

## New Inventions.

### Coke Ovens.

Guillaume Lambert, of Mons, in the Province of Hainault, Belgium, has applied for a patent for a useful improvement in coke ovens. The first part of the invention consists in constructing, arranging, and combining the ovens, two by two, in such a way that the smoke and gaseous products generated in one during the earlier stages of the coking process, may be burned in the other, which was charged earlier and in which the coking has progressed to a more advanced stage, and may deposit therein a portion of their carbon, and that the incombustible products of combustion may, by passing in contact with the exterior of the oven in which the process is least advanced, serve to assist in heating the charge and setting free the gases. The second part of the invention consists in certain means, by which each or any one of a long range of coke ovens may be discharged of the whole of its contents at once. We consider that every improvement in the manufacture of coke is a great public benefit. The time has now arrived when either coke or anthracite must be used on all the railroads in the Eastern States, New York, and Pennsylvania, in place of wood. Coke is the fuel which has always been used on the English railroads, and will be the only kind used on our Western railroads at no distant day.

### New Composition of Journal Boxes.

Joseph Garratt, Senr., of Indianapolis, Ind., has applied for a patent for a new composition metal for the journal boxes of locomotives, &c., which has been tested for about eight months on a locomotive, with the most gratifying results. It is cheaper than brass bearing boxes, or even those that are made of a hard metal lined with a soft composition metal. Boxes made of this alloy have sufficient strength and hardness to prevent them being pressed out of form. They also cause as little friction as any now in use, and will effect a considerable saving in the construction of locomotives and other engines.

### Feed Motion of Saws.

J. F. Lovcraft, of Rochester, N. Y., has taken measures to secure a patent for an improvement in the feed motion of buzz and panel saws in mills, the nature of which consists in the employment of two or more small saws, which are so united and arranged that the teeth of one will be opposite the spaces of the other, and both can be adjusted, so as to be thrown in or out of operation in an instant. The teeth of these saws, as they revolve, enter the bottom of the board that is to be cut into panel, &c., and feed it into the cutting saw—the two saws acting as cutting feeders.

### Beveling and Crozing Barrels.

A. H. Crozier, of Oswego, N. Y., has taken measures to secure a patent for an improved machine for beveling and crozing barrels, which consists in a movable platform and movable cutters arranged in such a manner that the cutters can be moved from the barrel and freed from the croze, when the platform and barrel descend, and then made to move towards the barrel when it is raised, so as to be under perfect control in cutting the croze and being freed from it.

### Cutting Barrel Heads.

Mr. Crozier has also applied for a patent on an improved machine for cutting barrel heads, the nature of which consists in the combination of rotary cutters and horizontal rotary clamps, whereby the heads of barrels are cut out and beveled at the same time.

### New Brick Machine.

J. McMurtry, of Lexington, Ky., has invented some useful improvements on machines for making bricks. This invention relates to a novel combination and arrangement of mold cylinders and plungers to certain means of giving rotary motion, at proper intervals, to the mold cylinders, and to certain means of securing the cylinders during the compression of the brick and releasing them between the successive

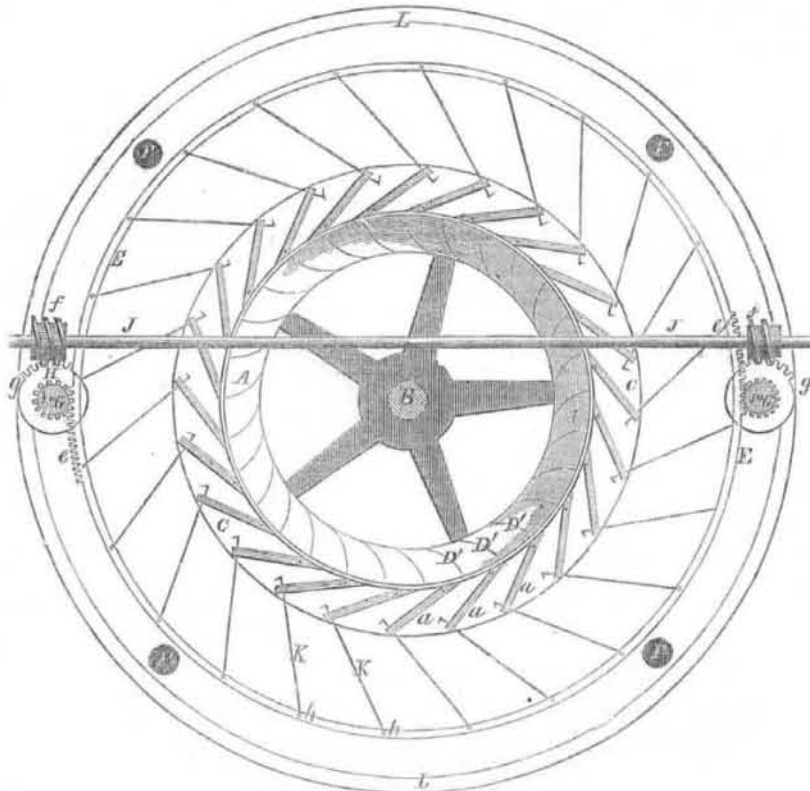
compressing operations, in order to enable them to receive the necessary movement. Measures have been taken to secure a patent.

