

A Subterranean River.

A correspondent of the London *Times* says that the underground phenomena found in certain portions of the southern and Adriatic provinces of Austria, including miles of underground caverns, lakes that disappear and reappear at regular seasons, and rivers that are swallowed up by the earth, and come to the surface again many miles distant, have recently been the object of much attention on the part of the Austro-German Alpine Club and of the Club degli Alpinisti, of Trieste. A section of the members of the former body determined, some time ago, to institute a systematic exploration of the subterranean course of the river Reka. Rising in the Schneeberg, in Carniola, this mysterious stream suddenly disappears in the so-called Karst caverns. At San Giovanni di Duino, twenty miles distant from the spot where the Reka is lost, a river of corresponding magnitude is found issuing from the foot of a hill. This stream is known as the Timavo, which takes a westward course, and discharges its waters into the Bay of Monfalcone. As to the identity of the Timavo with the Reka there cannot be a doubt, although until the present year no attempt had ever been made practically to demonstrate the fact. The members of the Austro-German Alpine Club, who had resolved to explore the underground meanderings of the river, made their preliminary reconnaissance on March 30 last.

Starting from the first great cavern, called the Rudolph's Dome, the expedition, consisting of four persons in two boats, proceeded on their eventful voyage.

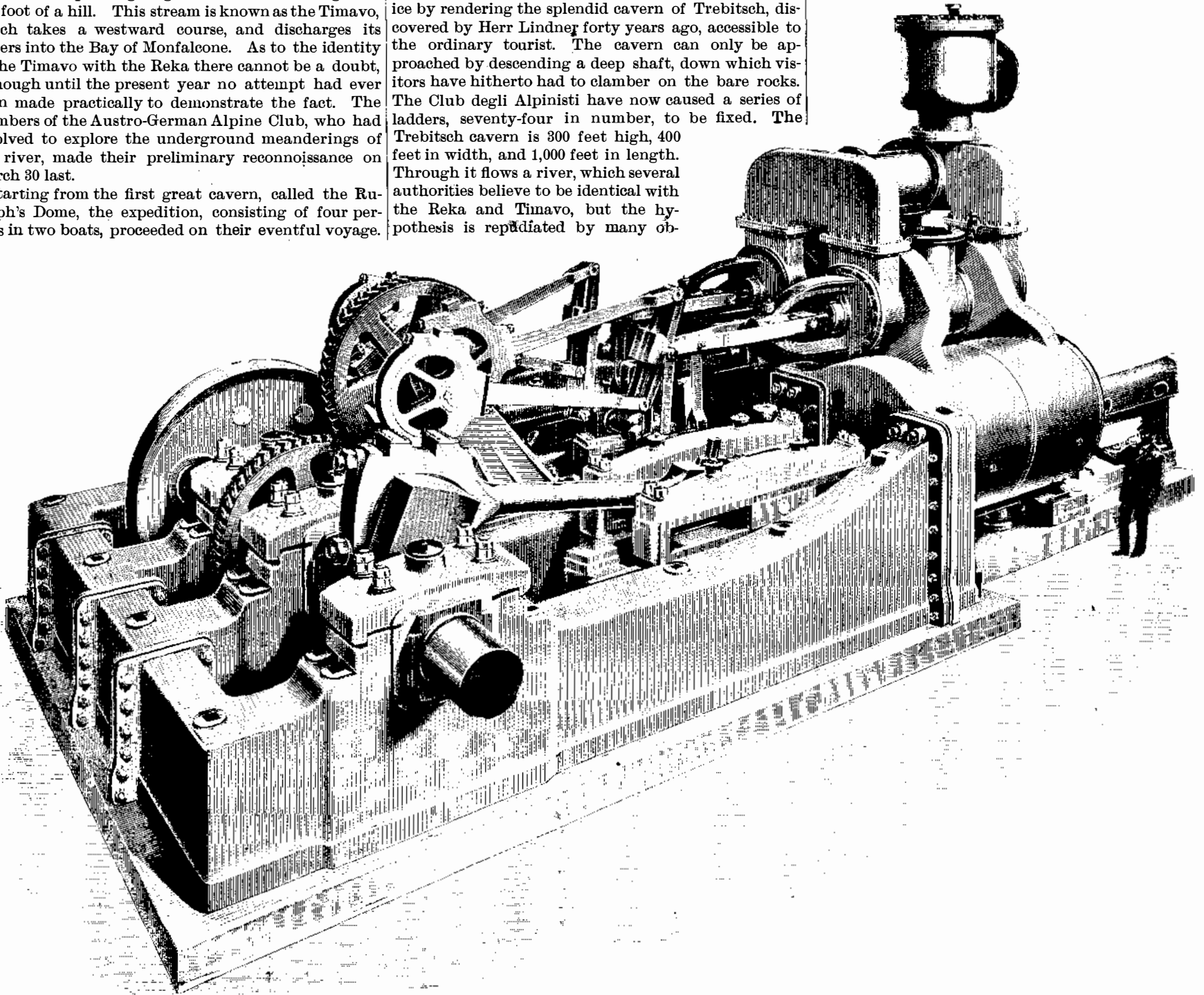
vancing some distance beyond it. They soon, however, came to a seventh waterfall, where they were compelled to turn back. They found that to make any further progress it would be necessary to get a boat past the last waterfall, as there is no standing room on either side of the stream, but sheer perpendicular walls of rock. The further exploration of the underground river will be resumed as soon as the requisite apparatus can be got ready. In the mean time the Alpine Club has decided to make the approaches to the Rudolph's Dome cavern more easy of access to the general public. The second cavern, which was discovered in September, is of far greater dimensions than the Rudolph's Dome, or any of the other caves of this district. Its height is upward of 450 feet, so that it could easily contain the Cathedral of St. Peter's at Rome.

