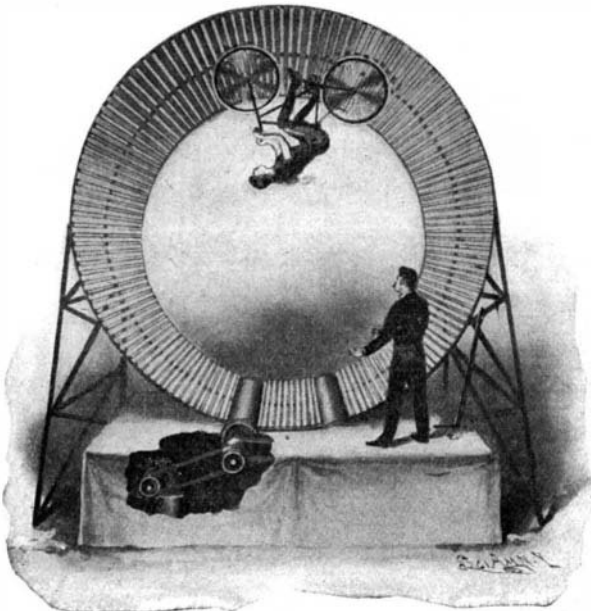


possess an automatic restaurant. Philadelphia anticipated it by some months. The Philadelphia equipment is exactly similar, mechanically, to that of New York. Restaurants on the same principle are soon to be opened in Chicago and the leading American cities.

The Pioneer American Manufacturer of Steel.

A contract made by Cornelius Atherton, the pioneer steel maker of the United States, was recently found



A COMBINED CYCLE-WHIRL AND LOOP-THE-LOOP.

among the effects of Cornelius Atherton, Jr., who died about twenty years ago at Afton, N. Y. The document, which bears the date of 1772, was found by W. M. Atherton, of Chicago, a descendant of the famous steel maker. It appears in the contract that Atherton agreed to "learn and instruct James and Ezra Reed in the art of making steel." The document was attested by Thomas Barlow, of Kent, Litchfield County, Conn., and Thomas Delano, the great-uncle of Columbus Delano, Secretary of the Interior in Grant's cabinet.

Cornelius Atherton was born in Cambridge, Mass., 1736. In 1763 he became connected with the Dover Iron Works. Associating himself with John and Samuel Adams and John Hancock, he began the manufacture of firearms and cutlery in Boston in the year 1769. After the works were burned down, presumably by the British soldiers, Atherton went to Pennsylvania, becoming one of the founders of the city of Scranton. At that time Scranton was called Slocumb Hollow. Mr. Atherton died at Afton December 4, 1809.

The total gold production of the world from the discovery of America by Columbus to the year 1900 is, according to the report of the United States Mint, in round numbers, \$9,811,000,000. Pure gold of this value would weigh about 16,272 tons, and occupy a space equal to 27,039 cubic feet. Graphically this amount could be represented by a solid circular tower of gold 20 feet in diameter, and 86 feet high. The total yearly world production of gold since 1900 would increase the height of such tower about 3 feet each year.

SOME FREAK CYCLE-WHIRLS AND LOOP-THE-LOOPS.

