

Alleged Discovery of Ancient American Carvings.

The *Pioneer Press* (St. Paul, Minn.), announces the discovery of a remarkable cave on the farm of David Samuels, 10 miles from La Crosse. The cave is 30 feet long, 13 feet wide, and about 8 feet high. Above the quarry sand, which has evidently drifted in and covered the floor to the depth of three to six feet, upon the walls, are very rude carvings representing men, animals, arms, and implements, and some appear to be hieroglyphics. One picture represents men, with bows and arrows, shooting animals, three buffaloes and one rabbit. Another represents three animals, which, if large, must have been like the hippopotamus; another appears to represent a mastodon; on another picture a moose is quite plainly delineated. There are eight representations that are canoes, much carved, or hammocks, which they more resemble. One sketch of a man is very plain; the figure wears a kind of chaplet or crown, and was probably chief of his tribe or clan. There are many fragments of pictures, where the rock had decomposed. The rock is a coarse, soft, white sandstone. On one side of the cave is a space about 2 feet high and 2½ feet in length, made into the wall. Above are the upper fragments of pictures, and below are lower fragments, showing that they were made when the rock was entire. From the depth to which decompositions reached in this dry and dark cavern, the inscription must be quite ancient. If the carving mentioned really represents the mastodon, the work must have been done by mound builders.

The accumulated sand needs to be removed to get a full view, and possibly human remains may be found. The entrance to the cave had evidently been covered by a landslide, there being left open only a small hole, where traps have long been set for coons. The large number of these animals that were caught led to the belief that the space inhabited by them must be large, and investigation led to the discovery of the cave. It is stated that over the entrance, since the landslide, a poplar tree, 18 inches in diameter, has grown, which shows that the cave has not been occupied by human beings for more than a century.

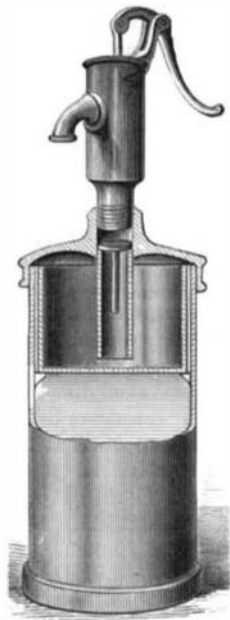
If the above statements are true, this may prove to be a rich find for our antiquarians.

NEW DEVICE FOR SEPARATING CREAM FROM MILK.

A novel device for separating cream from milk is shown in the accompanying engraving. It consists of a can for containing milk, to which is fitted a pan for containing water. The can is provided with an airtight cover, from which a tube projects nearly to the bottom of the water pan. In the top of this tube there is a valve, and a pump is attached to the cover immediately above the tube.

The can is filled with milk nearly to the lugs that support the water pan, and the latter is filled with water and placed in the can. The cover is then put on and fastened, and the pump is applied.

By removing the water from the pan a vacuum is created in the can which is said to greatly facilitate the raising of the cream. This device was recently patented by Mr. S. L. Plumb, of Portage, Wis.



Apparatus for Raising Cream.

The New Austrian Explosive.

The new explosive for military use, recently introduced in Austria, appears to have remarkable properties. It consists of Nobel's explosive gelatine (formed by dissolving gun cotton in nitro-glycerine), with camphor added in varying proportions (nominally 4 per cent). An interesting account of experiments made at the works of Zamky with this explosive is now appearing in the *Revue d'Artillerie*. From experiments on iron plates it appears that, weight for weight, it is 25 per cent stronger than the best Kieselguhr dynamite. The freezing of the charge and the priming cartridge does not diminish the inflammability and shattering force. The explosive is not sensibly altered by being under current water forty-eight hours. Fired at, in the soft state, with a rifle at twenty-five meters distance, it resists the shock; but not if frozen and placed against iron (or against wood, if frozen and containing only 1 per cent camphor). Its superiority, for military purposes, to ordinary explosive gelatine and other explosives is very marked. This new explosive is known as blasting gelatine.

Phosphorescent Powders.