With regard to the Italian Alpine Club, its committee has, during the past summer, done some good service by rendering the splendid cavern of Trebitsch, discovered by Herr Lindner forty years ago, accessible to the ordinary tourist. The cavern can only be approached by descending a deep shaft, down which visitors have hitherto had to clamber on the bare rocks. The Club degli Alpinisti have now caused a series of ladders, seventy-four in number, to be fixed. The Trebitsch cavern is 300 feet high, 400 feet in width, and 1,000 feet in length. Through it flows a river, which several authorities believe to be identical with the Reka and Timavo, but the hypothesis is repudiated by many ob-

Finally the nose improver is fixed on and the sides clasped together, and the wearer keeps it on all night, taking care in the morning to wash in cold water only. It is a rather painful process at first, but after the first two or three applications of the improver there is no more trouble. In about a month the nose begins to take its new shape, and at the end of from eight to ten weeks the alteration is said to be perfect and permanent, that is, until the patient becomes tired of that particular shape and is desirous of having another, when the same operation with another instrument is applied. I have known people," continued the surgeon, "change their noses four or five times in as many years."

IMPROVED RAIL MILL ENGINES.

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From the cavern just mentioned the river flows for 200 feet through a narrow channel between two perpendicular walls of rock, estimated to be upward of 100 yards in height. At the end of this channel the explorers, whose course throughout was illuminated by the magnesium light, found themselves in a vast cavern, where they were able to land. Fastening up their boats, they proceeded for some distance on foot past several cascades and rapids. They followed the course of the stream without much difficulty for a considerable distance, after leaving the newly discovered cavern, keeping to the left bank at first. At length they reached a spot where the river contracts to a width of barely twelve feet. Here they were compelled to cross to the right bank, which they did by help of a wooden ladder they had with them. The advance now became more difficult, the explorers being only able to get forward by creeping and climbing. At length they came to the sixth waterfall, which the party was unable to pass. The river here runs between two perpendicular walls of rocks, and suddenly takes a downward leap of over 20 feet.

From the Rudolph's Dome, where the start was made, to the sixth waterfall, the distance is rather over a furlong, and requires half a day to accomplish. At the third attempt the four gentlemen forming the expedition succeeded by help of suitable ladders and other apparatus in getting over this cataract, and ad-

servers. The question can only be settled when the Austro-German Alpine Club shall have accomplished the interesting task it has taken in hand—that of following the subterranean course of the river Reka from its beginning to its termination.

Changing the Style of Noses.