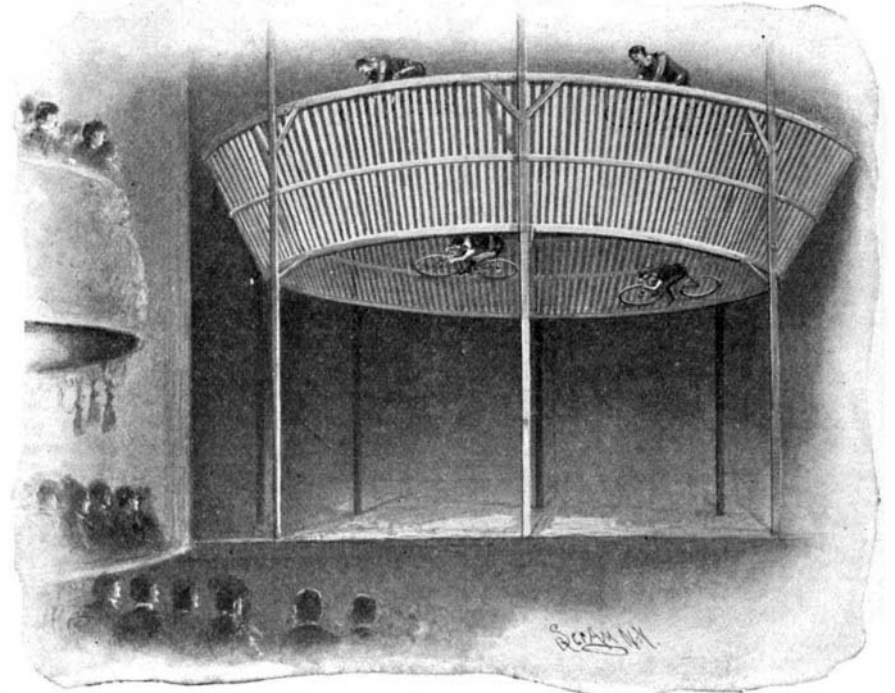
The Théâtre du Moulin-Rouge of Paris has its "Circle of Death," and the Folies-Bergère has its "Terrible Ring." Both are what may be called "aerial velodromes." The track of the former is a kind of bottomless saucer or truncated cone, composed of laths, separated by a space of 2 to 2½ inches. The walls are inclined at an angle of about 70 degrees. Through the laths it is possible to see everything that passes within. This aerial velodrome measures about 22 feet in diameter at its middle. The track itself is about 7 feet wide. By means of steel suspending wires, the ends of which are wrapped about windlasses, it is possible to raise and lower the track. The most astonishing evolutions are performed when the track is raised about 16 feet from the stage.

Dan Canary's "Circle of Death," exhibited at Madison Square Garden, New York city, is still more complicated. The bicyclist mounts by a long helical spiral until he reaches the circle itself, situated at a height of 60 feet above the ground. In order to emerge from the circle, the bicyclist ascends to the edge of the ring and enters a path which plunges down at a frightful incline.

Perhaps the record for tricks of this kind belongs to Miss Lottie Brandon, who seems to have done things in New York, compared with which the feats of the men who ride through the "Looping-the-Loop" apparatus and the "Circle of Death" seem tame. The track is vertical. In order to acquire the necessary momentum, speed is gotten up on a pair of rollers journaled in the lower part of the circle. When a sufficiently high speed has been attained, the rollers are dropped by an arrangement of levers, and the bicyclist whirls around the circle, which measures about 16 feet in diameter. To stop the bicycle is a more difficult task than to start it. On the descent, a powerful brake is applied, so that the speed is considerably reduced, in order to enable the performer's manager to snatch her from the wheel as she comes dashing down. The wheel itself is carried on by the momentum.—Translated for the SCIENTIFIC AMERICAN from La Nature.

American-Made Heathen Idols.

It is not very generally known that Philadelphia is one of the sources of supply whence the Far East derives the idols which it worships. Philadelphia, however, is not the only occidental city in the world which has a plant for the manufacture of graven images. In Germany thousands of idols are turned out each year; and many a little god and fetich, worshiped by the African savage, comes from the enterprising manufacturing town of Birmingham, England. Mr. F. Poole,