A recent English patent is to obtain and to utilize at night time the light taken or absorbed during the day time from direct or indirect sunlight, or from an artificial light, either by employing phosphorescent powders simply after exposure, or by augmenting their brilliancy by means of electricity. The composition and manufacture of the luminous products and their applications without the use of electricity, is thus described: 100 parts by weight of a carbonate of lime and phosphate of lime, produced by the calcination of sea shells, and especially those of the genus *Tridacna* and the cuttle fish bone, are to be intimately mixed with 100

parts by weight of lime rendered chemically pure by calcination, and add 25 parts by weight of calcined sea salt; from 25 to 50 per cent of the whole mass of sulphur, which incorporate therewith by the process of sublimation; and from 3 to 7 per cent of coloring matter in the form of powder composed of mono-sulphure of calcium, barium, strontium, uranium, magnesium, aluminum, or other minerals or substance producing the same physical appearances, *i. e.*, which, after having been impregnated with light, becomes luminous in the dark. After having mixed these five ingredients intimately the composition obtained is ready for use according to different methods of application. In certain cases, and more specially for augmenting the intensity and the duration of the luminous effect of the composition, the patentees add a sixth ingredient in the form of phosphorus reduced into powder, which is obtained from seaweed by the well known process of calcination. As to proportion, it is found that the phosphorus contained in a quantity of sea weed, representing 25 per cent of the weight of the composition formed by the five above named ingredients, gives very good results.

The phosphorescent powder thus obtained and reduced into paste by the addition of a sufficient quantity of varnish, such as copal, may serve with advantage for illuminating a great number of objects, *e. g.*, buoys, sea compasses, barometers, street plates, sign boards, and other similar objects, by arranging it in more or less thick coatings upon a plate of metal, wood, glass, or other material, covered by a transparent glass; this powder may also be employed for theatrical scenery or pictures, artificial flowers, and other similar articles by the application of one or more coatings of the powder incorporated in the varnish, or else by varnishing previously these objects and by sprinkling the dry powder upon the varnish still damp, and in this case the covering piece made of glass or other transparent material may be suppressed.

These powders are also employed for manufacturing solid objects generally made of cellulose, paper paste, papier-mache, artificial ivory, sometimes called coralline, and other materials of a similar nature, by sprinkling the surface of these objects, or only certain parts of the surface (still damp or moist) which are usually exposed to light, and by compression in moulds or otherwise in order to incorporate definitely the phosphorescent powders into the surfaces. The amount of powder applied should not exceed the thickness of a thin sheet of cardboard; it may be employed either for coating the whole surface or certain fractions thereof, so as to produce various designs, inscriptions, or effects. For this application various powders are also applied, which contain different coloring matters, so as to produce effects of various colors.

The dry phosphorescent powders are also converted into translucent flexible sheets of unlimited length, thickness, and width, by mixing them with about 80 per cent of their weight of ether and collodion in equal parts in a close vessel, and rolling the product into sheets, with which any object may be covered which is intended to be luminous in the dark.

The phosphorescent powders may also be intimately mixed with stearine, paraffine, rectified glue, isinglass, liquid silic, or other transparent solid matter, in the proportion of from 20 to 30 per cent of the former with from 50 to 80 per cent of either of these substances, and this mass is then reduced into sheets of variable length, width, and thickness, according to their intended applications. A luminous glass is also manufactured by means of the above mentioned phosphorescent powders by mixing the same in glass in a fused state in the proportions of from 5 to 20 per cent of the mass of glass. After the composition has been puddled or mixed it is converted into different articles, according to the ordinary processes; or after the manufacture of an object still warm and plastic made of ordinary glass it is sprinkled with the powders, which latter are then incorporated into the surface of the article by pressure exerted in the mould, or in any other suitable way.

It has been observed after various trials that the passage of an electric current through the different compositions augments their luminous properties or brilliancy to a great extent; this peculiarity is intended to be utilized in various applications too numerous to describe; but of which buoys form a good example. The current of electricity is furnished by plates of zinc and copper mounted on the buoy itself, when the latter is used at sea, but in rivers and fresh water inlets the battery will be carried in the interior of the buoy. To secure the full effect from 10 to 20 per cent of fine zinc, copper, or antimony dust is added to the phosphorescent powder above described. The patentees, Peiffer, MacCarty, and De Sagan, have devised a special form of buoy, which they claim is their invention, in company with the various applications above described.

AN INVENTOR VICTORIOUS.

