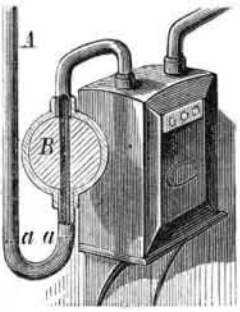


RECENT INVENTIONS.

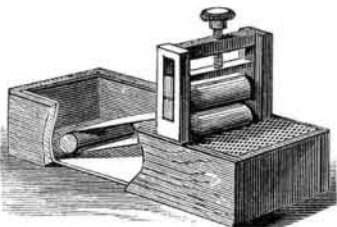
Gas Cut-off.

In a recent article on gas meters as helps to fires, we suggested that there was a field for a practicable invention for preventing the escape of gas following the destruction of the meter or the melting of the connection. Our suggestion has been heeded by Mr. Fred R. Hoard, of Providence, R. I., who has invented the simple and effective device shown in the engraving. It consists of a hollow ball, B, filled with lead or fusible metal with the exception of a central passage. This ball is inserted in the service pipe, A, the latter being bent in U-form. When a fire occurs, the metal in the ball is melted and drops into the lower part of the U, filling it to the line, *a a*, effectually shutting off the gas.



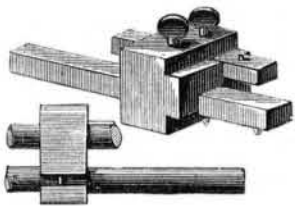
New Washing Machine.

The engraving shows a combined washing and wringing machine lately patented by Messrs. W. W. Adams and D. R. Snelling, of Ozark, Ark. The tub is provided with a roller near its bottom, and standards are secured to its sides supporting an adjustable spring pressed roller bearing on a roller arranged above the top of the tub, and carrying an inclined endless belt provided with a belt fastener, and fastening cords for the clothes. This endless belt passes around the lower rollers while washing, and is wound around the upper of the two lower rollers while wringing them, so that the clothes are washed and wrung without removing them from the belt or withdrawing the water from the tub. The operation is as follows: The clothes, preparatory to being washed, are to be laid on the belt in a spread out condition, and the fastening cords are to be tied over them until the whole length of the belt is loaded. The rollers are then worked by the crank to run the clothes around between them as long as is needed to wash the clothes. After washing the clothes, the belt is taken off from the lower roller by loosening the belt fastening. It is then wound tightly upon the lower of the upper pair of rollers. Another soft cloth is similarly rolled on, and in this condition the two rollers are used for wringing the clothes. A perforated board or screen is placed across the end of the tub in wringing, to prevent the wrung clothes from falling back into the tub. This machine is exceedingly simple, cheap, and easily operated.



Improved Gauge.

The engraving shows an improvement in that class of gauges which are more especially used for gauging door-jamb and the edges of doors for the proper setting of the door hinges, for hanging the door, and for cutting the door and jamb the depth that it is necessary to remove the wood to set the leaves of the hinges flush with the edge of the door and the face of the jamb; and it consists of a suitable stock provided with two marking points or blades (one longer than the other) to be used in combination with a slotted headblock adapted to slide on the stock, the headblock having two gauge surfaces or faces at right angles to the stock, which are the same distance apart as the marking points or blades. The headblock is provided with the usual gauge bar to be used for ordinary purposes. The stock is provided with two marking points or blades, the inner one being of considerable length, and in the headblock is formed a slot, which admits of sliding the block upon the stock past the long point or blade. The distance between the opposite surfaces of the headblock being exactly equal to the distance between the long and short marking points, it will be seen that when the front surface or that next the short marking point is moved to and from the point, the opposite or back surface will be moved an equal distance toward or from the long point. In using this gauge for hanging doors, or for marking or cutting the jamb, the back face of the headblock will be placed against the jamb, and the mark or cut made by the long point or blade. For marking or cutting the edge of the door, the gauge will be applied to the door, the front face being placed against that side of the door the corner of which shuts against the jamb, and the mark or cut made by the short point or blade. By this means it will be seen that the distance from the jamb to the mark made on the jamb will be exactly equal to the distance between the mark on the edge of the door, and the side of the door which comes



against the jamb, so that when the door is hung, the side of the door will come properly against the jamb. This invention has been patented by Mr. William McCullough, 454 West Forty-third Street, New York city.