### Improved Straw Cutters.

Subscribers at the West Southwest, are not unfrequently writing to us for information about good straw cutters. One of the best machines

that we know of for the purpose of straw, hay, and stalk cutting, is Sanford's Patent, which consists of a double cylinder of knives, whose edges revolve into each other, while in the act of cutting. These knives are capable of an easy adjustment, and any farmer can keep them in good order. The machines are made in large quantities by J. B. Ford, Greenville, Ind.

## ROBERTS' ADJUSTABLE SHUTE WATER WHEEL.



The annexed engraving is a bird's-eye view, with the upper rim removed, of an improvement in adjustable shutes for water wheels, for which a patent was granted to Elijah Roberts, of Rochester, N. H., on the 4th of last month (April, 1864.)

A is a center vent water wheel, with its vertical shaft, B. The curved buckets, D' D' D', are so placed as to receive the direct action of the water from the shutes,—introduced on the periphery of the wheel. The under side is open and the upper closed with a stationary cover, thus avoiding the weight of the water upon the wheel. E E is an annular ring to which the shutes are connected by rods, K K. This annular ring is supported by four grooved rollers. G G are pinions gearing into the annular ring. J is a shaft with worm gear, f, on its ends meshing into cogs on the small wheel, H. The pinions, G, are secured on vertical spindles, I I. h h are pins inserted in the annular ring, and e e are cogs on this ring meshing into the pinions, G. L L represent a cistern containing the wheel. This is a description of the parts.

The object of this improvement is to regulate and control the water advantageously when applied to the periphery of a wheel on a vertical shaft. The nature of the invention, therefore, consists in the arrangement of the device by which the water has an advantageous direction given to it in passing through the adjustable shutes, combined with the sliding rods for opening the shutes, also in the mode of hanging the shutes on fixed rods passing loosely through them, by which means the clamping of them is avoided, when the bolts holding the rims together are tightened; also the means for simultaneously opening these shutes by the annular ring gearing.

In his statement of the advantages of this improvement, the inventor says:—"The nature of my improvement is such that the water is applied with the same advantage and economy, when carrying one quarter, as its whole load. When driving a number of machines in a factory, and any one or more thrown is off, by which change of load the wheel would be left to increase in velocity, causing irregularity in the other machinery to be driven, its speed can be regulated in one-tenth part of the time that a breast wheel of more than 15 feet in diameter can under the same circumstances.

The improvement is a complete remedy for the difficulty in regulating the quantity of wa-

ter and speed of the Howd or United States Water Wheel, which has been in so many instances condemned and thrown aside on account of the circular or hoop gate, the difficulty in hoisting and shutting said gate and regulating the speed of the wheel, and wasting water. It is well known by all who use the Howd or United States Wheel, that the water is introduced into the conductor under the gate in a horizontal form, when the gate is halfway up at a right angle with the gate, thus spending a great part of its force against the back side of the shute, then its form is changed to a perpendicular position before it is discharged on the wheel, and is in a great degree reduced to froth and foam, so that in order to run one-fourth of the load of the wheel at proper speed, it is necessary to run three-fourths as much water as it would require to run the whole load of said wheel. In this improvement the hoop gate is dispensed with, and the apertures opened horizontally, and the water is applied at the whole height and at the thickness required, the water passing at its full velocity, whether the apertures are open one-fourth of an inch or one and a half inches, and said apertures or shutes are connected (when the wheel is running) to the regulator, and may be opened at full size or entirely closed to stop the wheel.

