

## New Inventions.

### Machine for Making Wrought Nails.

Mr. Henry Hays, of Quincy, Illinois, has invented a machine for making wrought iron nails, which will we hope be an excellent companion to the spike machine, recently invented by a mechanic in the State of Maine, and for which application has been made for a patent. In Mr. Hays's machine the iron is carried when red by the feeder into a groove between rollers, the lower one of which drops to receive the rod and then rises again into its place holding the rod firm until it is headed. At the time the nail is headed, the rod is cut off at any length to make the nail, when the nail then passes into a die, where the point is made. Measures have been taken to secure a patent. About eight months ago we were informed that a gentleman in Williamsburg, N. Y. had invented a machine for making wrought iron nails, but since that period we have heard nothing more about it, and have not seen any nails made by it, although we have made many enquiries respecting them.

### New Blow Pipe.

Mr. H. A. Haughton, of Eaton Village, N. Y., has made a beautiful improvement on the common *blow pipe*, by which it can be made very cheap. In some kinds of brazing it is well known that an intense heat is required, especially for a long seam of soldering. For this purpose what is called the oxyhydrogen blow pipe is used, whereby a great heat is engendered and minerals and metals are dissolved and become liquid under its influence, which otherwise would remain in their solid state. There is not a single mechanic but has sometimes to use the blow pipe.

Every workshop, however should have one. The invention of Mr. Haughton, by a single teaspoonful of alcohol will last for brazing a whole hour and can be held over the lamp to produce any degree of heat. Mr. Haughton has taken measures to secure a patent, and we may be able to present an engraving of it in the *Scientific American*, at some future period, when it will be fully explained.

### Boot Crimping Machine.

Mr. C. White, of Galway, N. Y., has lately invented a beautiful Boot Crimping machine, for which a patent has just been issued, the principle of which, is to produce an equal pressure upon all parts of the upper to be crimped, so as that one part of the leather may not be drawn out to the thinness of a wafer and injured in strength, while the rest is quite strong. For this purpose his frame is of a curved form of the shape of the board on which the leather to be crimped is placed, and by means of jaws working in slots by screws, said jaws are raised parallel up and down operating with equal pressure upon all parts of the leather to be crimped.

### New Corn Crusher.

Mr. J. C. Ross, of Lewisburg, Penn., has invented a very superior Corn Crusher. It shells the Corn first and then by an arrangement breaks the cob very fine, or breaks corn and cob both together. Very little power is required to propel it.

### New Railroad Brake.

Mr. L. Hill, of Glasgow, Scotland, has invented a new Brake, to operate on the hydrostatic principle, and is intended never to let the train get over a certain speed. While the train runs below a fixed speed, it pumps water into a cylinder no faster than it can escape without raising a piston valve, but beyond a given rate the water is pressed so fast as not to find egress, when the piston valve is raised and by an arrangement locks the wheels. No one will question the effectiveness of this plan who knows the power of hydrostatics. In our opinion, however, the arrangement must be not a little complicated.

### Smelting by Electricity.

A patent for smelting by electricity has lately been granted to Mr. Wall, of Poplar, England, which consists in an improved method of manufacturing cast iron. The patent embraces two parts or processes, the first of which consists in adding certain substances to the metal while in a state of fusion; and the other consists in the application of electricity to the metal while in a state of fusion, and during its congealing or solidification. In carrying out his invention, the patentee finds that a battery, consisting of platinum and zinc plates, containing eight pairs, 6 inches by 4 of active surface, in separate cells of dilute sulphuric and strong nitric acid, arranged as in the form known as Grove's battery, or 32 pairs of the same sized plates arranged in the manner commonly known as Mr. Smee's battery, give him sufficient electricity for all general purposes. In applying the electric current a rod of iron is inserted into each extremity of the mould, into which the metal is to be cast, if the casting be horizontal; or into the bottom and top of the mould if the casting is vertical. The two rods of iron are connected with the two poles of the battery respectively; and when the melted metal is poured into

the mould, it serves to complete the circuit, and the electricity continues to traverse it as long as the connection with the poles of the battery remains unbroken.

