

The transverse movements of the carriage as described in a straight line, make all the faces of the object straight transversely, but concave faces may be produced by raising the carriage when the centres are exactly beneath the axis of the cutter shaft.

This lathe is said to perform as much work as a common turning lathe, while the work produced is of a much higher class, the variety of work it may be made to do is almost infinite. It does not require a practical turner to use it, but any good mechanic, or indeed any person capable of understanding its operation, may use it. Any information about the sale of rights, &c., may be obtained by addressing Allen Sherwood, Auburn, N. Y.

MISCELLANEOUS.

The Oil Market.

The New Bedford Whalers' Shipping List gives a statement somewhat in detail, to account for the recent rapid advance in the oil market, extending to all branches of the oil trade. The rise is caused, it says, by the greatly diminished import of whale and sperm oil this year, viz., 155,000 barrels against 423,000 in 1851, and 372,000, the average of ten years past; and the amount of consumption and export, which, for the average of seven years, is stated at 276,000 barrels consumed, and 104,000 exported, making a total annual demand of 480,000 barrels. This statement shows that the exports of the present year do not come up to half the demand. In addition to this is the diminished supply of lard oil, from the falling off of the *hog crop* of both the last and present years.

Wooden Nutmegs Outdone.

The Paris correspondent of the National Intelligencer gives us some laughable information:—It appears that the French have learned to make counterfeit coffee berries of worthless flour. The paste or dough is, by means of moulds skillfully prepared, made to assume the shape of grains of coffee, whether of Mocha, or Bourbon, or Martinique, to suit the taste of buyers. The artificial grain is then baked until it takes the color of parched coffee and is retailed as such, with great profit, in the grocery stores. The practice, very general in France, of buying from the grocers coffee ready parched, facilitates this mode of falsification, otherwise impossible.

Rise of Labor.

The leading article in the January number of Blackwood's Magazine, is by the celebrated historian, Alison. In it he predicts the happiest results as likely to follow the recent gold discoveries—both in California and Australia. He says the consequences of an annual supply of \$1,000,000,000 will be incalculable in increasing the happiness of mankind. The changes will come gradually, he thinks, but come they will, as sure as any change produced by fixed laws.

The Wheeling Bridge.

It is stated that during the recent great rise in the Ohio river, the tallest boat on it, called the Cincinnati, passed under the wheeling bridge, and had eleven feet of space to spare. This fact shows that the noble structure is not an obstruction to navigation.—[Exchange.]

[This is true, but it is also stated, "she threw back her chimneys." We are indebted to W. J. McAlpine, Chief Engineer of this State, for his report on the Wheeling Bridge, but which we have not yet had time to examine for the benefit of our readers. We hope to be able to do so in the course of a week or two.

Breaking of Railway Axles.

We have seen in a number of our daily papers, various propositions, by correspondents, for providing against the breaking of railway axles. It would be well for men to consider well their subjects before writing on them. One proposes to have separate axles for each wheel; another to have one wheel loose on an axle, and all to prevent torsion in turning curves. These men do not know that the tread of railroad car wheels is conical to suit the curves on the track, and they do not see that to have the wheels on separate axles would increase the danger of running off the track in the one case; and the loose wheel in

the other case would effectually provide against a forward motion.

Recent Foreign Inventions.

GLASS, CHINA, PORCELAIN, &c.—W. Hodge, of St. Austell, Cornwall, Eng., has taken out a patent for improvements in the manufacture of glass, china, porcelain, earthenware, and artificial stone; the improvements consist in the above-stated manufactures of the material known as hornstone porphyry, otherwise called elvan or freestone, which has never hitherto been used for the purpose.

For the manufacture of glass, the elvan is to be reduced to powder, and to be mixed with the other pulverized materials in the melting-pot; and as the constituents of elvan are silex in combination with potash and alum in different proportions, it will be found a material well adapted for glass making. The proportion of elvan employed will vary according to the quality of glass to be produced, and the nature of the material will determine the quantity of fluor spar, lead, potash or other flux, for fusing the same. Thus, when the proportion of silex is large, an increased quantity of fluor spar will be required, and so with other fluxes. The elvan does not generally for this use require to be washed after being pulverized, but it may sometimes be found necessary to submit it to this operation.

