

New Inventions.

Gas Regulators.

On page 343, this vol. Sci. Am., there was published the claims of a patent granted to Thomas H. Dodge, of Nashua, N. H., the object of which invention we deem should be more distinctly known than can be from reading the claim. The improvement is intended principally to regulate the consumption of gas by a number of burners, by causing the pressure in every one that is lighted to be uniform and uninfluenced by the number of the others that are lighted or by the pressure on the main.

It is also adapted to regulate the flow of fluid at a given pressure, without regard to the quantity used, or any variation in the size of the outlet, or in the pressure on the main outlet.

To accomplish these objects two chambers are employed, which are placed side by side, and communicate with each other at the bottom through an open passage, and at the top by a passage which is opened and closed by a valve attached to a float, placed in one of the chambers, to be acted upon by water. This chamber containing the float communicates with the outlet where the gas is consumed and discharged, and the other chamber receives the inlet pipe. The pressure of the gas on the surface of the water in the inlet chamber, forces it (the water) upwards in the outlet chamber, in which the pressure raises according to the number of burners lighted in the area of the outlet, and this causes the water level to vary, and also the float, to give the valve a suitable amount of opening. The float and valve are also influenced by variations in the pressure in the inlet pipe, so as to contract the opening of the valve when the pressure increases, and vice versa.

Regulator for Gas Burners.

It has long been an object of no little solicitude to obtain some perfect and simple means of regulating the escape of gas in the burner, so as to have a steady flow under all pressures and thus a flame of constant size and brilliancy. This has been accomplished by Andrew Mayer, of Philadelphia, who has taken measures to secure a patent for the same. The improvement consists in making the regulating valve in the burner in the form of a hollow cone perforated at the apex to allow of the passage of no more gas than is sufficient to supply the burner when the gas is at the highest pressure and has lifted it (the valve) to its seat at the top of the recess which contains it. It has openings round its base or lower edge, which when the gas is at its lowest working pressure, and the cone rests upon the bottom of its recess, allow of sufficient gas to pass to be consumed. A single valve of this description works more effectually than a number of the disk valves now in use applied one above the other, and which produce a disagreeable whistling noise, which is totally avoided by this valve.

Improved Ventilating Chimney.

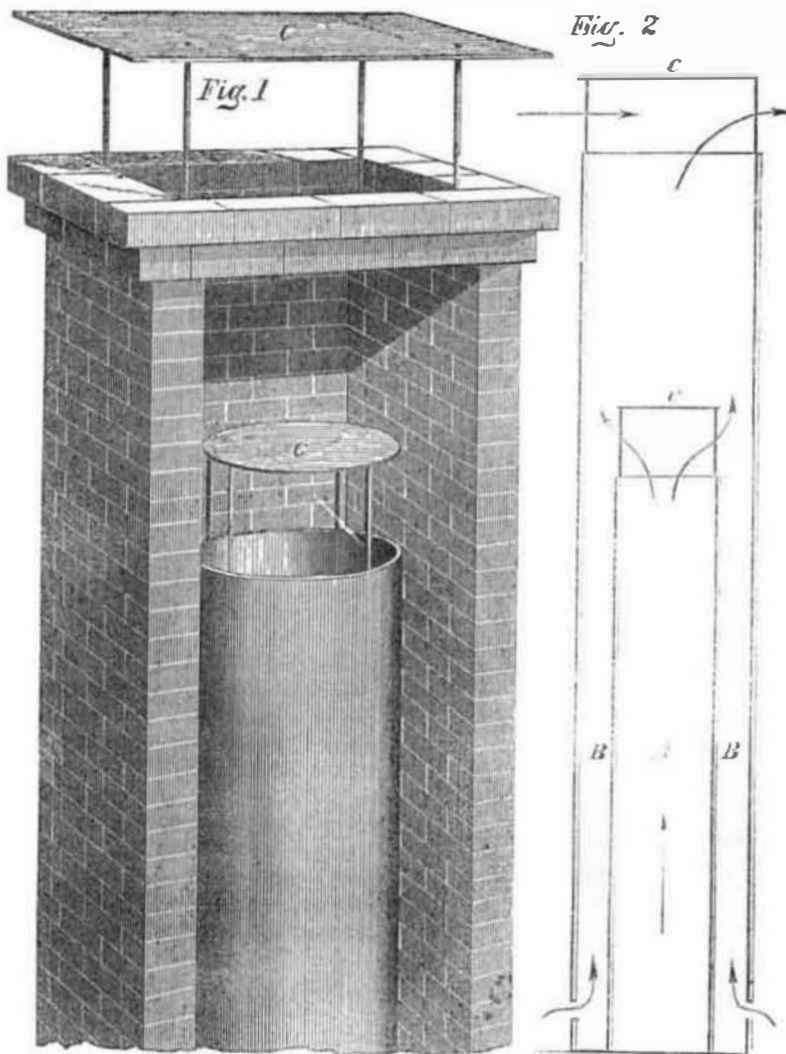
Figure 1 is a perspective view, and figure 2 is a vertical section of an improvement in ventilating chimneys, for which patents, both home and foreign, have been granted to Joseph Leeds, of Boston, Mass.

