

New Inventions.

New Surveyor's Instrument.

John R. Averill, of Waterloo, N. Y., has invented a new instrument for measuring distances in surveying. His instrument is founded on the well-known principle in trigonometry that if the perpendicular and one of the angles of a right angled triangle are known it is easy to determine the base. To illustrate the nature of the invention and its use, let us suppose that we measure off from one extremity of the line to be measured, at right angles with it a distance of ten rods; now, if we place the instrument at this latter station, and direct its sighting tube to the distant extremity of the line it is evident that a scale may be so calculated that an index attached to the sighting tube shall indicate upon it the distances of the two stations. It is certainly a convenient mode of measuring lines when their extremities can be readily seen. The inventor has applied for a patent.

Improved Saw Dresser.

D. B. Kimmell, of West Unity, Ohio, has invented an improved machine for dressing saw teeth, a patent for which he has taken measures to secure. This machine consists of a stock having attached to it adjustable ways on which a carriage containing the cutter is placed. By properly adjusting the ways, the cutter may be made to move either in a horizontal or oblique direction so that both the upper and under surface of each tooth may be cut. The carriage and cutter are made to move from and towards the saw by a peculiar arrangement of gearing. This machine is intended to answer the purpose of a gummer and a file.

Parallel Rod Connection for Locomotives.

J. B. Martin, of Corning, N. Y., has invented and taken measures to obtain a patent for an improved coupling rod for locomotive engines, the nature of which consists in extending the strap of the connecting rod beyond the box of the crank pin of the driving axle, to hold a pin to be received in a box attached to the parallel rod. This brings the connecting rod and parallel rod in the same plane, and enables their boxes to be tightened without allowing the play left in other modes of connection. The advantages of connecting the other wheels of locomotives with their driving wheels, are well known, and this is intended to remove the difficulties existing in other modes of doing this.

New Hat Presser.

S. Fields, and S. A. Kinsman, of Barre, Mass., have invented an improved machine for pressing hat bodies, upon which they have applied for a patent. Their improvements consist in supporting the hat block on a vibrating carriage so arranged in relation to stationary flats or pressing irons, and controlled by springs, that it is always kept in contact with the pressing irons during the operation of pressing; and also in a mode of attaching the angle iron for the corner of the crown to the crown iron. This enables them to be heated by steam, and at the same time to be connected so firmly together as not to be likely to get out of order.

Invalid Bedstead.

S. Bigelow, of Shelburne, Mass., has invented a bedstead for the use of invalids, the peculiarity of which consists in constructing the bottom of the bedsteads in sections, these being adjustable so as to place the invalid in different positions, thus affording relief to the weary. These changes of position can be made without annoyance to the invalid. This is a desirable invention.

Portable Stoves.

A very nice portable stove heated by an oil lamp, has been invented by F. Arnold, Middle Haddam, Conn. Its sides being of glass protected by grating, it may also be used as a lantern. It is also adapted for heating a kettle of water by the heat of the lamp, and thus it is very useful at night in families when there is sickness. The inventor has applied for a patent.

Hot Air Furnaces.

Frederick Tiffany, of Buffalo, N. Y., has invented an improvement in furnaces for heating

buildings by hot air, the nature of which consists in arranging within the furnace chamber a series of collateral pipes, so that a very large amount of heating surface is combined in a small space. These tiers are connected by vertical boxes or chambers in such a manner that two separate spaces will be formed for the cold air, and also a circuitous passage for the flame. The cold air spaces are further divided in such a manner that the air will have to remain some time in contact with the surfaces heated by the flame. A very good improvement.