For the manufacture of china, porcelain, and earthenware, the elvan is reduced to powder, and brought to a plastic state, when it is moulded in the usual way, and then dried and fired as customary. The elvan may be used alone, or may be combined with china clay, or such other materials as are commonly used in earthenware or china manufacturing; and according to the quantity in which it is used, so will the character of the manufactured article more or less resemble that of stone-ware. The elvan may also be used for making glazes in the same manner as other materials are now employed for the same purpose.

For producing artificial stone, the elvan may be used alone or in combination with granite or other similar stone or substance in broken fragments, or reduced to a powdery condition. The materials having been mixed together, are brought to a plastic condition, moulded into blocks, dried and fired in the usual way.

Although in the manufacture of articles in china, porcelain, and earthenware, the elvan is above directed to be powdered and brought to a plastic condition, and moulded into the form of article to be produced, it is nevertheless capable of being worked in a pulverized or disintegrated condition, and applied to the manufacture of articles by dies and pressure, the method of doing which is well understood.

IMPROVEMENT IN SMOKING PIPES.—George Phillips, of London, has recently taken out a patent for improvements in smoking pipes.

It is well known that tobacco contains two highly poisonous constituents, nicotine, and nicotianine, which are distilled over with the volatile oil during the act of smoking, and when introduced into the system tend much to the injury of the health and comfort of the smoker. The former of these products is volatilized at 320°, and the latter at 212° Fahrenheit. Now the object of the patentee is to intercept, cool down, and condense these noxious oils; and this he effects by causing the smoke to traverse worms, or plates of metal, or surfaces of wool cotton, or other fibrous material, or discs of woven fabrics, or sawdust, pumice, or other porous material, which will permit the passage of the smoke, but intercept and condense the volatile oils; and he prefers for this purpose to use the material known as "wool in grease." He also saturates the fibrous or other material employed with fats or fixed oils, which he finds to act effectually in condensing the noxious products in tobacco smoking. The same effect may be produced by using alkaline solutions, but the patentee does not recommend their adoption, as they are found to destroy the true taste of the smoke. The fibrous materials, lightly packed, are placed in a stem of glass, in which they are retained by perforated corks, and they are introduced into the stem at about the middle of its length, so as to allow room for the mouth-piece and bowl to be attached.

The bowl is formed with a stem, which is

introduced into the glass tube, and the space left between the interior of the tube and the stem of the bowl constitutes a reservoir, which serves to contain the condensed oil, &c., and prevents their return into the bowl; and sometimes the stem of the bowl has a cup attached to its end, to prevent the oil passing into it. The mouth piece is fitted in a similar manner—that is, it has a stem which projects into the tube so as to prevent any condensed oil from passing into the mouth of the smoker. The improvements are also shown as adapted to meerschaums, and the tubes may be fitted so as to admit of holding cigars. The patentee also in some cases introduces a wet sponge in the tube at the top, for the purpose of obtaining a water pipe.

To Render Water Wholesome.

The alkaline waters found on the plains, and so often found fatal to man and beast making their journey overland to California and Oregon, are said to be rendered entirely palatable and wholesome by mixing a small quantity of citric or tartaric acid, which neutralizes the alkali.—[Ex.]

[Those who use the water will then have what is termed good soda water.—The best way to purify the water would be to use sulphuric or chloric acid, and allow the sediment to settle, then filter through sand or charcoal. The above plan in the extract is the most convenient, and travellers intending to take the overland route to the Pacific, would do well to take some tartaric acid along with them, it can be purchased at any druggists; it is sold in beautiful crystals which should be kept well covered, as they have the quality of absorbing moisture from the atmosphere.

A Crystal Palace in France.

Among the last decrees of Louis Napoleon before surrendering the nominal dictatorship, was the following:—

"An edifice destined to receive the national exhibitions, and which may serve for public ceremonies and for civil and military fetes, shall be constructed on the system of the Crystal Palace in London and established in the Great Square in the Champs Elysees."

The London Crystal Palace received 50,000 persons on the last Saturday in March, and 20,000 were present at one time. Great efforts are making to preserve this edifice.

One piece of carpet for the Crystal Palace in New York (that is to be when the funds are raised), has arrived from England. It had to pay the duty; this kind of duty will prove exceedingly effective in preventing contributions from abroad. If it were a "National Exhibition" the duty would be relaxed as was the case with the articles sent to the World's Fair.

