New Inventions.

New Rail Road Switch.

Mr. H. C. Jones, of Newark, N. J., has invented a valuable improvement on the R. Road Switch. It is a new application of a patent lock of his own, which promises to be valuable in another field. It consists of jaws which grasp two sides of a dart headed staple. It has two chambers, so arranged that sand and gravel cannot be forced into them, as has been done by malicious persons with the old locks, and the key-hole is provided with a close cover to prevent the access of moisture, &c. from the rains. It is intended to be readily applied to the switches in ordinary use, requiring a simple turn of the key to open it, and then lock itself by a spring, upon merely closing the switch levers,—thus saving the time required by the bolts and locks now generally used, and is calculated to be worked by the engineer, without the necessity of switch-tenders.

Improved Meat Chopper.

Mr. Andrew Paine, of Milton, Ulster County, N. Y., has made an improvement on Meat Choppers, which is very simple and good. He employs two knives to cut, on a rotary block, and he gives the knives a reciprocating and the block a rotary motion, by a wheel on the main axle, which can be driven by hand or by other power. The wheel which thus moves the knives and turns the block, is an eccentric cam wheel. It has cams on its two sides, which strike downwards alternately on the short ends of the levers to which the knives are secured, their fulcrum being an axis on which they vibrate—the knives cutting downwards. At the same time the cams are actuating the knives, the edge of the wheel moves a ratchet, which takes into a ratchet rim on the meat block, and thus *it* is moved round on an upright axis in unison with the knives. This machine is simple and can be easily and cheaply made. The inventor has taken measures to secure a patent.

Improved Grass Cutting Machine.

Mr. Homer Adkins of Round Prairie in McDonough Co., Illinois has invented a new and useful improvement in machines for cutting grass which has been tried and worked well, and for which he has taken measures to secure a patent; his cutters are formed on one blade like a long rip saw in front of the wagon wheel, and to it is a vibrating arm, on a rocking shaft, which receives motion, simply from a cog wheel formed on the side of the wagon wheel. The cutters therefore have a reciprocating motion while the wagon is drawn forward, and cut during the forward and back motion. The grass is held firm to the cutters by a set of stationary teeth or cutters, formed exactly like the active cutters, but which are placed below them, to grasp the grass and hold it up to the action of the cutters, making them to act nearly like scissors. We will present an engraving of this machine at some other time.

New Circle Bearing for the Axles of Carriages.

Mr. Peter Van Buren, of Coeymans, Albany Co., N. Y., has made a very valuable improvement on circles for wagons and carriages, for which he has taken measures to secure a patent. The circle works on a conical hub, with an opening in it, through which a wrought iron king bolt passes and is secured to one of the braces below; by this arrangement the king bolt does not wear out, for there is no action of the circle on it, and as the hub on which the circle plays, is conical, it (the circle) accommodates itself in a very excellent manner to the rising up and down of the wheels, on uneven roads. This improvement, by many who have seen it, and who are well qualified to judge of the matter, has been highly spoken of.

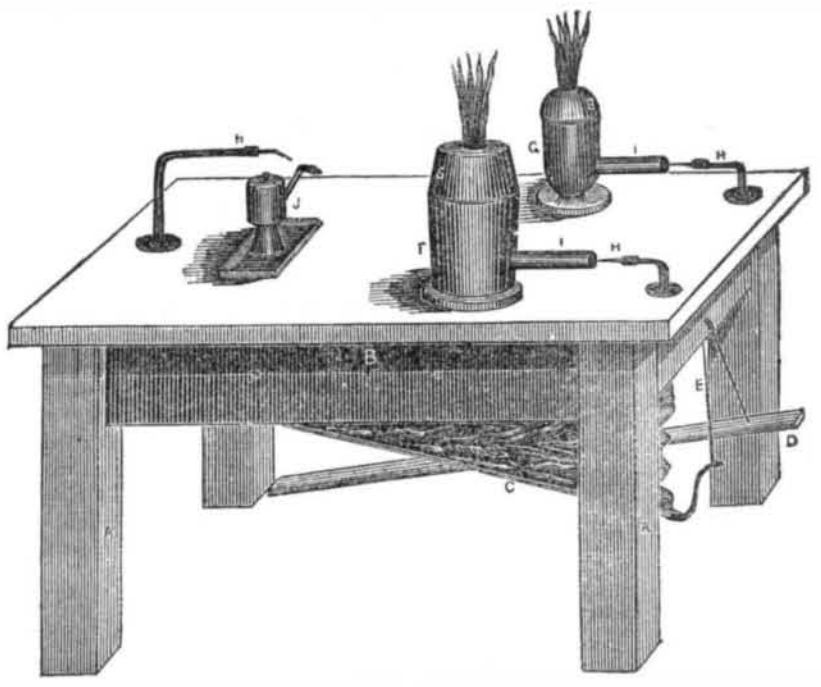
A rotary clothes--drying machine has been erected in the Park, behind the City Hall, where it spins around with the clothes on its arms, drying them in shadow or sunshine.