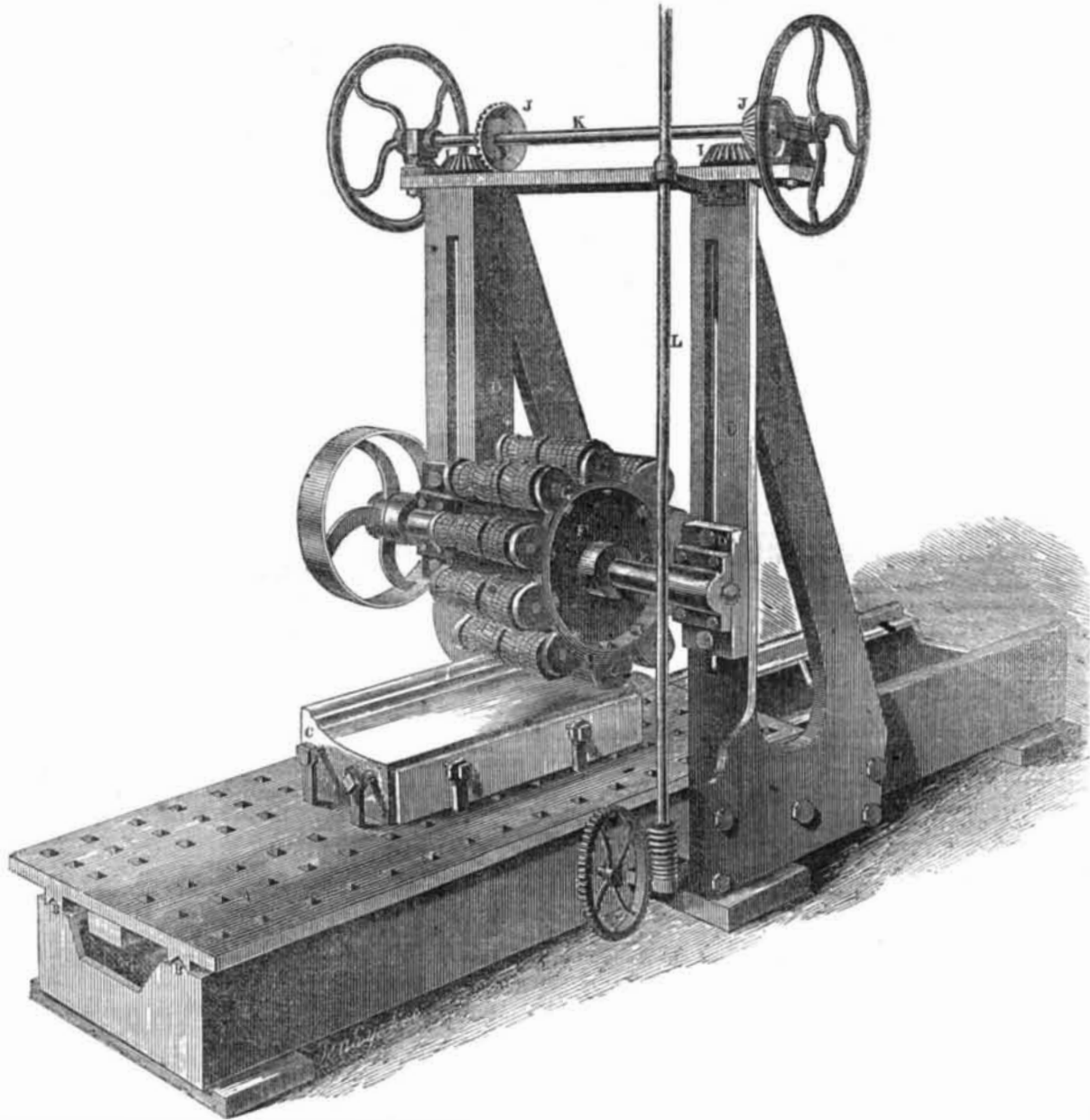
New Liquor Meter.

"A very ingenious little instrument has just been brought before the public. It is entitled *Harrison's meter*, and is for the purpose of detecting fraud, or rather for exactly registering the quantity of spirits, &c., drawn out of vessels. The principle is, that the liquid, in passing through, acts in two opposite directions between two flexible diaphragms placed between chambers, into which it is alternately admitted, thus displacing, at every movement, from one chamber the quantity of liquid equal to that admitted into the other. This action gives a mo-

tion to spindles, which is ultimately communicated to the registering hands, and thus the meter shows accurately, at a glance, the quantity drawn off, in gallons, quarts, pints, etc. The instrument is well finished, and of moderate price."—[London Correspondence U. S. Gazette.]

