# NEW INVENTIONS.

### Shingle Machine.

Measures to secure a patent for an improved Shingle Machine have been taken by Samuel Bell, of South Hanover, Indiana. There are several improvements in this machine, which is intended to cut shingles to a shape superior to those generally used. The form of the shingle is one of the specified improvements, and its merit consists in making the shingle of an equal thickness for one-third of its length, the remaining two-thirds being tapered, as to its thickness, to a point, which is effected by shaving down the under-side, or that side of the shingle which is not exposed to the weather. A sliding frame carries the splitting knife and also the first shaving knife, up to the block of wood which is to be formed into shingles. The shape of the splitting knife is peculiar, the cutting edge being concave, so that the edges of the shingle are split before the middle part, a plan which requires less power and works better. The beforementioned sliding frame or carriage is worked by means of a double crank, which also serves to impel an apparatus for clearing away the shavings from the first shaving knife and works a vibrating ram that moves the shingle forward to undergo the finishing process, which is accomplished by using two rollers, one of which performs the three offices of pressing, feeding, and cleaving; the other roller is shaped in a peculiar manner, being made concentric for one-third of its diameter, and the remaining two-thirds increasing in size in the form of an involute curve; in fact it has an eccentric motion, so that the shingle, being forced along between this roller and the finishing knife, is formed to the shape described. Two other rollers then remove and deliver the finished shingle. The inventor mentions other ingenious substitutes for the eccentric roller just described, and has many excellent arrangements for the various requirements of the machine.

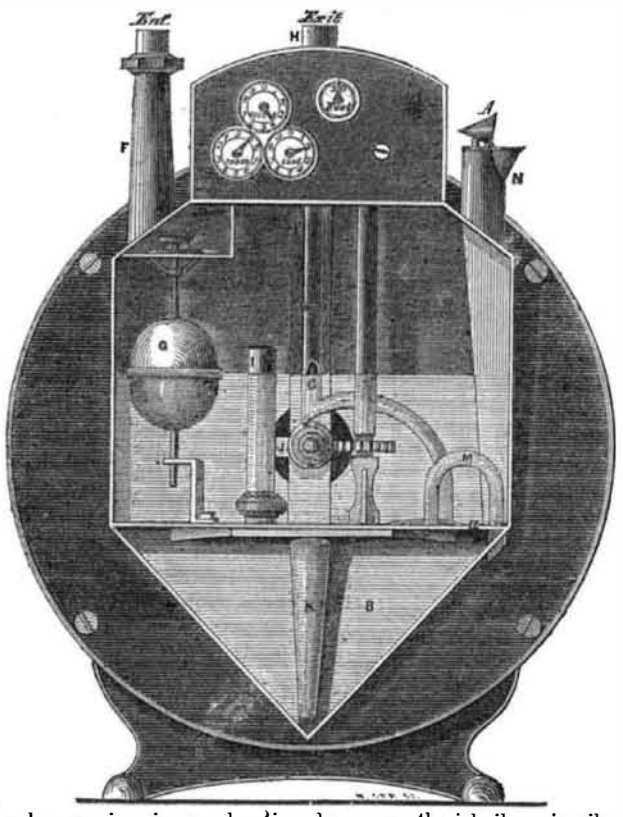
### Pipe Moulding.

An improved method of casting any kind of pipe, lamp-posts, &c., has been invented by George Peacock, of West Troy, N. Y., who has taken measures to secure a patent. The process consists in the employment of a lozenge-shaped iron bar, with projections of a suitable form, on the lower side, to bind the sand for the core, and of a core box of the size and form of the pipe intended to be cast. The core is then adjusted in the mould (the collars at the end of the core bar resting on the end of the flask), and is anchored or prevented from rising by means of metal strips or bridges, which fit in recesses cut in the upper part of the core bar, and rest upon wooden supports. When the liquid metal is poured into the mould, these latter burn out, and the strip or bridge falls into the recess, and the anchor and core may be withdrawn. The upper part of the core bar, that is, the triangular part, is not quite as high or as deep as the lower, to which the wings are attached. This is for the purpose of allowing the core to be easily withdrawn from the pipe after it is cast. By the above process, pipes of any length may be cast, a desideratum that cannot be obtained by the method now in use. Another advantage of this new method is its application for making elbow or branch pipes, for this purpose the core-bar of the branch pipe is formed of two parts, with one end of each part fitting at opposite sides of the core bar of the main pipe. The two parts of the branch pipe have each a projection, which fits into a corresponding recess formed in the core bar of the main pipe. These projections being secured by wooden wedges within the above recesses, hold the two core-bars in position. The fluid metal, on being poured in, burns away the wedges, and the core-bars become detached from each other, and can be readily withdrawn.