Persons using the Howd or United States Wheel, of good construction, can have the improvement applied at small expense, and thereby be enabled to run as much machinery with water as with the breast wheel; said wheels with the water applied in this way, are, in economy of water, equal to the breast wheel, and in other respects superior."

More information may be obtained by letter addressed to Mr. Roberts.

### Cut off of Steam Engines.

Thomas Ashcroft, of Boston, Mass., has applied for a patent for an improvement in the cut-off of steam engines. The cut-off to which this improvement is applicable, is one that is well known, consisting of two plates working on the back of the slide valve. Its nature consists in furnishing the cut off plates with two inclined planes, one for each plate—facing each other, and in placing between these, two inclined planes and an adjustable stop-bar with which the inclined planes come in contact, to arrest the cut-off plates in their movements with the slide valve, thus cutting off the steam

at some point, in the first half of each stroke of the engine.

The stop-bar will arrest the motion of the cut-off plates and cut off the steam sooner, or later according to it is nearer or further from the valve, and hence by properly adjusting it, the steam may be cut off at any desired point under half stroke. By attaching it to a "governor," it may be made to act upon the plates, so as to govern the engine by the cut-off.

(For the Scientific American.)  
Virginia Gold Regions.

This being the "gold regions" of Virginia, some news may be of importance in regard to mining, &c.

Com. Stockton is not at work, his mill being out of order but repairing.

At the "Belzora Mines" they are in full blast, crushing ore with a machine having six balls, which I have seen illustrated in the "Scientific American." The machinery is spoken highly of; they use what is called "Buffum's Amalgamator." Stockton uses "Ball's Amalgamator," but it is not as good as Buffum's.

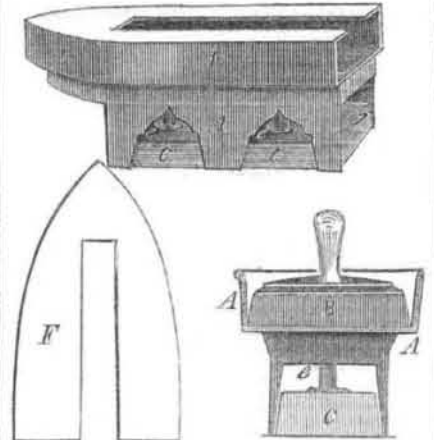
The "Waller Mines" are preparing slowly to operate; also "Aigle D'or Mine," adjoining the Waller; the "Long Island Mine" is also running, using stamps and one of "Ball's Amalgamators."

Several other mines are preparing, all of which expect to be in operation early in the summer. Yours,  
GEO. O. BAKER.

Columbus, Havana Co., Va.

### Flat-Iron Heater

The accompanying figures represent an improved heater for flatirons by F. S. Coburn, of Ipswich, Mass., and embrace a perspective view of the heater complete; a transverse section showing an iron in the heater, also a plan view of the cover, F. A is the shell, of cast-iron, into which the flat-iron is slipped to be heated. About one inch of space is left below the bottom of the iron, and a quarter of an inch at the sides. Through these spaces a draught of hot air, heated by the lamp, C C, circulates, and then escapes under the handle. e e are the tubes of the lamp, they pass through the



shell about one inch from the face of the iron. Alcohol is the fluid intended to be used, as it emits no smoke in burning and gives off a high heat. The apparatus weighs only about 3½ lbs. It is all cast in the foundry, excepting the cover, F, which is of sheet-iron or tin, the edges of which are clinched over the upper edges of the casting. It is a simple apparatus for heating flat-irons by a lamp for dressing clothes without the use of a coal fire. It can be set upon the same table on which the clothes are to be dressed; in this respect it is very convenient, and at the same time it obviates the great heat of a coal fire in a furnace, which is very oppressive in warm weather.

For more information see advertising page.

### Tail-Boards of Wagons.

F. M. Harris, of Carrol, Ohio, has invented an improvement in tail-boards for wagons, by which they are rendered self-locking, and at the same time unlocked in an instant. They also render wagons to which they are applied more convenient and safe for their loads.

### Chloroform Counteracted.

Dr. Robert de Lambelle, a distinguished physician of Paris, announces that a shock of electricity, given to a patient dying from the effects of chloroform, immediately counteracts its influence, and returns the sufferer to life.