

New Inventions.

Feeding Printing Presses.

Henry E. Chapman of Albany, N. Y. has invented an apparatus for feeding paper to printing presses, on which he has applied for a patent. The invention consists in the use of a vibrating frame composed of a series of air tubes in combination with a series of fingers attached to the vibrating frame and moving with it, and also having a movement independent of the frame. The air tubes above mentioned communicate with a bellows or air pump, which operates as the frame vibrates and gives an alternate attractive and repelling surface to the ends of the several tubes of the frame, which in connection with the fingers convey the paper in single sheets to the press. The novelty consists in the combination of the fingers with the vibrating frame and air tubes.

Preparing Gold.

A. J. Watts of Utica, N. Y. has invented an improved process of preparing gold for Dental purposes, and others of a similar character. The nature of this invention consists in submitting spongy crystalline gold to certain degrees of heat, varying according to the spongy character of the specimens to be treated, whereby it is rendered adhesive, cohesive, and malleable, which enables it to accommodate itself to all the irregularities and cavities of the teeth. Application has been made for a patent.

Railroad Switches.

George Hancock of Providence, R. I. has invented an improved railroad switch, and has taken measures to secure a patent. This invention consists in the employment of a number of elastic and permanent rails attached to movable frogs so arranged that the cars while going in one direction may be switched on branch tracks at either side of the road, while cars moving in an opposite direction may pass over the switch on the main track, irrespective of the position of the switch.

Improved Wrench.

P. Smith of Bridgeport, Conn. has invented an improved wrench, on which an application has been made for a patent. The nature of the invention consist in having the lower jaw of the wrench stationary and secured to the handle by a hollow shaft, while the other jaw is made movable by a combination of a rack and pinion.

Ditching Machine.

John Lyon of Harrisburg, Iowa, has invented a machine for excavating earth and throwing it in embankments, on which application has been made for a patent. The machine is constructed with a plow, which enters the ground and elevating the earth throws it upon the endless conveyor moving at right angles to the line of draught. The claim is upon the general arrangement of parts.

Improved Slitting Gauge.

James Ballard, of Ashtabula, Ohio, has invented an improvement in gauges for slitting laths and like purposes, on which he has applied for a patent. The invention consists in making the gauge head in two sections with back stops and set screws, and uniting them together at their center, by a pin upon which they may turn freely, and the lower section adjust itself to a position in line with the edge of the board, thus preventing it from running off in cross grained wood.

Improved Lantern.

P. A. Morley, of Brooklyn, N. Y., has invented an improvement in lanterns, on which he has taken measures to secure a patent. The improvement consists in making a lamp and lantern in one piece of glass, thus simplifying its construction and reducing its cost, as no fastenings are necessary for securing the oil reservoir to the lantern.

On account of the tremendous mortality by pulmonary consumption, it has been suggested that a distinct chair in some or all of the colleges, for the study of thoracic viscera, and the lungs in particular, in health and disease, would be of great benefit.

LYMAN'S APPARATUS FOR WARMING AND VENTILATING ROOMS.

In this apparatus heated air is circulated in the same manner as water in the common hot water apparatus, as the medium for diffusing the heat of the furnace through separate and more extensive radiatory surfaces.

These radiators constitute a chamber completely inclosing the furnace, and being air tight they do not permit any of the air that has been in contact with the furnace or its pipes, nor any of the products of combustion escaping from their joints, to pass up into the rooms.

From their position and extent the radiators are uniformly heated by hot air, so that the current of air passing along their outer surfaces for warming and ventilating is uninjured, having neither been in contact with highly heated surfaces, or mingled with noxious gases.

Figure 1 is a perspective view; figure 2 is a vertical cross section through the grate, and the brick chamber inclosing the heater; figure 3 is a vertical longitudinal section; figure 4 is a horizontal plan.

A represents the internal furnace corresponding with the furnace of the hot water apparatus; B is a large corrugated smoke chamber presenting an extensive surface; M is an air tight case completely inclosing this furnace; R is the corrugated top of this case, which also forms a second and much more extensive radiating surface; D is the door; d the damper.

