

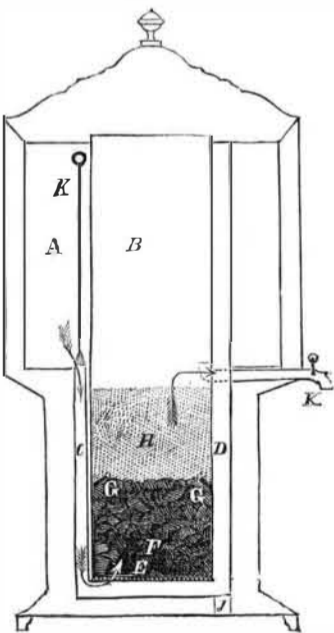
A, perfectly cool. There is a space left between the ring, A, and burner, D, through which cool air always circulates; ring A, therefore, never becomes warmed.

H is a deflector which spreads the heat as it ascends into the baker, I. All the parts above the flame and cone, E, are made of tin, and can be removed or changed for other cooking utensils, when desired. Beefsteak and meat of all kinds may be quickly broiled, and in the very best manner. The article to be broiled is brought in direct contact with the flame, and the results are said to be far superior to those obtained with other fuel. Various operations, such as baking, boiling, heating flat-irons, &c., may be done at once.

This is a very excellent practical invention. It reduces the art of cooking to a very simple business, divests it of all nuisances, saves much time, greatly lessens labor, creates no smoke soot, dirt, or ashes, requires no previous preparation of fuel. It may be used anywhere, in any apartment, out doors or in. It needs no stove pipe or chimney, and is always ready for use.

The peculiar mode of economising the heat and perfecting the combustion, renders the use of alcohol, even at its present high prices, a comparatively cheap fuel. This apparatus sells for \$7.50 and upwards, according to size. When desirable, the ordinary illuminating gas used in cities, may be used instead of alcohol, with the same advantages. Apply as above for further information. Patent applied for.

Improved Water Filter and Cooler.—By C. Warner, of New York City.—The outline of our engraving will give an idea of the external form of this improvement. The shell is made double. The water to be filtered is placed in the chamber, A, whence it passes down tube, c, and then rises in direction of the arrow through diaphragm E, charcoal dust, F, and sand, H, to the inner chamber, B. In its rise through the charcoal and sand, the water is thoroughly purified. From B the pure liquid is drawn off through faucet K. G are flanges to prevent the charcoal from rising, in consequence of the smoothness of the sides of the vessel. The superincumbent sand, H, aided by flanges, G, keeps the charcoal always down in proper place. J is a plug, by opening which the water in chamber B may be drawn off, and by its downward or reverse movement made to cleanse the sand and charcoal of their impurities. During this cleansing operation the plug, K, should be shoved firmly into the mouth of c, so as to prevent the passage of water from A.



This invention is adapted to the filtering of water on a large as well as a small scale. It may be made in the form of a cistern, and sunk in the ground. In such cases the water from the eaves spouts is conducted to chamber A, and is raised by a pump from chamber B. The filter is cleansed by the application of a pump to the upper end of the tube, D. The water in B will thus be drawn down through the filtering materials, bringing away the impurities and discharging them through D.

This invention appears to be admirable for the purpose intended, and will, no doubt, come into extensive use. Patented June 3d,

1856. For further information apply to the inventor at No. 7 Beekman st., New York City.

Improvement in Oil Lamps.—By Nicholas Linden, of Jersey City, N. J.—Relates to what are known as fountain lamps, or those that are provided with a reservoir for holding the oil; the reservoir being connected with the wick by a tube. The common lamps are very inconvenient to fill, cause a waste of oil by dripping, create dirt, &c. The present invention consists in a peculiar construction of parts, whereby the oil is conveniently introduced without removing the reservoir cup, and a regular supply of oil to the wick is at the same time insured.

Improved Washing Machine.—By V. R. Stewart, of Weedsport, N. Y.—Consists in the employment of a corrugated cylinder combined with a curved reciprocating corrugated board. The clothes are introduced between the cylinder and board and rubbed most thoroughly.

Cooler for Beer Casks and other vessels.—By F. Espenschade, of Williamsport, Penn.—Consists in a cooler peculiarly constructed, provided with a pump, and connected with the barrel, so that liquids may be drawn from the barrel in a cool state without admitting air into the barrel. The liquid passes from the barrel into a chamber surrounded by ice, and is thence drawn out.