Several weeks ago an engraving of a contrivance for straightening crooked noses was published in these columns. It now appears that a Frenchman invented a machine some years ago for changing the style of noses, by which it is said he amassed quite a fortune. A representative of the *Philadelphia Times* recently interviewed a surgeon on the subject, and learned the following:

"The nose is simply a piece of cartilage, and its shape can be changed with ease. Many people are troubled with noses whose shapes do not please their owners or their owners' friends. The French machine consists of a small shell in two parts, hinged together. It is made of iron, japanned or enameled. It is in shape inside that of a perfectly moulded nose, according to the type of the features of the wearer. Thus you can obtain a Roman, Grecian, retroussé, aquiline, or any other shape you desire. To apply the instrument, the nose is first bathed in warm water at bedtime and thoroughly heated and softened. Then it is well greased with olive oil, glycerine, vaseline, or other oily substance.

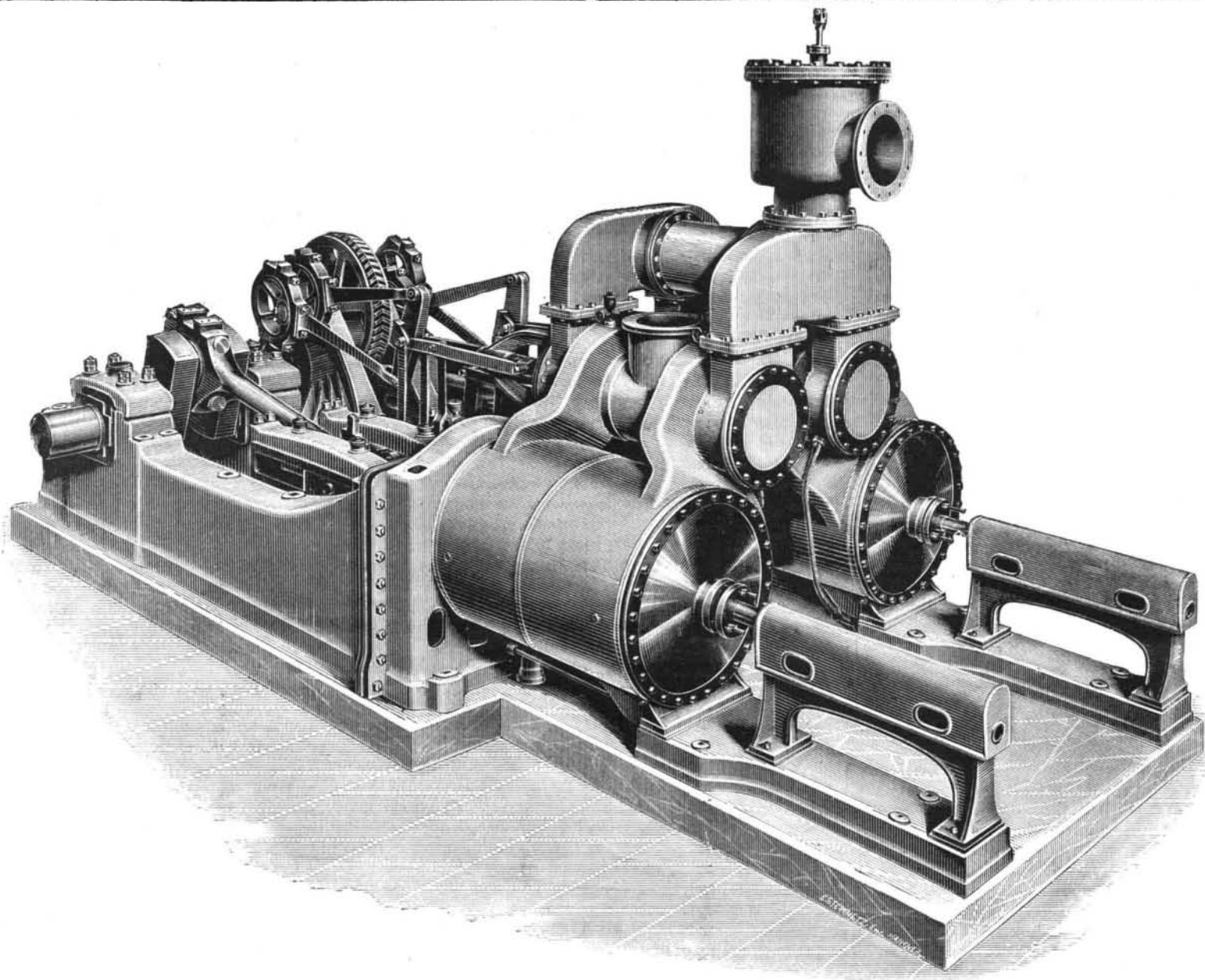
Iron and Coal Company, these engines having been constructed by Kitson & Co., of Leeds. We are indebted to *Engineering* for the engravings. The engines have 60 in. cylinders with 5 ft. stroke. The engravings are prepared from photographs, and the man shown in one of the views by the side of the engines will enable the size of the latter to be better appreciated.