When the fire is built in the furnace, the air in contact with it is heated and rises in the direction of the arrows, S S, figure 2, up among

Figure 1.

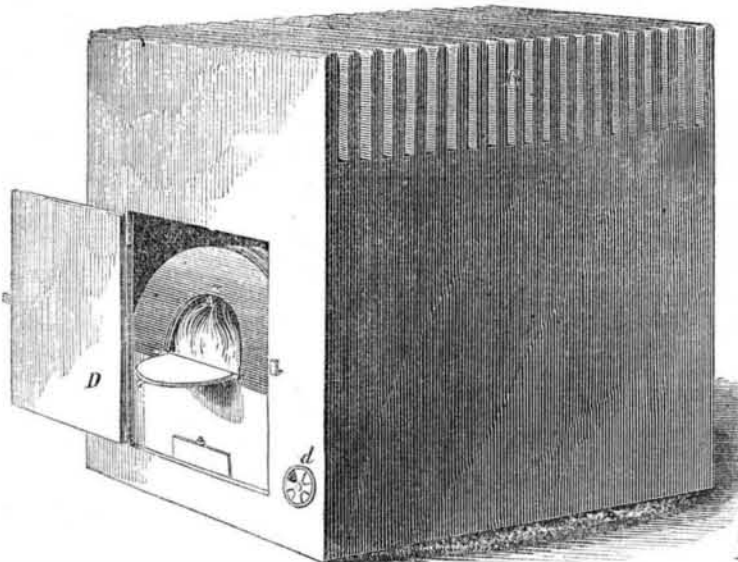
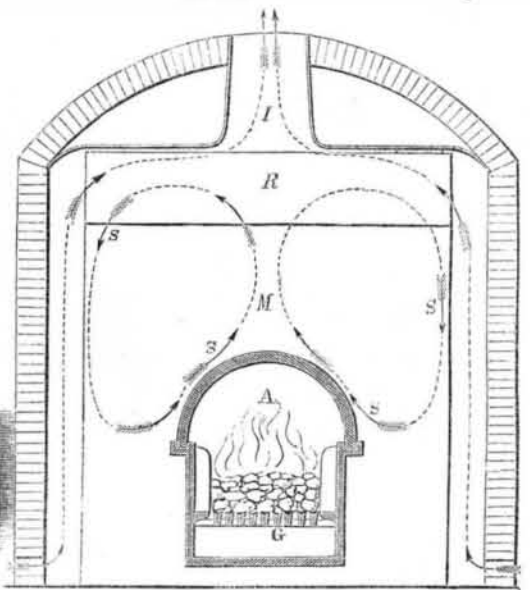


Figure 2.



the radiators, the colder air from the sides of the case flowing in to supply its place, and is in its turn rarified and rises, while the air among the radiators is cooled, becomes heavier, and flows down the sides of the case, and thus circulating currents of hot air are formed as represented by the arrows, S S.

These currents of heated air circulating between the furnace, A B, and the radiators, R, operate as the medium in the same manner as water for taking up the heat of the furnace and diffusing it through the separate radiators.

The internal furnace takes its draught entirely from the air being used as a circulating medium, and this medium is being constantly renewed by a supply through the damper, d.

Figure 3.