### Improved Kettle.

Thomas H. Dodge, of Nashua, N. H., has taken measures to secure a patent for an improved kettle. The improvement alluded to consists in the employment of a slide, for the purpose of keeping the handle immovable when required. This is effected by making the above-mentioned slide to fit in one of the tongues that connect the handle with the kettle, this tongue being grooved in such a manner that the slide, which is dovetailed, fits into the groove and keeps the handle in a fixed vertical position. To allow of the handle being loose, the slide can be moved into either of two different positions, as desired. A set screw may likewise be attached to the slide for screwing it fast to the handle when loose, but this is not essential to the operation. The advantages of this contrivance are to prevent the swinging to and fro of the handle of the kettle, and yet, when required, to allow of its being loose by moving the slide from its fixed position, as already described.

## LAIDLAW'S PATENT PROTECTOR GAS METER.




The annexed engraving is an elevation with the front plate removed, of a gas meter invented by J. Laidlaw, of this city, and for which a patent was granted on the 2nd of last month, (Nov.)

A is the cap of the pipe, N, through which the water is poured into the chamber. There is a valve under the said cap which is pushed down to allow the water to be poured in. When the water arises to its proper determined level, it will flow down the opening exhibited in pipe, C, from whence it runs by a curved pipe into a small chamber connected with pipe, K, through which it flows to the chamber, B. The opening at, C, prevents the water rising above a proper level. When the water has filled the chamber, B, it rises up through a syphon, M, the inner end of which is inserted through the plate, *a*, into chamber, B, and its outer end is on the outside. It therefore carries off all the surplus water, and all impurities that gather on the surface of it. The gas comes in by the pipe, F, into a small chamber, then through a valve opening, regulated by float, G, in the usual way. It then passes down pipe, I, and out of it by pipe, J, into the dark central opening which is the centre of the common revolving drum, which is a nicely balanced centrifugal re-action wheel, and which is rotated by the gas passing in at the centre and out at the periphery; the axis of this drum moves the gearing to operate the dials to indicate how much gas has passed through the drum and out of pipe, H. The syphon, M, makes it perfectly self-acting, which is not the case with common meters. The water level being taken from the exact centre, tilting the meter on either side merely alters the position of the water without diminishing the quantity; and, if tilted forward, closes the pipes, I and J, thus stopping all communication of the gas into the drum, and if tilted backward, it displaces the water from the front of the meter, the float, G, falls, closing the valve at the top, thus shutting off the flow of gas.

The necessity of having artificial light is so universally felt, and each successive setting sun so effectually confirms that necessity that few subjects comparatively agitate the public mind more than this, embracing a discussion of the properties of the various articles used for producing it; their safety, economy, the brilliancy of the light obtained, &c., and while it is conceded on all hands that oil is often of a very inferior quality, and if carelessly used, often producing injury and filth, and the various compounds or admixtures known as etherial oil, resin oil, gas or fluids are attended with more or less danger, and from their volatile nature are rapidly consumed, and hence really expensive, leaving coal or rosin gas after all, as probably the safest, neatest, most brilliant and equally economical. But even the use of these last named gases has caused no little controversey between the gas companies or producers, and the public or consumers, the latter alleging over-charging or false accounts of the quantities of gas consumed, owing either to the imperfection in the construction of the meter for measuring, or inattention in not promptly removing the water beyond the proper quantity, gathered there from condensation in the pipes, ill-construction of the meter or otherwise, and hence making the consumer chargeable for more gas than has been used; while on the other hand gas companies allege that they are often defrauded by dishonest consumers tilting their meters or otherwise diminishing the required quantity of water, and thus consuming large quantities of unregistered gas to the detriment of the producers, and these disputations between producers and consumers have raged to a greater or less degree ever since, the somewhat or more general introduction or use of coal gas in Europe, now only about a half century since, and it is a matter of some congratulation at least that a termination of these disputations may now be hoped for, and entire satisfaction given and received, as the patentee believes by the introduction and use of his Patent Protector Gas Meter exhibited at the late fair by Mr. John Laidlaw, from his gas apparatus manufactory in West Twenty-fourth street, this city, which meter embracing such combinations, among others, as by a self-acting, ever-ready, syphon, vacates any undue quantity of water from the meter, no matter how or where put in, and effectually securing to the consumer a registry of the exact quantity of gas he has used, and that only; and on the other hand effectually protecting gas companies from being defrauded by dishonest consumers tilting their meters, as the moment, they attempt this, the flow of water to an improper part of the meter will close the valve and shut off the supply of gas which a consumer seeks unrighteously to obtain—nor can the companies be defrauded by reducing the water by either suction or screws below the proper level, nor by the water being blown out by the pressure of the gas as is done in all these three ways in the meters commonly used, nor can companies be defrauded as in other meters by removing the dry wall screw, and attaching a pipe so that gas can be used without registering, and without the knowledge of the company, as this improved meter dispenses with screws entirely, the opening of which and consequent escapement of gas has so often caused serious accidents producing fires, explosions, and loss of life.

