AN ALLEGED PERPETUAL MOTION.

Perpetual motion is, to many inventors, what the "will o' the wisp" is to the traveler. It is always in sight, but never quite within reach. One of the favorite schemes for securing the desired end involves the use of permanent magnets, and the only impediment to the realization of a machine for creating power is an insulator of magnetism. With inventors of this class of machines it has always been a great "if;" but now, if we are to believe certain reports, the great "if" has been annihilated, and the force of permanent magnets has been rendered available by the discovery of an insulator of magnetism, which, as we are told, consists of "chemical and mineral substances," but regarding the nature of these substances we are uninformed.

We have secured a picture of the machine, in which an insulating septum of the "substances" is employed to cut off the attraction of a permanent magnet, and thus secure the rotation of a wheel arranged within the field of force of a permanent magnet. This machine is the invention of Mr. H. S. Pullman, of Rockville, Conn., who has exhibited it in the city of Hartford to crowds who have been enabled to witness the wonderful performances of the machine at the expense of ten cents per head.

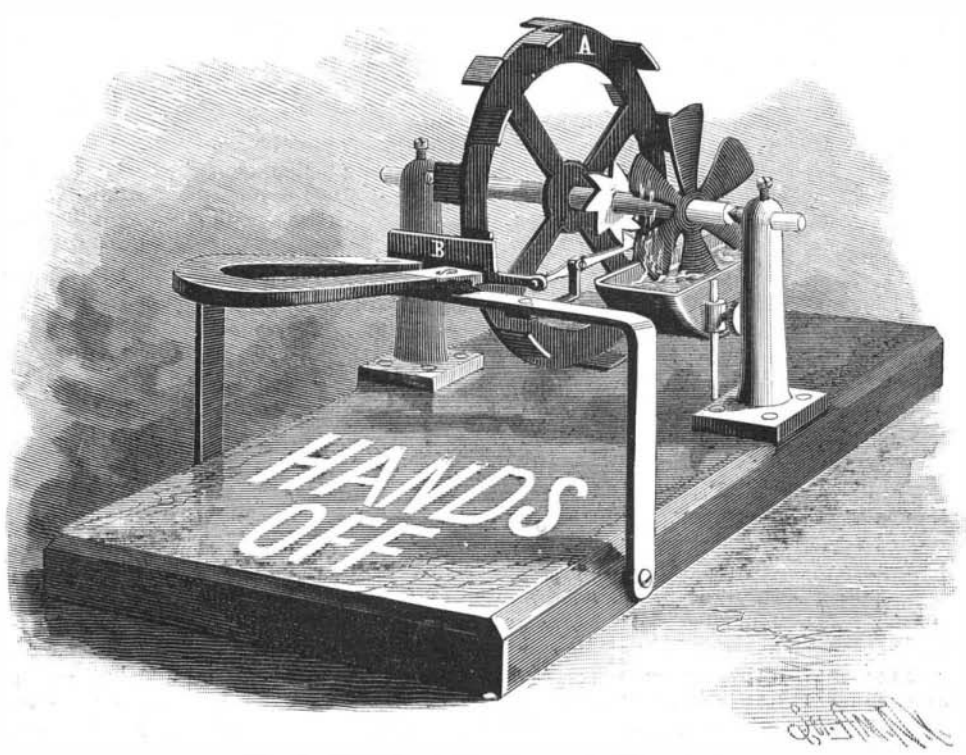
The simple fact of the machine being exhibited under such circumstances would seem to cast a shadow on its genuineness, for, if it is really a power-creating machine, the inventor might realize millions from patents for his invention where he receives only mills in the dime show business; however, the machine has the credit of moving apparently by power created within itself. It has been seen in motion by Mr. W. H. Goldsmith, city editor of the *Hartford Times*, to whom we are indebted for several points in regard to it; and Prof. Luther, of Trinity College, was promised the opportunity of testing the machine, but the inventor, with his machine, like the Arab, "folded his tent, and as silently stole away."

The machine is a wonderfully solid-looking affair for the amount of power produced by it, the thickness of the base and the diameter of the columns supporting the main wheel being apparently altogether out of proportion to the other parts. To an incredulous person these features might be suggestive of a spring motor contained in the base, and mechanism for conveying the power from the base through one of the columns to the motor wheel; and, further, one of the most salient features of the apparent deception is the legend upon the base, which is also suggestive of hidden parts.

