

## NEW INVENTIONS.

## New Air-Tight Oven.

An improved baking apparatus, denominated "Barstow's Air-tight Furnace Bake Oven," has been invented by Benjamin Barstow, of New York City, who has taken measures to secure a patent. It consists in arranging within an air-tight outer casing, one or more ovens over the furnace chamber, in such a manner that when the fire is in full blast the rising flame or hot air will be allowed to have a free course and circulate underneath the bottom, over the top, and along the sides and ends of the ovens. This is effected by means of passages in the top plate of the furnace through which the hot air and flame passes, and circulates freely, as described, to the ovens, the bottom plates of which are similarly provided with passages for the admission of the hot air and flame. Dampers are likewise affixed to the passages of both the ovens and the furnace, so that the quantity of heat can be regulated at will, and they can be so operated as to let on the flame to the ovens in a zig zag manner instead of in a direct line. This arrangement is useful in case the heat is too great on one side and not sufficient on the other. The ovens, which are placed in a row one above the other, may be indefinite as to number, and are separated from each other, and the outer wall by partitions and metal rods, these latter, which extend completely across the under sides of the ovens serve to support them, and have their bearing in the wall. Any number of ovens, one or more, can be heated, according as may be required, and there is an independent arrangement consisting of pipes, by employing which the ovens can be used for baking meat as well as bread, the apparatus being more particularly intended for the latter purpose.

## Improved Portable Umbrella.

Measures have been taken by Henry Richardson, Sheldon Morris, Jr., and Bennet C. Perry of Litchfield, Conn., to secure a patent for a new description of umbrella. This is a compact arrangement to enable an umbrella to be folded into so small a compass that it can be placed in the pocket or otherwise conveniently packed for travelling. The stick is formed of several pieces, which serew together, and by means of shoulders are maintained in a steady position. A small link and swivel prevent the several pieces from becoming detached, when the joints are unfastened and yet do not check the action of the screws. Each rib is jointed and is kept in a proper position by a spring and catch, which easily yield when the umbrella is required to be folded.

## Paine's Patent Ventilating Cars.

MESSRS. EDITORS—With reference to your article on the subject of Mr. Goodyear's "advertisement," permit me to say, that there has not been any question of interference between Mr. G. and myself, on the subject of my patent for ventilating railroad cars, on the contrary, Mr. Goodyear, just previous to his death offered me twenty thousand dollars for my patent. A few weeks since I caused an interference to be declared between Mr. Goodyear's administrator and myself, for the purpose of testing his right to the use of any kind of deflectors to a car window. Unfortunately for my position, the term "screens" was in my claim, and as Mr. Goodyear's patent claims the use of screens, and screening action only, the decision was against me. My papers, however, have been amended, and a different result will be declared in due time. My claim is for windows adjusted so as to act as deflectors, and my patent is the only one issued for a deflecting process, and my patent remains intact. H. W. PAINE.

New York, Feb. 2nd. 1853.

## Curious Experiments on Silk Worms.

By experiments that have been lately made, it appears that the natural silk from the silk worms can be obtained colored as desired by administering colored articles of food to silk worms just before they begin spinning their cocoons. The first experiments were conducted with indigo, which was mixed in certain portions with the mulberry leaves, serving the worms for food. The result of

treatment was successful; blue cocoons were obtained. Small portions of bignonia chica having been added to the mulberry leaves, the silk-worms consumed the mixture and produced red colored silk.

## Gum Arabic Starch.

Take two ounces of fine white gum arabic, and pound it to powder. Next put it into a