Galvanic Action as a Preservative.

At the present time, when so much has been said and written concerning the influence of galvanic action on fermentation and beer, it may be of interest to recall an experiment made by Andrew Crosse some years ago. He found that by subjecting milk to electric action it could be kept sweet for weeks together. He used the following simple arrangement:

"Two cylinders of sheet zinc and sheet iron were severally placed in two porous earthenware tubes, open at the top, but closed at the bottom, the same being filled with water, and these were connected at the top by a copper ribbon; the earthenware vessels were then placed in the fluid (milk or otherwise), and the electrical action commenced immediately, and the fluid became antiseptic in a few hours."

It is recorded that milk has in this way been kept sweet for three weeks in the middle of summer. It would seem that in this case the galvanic action was



IMPROVED SIXTY INCH RAIL MILL ENGINES.

fatal to the putrefying bacteria, and if so changeable a liquid as milk could be thus preserved, it seems feasible to successfully apply the same process to the preservation of beer. At all events, Crosse's experiments seem to show that galvanic action is not detrimental to the keeping qualities of such liquids as milk and beer.

AN AQUATIC VELOCIPEDE.

The apparatus shown in the accompanying engraving was constructed by quite a young man, Mr. Leon Bollee, one of the sons of a well known constructing engineer of Mans, Mr. Amedee Bollee. The aquatic velocipede in question has been experimented with several times upon the Huisne River, and the results obtained were satisfactory.

The apparatus consists of two spindle-shaped floats, which displace about fifty cubic feet, and which are connected by cross braces that serve to support a deck. Between the two spindles is placed a paddlewheel, which is moved by one or two persons actuating revolving pedals analogous to those found in tricycles. The person situated in front steers the boat, and the latter maneuvers with sufficient ease to turn in a radius equal to double its length. Finally, a railing adds to the security of the passengers.

With this boat there is obtained a mean speed of six miles an hour in stemming the current of the Huisne, which is quite swift. On descending the river the speed is much greater, of course. The power required for propelling the apparatus is so slight that a mere child can run it with the greatest ease.

As the apparatus weighs about 880 pounds, and the volume of water displaced is fifty cubic feet, there remain 2,200 pounds for the load, and the space between the spindles being quite wide, a change of position of those on board does not greatly affect the boat's stability. Our explanatory figure (Fig. 2) allows us to dispense with entering into longer details on the subject

of a very simple arrangement that will interest the numerous friends of velocipeding.—*La Nature*.

The Quarries of Carrara.

The marble used by most of the sculptors in Italy, and preferred to any other by artists the world over, comes from the famous quarries of Carrara, Italy. A correspondent in the Baltimore *Sun* gives the following

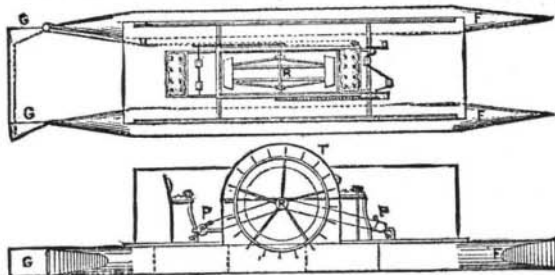


Fig. 2.—PLAN AND SECTION.—VELOCIPEDE.
R. Paddlewheel. T. Paddlebox. F. Floats made of iron plate. G, G. Rudders. P, P. Pedals.