[The above description would lead us to infer that *Harrison's metre* is identical with the gas metre of James Bogardus, of this city, which was patented a number of years ago, only it is used for a different purpose.]

ROTARY STONE DRESSING MACHINE.



In our last number we published an illustration of Eastman's Chisel Stone Dressing Machine; this engraving is a perspective view of his burringstone dresser. A series of discs with grooved or burred faces, made of cast iron and chilled, are strung, as it were, on a series of spindles, around a drum; the drum is revolved, and the stone to be dressed is fed forward to it, when the burring tools dress the face of the stone, by abrasion.

A is the sliding bed of the machine, it is similar to that of an iron planer; B B is the bed plate with its guide rails for the grooves of the slide; C is a stone secured in the slide, and is being fed into the burring tools; F is a drum or cylinder on a strong shaft, E, at one end of which is a driving pulley, by which a band can rotate the cylinder; G is a series of burring discs or rings on a spindle. A number of such are secured at equal distances from the center on the periphery of cylinder, F. These burring tools have chilled serrated faces. Any number of them may be secured on a spindle. As the stone, C, is fed forward on its sliding bed, the cylinder, F, is rotated, and the burring tools act upon the stone, and reduce it to an exceedingly smooth surface. The burring tools may be of unequal diameter, so that they can dress a stone with one or more grooves. The stone, C, is represented as being dressed with a groove.

The shaft, E, of the tool cylinder is secured in movable journal boxes, D'. These are supported on the vertical posts; D D, which are

well braced. These posts have elongated slots in them, so as to elevate and depress the journal boxes, D', in them, to adapt the tools for stones of different thicknesses; K is a top shaft with bevel pinions, J J, meshing into others, I I, on vertical spindles, which have screws upon them working into nuts, (not shown,) on the inside of the boxes, D', for raising and lowering the cutter drum; L is a shaft with a worm screw on the lower end which meshes with a wheel having a shaft running transversely under the slide A, it has a pinion on it meshing into a rack on the under side of the slide to feed it and the stone forward and back. The spindle, L, is driven by band and pulley (not shown).

This machine is so simple that every person will be able to understand its construction and operation, from the description given of the engraving. It can dress smooth surfaces, and fluted work, and is adapted to produce fluted columns by giving the stone an axial motion on its bed, when a flute is cut its whole length. The burring tools can be cast of various forms to produce the reverse surfaces on the stone. These cutters can also be set at various distances apart by having washers between them. As these tools are cast, they are not expensive; they are also very durable, as they roll on the face of the stone, reducing it to a smooth surface—By a duplicate arrangement of the burring tools, the stone can be dressed on both sides, at one operation, and on four sides by a

double operation. The burrers can be cast to produce either grooves or beading on stones, and we have seen a circular stone with a number of concentric grooves formed in it by a different arrangement of the same tools. The tools are cast with chilled surfaces in moulds and are a composite of iron and steel.

This machine was patented two years before the one which was illustrated last week. The patent is owned by the same assignees, Seth Eastman and B. H. Cheever, Washington, D. C., Jos. Greeley, Nashua, N. H., and Darcy E. Bolton, of Coburg, Canada West, from whom more information may be obtained by letter. This machine is also on exhibition at the Crystal Palace, beside the chisel cutter illustrated in the last number, and has also been patented in all the important kingdoms of Europe.

The Jewish Rabbi, Doctor Raphall is engaged in the delivery of a course of popular lectures on the Sacred Poetry of the Hebrews, at the Broadway Tabernacle. Lectures (each Monday evening) commence at 8 o'clock.

Commodore Perry, of the Japan Expedition has succeeded in obtaining an interview with the two Princes of the Empire. He was well received.

Great strikes have taken place in the cotton manufacturing districts of England; the employers are leagued on the one hand, and the operatives on the other.