New Paper Holder.

The annexed engraving shows a novel paper holder recently patented by Mr. Ross White, of No. 1 Reade Street, New York city. This device, which is simple and cheap, is designed as a package for containing closet paper. The sheets of paper are removed through the central aperture, and as the surface of only one sheet can be touched, only one sheet will be removed at a time. The package is inexpensively but neatly made, and while it keeps the entire package in good and convenient shape, and permits of the removal of as many sheets as desired, the paper cannot be wasted in quantities, as is commonly the case when the package is suspended by a wire loop. The packages are provided with a suspending loop for receiving the hook.



New Letter and Bill File.

This is a file for receiving letters, bills, and similar papers in a manner to allowing convenient inspection of any bill or letter on the file; and further, combined with the file, there is a device for fastening the bundle of bills or letters on its removal. The base plate is formed of metal, and attached permanently to a board, and to it are fixed posts receiving in slots a cross rod, the ends of which are bent up to form hooks, these hooks being tubular. The perforators, which are tubular, are pointed at their outer ends, and screwed into hollow slotted studs on the plate. A guide wire secured to the plate serves as a guide for placing the letters on the perforators. The crossbar carrying the hooks fits loosely in the slots of the posts, so that it is free to be moved up and down, and when in the downward position the hollow ends of the hooks receive the pointed ends of the perforators, so that the perforators and hooks form a continuous wire, and allow the letters to be turned over for the inspection of any one on the file. When the hook bar is raised, the hooks are carried above the ends of the perforators, and may be then turned backward out of the way, to allow the removal or placing of the letters upon the perforators. A handle on the hook bar is used in manipulating it, and a plate spring presses against a projection on the bar, so as to hold the hooks in any position in which they may be placed. The base plate is slotted beneath the hollow studs, to receive the heads of fasteners. The studs are also slotted on one side, to admit of removing the fasteners. These fasteners are ordinary paper clamps, of suitable length, and their folded ends extend upward into the hollow perforators. When the file is filled, the bar and hooks are raised and turned back, the perforators are then unscrewed from the studs, and drawn out, leaving the fasteners in the bills or letters. The ends of the fasteners may then be turned down, and the bundle of papers thus fastened can be removed by sliding the heads of the fasteners from the slots in the base plate. This invention has been patented by Mr. Frank D. Adams, of Auburn, Cal.



General Paralysis.

Dr. Philip Tenner, in the Cincinnati *Lancet and Clinic*, defines the disease as an affection of the anterior portion of the cerebrum, of that part which the study of comparative anatomy and anthropology indicates to be the seat of intelligence, and which modern experimental investigations indicate to contain the motor centers. The pathological anatomy consists of changes in the membranes of the brain, usually most marked in the anterior portions, as well as changes in the cortex and subcortical regions, affecting chiefly the anterior cerebral convolutions. Its earlier symptoms consist chiefly of morbid manifestations of intelligence, such as want of judgment, loss of memory, boastfulness, etc., and of failure of the motor functions occurring simultaneously and progressing correlatively with the mental disturbances.

Remedy for Hog Disease.

A disease of pigs, known in France as *rouget* or *mal rouge* (red evil), has of late wrought terrible ravages in the Rhone Valley, 20,000 pigs having succumbed in a year. M. Pasteur has detected the microbe to which the disease is due. It is somewhat like that of chicken cholera, but much smaller and different in physiological properties. Its form is that of the figure 8. It has no action on fowls, but rapidly kills rabbits and sheep. Injected in almost inappreciable quantity into pigs, it suffices to cause mortal disease. M. Pasteur has succeeded in producing an attenuated form of this virus, wherewith healthy pigs may be vaccinated and rendered refractory to the contagion.

AMERICAN CIVIL ENGINEERS.

The annual meeting of the American Society of Civil Engineers was begun in this city January 17, with many members in attendance.