Stereoscopic Daguerreotype.

We have just had an opportunity of inspecting these wonderful productions of art at the establishments of Messrs Voigtlander and Evans, at Knightsbridge. The ordinary daguerreotype presents, as is well known, a mere flat miniature of the person represented. It is a common perspective pencilling, effected by the sun's rays, and no more. In the beautiful invention to which we now direct the attention of our readers two distinct copies of the same image are simultaneously taken in two adjacent cameras. Though these are apparently similar, they are yet, in fact, somewhat different in their representation of the object, corresponding as nearly as possible, to the slight difference of picture produced in Nature upon the right and left eyes of an observer, in viewing any solid figure. The two daguerreotypes so taken are placed in a peculiarly constructed box, termed a stereoscope, which admits a view of one picture to the right eye only, and of the other to the left. The consequence is that the two images are so completely blended by the operation of the brain, that the sense of sight no longer recognizes a flat picture, but a solid reality (in miniature it is true), but otherwise endowed with all the appearance of life, excepting that of motion. We strongly recommend the curious in optical illusions to take an early opportunity of seeing this remarkable application of the principle of binocular vision at the establishment above referred to. London Mining Journal.

[There was some talk a few weeks ago that this instrument had been introduced into this city, and was used by some New York artists, but we have neither seen nor heard anything positive in fulfillment of the truth of the rumor.

Strains upon the Diagonals of Lattice Beams.

The London Journal of Arts and Sciences gives an account of experiments recently made in London upon lattice beams.

The experiments were made on a model 12 feet in length, so constructed that the diagonals in compression (which were strips of mahogany, let into the top and bottom, but not fastened to them, and the ties which were of hoop iron chains), must of necessity take their respective bearing and strain; and by the substitution of a dynamometer for any one of the ties, the strain on it could be accurately measured.

The results of the investigation were, that for a parallel beam of one span, supported at each end and loaded at the centre, the strains throughout the diagonals were uniform, and the horizontal strains were greatest at the centre, decreasing uniformly at the points of support. For a similar beam, uniformly loaded over its entire length, the strains at the diagonals commenced at the centre, increasing uniformly to the points of support; while the horizontal strains decreased from the centre to the ends in the ratio of the ordinates of a parabola. These results were arrived at by different methods of reasoning, and the formulæ derived from them were stated to be applicable to the more complex form of a closely intersected lattice, taking into consideration the increased number of triangulations.

Pig Iron without the Blast.

C. S. Quilliard, of Rondout, Ulster Co., N. Y., writes us that he can make pig iron by a peculiarly constructed furnace, without using blast at all, thus saving an enormous expense in the manufacture of iron. He has been brought up to make iron, as was his father before him, and he is well acquainted with all the different plans of smelting iron.

The New Arctic Expedition.

The vessels of Capt. Sir E. Belcher's Arctic expedition, are provided with harpoon guns to kill whales and other large fish, and Minie rifles to bring down bird and deer. The oil of the fish will serve to give the expeditionists light and heat.

The Supposed Relic of the Steamer President.

The Boston Traveller of the 1st instant, speaks of the rumor brought to that port from Barbadoes, of the discovery of a figure-head, which is conjectured to be a portion of the ill-fated steamer President:

"The Grenada Chronicle has a statement that on the 4th ult., a ship's figure-head of unusual dimensions was cast ashore on the windward part of the Island. It had originally been tully eight feet high, and is that of a Senator in the act of speaking; he is partially bald, and holds a scroll in his right hand, the left grasping a scarf, which is thrown over him. It is cut of white pine and gilt, and the papers conjecture that it may be a remnant of the steamer President, though what grounds they have for such a supposition we do not learn."

Emery in Arkansas.

A mountain of emery, or corundum, is reported to have been discovered in the southern part of Arkansas near a mountain of iron. It is represented as being equal, if not superior to the Russian material. In the Arkansas emery, as in that of Russia, rubies are found.

We notice that a correspondent of the Indiana State Sentinel recommends Col. J. Franklin Reigart, of Lancaster, Pa., as a suitable person for the office of Commissioner of Patents, to succeed Mr. Ewbank, in case of any change in the administration of the office.

We think Mr. Reigart would prove a good officer, as he has practical knowledge of the details required to discharge the duty.