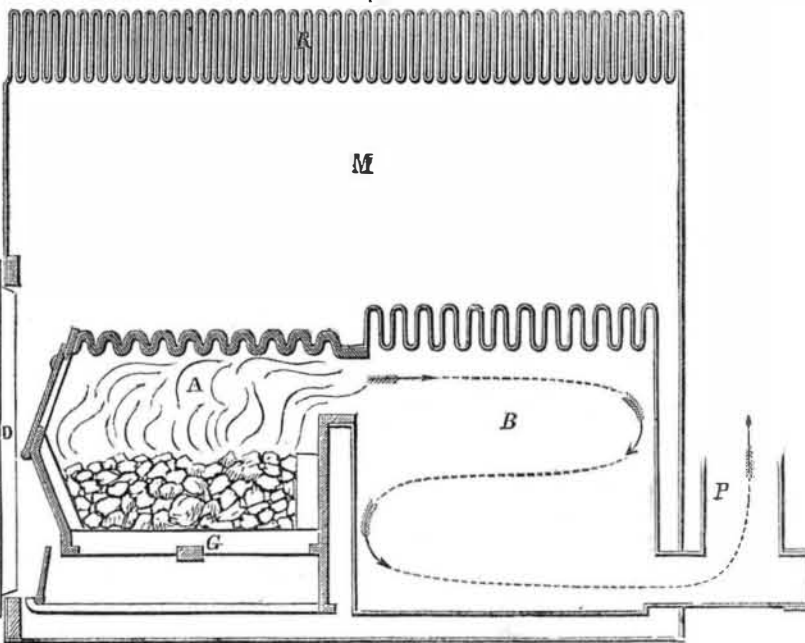
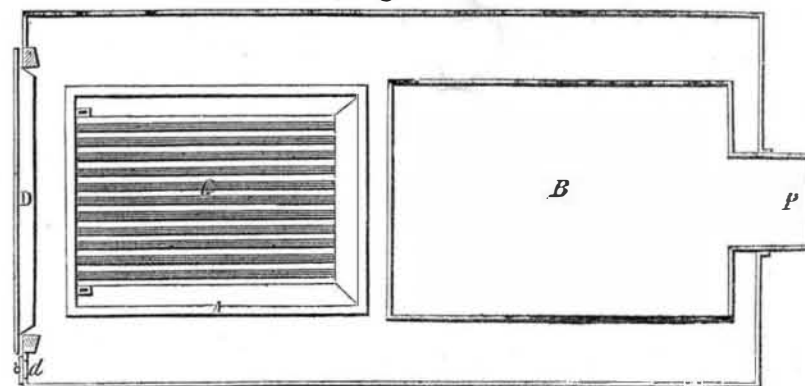


Figure 4.



Any gases that escape from the defects in the internal furnace mingle with the circulating medium and are finally drawn back into the furnace, and the scorched air being here used to support combustion is sent off the smoke pipe where it can do no harm.

The external circulation is the same as that

of the hot water apparatus. The air among the radiators, R, being warmed, rises up the hot air pipe, I, and the cold air flows in at the bottom of the brick wall, up the sides of the case, and under the shield through the radiators.

It is well known that air warmed by ordinary

naked hot air furnaces is more or less impaired as it is so over-heated by the high temperature of some parts of the furnace as to be injurious to health.

The products of combustion escaping through the joints of the furnace into the rooms are inhaled by the occupants. This is not entirely owing to defects in the construction of, or accidents to furnaces, but in part to their peculiar situation. Placed in chambers of rarified air, from which proceed upward large flues having often a draught more powerful than that of the smoke pipe, and the supply of cold air being checked by adverse currents or eddy winds about the entrance of the cold air channel or by the valve being partly closed in this channel, while the draught under the grate is fully open, the pressure of the atmosphere often becomes greater in the furnace than in the rarified air chamber around it, consequently the products of combustion are forced through the joints of the furnace to supply the partial vacuum.

Again, every one knows that smoke and gas frequently escape from the joints of the common stove when the door is open, and also when the damper in the smoke pipe is shut. This is true to a much greater extent in the case of the furnace surrounded by a partial vacuum.

The frequent fires which have occurred from furnaces, have rendered the very word almost a terror to many housekeepers. They are far from being all alike dangerous, but very many of them are neither more safe nor economical than that styled by Dr. Ure, "an incendiary coal devourer." The powerful draught up the hot air pipes, and the partial vacuum in the chamber surrounding the furnace causes not only the gases to escape as above shown, but sometimes sparks of fire escape by the joints of the furnace, and passing up with the current through the register set fire to articles in the room, or glancing through the joints of the hot air pipe, more frequently set fire to the wood-work which between the partitions and under the floor is covered with a dry inflammable powder. This more surely results when from undiscovered flaws and expansion by heat, pieces of the furnace are broken out which is not unfrequently the case.

This apparatus has been in operation at the Novelty Works during the whole of the past winter and has within a few past weeks been ordered for several first class houses, among others the new Opera House, on 14th street, where a room 200 feet long, 120 wide, and 85 high is to be heated by it. Address the inventor, A. S. Lyman, at the Novelty Works, this city.