

Another Cliff Town Discovered.

The occurrence of ancient cliff towns, built upon or rather in almost inaccessible places along the precipitous sides of river canons in Colorado and New Mexico, was made known several years ago. Another very important discovery of this nature was made a short time since by Mr. James Stephenson, of the U. S. Geological Survey, in New Mexico. The city lies in a cañon thirty miles long, never before visited by white men, and is about forty miles from Santa Fe and ten miles from the Rio Grande. It consists of a succession of excavations in the solid rock throughout the length of the canon, making, perhaps, the largest cliff town yet discovered.

The houses are dug out of the rock side to a depth of from fifteen to twenty feet. Apparently they were excavated with stone implements. They are almost inaccessible from the plains. Mr. Stephenson, however, managed to clamber up the rocky precipice, and entered and examined a number of articles that he thought remains of their first possessors. A scientist who has traveled in that region and visited other caves and excavations of a similar kind says he is disposed to believe that they have been tenanted within modern times by Indians at war with other tribes, seeking safety and advantage over their enemies. He thinks the remains found there are the remains of the things these belligerents have used, eaten, or worn, and not the relics of the first owners of the rock houses.

The Utilizing of the Tides.

A Philadelphia engineer has invented, it is claimed, a machine by which the power of the tides can be utilized. Numerous plans have been proposed for the accomplishment of this most desirable end, but only under exceptional conditions have they been practical or economical. If the new device can harness the tide in an open channel, so as to convert any considerable portion of the vast power into working force, the inventor will rank among the great benefactors of humanity. Emerson says somewhere: Hitch your wagon to a star. A device for utilizing mechanically the free tides, as they sweep along our shores, would come next to that, since it would enable us, through converters and carriers of electricity, to hitch our wagons to the sun and moon.

CREMATION TEMPLE.

The engraving shows the Cremation Temple lately built in the beautiful cemetery of Milan by Mr. Albert Keller. This temple, built in the Greco-Doric style, is surrounded by columns and pilasters, and surmounted by a cupola, forming a chimney through which the products of combustion escape. The furnace is in the basement, and nearly in the middle of the building. The interior of the building is divided into four large halls, in the first of which the mourners assemble before the body is brought into the urn or cremation chamber; adjoining this hall there is a room in which the bodies in their coffins are awaiting cremation. The next apartment is a large storage room for coal and wood, and beyond this are the furnaces. In an adjoining hall the "Cremation Society of Milan" has its office, and transacts all its business.

Here is a curious collection of antique and modern vases, documents relating to cremation, models of furnaces, etc.

The cremating furnace is arranged transversely in the temple to permit of watching the entire operation through a small window in the side wall of the temple, as shown in the engraving.

The body is placed upon a grate, under which a basin is placed to receive the liquids and ashes that may drop down.

Two furnaces are now before the public, known as the Gorini and Venini furnaces, after the inventors.

The engraving shows Gorini's furnace, in which the flames and products of combustion pass over the body, thence down a flue and under the base upon which the body rests, thence up the chimney. The body, thus completely enveloped in the flames, is converted to ashes in from one and a half to two hours. Wood or coal may be used, and the expense is about one dollar.

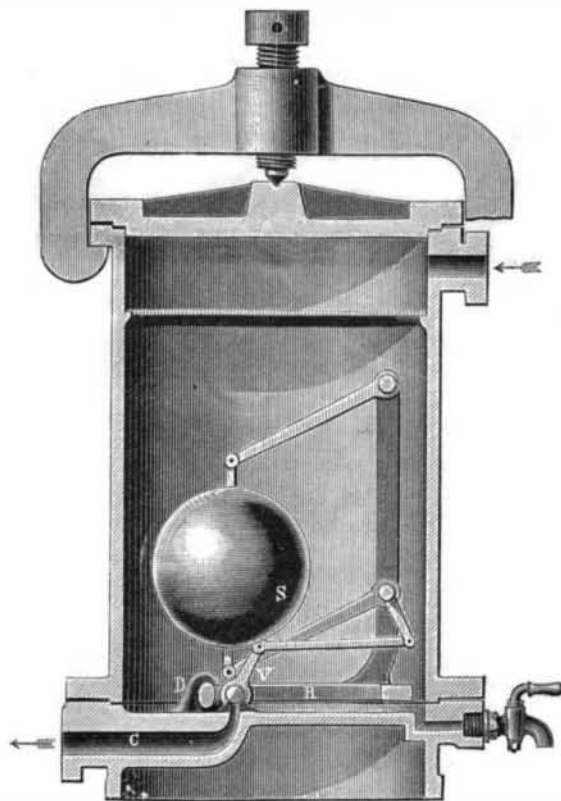
Mr. Venini's apparatus is more complicated than that of Mr. Gorini, but it transforms the tissues of the body into gases in a more perfect manner than any other furnace.