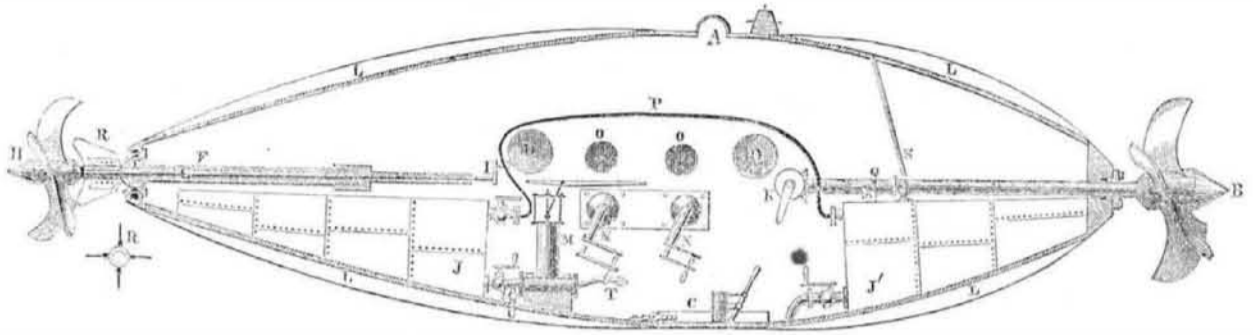
pitcher, and pour on it a pint or more of boiling water (according to the degree of strength you desire,) and then having covered it let it set all night. In the morning, pour it carefully from the dregs into a clean bottle, cork it, and keep it for use. A table spoonful of gum water stirred into a pint of starch that has been made in the usual manner, will give to lawns (either white or printed,) a look of

newness when nothing else can restore them after washing. It is also good (much diluted) for thin white muslin and bobbinet.

## Correspondence.

We have received a number of articles on the "Caloric or Hot Air Engine." One or two of these, which differ in opinion from us, we will try and present next week.

## PHILLIPS' SUBMARINE PROPELLER.



The annexed engraving is a longitudinal section of a Submarine Propeller, invented by L. D. Phillips, of Michigan City, Laporte Co., Ind., and for which a patent was granted on the 9th of last November (1852). The object of it is for exploring the bottoms of rivers, harbors, &c. The axis of the propeller is mounted on a universal joint, so that it can be inclined in any direction, for the purpose of applying the whole power of steering the vessel when necessary. This figure represents an oblong vessel made of boiler plate, or wood, and ballasted so as to descend to the proper depth.

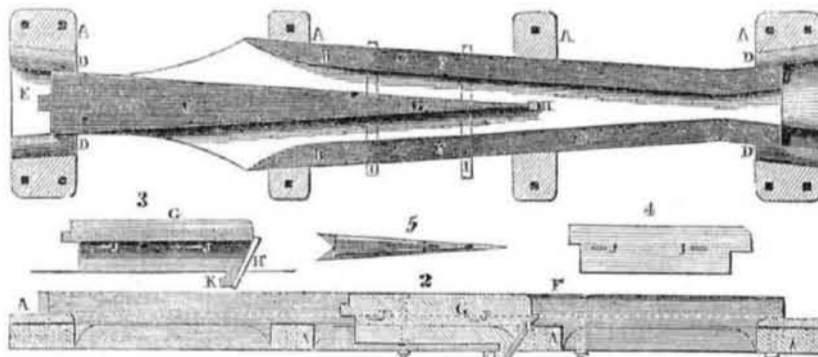
A is a strong glass light on the top, and O O are small side lights, and D D are reflector lights; L L L L are keels for keeping the vessel steady. There are two chambers, J J', made in the inside; they are air and water tight. J is the air, and J' the water chamber. M is an air pump, to force in the air into the chamber, J, until it is equal to the pressure of several atmospheres; P is a pipe communicating with the air and water chambers;

its object is to force out water, when required, by the pressure of air through the pipe seen below, leading out at the bottom, and the pipe, S, is to allow compressed air to escape, when more water is required to increase the weight of the vessel; C is the bottom hatch for discharging ballast, &c. T is a pipe to admit air into the pump; N N are clamp handles, whereby men in the inside can work the shears outside, for raising any thing. B and H are screws for propelling the one in front and the other behind. The former is operated by the crank, K, and the stern one by crank I. R is the rudder, it has four flukes; F is a hollow shaft of the propeller, H; and G is the spindle of the rudder. E is a ball joint, which is so packed that no water can enter. It is this ball joint which enables the stern propeller to be depressed, so as to make the bow of the vessel rise; or be elevated so as to make it dip, and it can also move it on any line; Q is a pipe to take off air for supplying the cabin, and V is a discharge pipe. As the air is confined under a heavy pressure, a fresh quan-

tity is let out from time to time, to supply the operators. There is a hatch on the top, which is sealed when the vessel is submerged; when the upper hatch is open, the bottom one is shut, and vice versa. Persons can examine the bottom of a river through the lower hatch, as the water can only rise to a very small height. The vessel is now represented as being moved in a horizontal direction. By throwing out stone ballast the apparatus will at once ascend to the surface, and the screw will assist it in steering upwards.

