STEAM CARRIAGES.

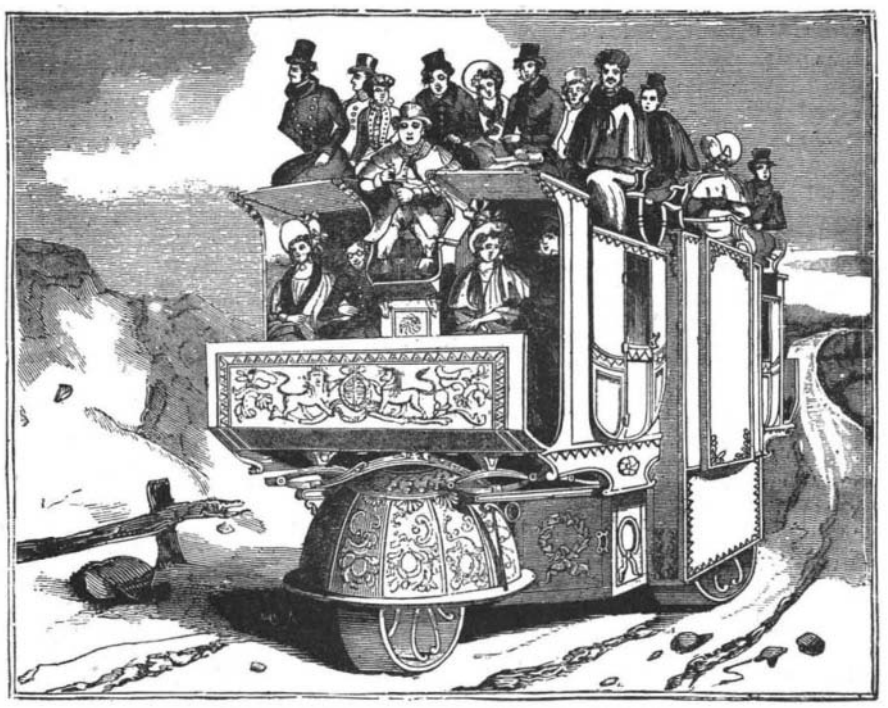
As well known, locomotives and cars on rails were, in the beginning, two absolutely distinct conceptions, which made their way isolatedly, and seemed as if they were never to meet. The fusion of these two ideas was to give us railways such as they now exist. The first steam carriage was built by Joseph Cugnot, and it is quite curious, apropos of this, to recall the terms in which his invention was made known to the Institute, on the 11th of Pluviose, year VI. (January 30, 1798), by Bonaparte:

"The secretary read a note sent by Citizen Bonaparte, who received it from Citizen Roland, relating to a carriage moved by steam. Citizens Coulomb, Perrier, Bonaparte, and Prony are commissioned to make a report upon this machine, and to be present at the trial to be made of it, and, at the same time, to present their views upon the best method of applying the action of steam to the carriage of burdens."

The model of the steam carriage constructed by Cugnot in 1771 is preserved at the Conservatoire des Arts et Metiers. Some years later, in 1784, Watt and Murdoch, each in turn, made experiments on the propulsion of carriages by steam, without a thought of anything else than doing away with the horse. The dwarf locomotive constructed by Murdoch is now on exhibition in the Kensington Museum. At the same epoch at which Stephenson was solving the problem of railways, experiments were likewise being made upon ordinary roadways; and much later on, when this great problem had been definitely solved, the roads were still being traversed by steam carriages of a more or less ingenious conception.

By good luck, we have come across an engraving of the period, representing Doctor Church's carriage, which we herewith reproduce.

Dr. Church, of Birmingham, ran over the road that leads from the latter place to London, at a speed of nine miles per hour, with the carriage shown in the cut. His enterprise was kept up for some time, and gave rise to other experiments in England. These experiments gave results full of promise, and perhaps would have disenthroned stage coaches and wagons, had not locomotives upon rails given something better than promises, and quickly revolutionized the economic conditions of civilized countries.—*La Science en Famille.*

