Recent Foreign Inventions.

Iron Block Railway Chair—Mr. Stephen Reed, of South Northumberland, has directed his attention to the construction of iron railway chairs and sleepers, to be substituted for wood. In lieu of only a 4-inch bearing of the ordinary rail upon the sleeper, the bearing is increased to 21 inches with permanent stability so insured at the joints, that three chairs are enabled to be fixed instead of four, now required, according to the old method. Mr. Reed's block chair of cast iron spreads so as to occupy a resisting surface of 462 in. superficial, being 22 inches long by 21 inches in breadth, 3-8 in. in thickness, and turned up with a margin 3-8 in. high. The boss which carries the chair is hollow; the sides and brackets are 3 8 in. thick; the 21-inch bearing is 1-2 inch thick. The weight of the joint chairs is 1 cwt. 1 qr. 7 lbs. each, and that of the intermediate chairs 1 cwt. 0 qr. 26 lbs. The weight and size, however, can be modified according to circumstances. This system requires neither spikes, tie-bars, wood pins, or screw bolts. The permanent way may be made even of sand in the absence of ballast, and the chairs, once embedded, will continue firm and undisturbed in wet weather, or during frost or thaw. By a judicious arrangement of the permanent way, and the formation of a bed of sand below the sleeper, all rigidity is removed, and a smoothness of transit is afforded for the trains, which very considerably tends to the diminution of the tear and wear of the rolling stock. Time has tested the value of this mode of construction, it having been extensively used in the north of England, evidence of which has been supplied by the reports of Mr. P. Tate, the engineer of the Newcastle and Carlisle Railway; Mr. Wm. Horsley, resident engineer of the Blyth and Tyne Railway; as well as by the statement of the chairmen and directors of other companies. Timber laid lines require re-laying almost periodically, and although the cost of the iron chair in the first instance may be greater than wood, on the ground of durability, the advantage in the long run is with the iron sleeper.—[London Mining Journal.

Metallic Frames for Pictures—E. Haseler, of Wolverhampton, England, has obtained a patent for a new method of framing pictures, &c., by thin strips of metal, such as brass, tin, &c. The inventor takes four strips of metal, having lengths equal, or nearly equal, to the four sides respectively of the picture, engraving, &c., to be framed. The strips of metal have a breadth somewhat greater than that which it is intended the finished frame shall have. That portion of each of the strips of metal which forms the front of the finished frame may be ornamented by pressure, or by any other suitable process. The drawing, engraving, &c., to be framed is covered with a glass, and a board is placed at the back of the drawing, picture, &c. The strips of metal are laid upon the glass, and bent round the edge thereof, so as to embrace or enclose the edge of the glass, drawing, and board, and thereby secure the whole together. The metal strips are held or secured in their places by corner pieces, placed at the angles, and in front of the frame. The corner pieces are furnished with eyes, which are joined together by wires, which pass across the back of the frame, and connect the opposite eyes in the corner pieces with one another, and thereby securely bind the several parts of the frame together. The corner pieces may be composed of metal, and ornamented.

Weaving Figured Pile Fabrics—W. F. Norton, of Edinburgh, Scotland, has taken out a patent for weaving pile fabrics, embraced under the three following heads :—1. Certain modes of weaving printed warps for the production of a double-printed pile or velvet fabric, to be divided into two separate single fabrics after having been woven. 2. A mode of so arranging the beams of the ground warps that the two cloths shall be kept the requisite distance asunder during the weaving, and when cut, shall each have its requisite length of pile. 3. A mode of weaving double-printed pile or velvet fabrics, wherein two or more sets of printed warp threads are woven in alternately, so that each set of threads is only worked into the fabrics at intervals, and so that the pattern upon each set only requires to be elongated to about the same extent that would be necessary were a single set of threads used.

The Cornish and Condensing Engine.

Messrs. Editors—The object of my inquiry with regard to the relative economy of the Cornish and double-acting condensing engine, was to ascertain the *cause* of the superiority, if any existed, in the Cornish engine over the other, provided they were both encased alike, used steam of the same pressure, and expanded alike. Your correspondent, Mr. West, in a recent number of the Scientific American, has undertaken to enlighten us upon the subject, but I am at loss to conceive what could have been the nature of the experiments to which he alludes, to produce such results. Admitting, however, that he is correct in the principle which he advances, i. e., "the economy of the one is to that of the other as the diameter of one is to the diameter of the other." Suppose that, instead of reducing the diameter of the double acting engine to 35 3-8 inches, (which would give us nearer half the area than 38 3-8 in.) we use the same diameter, (50 inches) and half the stroke, which would give us the same amount of steam piston displacement in the double stroke of one as in the single stroke of the other. What, then, is the difference in the economy, and what would be the difference in the economy between two double acting engines of the same capacity of cylinder? The absurdity, therefore, of attributing the economy of the Cornish engine to the diameter of the cylinder, is at once rendered obvious. The cause of the superiority of the Cornish engine over the ordinary double acting engine, is alone traceable to the high expansion used, and the effectual method employed to effect radiation; and there is no earthly reason why the same means would not produce the same results in a double acting condensing engine.