A is an interior iron chimney, and the outside one is of brick, with an airspace, B B, between. C is the cap of the interior and exterior. The inner one should rise about two-thirds as high as the outer, or higher, if rooms above require to be ventilated by it. The heat from combustion, as it passes up the inner chimney, radiates largely into the air chamber, between the chimney, and holes or inlets made at the bottom, as shown by the arrows, admit atmospheric air, which rarefies, ascends rapidly, and draws on the inner flue as it passes up and off.

This chimney operates in a very simple yet efficient manner. It can be built wholly of iron, or brick and iron; its shape may be round, or square, or many-sided. The patentee says it combines the following advantages, namely: "proof against fire; a perfect draught wherever it may be built; at fifty feet in height

it will give as much draught as any other chimney gives at one hundred or more feet high. In buildings, large or small, the fires in different stories or rooms, (heaters, stoves, forges, and furnaces,) can have the products of combustion, conducted into this chimney, with a certainty of perfect draught in each, so that one chimney can serve a large building. It can ventilate every story in a building, and draw off dust and impurities of every kind. In factories of all kinds it can draw off the same, besides the particles which fly from cot-

LEED'S VENTILATING CHIMNEY.



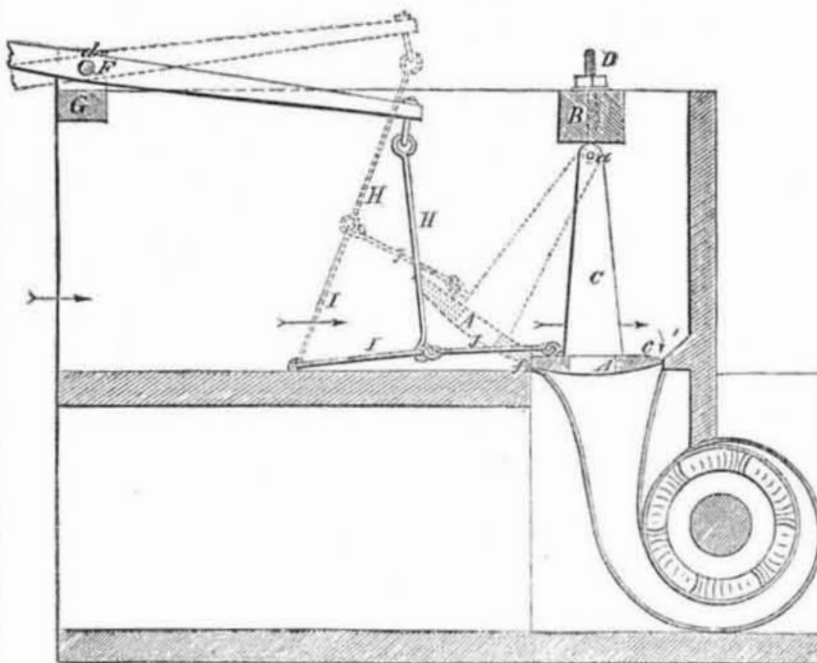
ton, wool, rags, &c., thereby promoting health and vigor among the operatives, besides adding much to their comfort. It can be built as cheap as other chimneys; it saves twenty-five per cent in fuel."

The above is not theory, it is in practical use and operation and highly approved. Quite a number of these chimneys, we un-

derstand, have been put up in Boston and Philadelphia, and give great satisfaction. The principle of a double chimney for ventilation and draught appears to be good.