The claim of this patent will be found on page 78, this volume of the Scientific American. It can be employed under water, to discharge shells into a vessel by making such shell with sharp horns like the one shown on the top, then sinking it into a ship's side, and igniting it by a small galvanic battery inside. The inventor of the improvement on this vessel, has made many successful trials with it, as we have been told. More information may be obtained by letter addressed to him at the place designated above.

## IMPROVED RAILROAD FROG.—Fig. 1.



The annexed engravings are views of an improvement in Railroad Frogs, invented by Marshal S. Curtis, and Edgar St. John, of Binghamton, N. Y., and for which a patent was granted on the 10th of August (1852).

Figure 1 is a plan view of the railroad frog; figure 2 is a sectional elevation; figure 3 is a side view of the movable wrought iron point, G, showing the slots, J J, for the pins, I I, also showing the key, H, and the notch, K; figure 4 is a different style of frog point, from that of figure 5, which is an underside view of G. The same letters refer to like parts on all the figures.

The improvement consists in the peculiar manner of constructing the shank of the movable point, with projections, or hooks, fitting a corresponding slot or channel, formed with recesses in the bed-plate thereof, whereby said point is secured in its seat by a wedge-shaped spike, pressing against the end of the frog point, and passing through the said bed-plate, into the frog block below, which forces said point close against the truncated end of the frog; and it may be further secured from any vertical or lateral movement, by the insertion of bolts, horizontally, through its shank and said bed-plate, thus obviating the practical disadvantages arising from the present method, in general use, of drilling holes, vertically, through that

part of said point most subject to the tread and friction of the flanges of the wheels, and lessening the expense of constructing, keeping the whole frog in efficient repair, and, consequently, augmenting its durability.

A A A, and B B form the cast metal bed-plate of the frog, and C is the rail of it cast along with the said plate; D D are clutches to embrace the rails which join on the frog; E is the part where the rails meet at one end against the frog rail, C; F F are guard steel plates bolted to the bed plate; G is the movable wrought iron frog point; H is the vertical key at its point, and I I are cross pins. If the pins, I I were withdrawn, still the movable point could not be removed, for the key, H, will still retain it, and it cannot be withdrawn without an instrument. This manner of securing the movable point, G, is evidently a very excellent one, as the key, H, when out, allows of the point, G, being placed to the right, then pushed to the left to make it take into the frog plate as shown in figure 2, also to make the notch, K, catch over the projecting part of said plate. The key, H, then drives all up close and tight, so that there can be no lateral nor end motion of the movable point—a most important consideration. The claim for this improvement will be found in our list, Vol. 7, of the date mentioned above.

The figure 4 of the point having no hooks upon it, is the pattern used by the New York and Erie Railroad.

More information may be obtained by letter addressed to the inventors at Binghamton.

## Daguerreotyping.

M. Niepce de St. Victor has presented a third memoir on Heliochrome, or sun coloring, to the French Academy of Sciences, which we will give, in extenso, next week, as it contains much of interest to all Daguerreotypists. It was mentioned by M. Arago, to the Academy, on the occasion, that it is not by contact, but in the camera, that M. Niepce operates, and that he obtains every color. He likewise noticed a very remarkable fact that M. Niepce has observed in his experiments, and to which he directed the study of philosophers, namely, that the morning light has a much greater photogenic action than the evening light. For example, if a prepared plate is exposed from nine o'clock till noon, in the camera, the colored impression will be obtained in a much shorter time than if the same experiment were made from noon till three o'clock. Moreover, if the pictures are looked at by a strong light, M. Niepce not having yet found the means of fixing them completely, the colors become faint, but this effect is very perceptible if it is morning, whilst it is almost nothing in the afternoon. At the close of his remarks, M. Arago used these significant words—"M. Niepce has resolved the problem—nothing further remains for him to do but to perfect it by the permanent fixing of the colors."

## Chinese Industry.

Parrot's building in San Francisco, of one hundred feet front, seventy or eighty feet deep, and four stories high, all of solid granite, was put up in Canton, block by block, by Chinese workmen; and the blocks being all numbered, the building was then taken down, put aboard ship, brought across the Pacific, and re-erected in San Francisco by the same hands.