H. Haines

Petersburg, Va., Jan., 1856.

(For the Scientific American.)

Sweet Almond, Fig, and Olive.

Almond—It is a matter of much astonishment that the easy culture of this tree has been neglected. It will bear abundant crops in any State south of the Potomac. It flourishes in ordinary light soils, sandy or otherwise. The trees should be planted in orchards, at the distance of eight to ten feet apart, each way. The same culture as is given to the peach is all that is required for the almond. There are four principal varieties, that are articles of commerce: oval hardshell, long hardshell, softshell, and ladies thinshell. The climate of California is found to be very suitable for this tree, as well as the fig, olive, pomegranate, pistachia nut, &c.

Fig—This tree will flourish in almost any soil, is of vigorous growth, and usually produces two crops in a season. Indeed, many varieties do this invariably. It will support the winters at Baltimore with but moderate protection, and south of the Potomac will stand entirely unprotected. In orchards the trees should be planted at a distance of eight feet apart each way, and be formed into standards. The crops are very large, and our cities offer extensive markets for the fresh fruit, while the surplus p oduct could be dried for after use. There are more than fifty varieties cultivated in the south of France and in Italy, but a selection of from six to ten varieties, ripening at different periods, would suffice for an orchard.

European Olive—In the vicinity of Wilmington, N. C., and south of it, this tree will withstand the winters and flourish. It may be trained as a low standard, the orchard being planted in rows about six feet asunder either way. As the fruit and the oil of this tree form important articles of commerce, our attention ought to be given to its culture.

Wm. R. Prince.

Flushing, L. I., Jan. 4, 1856.

Restoring Rancid Butter.—Butter Towers.

Messrs. Editors—The remedy I propose to effect a thorough revival of spoiled butter is the erection or use of elevated towers on the principle of shot towers. My plan is to build the towers of a considerable hight; elevate the butter and warm it so that it will flow freely through webs of different fineness, and then let it fall into a cold and strong solution of salt, occupying the base of the tower, from which it is to be taken out and washed in pure cold water, or a weak solution of salt, and then be packed for use. Various means of restoring butter are used by those in the trade, but they are only temporary in their influence or superficial in their action. The interior of the tower may be filled with some disinfecting or reviving gases, through which the butter in its molten and divided state falls, and thus serve still further to purify or revive it. When butter is fresh and brought immediately to market it brings the best price, but if it is indifferently prepared or packed it soon depreciates on the hands of the holder, who must sell it at more or less of a sacrafice. The treatment I propose for rancid butter, is destined to restore it to its original value to the trade. H. Strait.

Covington, Ky.

[The plan proposed by our correspondent to restore rancid butter is new to us; but is he positive that it will accomplish the object? It would have been well if he had given us some of his experience in prosecuting the process. If butter be heated, as proposed, care must be exercised not to raise its temperature to the boiling point, as at this heat it is liable to have its butyrine taste destroyed.

Paraffine Oil, Naphtha, and Paraffine, from Coal.

Some varieties of coal, particularly those which afford the largest amount of illuminating gas, as the Parrot, Cannel, and Boghead coals, have been latterly distilled for the sake of the naphtha and oils which they afford at a low temperature. The coal principally employed in this manufacture is that found at Bathgate, in Scotland, and known as Boghead coal, the constitution or nature of which has recently given rise to a great difference of opinion among scientific men, some considering it a bituminous shale, while others view it as a true coal. Its average composition is as follows:

Earthy matter . . .	20	to 25 per cent.
Total carbon . . .	60	" 65 "
Hydrogen	7 1-2	" 9 "

Of the carbon, only from 6 to 16 per cent is fixed, or remains in the retort after distillation, owing to the large amount of hydrogen, which is greater in this than in any other variety of coal. In preparing the paraffine oil, now most extensively used for lubricating machinery, the coal is broken into small pieces, and distilled in an ordinary gas-retort, connected with a worm-pipe passing through a refrigerator, and kept at a temperature of 55 degs. Fah., by a stream of cold water. At a low temperature the pipe is liable to be clogged, in consequence of the solidification of the paraffine. The retort being charged, is gradually raised to a dull red heat, at which temperature it is kept as long as volatile products escape. An increase of temperature is prevented, which would convert the otherwise condensable products into permanent gases, which, to some extent, always escapes, and may be collected or burned.