To the base are secured two standards provided with centers, upon which are mounted the main shaft of the machine, carrying the motor wheel, A. The wheel is made of sheet iron, with teeth formed in its periphery, and bent alternately in opposite directions. Upon the shaft are also mounted a star wheel and a propeller wheel. The star wheel is arranged to tilt a lever, which carries at its extremity a plate, B, of brass coated with the "chemical and mineral substances" which make it an insulator of magnetism. The permanent magnet is supported by a U-shaped bar, with its poles near the wheel, A, and opposite the path of the insulating plate, B. The propeller wheel, turning in a cup of water, serves to equalize the motion, and thus prevent the machine from running away with itself and committing self-destruction.

We have never seen, nor have we before heard, of an insulator of magnetism, but, supposing it to be an entity, the machine illustrated seems to be poorly adapted for its application.

When one of the projections of the motor wheel approaches the horseshoe magnet, the insulating plate, B, is pushed up between the magnet and the wheel by the action of the star wheel, and as soon as the projection passes the magnet, the lever slips off from one of the points of the star wheel, allowing the insulator to drop, when the magnet will attract the next projection in order, and when near the magnet the insulator will be pushed up as before, and again dropped down, and thus the rotation of the wheel, A, is supposed to continue forever.



AN ALLEGED PERPETUAL MOTION.

IN breaking the ground in a place near Kincardine, Ont., the other day, a skeleton, which to all appearance is that of a wild boar, was found. All the bones, including the tusks and teeth, were in splendid condition, though it is thought they have been lying there for one or two hundred years.

SPENCER FULLERTON BAIRD.*

BY MARCUS BENJAMIN.

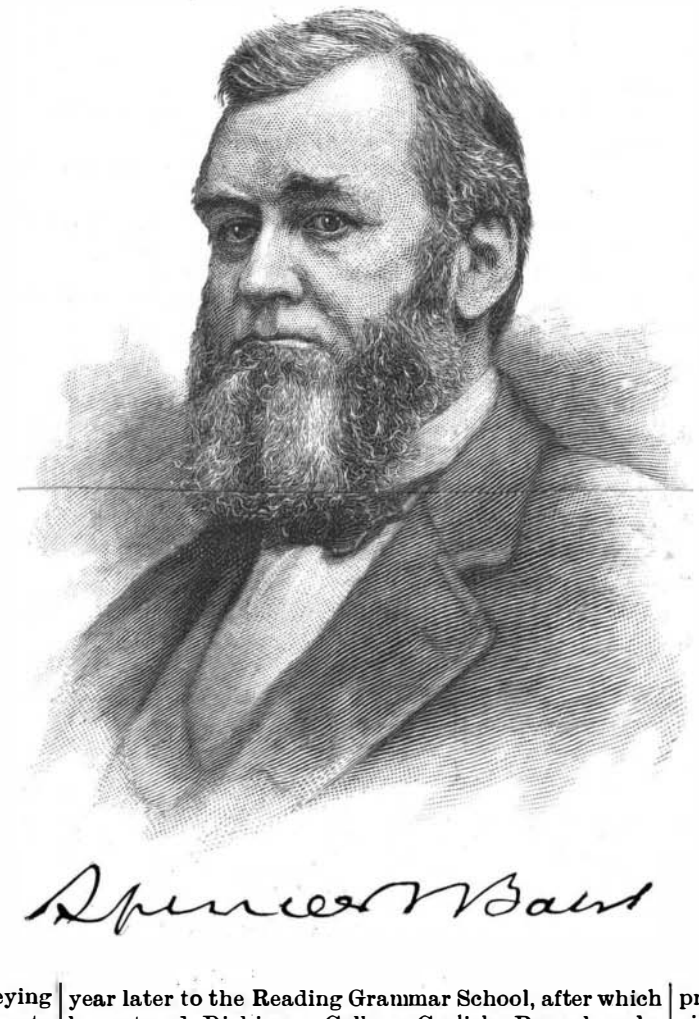
The high rank among living naturalists so long held by the distinguished secretary of the Smithsonian Institution makes it eminently proper that he should receive a place in our gallery of American scientists, and at present the time is most opportune, for within a few days the news of his death has flashed through the country.