Index Circles.—The figures on the first circle to the right express hundreds, on the second thousands, and on the third tens of thousands, and should there be a fourth circle, hundreds of thousands; or, each revolution of the right hand pointer indicates 1,000 feet of gas consumed, the next 10,000, and the third 100,000.

Rule for Placing the Meter.—Let the meter be set perfectly level, and attach the company's service pipe to the union pipe marked Ent, at the top of column, F, and the pipe leading through the building to the exit pipe marked, H, as shown at the back of the index box.

Rule for Finding the Consumption of Gas.—Put down two ciphers (00,) then mark down the figure least in value next the pointer on each circle, employed to obviate the inconvenience of taking into account a less quantity of gas than 100 cubic feet, no notice being taken of the small circle at the top of the dial.

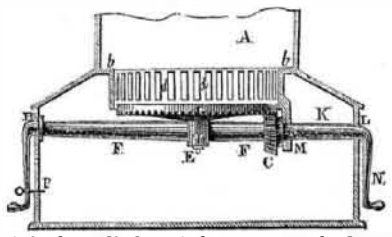
The above index will stand thus—49·200. Should a previous observation have been taken, it is necessary to subtract what the meter then indicated from 49·200, in order to know the quantity consumed in the interval.

### Improvement in Rotary Stove Grates.

The annexed engravings are views of an improvement in Rotary Stove Grates, invented by Alexander Harrison, of the City of Philadelphia, and patented on the 5th of last October (1852).

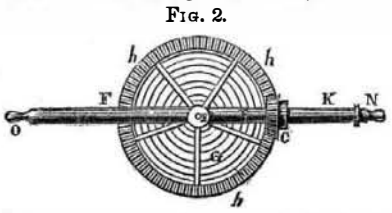
Figure 1 is a sectional view of a cylindrical stove, with the improved grating applied thereto; and fig. 2 is an under-side plan view looking upwards. The same letters refer to like parts.

Fig. 1




A is the cylinder of the stove, at the lower part of which is a small ledge, *b b*, projecting about three or four inches around the interior of the cylinder. At the inner edge of the ledge is fixed a series of small upright metal bars, *d d*, about two inches high, with spaces between for the admission of air. At the lower end of these bars is placed a flat circular grate, G, which forms the bottom of the stove, and is supported at its centre by a small vertical spindle or shaft, E. This latter rests in a socket formed in the horizontal cross shaft, F, one end of which rotates in a bearing, H, and the other in the mitre-geared wheel, C.

Fig. 2.




By an arrangement, as seen in fig. 2, this cog-wheel gears into a set of teeth, *h h*, round the under-side of the grate, G, so that, by turning the crank, N, motion is given to the shaft, K, and cog-wheel, C, the shaft, K, working in a bearing at L, and through a small vertical hanger at M; by which action the ashes are discharged from the grate. On the other side of the stove there is a similar crank, O belonging to the shaft, F, by turning which the spindle and grate are made to cant over and thus empty the latter of its contents. A pin is inserted at P to prevent the grate from turning over, which is withdrawn when it is required to tilt the grate.

The operation of this grate is so plain, that no further description is necessary; the invention is a good one. More information may be obtained by letter addressed to Mr. Harrison, at Philadelphia