### India Rubber Felt for Railways.

Railway india rubber is now manufactured with a large quantity of metallic substance, rendering it impervious to heat and cold, and of all thicknesses for the purpose of being placed under the bearings of the rails, and at the junction of the rails on the junction plates; by which it is supposed much of the jar, and consequent wear and noise of the machinery will be avoided.

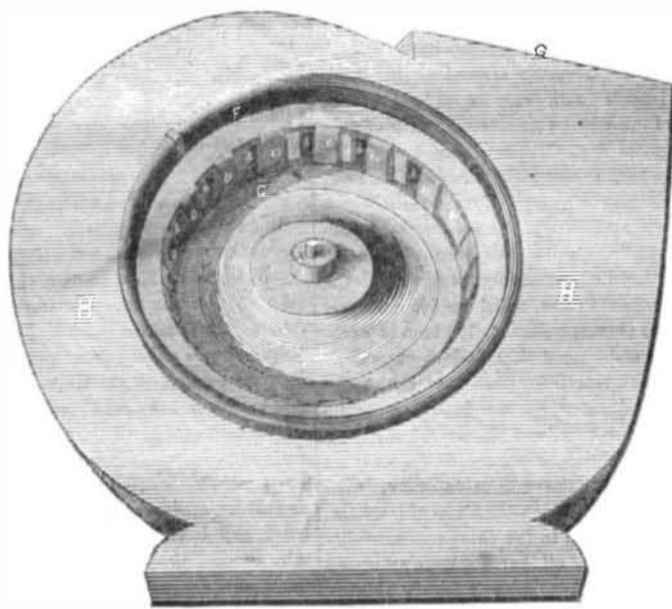
### Lighting by Electricity.

A patent has lately been taken out by Mr. Thomas Wright of Cooper's Hill, England, for the proposed purpose of causing light by continually presenting one or more charcoal points to the path of an electric current.

### Revolving Cravat and a Coat of one piece.

A London firm has registered a new "revolving cravat," which presents a new surface to the roughness of the chin whenever it is tied, and the *Times* announces that a London tailor has cut a coat in one single piece without a seam, out of Gutta Percha cloth.

## TELLER AND DILLENBACK'S VERTICAL WATER WHEEL.



This is an oblique perspective view of a wheel on which an improvement has been made by Messrs. Teller and Dillenback, of Fort Plain, Herkimer county, N. Y. The principal feature of difference in this from the other water wheels, is in the manner of regulating the discharge, so that there can always be a uniform speed with a variation of power. It is well known that much difficulty and breakage is often experienced in machinery driven by a water wheel, and geared to a certain speed, in such situations where there is not a uniform supply of water and the speed of the prime mover variable. If a stoppage of some part of the machinery obviated this difficulty and brought all the machinery that was running up to the required speed, all would be well; but this is not the case always, as there is a difficulty of regulating the amount of resistance to the amount of power.

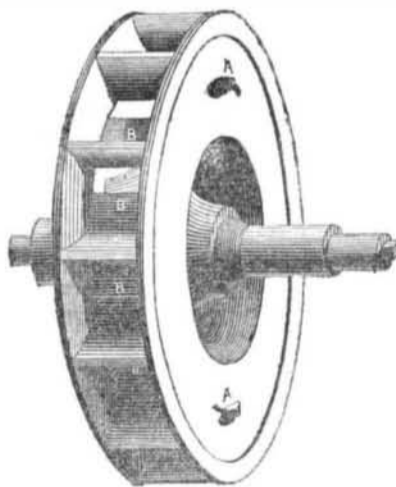
In this wheel this object is obtained by a double tier of buckets, an exterior and an interior set, to regulate the discharge. The amount of power reckoned to the amount of water discharged and the speed uniform by the flue or case being kept always full of water. This view represents the downward or discharge part—all is air-tight when the wheel is in motion.

The water is admitted through the flue G. A, is the shaft. B, are the exterior, and D the sliding, interior buckets. F, is a rim capable of regulating the distance between the arc and the wheel. C and U, represent the casing of the wheel. H H, the scroll.