Machine for making Elastic Hay Rake Teeth.—By Charles R. Soule, of Fairfield, Vt.—Consists in a peculiar arrangement of a roller, and other parts, for bending the wire into proper shape. The work is done with great expedition and perfection.

Recent Foreign Inventions.

Hardening Fatty and Oily Bodies.—R. A. Tilghmann, of London, has secured a patent for hardening oil and fatty bodies, by subjecting them to the action of a small portion of sulphur or phosphorus at a high temperature. This appears to be a useful invention in the manufacture of candles.

Vegetable Charcoal Prepared for Sugar Refineries.—J. Stenhouse, of London, has obtained a patent for rendering good wood charcoal suitable for decolorizing in sugar refineries. The charcoal is steeped for a short time in a solution of the oxyd of iron, clay, and superphosphate of lime. It is then dried and heated to a red heat in close vessels such as retorts, until the water and acid are expelled.

Extracting Coloring Matter from Lichens.—The most beautiful light shades of purple dyed on silk, are produced from archil on the extract of lichens. Archil used to be manufactured by steeping the lichens in urine, or a liquor of ammonia. A few years since M. Robiquet, of Paris, France, improved the process of manufacturing it, by first extracting the resin of the lichens with alcohol, then bringing the extract thus obtained in contact with ammonia. J. Murdoch, of London, has received a patent for improving the art not to obtain a superior extract, but to simplify and quicken the process. He boils the lichens in an ammoniacal liquor in a close vessel, and condenses the ammonia as it is carried over. Thus the whole coloring matter is extracted rapidly, and none of the ammonia lost by boiling. It is rather surprising that this method was not sooner brought into use.

Mexican Grass Mattresses.—W. Staufen, of London, has taken out a patent for the use of Mexican grass as a substitute for hair in mattresses. The bark or skin of this grass is first removed by passing it between rollers, and skutching it, and it then forms a good mattress material. In England such patents are as easily obtained as any other; that is, substituting one material for another—applying it to a purpose for which it had not been previously used—and these patents are fully sustained by law. Our Patent Office generally pursues a contrary course, not in accordance, at all times, with the spirit of the patent code.

Reducing Gold and Silver Ores.—J. Forrest, of London, has received a patent for the following method of treating ores containing the precious metals. The quartz is first broken into small pieces, then immersed for about two hours in a hot solution of caustic soda, or any

other alkali. After this the ore is removed from the alkaline bath and subjected to a white heat in a muffle retort, or other suitably constructed furnace. While under this heat the alkali will become fused, and, forming a flux, will facilitate the fusion of the metallic matter contained in the ore, and the separation of the precious metals from their combinations. Another part which this flux plays is to cause the small particles of gold or silver to agglomerate in large beads on the surface of the broken pieces of ore, and thus to prevent loss of the precious metals by sublimation. The ore having been subjected to a white heat sufficiently long to reduce the gold to a pure metallic state, is discharged into cold water, whereby it is rendered very fragile, and capable of being readily reduced to powder. The precious metals may then be separated by any of the ordinary washing or amalgamating processes.

Railroad Car Wheels.—John and William Olive, of Woolfield, Eng., have secured a patent for manufacturing railroad car wheels formed of two wrought-iron disks connected together at their circumference by a hoop, and at the center by a tube which forms the nave. The hoop and the tube are united to the disks by welding. The tyre is secured to the wheel thus formed by screws tapped into the latter. By this method a strong wheel must be the result, and cheaper, we think, than the wrought-iron spoke wheels.

Silvering Metallic Articles.—The following very simple method of producing the result indicated by the foregoing caption has been patented by Louis B. Advielle, of Paris:—

Dissolve 3 1-4 ounces of silver in 6 1-2 ounces of nitric acid, and thus produce the nitrate of silver. In ten quarts of soft water dissolve 2 lbs. of the cyanuret of potassium, and pour the nitrate of silver solution into it, and thus obtain the cyanuret of silver, which is white and soluble. To this is added 6 1-2 ounces of fine whiting, which, when well stirred, forms what is called by the inventor "Argentine water." It is kept for use in bottles or stone-ware baths or dishes having covers, and is diluted with twice its bulk of water. The articles to be treated are immersed in this liquor for a few minutes, then taken out, rubbed with dry whiting, washed, and rubbed with a dry cloth, and are stated to have a brilliant silvery appearance. The Argentine water must always be stirred up in the bath before the article to be silverized is immersed in it. Another method of applying it, is to keep it in stoppered bottles, which must be well shaken up before being applied to the metal article, which is accomplished by simply rubbing it on with a piece of cotton or linen. When the metal article has received a good coating of the Argentine water, it is rubbed with dry whiting, then washed in soft water, and dried with a soft cotton cloth. The Argentine water is applied successively by dipping the articles in it, or rubbing it on the articles until all parts of them are silverized; but one dip will be sufficient in most instances, when the operations are carefully conducted.