More information may be obtained by letter addressed to Mr. Leeds, 27 State street, Boston, or 22 North Ninth street, Philadelphia, Penn.

GATES FOR RE-ACTION WATER WHEELS.



This figure illustrates an improvement in operating the head-gates of Re-action Water Wheels, for which a patent was granted to Hartwell L. Turner, of Strykersville, Wyoming Co., N. Y., on the 27th of June last. The figure is a vertical section of a flume, &c., for two re-action water wheels arranged on a horizontal shaft.

The nature of the invention consists in a new and simple manner of arranging and operating the head gates of re-action water wheels,

whereby the great difficulty in hoisting, lowering, and keeping in order, and preventing leakage, can be perfectly overcome, and gates of any size opened and closed with facility and great ease.

A represents the head-gate of a water wheel, it is attached firmly to the cross-head, B, by the jointed bar, C D, and swings freely, as it is raised and lowered on the pin, a, which connects the eye bolt, D, and bar, C, together. The eye bolt, D, passes through the cross head

and has a thread formed on it, and a nut screwed on the same. By this nut and screw, the gate can be adjusted so as to clear the fall block about a quarter of an inch, as occasion may require. The bar, C, is placed in nearly the center of the gate, and the gate is beveled at c down to one half or one quarter of an inch thick at the back edge, said bevel commencing about three inches forward of the back edge, as shown in the engraving. By thus hanging the gate and beveling its back edge, it will be almost perfectly balanced, and consequently it can be hoisted with ease, and also lowered without jarring; for it must be evident that as the water rushes over the gate, and cannot escape, it must necessarily exert a pressure upon the same, and as the back edge is inclined or beveled at c, this pressure will come in contact with the said beveled part in the manner indicated by the arrow, l, and balance the same, and also aid the operator in hoisting the same as the pressure is exerted in the direction in which it is moved when being hoisted. The bevel also serves to prevent the gate closing too hard by the resistance of the water against said bevel surface will be much greater than of the whole surface of the gate was even. The bottom of the gate is made concentric with the hinge joint, a. A strip of leather, f, is nailed on the part edge of the gate, and laps over the space between the fall block and gate, and serves to prevent leakage. F is a lever attached to the front cross head, G, by a fulcrum pin, d. The front end of this lever is hinged to a connecting rod, H, which is jointed to another similar rod, I, hinged to the fall block; these two rods form a knee joint. J is a rod for connecting the gate to said knee joint and lever. This rod is hinged loosely to the bar of the gate, and to the joint of the rods, I J. By means of the lever, knee joint, and connecting rod, the gate can be raised with ease to the position shown in dotted lines, and lowered without jarring, to the position shown, when the gate is lowered or closed. It is by hanging the gate on a hinge at a, and making it beveling at c, that the difficulties heretofore experienced in opening and closing the ordinary gates of water wheels are overcome, and it is these features, in connection with the raising and lowering contrivance, that constitute the invention.

More information may be obtained by letter addressed to the patentee.

Tape Worm Trap.

In the line of modern inventions, perhaps none excel in novelty and singularity one for which a patent has been applied for, by Alpheus Myers, of Logansport, Ind. It is nothing less than fishing for worms in the human stomach, in order to remove them—especially the tape worm—without employing medicines.—He has made a small trap, on which a bait is secured, and after fasting for some time, the patient swallows the trap and bait, the latter being snapped at by the worm, which gets its head into the trap, and is at once drawn to the surface, a captured tenoid.

Converting Rotary into Reciprocating Motion.

James Harrison, of Milwaukee, Wis., has taken measures to secure a patent for a new method of accomplishing the object set forth in the above caption. Three pins are secured to the side of a wheel, and made to project from it, parallel with the shaft. This wheel works within a frame provided with yokes and grooves, and as it (the wheel) revolves, the pins catch into the yokes of the frame and communicate a reciprocating rectilinear motion to the frame.

Circular Saws.

James Slater, of Macon, Ga., has taken measures to secure a patent for an improvement in circular saws, the object of which is to make the saw in such a manner as to relieve the steam engine which drives it. Portions of the edge of the saw are cut out, at places opposite to one another, and the saw is so arranged in relation to the crank pin of the engine, that its teeth will not come in contact with the board or log while the said pin is passing the dead points.