Every reader will understand the application and operation of the above wheel by just supposing Fig. 1 to be turned over and the water flowing on to the buckets through the chute. It will then be perceived that although this wheel is submerged, that it will revolve and discharge as well as any other constructed on the same principle, while in a scarcity of wa-

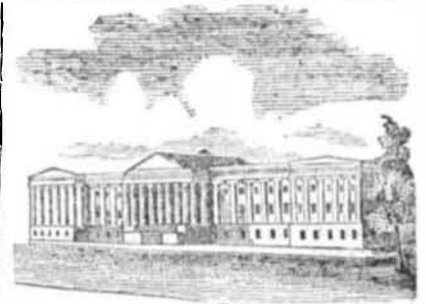
ter its speed can be uniform, as the power, by the quantity of water discharged, will always be known.

FIG. 2.



This is a section end view of the wheel, without the arc, or scroll, and exhibits the interior and exterior rows of buckets. B B, are the interior rows of buckets, which regulate the discharge by being constructed so as to be moved backwards and forwards in a groove of the face plate, C C, on which are the outside rows of buckets. This wheel is intended to be made of cast iron and can be used either to be hung horizontally or vertically. When used as a horizontal wheel, the inventors use what is called a balance which is a part cast on the periphery covering the distance between every two buckets, thereby making it a wheel suited either for vertical or horizontal motion in the main shaft.

Measures have been taken to secure a patent for the balance and mode of regulating the discharge.



### LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

For the week ending Jan 12, 1848.

To Elias Gruver and John Gilliford, for improvement in machinery for threshing and cleaning clover seed. Patented Jan. 12, 1848.

To Cosman White, of Galway, N. Y., for improvement in Boot Crimps. Patented Jan. 12, 1848

### INVENTOR'S CLAIMS.

#### Machine for Exercising Children.

By George W. Tuttle, of New York. Improvement on machine for exercising Children. Patented September 4th, 1847. Claim I do not claim the use of a spring as a means of giving motion for the purpose of exercise or amusement, as that has been before employed in a variety of ways. But I do claim the combining of a spring or springs, with a suspended apparatus, substantially the same with that above described for exercising children and invalids; it being understood that my claim is limited to the combination of such spring or springs and suspension apparatus as will enable the child to bring its feet conveniently in contact with the floor, while its body is suspended substantially in the manner described; not intending however by the foregoing description and claim to limit myself to the exact form or mode of uniting any of the parts of the apparatus, but to vary the same as I may think proper, whilst I attain the same end by means substantially the same.

#### Sash Fastener.

By Morton Judd, of New Britain, Conn. Improvement in sash fasteners. Patented September 4th, 1847. Claim—What I claim as my invention and desire to secure by letters patent, is the method of fastening window sashes by placing the catch in the centre, longitudinally, of a box—said box having three of its sides and ends closed—the ends having a jog or shoulder upon which a bar or curved spring is arranged, against which the end of the turning catch is placed which serves to keep the spring in its place, and the spring to secure the catch in the position which it is made to assume without bolts or screws the catch being thus placed in the centre of the box answers the double purpose of securing the spring to its place without the expense of fastening it in the usual way together with the convenience of fastening or unfastening the window by turning the catch either to the right or left. Fasteners made in this way can be made of sheet metal, whereby they can be afforded at one quarter less expense than the ordinary way of casting, and be much stronger, not being mortised for the binding screws that confine the spring to the box and the spring being placed loosely in the box.

#### Steering Apparatus.

By Isaac L. Blanchard of Weymouth Mass. Improvement in Steering Apparatus for vessels. Patented 11th September, 1847. Claim—What I claim as my invention, is a combination of chains, two windlass barrels, cogged wheels, and purchase wheels and shaft as applied to the rudder-head in the manner and for the purpose as specified. I further claim the combination of the index pointer apparatus, with the rudder-head, for the purpose of denoting the direction of the rudder when the rudder is removed—all as specified.

#### Rock Drill.—Errata.

In our description of Messrs Wightman & Vaughan's Rock Drill, in last week's *Scientific American*, it should have read "it has drilled a hole 3 1-4 inches in diameter ten feet deep in 12 hours," instead of "three-fourths of an inch in diameter." Also, that "a patent has been secured for the invention," instead of "measures have been taken to secure a patent."