Under the above heading the Cincinnati *Commercial* of June 10th says:

The suit of John L. Lewis against the Swift Iron and Steel Works of Newport, to restrain them from operating a style of rolls patented by the plaintiff, was decided yesterday in the United States Court. The decree of the court orders that Swift & Co. be for ever restrained from using any of the 14 sets of iron rollers now at the mill in Newport, Ky., and from making or using any roller of like form. It is further ordered that this case be referred to the Master to inquire and report as well the profits realized by Swift & Co.

by the use of the rollers, as the damage which Lewis has sustained, and for this purpose the two parties are to bring proof as to how long Swift & Co. have used each set of rolls, with the provision that in the absence of any proof it will be assumed that they have been in use for five years from the beginning of this suit; and as to what royalty Lewis has been receiving for the license and whether the royalty be different according to the size of the rolls. The proof is required to be furnished by the 10th of July, and the case submitted to the court on the 30th of the same month.

This patent for angle iron rolls was granted to John L. Lewis, of Pittsburg, Pa., through the SCIENTIFIC AMERICAN Agency of Munn & Co., and the case between the patentee and the Swift Iron and Steel Works of Newport, Ky., was carried on for a period of more than five years. The letters patent were the object of attack by able patent lawyers, and the case drew considerable attention among iron manufacturers, West and Southwest. It is rarely, perhaps, that a specification is subjected to the test so long continued as was the Lewis patent, but it stood the test well.

Industrial Art in New York.

Hitherto there has been no museum in this city which has given any special attention to the applications of industry to art and art to industry. This want the trustees of the Metropolitan Museum have determined to supply, and have devoted a portion of the new art building, in Central Park, to collections illustrating industrial art. They propose to begin with the applications of metals. Valuable gifts have already been received, others are promised, and more are earnestly solicited. Professor Thomas Egleston, of the School of Mines, Columbia College, has been authorized to receive such donations. Communications relating to the matter may be sent to him or to the Director of the Museum, Gen. Di Cesnola. The department is an important and useful one, and it is to be hoped that contributions will be liberal.

Disastrous Earthquake in Sicily.

The region about Mount Etna was shaken by a violent earthquake June 18. Five villages near Aci Reale, a few miles northeast of Catania, were almost wholly destroyed, with serious loss of life. The eruption of Etna had subsided materially.

IMPROVED ANCHOR.

The engraving represents an improved anchor recently patented by Messrs. Spedden & Stafford, of Astoria, Oregon. It consists in a single fluke pivoted in a frame and provided with cam-shaped tripping arms at its base. The frame or shank serves both as a shank and stock, and it has no projecting arms to entangle the cable or chains so as to foul it, and its action is rendered positive by the action of the trip arms.



A Novel Anchor.

Solution for Electro-Plating with Copper.

The following recipe is for a solution for electro-coppering iron, lead, zinc, pewter, etc.: Weigh out, sulphate of copper, one drachm; tartaric acid, two drachms; caustic potash (in sticks), two drachms. Dissolve the sulphate of copper in about half a tumblerful of water. Also dissolve a small quantity of washing soda (about 2 drachms) in warm water, and add the soda solution to the copper solution.

Just enough should be added to throw down all the copper in the form of a green precipitate—basic carbonate of copper. This precipitate has now to be separated from the fluid, which is a solution of sulphate of soda. The quickest way to effect the separation is by filtration, in which a piece of blotting paper, folded twice and adjusted within a funnel, may replace the usual filter paper. The *Electrician* says that if time be no object, the precipitate may be allowed to subsides, and the clear solution afterward poured off. In either case the precipitate should be washed with clear water in order to remove the last portions of the soda solution. Now dissolve the tartaric acid in a small quantity of warm water; get the moist copper precipitate into a tumbler, and pour the tartaric acid solution upon it. Effervescence will take place. Wait until all the gas—carbonic acid—is evolved; then put the sticks of caustic potash into the tumbler, and add sufficient water to make up at least half a tumblerful—one gill—of solution. The potash dissolves the copper precipitate, the fluid becoming of a beautiful blue color, without any sediment.

Ancient Intercourse with China.

The Chinese Ambassador, Li-Fang-pao, at Berlin, says that from the Chinese inscription on one of the vases found by Dr. Schliemann on Trojan soil, it is proved that there was traffic between China and European boundaries about twelve hundred years before Christ. The gauze linen found by Dr. Schliemann in the vase was made in China. Li-Fang-pao contends that the Hyperboreans were Chinamen.