THE ELECTRIC LIGHTING.—The Commissioner of Public Works, New York city, has granted Mr. Edison a permit to introduce his system of electric lighting in the lower part of this city.

AUTOMATIC GOVERNOR FOR WASTE WATER PIPES.

The governor shown in the annexed cut, taken from the *Deutsche Gewerbe Zeitung*, controls the flow of the waste water from a surface condenser.

The valve, V, which closes the inner end of the outlet, C, is mounted in a frame, R, which has its fulcrum at D, and presses the valve upon the end of the outlet with considerable pressure, insuring a close joint, which is not affected by the accumulation of sediment. The valve is operated by a

**GOVERNOR FOR WASTE WATER PIPES.**

series of levers which are actuated by a float, S, which rises and falls with the water, and opens and closes the valve, V, accordingly. The apparatus is said to work equally well at low or high pressure.

Uncertainty of Blood Stains in Evidence.

The circumstantial evidence of minute blood stains in criminal cases has been made much of in several recent trials. The value of such evidence has been seriously questioned by Dr. Charles O. Curtman, of St. Louis, who shows that, even when the suspected blood has been shown to be unmistakably human, the accused may plead that the blood stains were caused by predatory insects. In his experimental investigations Dr. Curtman allowed mosquitoes to take their fill of human blood, then, after keeping them in close confine-

ment for periods of varying length, he killed them and examined the blood. In all cases, up to forty-eight hours after a meal, a large proportion of human blood corpuscles were unchanged and readily recognizable. The size and color of the corpuscles of mosquito blood are very different from human. As the result of more than a hundred careful measurements, he

gives the following sizes: Human blood (after imbibition by the mosquito) averages, in dilute glycerine, 1-3200 inch; in 80 per cent alcohol, 1-4000 inch. Mosquito blood averages, in dilute glycerine, 1-14000 inch; in 80 per cent alcohol, 1-18000 inch. In the case of bedbugs it was found that these insects digest blood much more rapidly than mosquitoes do. After twelve hours no trace of human blood was discovered.

An Ice Cave in Montana.

Two explorers named Lambert and Caruthers discovered, last summer, a large cave on the Dry Fork of Arrow Creek, in the Belt Mountains, in which was half an acre of solid ice of unknown depth. At the time of the discovery, about August 1, the ice was covered with ten inches of water, which prevented a thorough exploration of the cave. The *Fort Benton Press* says that the ice gives every indication of being in great body, and it is believed, from its appearance, and the fact that in the hottest season only a few inches of it was melted, that it is perpetual. The cave is described as being a great resort for game, as all kinds were killed close to its entrance.

Pampas Grass.

The cultivation of pampas grass, now so much used for decorative purposes, has become quite a profitable industry in Southern California. Three-quarters of an acre planted in pampas grass yielded, at $2\frac{1}{2}$ cents per head, \$500. Another grower sold all he could raise at $7\frac{1}{2}$ cents per head. Last year 10,000 heads or plumes of this grass were sold from that region.

ENGINEERING INVENTIONS.

A circulating device for steam generators has been patented by Mr. Dan Abell, of Carson City, Nev. This invention consists in combining with the feed water and circulation pipes of a steam generator a steam pump for keeping up a continuous and rapid circulation of the water within the space of the generator.

An improvement in that class of devices called "self-couplers" and "uncouplers," has been patented by Mr. Louis C. Slonecker, of Stauffer's Station, Pa. It consists of two spring-actuated spear-headed coupling pins or hooks, pivoted parallel with each other on either side of a vertically adjustable drawhead, and extending forward in front of the drawhead to couple with a like device.

An improved car truck has been patented by Mr. Edward P. Cowles, of Wequiock, Wis. The object of this invention is to provide running gear for a car or other vehicle designed especially to run on round rails, and to avoid the use of flanged wheels and the friction and abrasion caused by them. The invention consists of a car frame of novel design, provided with flat faced vertical wheels to run on the top of the track, and with inclined flat-faced guide wheels that run under the inside edges of the flat wheels squarely against the side of the track.

An improved propeller has been patented by Mr. Rio Gardner, of Westerly, R. I. The invention consists of a hub having short arms, and of blades united thereto by mortise and tenon joints and suitable bolts and screws.

