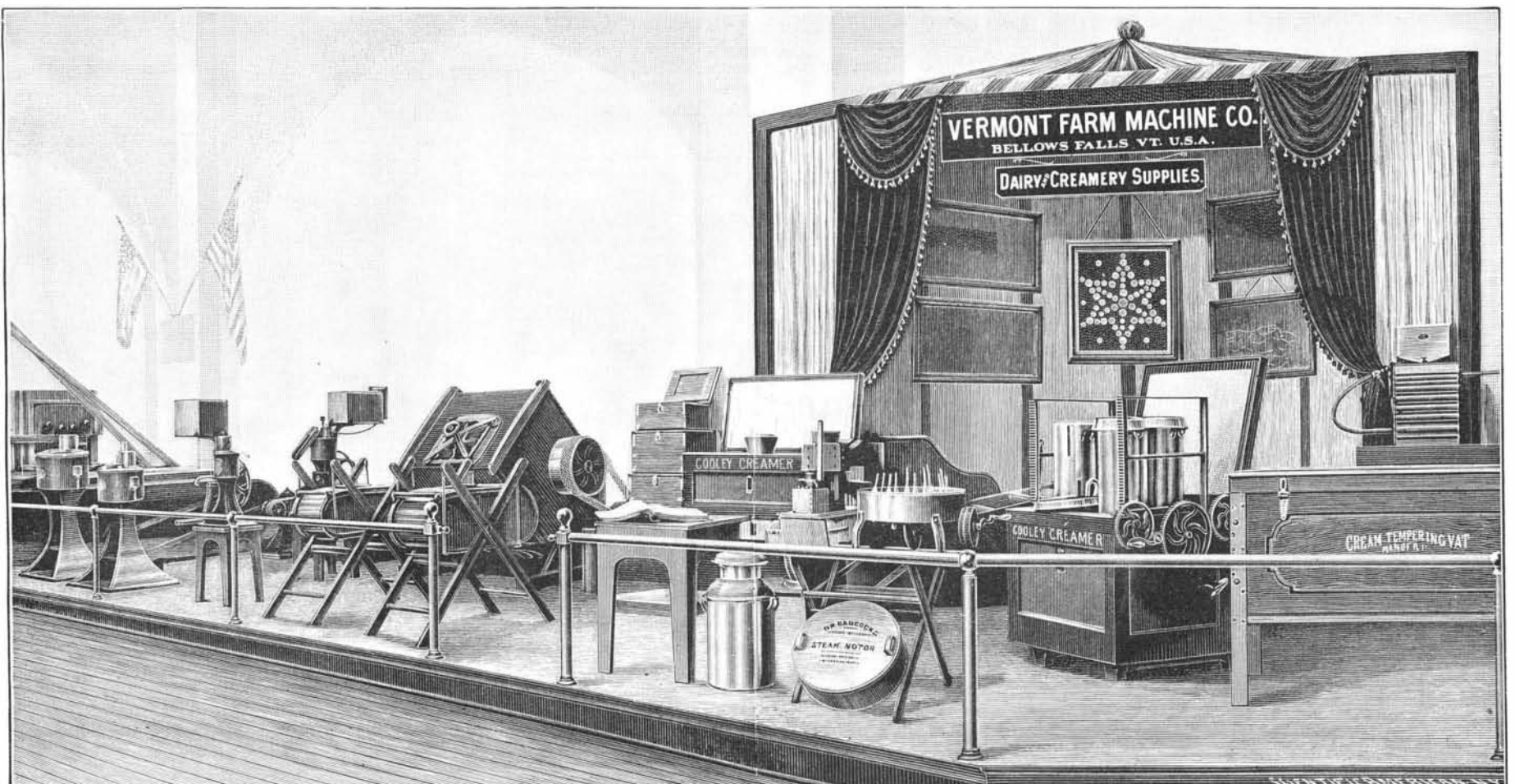
The Cherbourg "digue" is 4,120 yards long, having two arms inclosing the entrance.



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milk for raising cream consists of putting the milk into cans, which are submerged and water-sealed in the creamers, the milk being automatically skimmed while the cream is raised. The processes are covered by patents, which have been sustained by the U. S. Circuit Courts in Iowa and Vermont, and within two months by the U. S. Court of Appeals, New York. The Cooley creamer is made in several different styles, the favorite one having an elevator attachment, in which there is no lifting of milk cans by hand. The process of skimming the cream from the milk with this apparatus is so rapid that the average time is less than one minute per can.

The milk cooler and aerator is shown at the extreme right. This is an indispensable article to all dairy-men who sell their milk, as it will cool the milk to any degree desired in less than two minutes. The square



**THE WORLD'S COLUMBIAN EXPOSITION—CREAMERY AND DAIRY EXHIBITS OF THE VERMONT FARM MACHINE CO.**