Improvement in Spark Arresters.

Messrs. Z. C. Ladd & Edward Ivers, of Boston, Mass., have made a most splendid improvement on spark arresters, for which they have taken the usual measures to secure a patent. It has the quality of preventing a single spark from escaping. It has two wire-gauze screens connected together, an inside one and an outside one. The inside one is of a pyramidical form, and the outer one an inverted cone, surrounded with the outside case, which is like those in common use. The smoke and sparks from the fire pass first up through a central interior pipe, at the top of which is an inverted conical cap, the vertex of which is directly above the centre of the pipe; but there is a space spreading circularly, and around which conducts the smoke, &c., to come down and to pass through the outside gauze screen, into the space or chamber between it and the inside screen, from which it ascends out of the arrester, by radiating channels at the top. The inverted conical cap at the top of the vertical smoke pipe, deflects the sparks and sheds them off towards the sides, where they fall down between the outside screen and casing into a receptacle for that purpose, which can be easily cleared at any moment. All the smoke, &c., is therefore directed upwards and sideways and then downwards, to pass through the screen before it can escape, and in doing this, the sparks are completely sifted from the more subtle smoke—something very much desired on our railroads, that still burn wood, as every traveller knows full well, sometimes at the expense, not of an eye opener, but an eye closer.

IMPROVEMENT IN THE PORTABLE BLAST FURNACE.

Figure 1.



This is a most valuable improvement in the useful arts, both for chemists, silversmiths, dentists and assayers, invented by Messrs. Barron & Brother No. 252 Broadway this City. The experiments of Messrs Barron, were founded upon the principle that a given quantity of fuel would produce a given quantity of heat, and that the blast-furnaces heretofore in use, were not economical in the use of fuel to produce that heat, because the cold air was forced in upon the fuel, in a greater quantity, than was actually required to support combustion—the superabundance producing a prodigal instead of an economical effect. Fig. 1, is a perspective view. Fig. 2, is a view of the bellows, and fig. 3 is an enlarged section of the furnace. Figure 1 is a table with two furnaces, a spirit lamp and three blow pipes, with the bellows below; A A are the legs of the table; C are the bellows, and B is the side of the table; above the bellows there is a wind chest, in which the air is forced from the bellows, to keep up a steady current through the wind tubes. On the top of the bellows there are a number of coiled springs (not seen) which will allow any degree of pressure on the bellows, by the stirrup D, and the rope, E, running over the pulley, as represented; H H are the wind tubes, with very small discharge orifices; F is the large furnace, and G the smaller one; S S are two caps, and J the spirit lamp. The wind tubes can be drawn to any length, in slides, and turned in any direction. I I are the two receiving air tubes of the furnaces. They are larger than the bore of the tubes, H H, and are open at the ends, the air from the pipes H H being injected into them as represented in fig. 1, but especially in principle by fig. 2; O being the furnace pipe, P the bellows, and R the strap block to which the point of the bellows is secured. Fig. 3 shows the furnace with a crucible in it, placed upon the top of another inverted one, K. O is the air tube, very different from that in Ure's Dictionary. The cap, S, need not be used by goldsmiths, as the furnace will answer quite well without it. The arrangement of this furnace is to supply the actual amount of air required to produce the greatest amount of heat; therefore the air expands in the tube, I, and the fuel takes up the exact amount necessary without a cold current, being driven in, as in the old furnaces; for the air is rarified in the tube. I, before it enters the furnace. As experience is the best proof of utility, and is the assayer of every new invention, it is perhaps enough for us to say, that Dr. Chilton, the eminent chemist, and a great number of our principal jewellers and smelters, are using this blast furnace in preference to all others, and it is regarded by them with especial favor, working far better in practice than any other Every improvement in furnaces is valuable, and along with this one, the furnace has something more to commend it, namely, its cheapness. Messrs. Barron have taken measures to secure a patent.