The election of the following officers was announced: Charles Paine, president; W. H. Paine and Henry Flad, vice-presidents; John Bogart, secretary and librarian; J. James R. Croes, treasurer; and G. S. Green, Jr., J. P. Davis, William Metcalf, W. E. Merrill, and W. G. Hamilton, directors. The special committee on a uniform system of tests of cements, and on the preservation of timber, reported progress and were continued. The special committee on uniform standard time made a report approving the action of Congress in authorizing the President to call an international congress to consider the subject, and recommended the calling of a convention as soon as possible to determine upon a standard of time that would be the best for the interests of North America.

The "Norman" medal for the last year was awarded to A. Freley and F. P. Stearns, of Boston, for a joint paper upon "The Flow of the Water of Sudbury River." A paper by William P. Shinn, on "Increased Efficiency of Railways for the Transportation of Freight," which was read before the society recently, was discussed.

Mr. Jervis thought that improvement in rails and in road-bed must go together. The weight a steel rail could carry depended largely upon the quality of the road-bed. He spoke of the advances that had been made in using to better advantage the adhesion of the locomotive wheels to rails, and cited as a proof of the improved efficiency of railroad transportation the gradual reduction in canal tolls that had taken place till the waterways of New York had been made free.

Mr. Paine in his paper discussed mainly the detention of cars at stations and sidings. He thought that an assessment of 20 cents a day for the detention of a car would do much to do away with the evil. He admitted, however, that the habits of business men would be against paying such an assessment, and that there were many other obstacles to carrying out the plan, several of which he discussed.

Mr. Emery thought that engineers could be instructed to advantage, so that they could get through many tight places by relying upon adhesion of the wheels and a steady pressure from the boiler.

Mr. Fisher, who is chief engineer of the New York Central Railroad, described a reduction of grade on both sides of the Rochester station, by which \$70,000 a year was saved to the company. Mr. Chanute, the chief engineer of the Erie Railroad, said that the practice of that road showed that consolidation engines and long trains were more economical than short trains and the old engines. They had increased the average number of cars in a train from twenty-three to thirty-eight. Instead of increasing accidents by the breaking of trains, such accidents had actually been decreased by strengthening the connections of the cars.

W. P. Shinn, whose paper was being considered, thought that the commercial departments of railroads made a serious mistake in placing those who had come up through the office as clerks in the management. The commercial departments thought only of securing an increase in freight, and so in gross earnings. They should remember that the railroads really wanted net earnings, and not gross. The discussion was postponed, and it was decided to invite railroad managers to take part in it.

The programme for the next day included visits to the East River Bridge, the Erie Basin, the works of the New York Steam Heating Company, and the Mills building, with a concluding reception in the evening.

Breathe through the Nose.

Dr. Ward, Physician to the Metropolitan Throat Hospital, in an article on singers' throat troubles, in the *Musical Critic*, treats of the various kinds of catarrhal troubles experienced by public singers, and repeats the well known fact that the nose is the only channel through which air should pass during ordinary acts of breathing, the mouth being intended only as an accessory breathing agent when, on certain occasions—as, for instance, running—the lungs demand a rapid supply of air. The air, in passing through the nostrils, is warmed and sifted of its harmful ingredients, and thus prepared for its reception into the delicate structures below. If it passes directly into the mouth without the above preparation, it will frequently cause irritation and inflammation of the mucous membrane lining the mouth and throat by being, in the first place, too cold, and in the second place by containing irritating particles of dust and other matter.

The Pioneer White-Lead Maker in the United States.

Referring to a recent article on lead pigments printed in this paper, Messrs. Wetherill & Brother, of Philadelphia, write that priority in the manufacture of white lead in this country is due to their predecessors, Samuel Wetherill & Son, who erected the first white lead works at Broad and Chestnut Sts. Philadelphia, in 1804. Samuel Wetherill was originally a manufacturer of cloths, and has been credited with being the maker of the first cloth made in this country. His importations of dye stuffs led naturally to the importation of pigments, and subsequently, in 1777, to the manufacture of paints. The existing firm is of the fourth generation from the founder of their house, and their books, running back to the year 1777, furnish, they believe, the longest consecutive record of any one established in this country.