Spencer F. Baird was born in Reading, Pa., on February 3, 1823. He was sent, at the age of eleven, to a Quaker boarding school in Port Deposit, Md., and a year later to the Reading Grammar School, after which he entered Dickinson College, Carlisle, Pa., where he was graduated in 1840.

For several years afterward he devoted his attention to studies in general natural history, making long pedestrian excursions for the purpose of observing animals and plants. In 1841 he made an ornithological excursion through the mountains of Pennsylvania, walking four hundred miles in twenty-one days, and doing sixty miles between daybreak and rest on the last day. During the following year his pedestrian trips covered more than 2,200 miles. The specimens collected at this time for his private cabinet of natural history became later the nucleus of the museum connected with the Smithsonian Institution.

Meanwhile he studied medicine, and in 1842 attended a course of lectures at the College of Physicians and Surgeons in New York, but, did not graduate. He received, however, the degree of M.D. *honoris causa* in 1848 from the Philadelphia Medical College. In 1845 he returned to Dickinson College as professor of natural history, and a few years later became also professor of chemistry. His lectures included physiology to the seniors, geometry to the sophomores, and zoology to the freshmen.

He accepted the appointment of Assistant Secretary of the Smithsonian Institution in July, 1850, on the urgent recommendation of George P. Marsh, and thenceforth continued as its principal executive officer, becoming in May, 1878, on the death of Joseph Henry, its secretary and official head.



Spencer F. Baird

His duties in this connection were exceedingly arduous, and nearly all of the scientific development of the Institution was under his immediate charge. Indeed, his genius for organization made itself apparent from the outset.

The Department of Exploration was placed under his authority from the beginning, and his annual reports constitute the only systematic record of the government explorations ever prepared. During the decade of 1850–60 he devoted much time to enlisting the sympathies of the leaders of government expeditions in the objects of the Institution, supplying them with all the appliances for collecting, as well as with instructions for their use. In many instances he organized the natural history parties, named the collectors, employed and supervised the artists in preparing the plates, and frequently editing the zoological portions of the reports. The specimens brought back to Washington were intrusted to his care. These with his own collection and those of the Wilkes exploring expedition, brought to the Smithsonian in 1842, formed the beginning of the National Museum, now the finest in this country.

It has been no slight task to organize a museum such as that now in existence in Washington, and the brain that planned its details was that of Professor Baird.

According to G. Brown Goode, its assistant director, and since January 1, 1887, in full charge of the museum, "there have been three periods in the history of the museum. At first, it was a cabinet of the results of research. When, in 1857, the Smithsonian assumed its custody, it became also a museum of records. Since 1876, the idea of public education has been predominant."* Besides the usual routine work incidental to the office of assistant secretary, Professor Baird organized the system of international exchanges which has since become one of the leading features of the Institution.

The most conspicuous, and perhaps the most valuable, of Professor Baird's scientific work dates from his appointment in 1871, by President Grant, as Commissioner of Fish and Fisheries. The duties of this office, as originally defined by Congress, were "to prosecute investigations on the subject, *i. e.*, of the diminution of valuable fishes, with the view of ascertaining whether any and what diminution in the number of the food fishes of the coast and lakes of the United States had taken place, and, if so, to what causes the same is due; and also whether any and what protective, prohibitory, or precautionary measures should be adopted in the premises, and to report upon the same to Congress." But the undertaking expanded as the work progressed, until it is now tenfold more extensive and useful than at first. At present, it includes: 1. The systematic investigation of the waters of the United States, and the biological and physical problems which they present. 2. The investigation of the method of fisheries, past and present, and the statistics of production and commerce of fishery products. 3. The introduction and multiplication of useful food-fishes throughout the country, especially in waters under the jurisdiction of the general government, or those common to several States, none of which might feel willing to make expenditures for the benefit of others.

His work in this department has received universal recognition. At the request of the United States government, he was present as advisory counsel at the Halifax Fishery Commission, held in 1877, and at that time prepared an essay on fish culture, into which he threw all of the wealth of his vast knowledge and experience on this subject. The manuscript has recently been put in the printer's hands, and is now in course of preparation for publication.

* For the biographical details of this sketch I am principally indebted to G. Brown Goode's analysis, published in "Bulletin of the U. S. National Museum, No. 20." (Washington, 1883.)

* The story has been well told by Ernest Ingersoll, in the *Century* for January, 1885, under title of "The Making of a Museum."