Fig. 2.

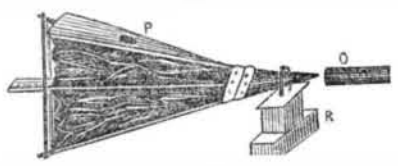
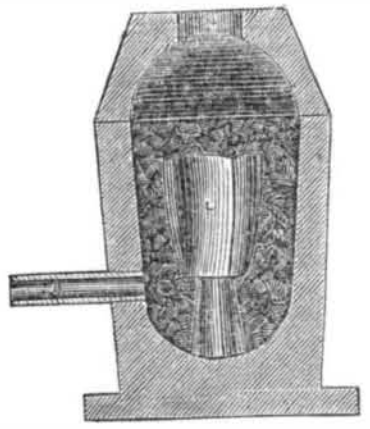


Fig. 3.



American machinery for London is in the course of construction at Trenton, to be used in the manufacture of india rubber.

Machine for Drying Cotton.

The New Orleans *Bee* says, that two gentlemen of that city have invented and are now preparing for exhibition, a new machine for drying cotton, which bids fair to improve the quality and increase the quantity of the staple. During heavy rains it will dry 250 pounds an hour and be immensely serviceable during the usual December rains, when much of the picking is injured by over-heating. A public trial of the machine will soon be made.

[There is a machine already patented for this purpose; it can dry cloth, cotton, &c., in an astonishing short period, without the aid of any artificial heat. It is both simple and cheap, too, and can be easily constructed.

Improvements in Machinery for Sawing Irregular pieces of Timber.

Mr. Oliver Wright, of Rochester, N. Y., has invented some improvements on machinery for sawing irregular shaped blocks or pieces of wood, for which he has taken measures to secure a patent, and which in our country, from its simplicity, and great amount of wood work done in it, must be of no small value. At some future time we will try and give a cut of this machine; at present, suffice it to say, that the saw is arbitrarily set at an angle with the bed block or table, which can be shifted to any position, to mitre work that may be placed on it, to be sawed to any angle or describe any curvature.

Burrell's Straw Cutter.

In our list of Patents, this week, will be found one for an improvement on a Straw Cutter, invented by Messrs. Thomas and Edward Burrell. It is a very perfect machine, and it has been in operation for some time, astonishing those who have seen it, with the ease with which it can be operated and the great quantity of work it performs in a given time.

An acquaintance of ours, some time ago, wrote us from Geneva, N. Y., saying that he had seen it in operation, and would not tell us how much work it had done in an hour, fearing that we might doubt the correctness of the statement. It uses rotary cutters and has an entirely different feed motion, from any in use, and by an endless apron, all the cut straw is received from the cutters and carried away into a proper receptacle for that purpose.

Fuel in Paris.

There are wood and coal shops in every street, and at almost every corner, where you can buy any sort of fuel you choose to order; and as it is always sold by the pound, there is no dispute or uncertainty as to the quality, and the price appears to be uniform throughout the city. The most rigid economy prevails as to the use of fuel. The French often submit to a degree of cold, which, with our habits, we should think scarcely endurable. In this respect, they show their wisdom, and have fewer colds and catarrhs, than prevail with us. They never make a fire, unless absolutely necessary. Their fuel, in the next place, is always perfectly dry, and is presented in the most convenient forms. They use much charcoal for cooking, in which there is great economy. They have none of the detestable cooking stoves of the most disagreeable kind; but they have ranges of little furnaces, where they cook entirely with charcoal, and so placed that all the odor of the food is carried off. They have every contrivance for making a fire instantly, and are never at a loss for heat, so numerous and complete are their appliances.

Cure for Headaches.

A work has recently been published in Paris, by an emminent physician, in which he describes a new remedy for headaches. He uses a mixture of ice and salt, in the proportion of 1 to 1-2, as a cold mixture, and this he applies, by means of a little purse of silk gauze, with a rim of gutta-percha, to limited spots on the forehead or other parts of the scalp where rheumatic headache is felt. It gives instantaneoous relief. The skin is subjected to the process for from half a minute to one and a half minutes, and is rendered hard and white. It is good in erysipelas and diseases of the skin.