(Our Foreign Correspondence.)

Crossing the Alps by Railroad.—American Locomotives in Austria, &c.

VIENNA, Austria, May, 1856.

MESSRS. EDITORS—Once more among railroads and far away from the "unprogressives" I have at length reached this city after an exciting ride over a railway known here by the name of "Semmering," because it crosses a range of the Alps thus called. With a powerful locomotive we rushed up an inclined plane and shot through a tunnel, from whence we emerged upon the edge of a cliff, where we could see snow a thousand feet below us, and a couple of thousand feet below that, green valleys stretched away in the distance. After reaching this altitude, of course our "iron horse" required some refreshment, and I was amused at the manner a couple of women were sawing up his "dessert" of pine wood—for hard coal (and a hard, stony coal it is, too,) is used upon the railroads of Austria, aided in its combustion by pine wood frequently thrown in the furnace to keep the flames alive. The contrivance operated by these women consisted of an upright triangular frame, and another wooden triangle hung

down from the top of this frame, to which was attached a common buck-saw. A saw horse, placed beneath this arrangement, was loaded with wood, and the "ladies" moved the saw forwards and backwards, thus cutting the wood up into the dimensions. As the teeth of the saw penetrated the wood, the instrument was made to descend by the weight of a box of stones ingeniously arranged on top of the movable triangle, working in grooves made at the summit of the original frame.

By the time I had noted this mechanical novelty the conductor's horn warned us all aboard, and we commenced descending into the valley. Our train of cars wound like a snake around the bases of high mountains; whenever it came to a mountain standing on the track, the locomotive dashed right through its bowels, and came out on the other side, described a short curve, and then bolted across a long viaduct over a very high valley, into the vitals of another snowy mountain, thus continuing onwards for more than twenty-five miles, passing through twenty-three mountains or parts of mountains, and over thirteen valleys, until we reached the plains. I then began to smooth down the hair that had risen up, on my head, upon commencing this almost fearful portion of the trip.

The Semmering railway is, unquestionably, one of the most extraordinary works of the kind in Europe. It was built by the Austrian government over a branch of the Alps, which, from their steepness, long presented serious obstacles to the construction.

The road, as we descended, often ran, for a mile or two, parallel with the track we had just left on the other side of the valley, but always on a descending grade, varying from between one in forty to one in one hundred, as indicated upon painted boards stuck up alongside of the road, whenever the grade varied. I was fortunate enough to get acquainted, in the cars, with a nephew of one of the contractors, who gave me considerable information about the length and height of the various tunnels. The main tunnel, which is also the highest, is fifteen hundred and sixty-one American yards in length, (4683 feet) at an elevation of twenty-nine hundred and eighty-three Yankee feet above the sea—the decline, from the highest tunnel to the level ground, being over twenty-five hundred feet in a distance of barely seventeen miles. It is a single track, occasionally sweeping around the mountains in such rapid curves that I momentarily expected the train would pitch over into the yawning chasms beneath.

Arriving in this city, after passing over such a railroad, so substantially constructed in the bargain, has impressed me greatly with the progress of these Austrians, not at all depreciated by the fact that they use upon this same railroad many locomotives of American manufacture.

As we came along I saw many cotton mills, and bales of our southern staple being unloaded at the doors of the factories, which were, apparently, working under all the advantages that steam and labor-saving improvements could supply.

Since we have been here I have been into some of the workshops, and have there seen, in operation, various contrivances that denote the Austrians to be an enterprising go-ahead sort of people, very different from those I have left behind me in Italy. J. P. B.

The Raining Tree.

The island of Fierro is one of the largest in Canarie Group, and it has received its name on account of its iron bound soil, through which no river or stream flows. It has also but very few wells, and these not very good. But the great Preserver and Sustainer of all, remedies this inconvenience in a way so extraordinary that man will be forced to acknowledge that He gives in this an undeniable demonstration of His wonderful goodness. In the midst of the island there grows a tree, the leaves of which are long and narrow, and continue in constant verdure, winter and summer, and the branches are covered with a cloud which is never dispelled, but resolving itself into a moisture, causes to fall from its leaves a very clear water, and in such abundance that cisterns placed at its foot to receive it, are never empty.