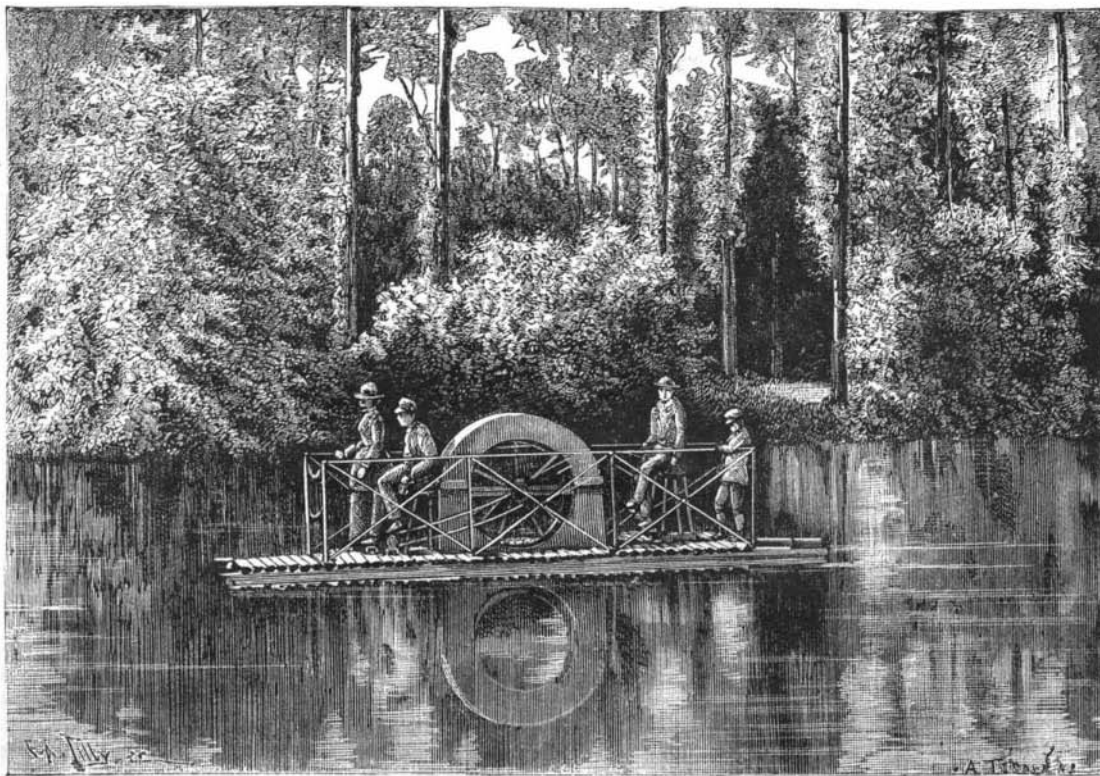


Fig. 1.—BOLLEE'S AQUATIC VELOCIPEDE.

interesting account of his visit to the quarries. He spent several days at Carrara, and, according to his statement, there are some 6,000 men at work in the quarries, and there are 100 studios of sculpture at Carrara, 65 sawmills, and 25 polishing wheels, which brighten dull marble and smooth the slight fortunes of some 400 plodding workers. The hewing of rough rocks, huge in their proportions, is something approaching the marvelous here. The men are hoisted to the height of some 700 feet above the level of the quarry, and up aloft excavate colossal lumps of marble. Each gang, or the foreman of the gang, goes down with and on the lump as it is swung by derrick ropes out into the air and swiftly brought to mother earth.

One of these Italians will sing in lusty tones, "Viva, viva Garibaldi," from his dizzy eminence, and suddenly appear below where you are standing, his bright, big black eyes full of unequaled expressiveness and his white teeth glittering between unapproachable smiles—the inalienable gifts of these people—and say, "Ah, signore, will you go up with me again?" just as if it

were a perfectly ordinary feat. The free, easy, and primitive style of this Carrara flying-trapeze work makes it appear doubly dangerous. Hundreds of accidents occur every year.

Children scarcely out of their swaddling clothes work amid the glare and dust of this lovely white marble, and die with sore eyes and stifled lungs. The food is dry bread, a raw onion, and dirty water. It is the only place in Italy where wine is not drunk. Worn out by incessant, severe toil, these people, insufficiently fed, fall into dissipation, violence, and crime, dying like dogs, and leaving on the white marble the sweat of their wretched lives. We see none of all this under the hand of art.

Fully \$800,000 worth of marble goes out annually from these quarries, the bulk of it to France. The price of it varies according to its beauty. The first quality is priced at \$60 to \$80 per square meter at the seaport. This is what we term statuary marble. The