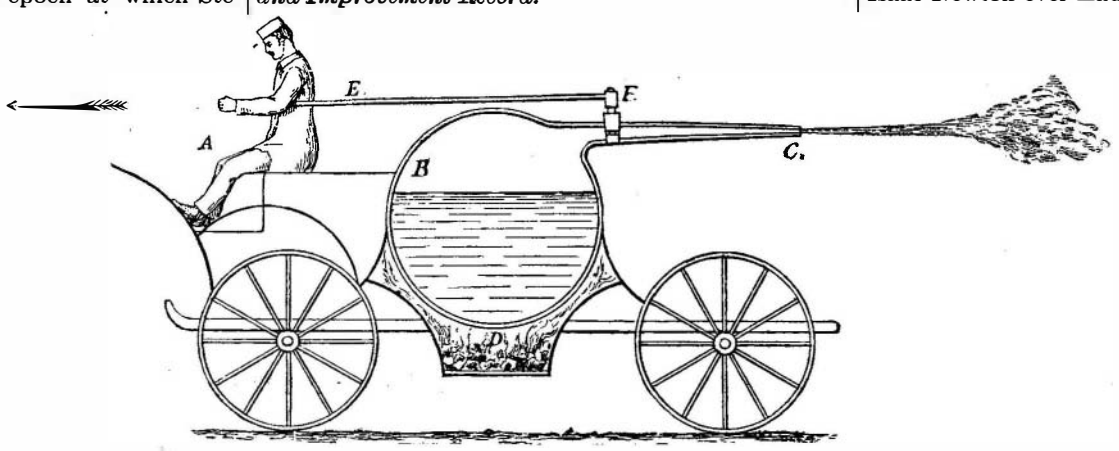


DR. CHURCH'S STEAM OMNIBUS.

SIR ISAAC NEWTON'S STEAM CARRIAGE.

It is curious that Sir Isaac Newton, in one of his books, said that it would be necessary that a new mode of traveling should be invented. He prophesied that the time would arrive when, owing to the increase of knowledge, we should be able to travel at the rate of fifty miles an hour; these remarks were ridiculed at the time, but have been more than realized. Moreover, the world is indebted to the same illustrious personage for the first idea of propulsion on land by steam power, for in his "Explanations of the Newtonian Philosophy," written in 1680, he suggested the little locomotive shown by the accompanying engraving, "which will be recognized as representing the scientific toy which is found in nearly every collection of illustrative philosophical apparatus." It consists of a spherical generator, B; the driver sitting at A controls the escape of the steam by the lever, E, and the cock, F; the fire beneath the boiler is seen at D; the whole is mounted on light wheels, so as to move easily on a horizontal plane, and upon opening the cock, F, steam would issue violently out of the nozzle, C, shown pointing backward, and by its reaction the carriage would be driven in the opposite direction, and propelled forward, as indicated by the arrow.

It would be very interesting to know whether Sir Isaac Newton ever made a model of his proposed locomotive; doubtless "he merely threw out the idea for other minds to work upon."



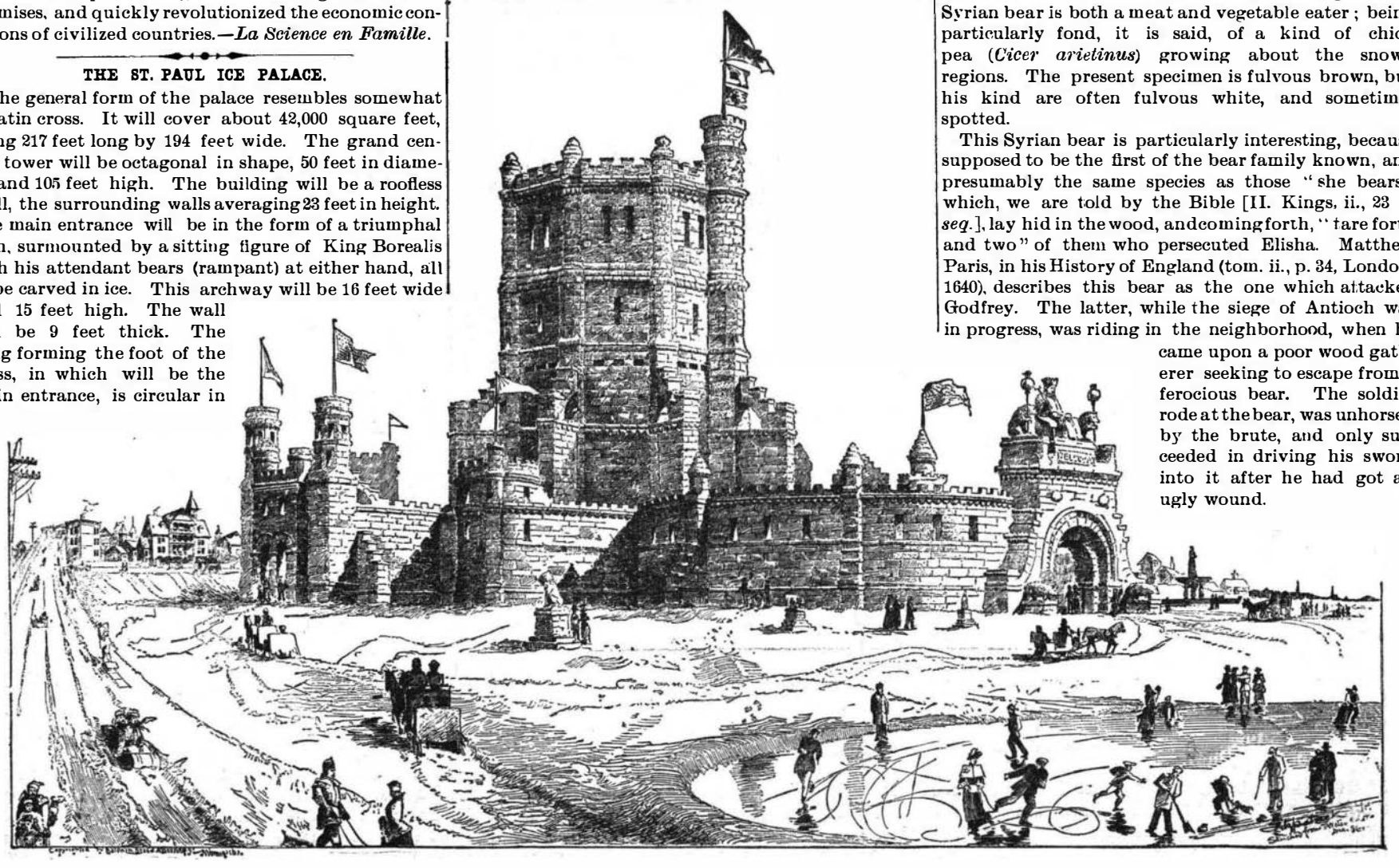
SIR ISAAC NEWTON'S STEAM CARRIAGE OF 1680.