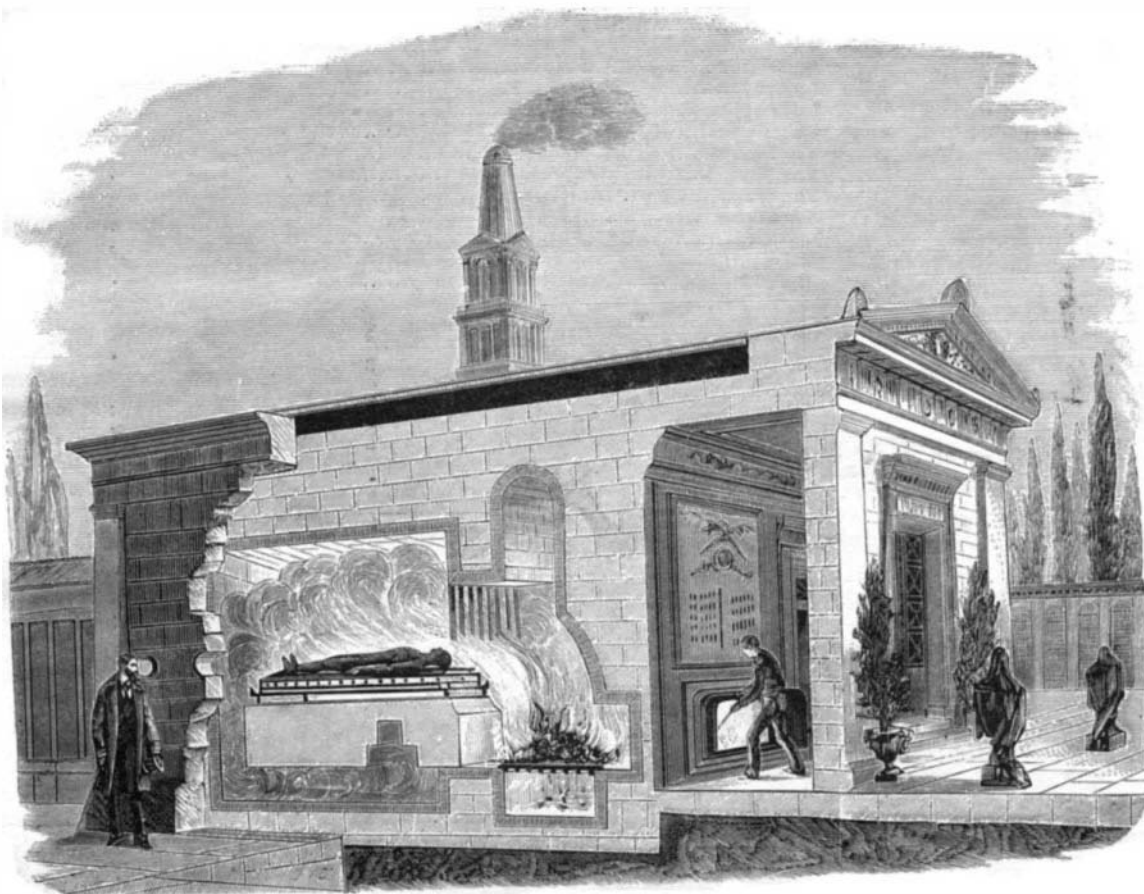
Mr. John Forbes, of Harrisburg, Pa., has patented a core box having a lid fitted for use as a sweep in striking the core and apertured to give access to the box; also, in the combination, with the core box, of flanged tubes for strengthening the legs of the core and giving vent.

Mr. William J. Watson, of Marion, S. C., has patented an improved stump puller, so constructed that it can be readily applied to the stumps and will be powerful in operation. The invention consists in providing a stump puller with a lever strengthened by a truss rod and stud, and having a clevis at its forward end for the attachment of the draught, and a chain at its rear to be attached to a stump, a swiveled standard for connecting wheels, and an axle with the lever to carry it, and a right angled lever for adjusting the carriage and fastening it in place.

Mr. George W. Veil, of Bucyrus, Ohio, has patented a machine for opening and grading tile ditches, so constructed

as to leave the bottom of the ditch straight and smooth.

An improved locomotive spark extinguisher has been patented by Messrs. G. A. Gunther, of Bath, and W. Kowalski, of Brooklyn, N. Y. The object of this invention is to deaden or extinguish sparks passing out through the smoke stack of a locomotive. The construction of this device is peculiar and cannot be readily described without engravings.

**THE MILAN CREMATION TEMPLE.**

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