The crude paraffine oil obtained in the distillation is heated to 150 degs. Fah., by means of a steam pipe, when water and mechanical impurities separate, and the oil, having been kept warm for twenty-four hours, can be run off into another vessel, leaving the foreign matters behind. The oil is then re-distilled in an iron vessel, and connected with a condenser kept at 55 degs. Fah., as before. Nearly the whole passes over, leaving a small carbonaceous residue. From the condenser the oil flows into a leaden vessel, where ten gallons of oil of vitriol are mixed with every 100 gallons, by constant agitation for an hour. It is then left at rest for twelve hours, during which time the acid, and the substances it has extracted, settle to the bottom of the vessel.—The oil is then drawn off into an iron vessel, and mixed with caustic soda of sp. gr. 1·3, 4 gallons of this solution being added to every 100 gallons of oil. Agitation is again kept up for an hour, and again the whole allowed to settle during six or eight hours, when the oil is removed from the alkaline solution, and again distilled with about half its bulk of water, which relative proportions are kept constant by the addition of water during the distillation. The steam carries over with it an oil or naphtha lighter than paraffine oil, which separates as it leaves the worm, coming to the surface of the condensed water. This oil or naphtha may be employed for illuminating purposes. The oil remaining in the still is separated carefully from the water, and again treated in a leaden vessel, with about 2 gallons of oil of vitriol to every 100 gallons of oil, constant stirring being kept up for six or eight hours, and then left for twenty-four hours to allow the acid to settle down. This oil is agitated with chalk, ground up into a thin paste with water, 28 lbs. of the paste being added to every 100 gallons of oil. In this manner every trace of sulphurous acid, which is copiously evolved during the action of the vitriol, is removed, and the oil kept at 100 degs. F., for about a week. This is necessary, to separate the impurities. The oil is then fit for use, as a lubricating agent, or for illuminating purposes, either alone, or mixed with fat oils.

To obtain solid crystalline paraffine, which is contained in solution in this oil, the oil is cooled as much as possible, when crystals of paraffine are formed, and may be separated from the liquid oil by filtration through woolen cloths. The lower the temperature, the greater the amount of solid paraffine which separates. The crystals are collected and submitted to pressure, that the last portions of oil may be squeezed out. In order to obtain the substance perfectly pure, it must be treated once or twice with its own bulk of oil of vitriol, washed subsequently each time with caustic soda, and lastly with pure warm water. The solid substance thus obtained is admirably adapted for making candles; but the last processes of purification are too costly to admit of its being manufactured for that purpose at present.

[The above is taken from the most recent edition of "Knapp's Chemical Technology," which we noticed afew weeks since. This information respecting the manufacture of oil from bituminous coal, should stimulate some of our owners of cannel coal mines to commence its manufacture.

At Buel, near Bonn, on the Rhine, there is a factory in which solid paraffine is made from a bituminous shale. It is sold for about half a dollar per pound, and made into candles which rival those made of wax. It is our opinion that a profitable business may be carried on at any of our cannel coal mines in the manufacture of coal oils, to be used for lubrication, illumination, and also for mixing with various kinds of paints.

Horse Flesh as Food.

The editor of the *Union Medicale* gives an amusing account of a dinner to which he was recently united in Paris, invited by M. Renault, Director of the great Veterinary School at Alfort. The object proposed was a comparative test of the qualities of beef and horse flesh. The horse flesh was obtained from a fat animal twenty-three years of age. The editor speaks in glowing terms of horse flesh soup, and it may be said that a new article of food has been added to the *French service*. The Tartar tribes eat horse flesh; the French are learning to be as civilized.

Creosote for Warts.

Dr. Rainey, of St. Thomas' Hospital, London, has written an article to the *Lancet*, detailing the effects of creosote applied to warts. He applied it freely to an obstinate warty excresence on the finger, then covered it over with a piece of sticking plaster. This course he pursued every three days for two weeks, when the wart was found to have disappeared leaving the part beneath it quite healthy.—This is certainly a remedy which can be easily applied by any person.

By the return made to the Patent Office, it appears that between the years 1840 and 1850 three hundred thousand acres of land were added to those previously under improvement in Massachusetts, and during that time there was a reduction of one hundred and seventy seven thousand in the number of sheep and swine.

Wine Manufacture in Georgia.

The Southampton *Cultivator* states that the attempt to manufacture wine from a native grape has been successfully tried by Mr. A Leary, of Monroe County, Ga. The grape it known as the "Warrenton" and the produce is at the rate of eight hundred gallons per acre