THE ST. PAUL ICE PALACE.

The general form of the palace resembles somewhat a Latin cross. It will cover about 42,000 square feet, being 217 feet long by 194 feet wide. The grand central tower will be octagonal in shape, 50 feet in diameter and 105 feet high. The building will be a roofless shell, the surrounding walls averaging 23 feet in height. The main entrance will be in the form of a triumphal arch, surmounted by a sitting figure of King Borealis with his attendant bears (rampant) at either hand, all to be carved in ice. This archway will be 16 feet wide and 15 feet high. The wall will be 9 feet thick. The wing forming the foot of the cross, in which will be the main entrance, is circular in form, 95 feet in diameter. Each of the other wings, forming the head and arms of cross, will also terminate in an entrance, but of minor importance. The whole affair will be pleasing in effect and magnificent in proportions.

Our engraving is from the *Northwestern Architect and Improvement Record.*

DRUMINE discovered and described by Dr. John Reid (*Australian Medical Gazette*, October, 1886). Drumine is the alkaloid from *Euphorbia Drummondii*, and is an almost tasteless substance, soluble in chloroform and water, and producing local anæsthesia of mucous membranes in a way similar to cocaine.



THE ST. PAUL ICE PALACE.

A Rare Bear.

A curious and rare specimen of the bear family, called *Ursus syriacus* by one authority and *Ursus gabellinus* by another, came to New York recently, and is now to be seen at the private menagerie kept by Reiche, the dealer in live animals.

This species is both unusually powerful and vicious; two qualities of which he gave apt illustration recently by breaking through the heavy iron bars of his cage and attacking his keepers. During the struggle between men and bear, Mr. Reiche, who, from experience, knows a fierce animal when he sees it, decided that the odds were in favor of the bear, and was about to use his rifle when the bear succumbed, and was forced back into his cage. The Syrian bear is both a meat and vegetable eater; being particularly fond, it is said, of a kind of chick pea (*Cicer arietinus*) growing about the snowy regions. The present specimen is fulvous brown, but his kind are often fulvous white, and sometimes spotted.

This Syrian bear is particularly interesting, because supposed to be the first of the bear family known, and presumably the same species as those "she bears" which, we are told by the Bible [II. Kings, ii., 23 *et seq.*], lay hid in the wood, and coming forth, "tare forty and two" of them who persecuted Elisha. Matthew Paris, in his History of England (tom. ii., p. 34, London, 1640), describes this bear as the one which attacked Godfrey. The latter, while the siege of Antioch was in progress, was riding in the neighborhood, when he came upon a poor wood gatherer seeking to escape from a ferocious bear. The soldier rode at the bear, was unhorsed by the brute, and only succeeded in driving his sword into it after he had got an ugly wound.