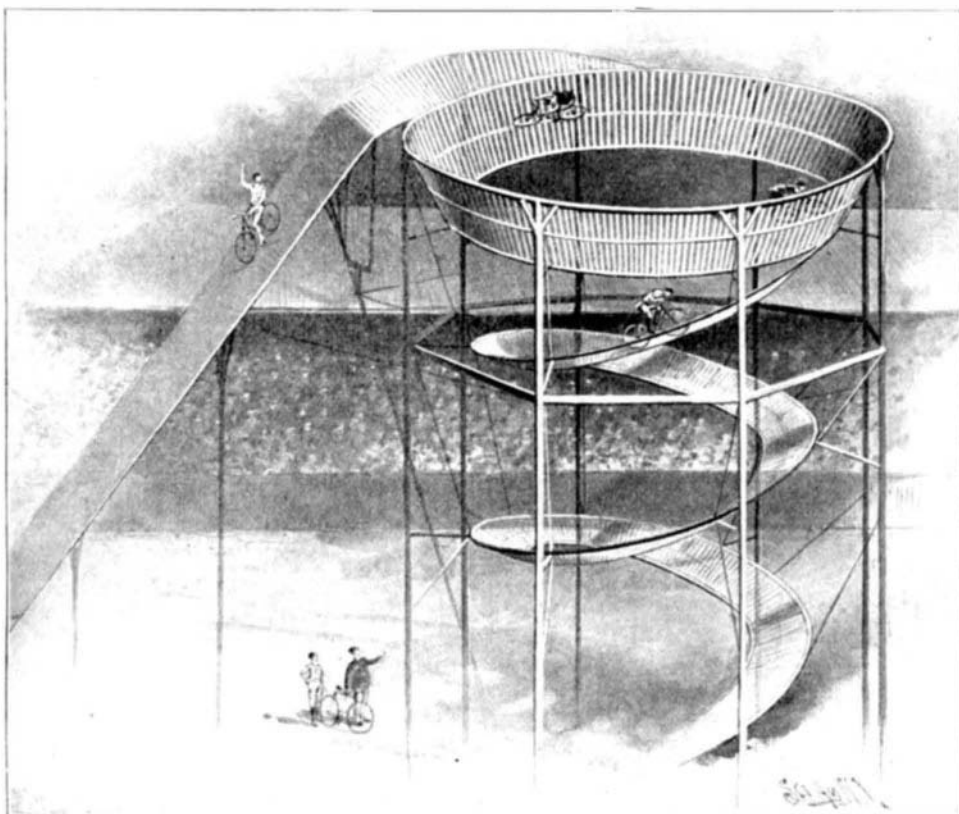
THE ELEVATED BOTTOMLESS CYCLE WHIRL.

who deposits at the gate a piece of money, in accordance with the time-honored custom of Buddhists.

In justice to the missionaries, be it said that they are, bitterly opposed to this traffic in idols. But the German Philadelphian (or Philadelphian German, if that term be preferred), despite all protests, continues to carry on his business.

Commercial Utilization of Producer Gas.

According to Mr. H. A. Humphrey, of London, who has closely investigated the problem of the possible application of producer gas to industry, if producer gas were generally introduced to replace direct firing by coal in all cases where gas firing is applicable, the saving in the consumption of fuel would amount to at least one-half of the total quantity now used. The gas producer is an apparatus for the conversion of the whole of the combustible matter obtained in the coal into a combustible gas, no coke residue even resulting—only ashes which it is impossible to burn remaining in the producer. Essentially the gas producer is a closed vessel containing a deep bed of incandescent fuel, through which air or air and steam is blown, and in which partial combustion of the coal takes place. The amount of coal actually burnt in the producer is, however, the minimum necessary to generate the heat required for decomposing the coal and some of the steam, and converting them into an inflammable gas, containing hydrogen, carbon monoxide, and methane gas as the combustible constituents, and carbon dioxide and nitrogen as the non-combustible constituents. In retorts for producing illuminating gas a ton of coal yields about 10,000 cubic feet of lighting gas; but from each ton of coal consumed in the gas-producer about 150,000 cubic feet of producer gas is obtainable. Although the calorific value of the lighting gas is nearly four times that of the same volume of producer gas, the quantity of the latter available is so much greater that the total available heat units in the producer gas are practically four times as great as with lighting gas derived from the same weight of fuel.



THE "CIRCLE OF DEATH."