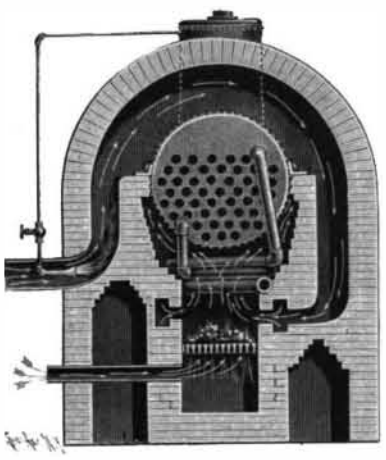
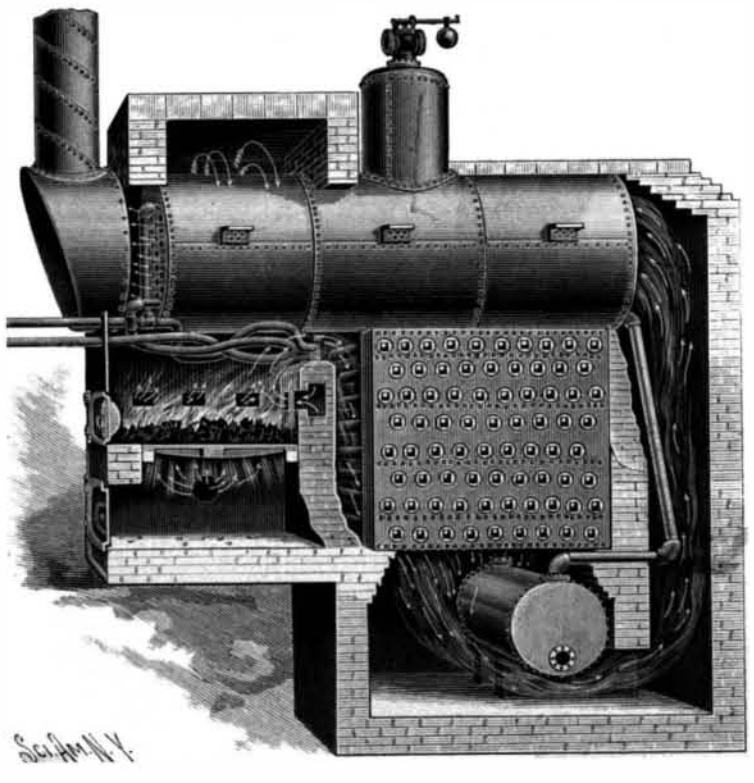
AN IMPROVED SMOKE CONSUMING FURNACE.

The accompanying illustrations represent, in side and transverse views, both partly sectional, a furnace which is designed to entirely abate the smoke nuisance, completely destroying all smoke and gases, while also being a great economizer of fuel. It is likewise especially adapted to consume the foul air and odors generated in the cremation of garbage in gas works, slaughter houses, limekilns, and all factories and places where objectionable or dangerous gases are produced. The improvement has been patented by S. G. Smith, of No. 108 Fulton Street, New York City. The opening at the side of the ashpit, as shown in the large view, is connected with a suitable air blast, to insure an abundant supply of air for the fuel burning on the grate, the products of combustion passing over the bridge wall and backward between pendent box-shaped water legs connected by transverse tubes, and also down around the mud drum, and upward to the rear of the boiler, and thence forward to the smokestack. The feed water is taken in from the front through a pipe formed in double curves in the top of the fire box, and is thence passed through the pendent water legs and their transverse pipes, and through the mud drum, thus promoting a rapid circulation and causing the water to be heated to a very high temperature before it is fed to the boilers, the water being also purified and incrustation prevented, as the sediment settles in the mud drum. In addition to these features for promoting efficient combustion and the heating and circulation of the feed water, this furnace is provided with a special condensing and gasifying chamber which surrounds the forward end of the boiler and into which foul air, smoke, gases, etc., to be consumed may be passed by means of a pressure blower, whether they be drawn from the stack or from any other source. The foul air and gases, etc., are passed into one leg of this chamber, as shown in the small view, a jet of steam commingling with the air and gases in their course around the boiler to the point of discharge from the apertures over the grate bars, in the bridge wall and in one of the side walls of the furnace. By this means complete control may be had of all the products of combustion which might otherwise be wasted at the stack, and all foul odors from any source may be destroyed at the same time that the efficiency of the furnace is increased and a very considerable saving effected in fuel.



SMITH'S SMOKE CONSUMING FURNACE—CONDENSING AND GASIFYING CHAMBER.



SMITH'S DEODORIZER AND SMOKE CONSUMING FURNACE.

A VERY fine specimen of an egg of the great auk was recently sold by auction in London. Bidding began at 100 guineas and reached 280 guineas, at which price the egg was secured by Mr. T. G. Middlebrook.

Discovery of Telescopic Daylight Meteors.

Prof. William R. Brooks, director of the Smith Observatory, at Geneva, N. Y., made an exceedingly interesting observation on Thursday afternoon, April 29.

While making daylight observations of the planet Mercury, then at its greatest elongation eastward from the sun, he discovered a flight of telescopic meteors passing through the field of the large telescope. This was between three and four o'clock, and the sun was shining brilliantly.

The flight lasted about half an hour, in which time over one hundred were seen.

The meteors were as bright as Vega, or other brilliant stars, when seen through a large telescope, in the daytime. The direction of their flight was toward the sun.

Science Notes.

In connection with the general meeting of the Verein Deutscher Strassen- und Kleinbahnverwaltungen, which will be held in Hamburg August 6 and 7 next, a street railway exhibition is intended lasting from August 5 to 9.

At a recent meeting of a German engineering society, according to the Electrical World, the topic of the evening was: "Elektroautomatischensicherheitspatenteisenbahnaborthuerenverschluss." It must have been an interesting subject.

The famous Victor Emmanuel gallery at Milan is lighted in the evenings with rows of many hundred gas jets placed near the top, and the method of igniting these was an important question, says the Progressive Age. It was finally solved by using a miniature electric locomotive running on a track passing close to the burners. This locomotive carries an alcohol torch, and is made to run rapidly over the whole circuit after the gas has been turned on.

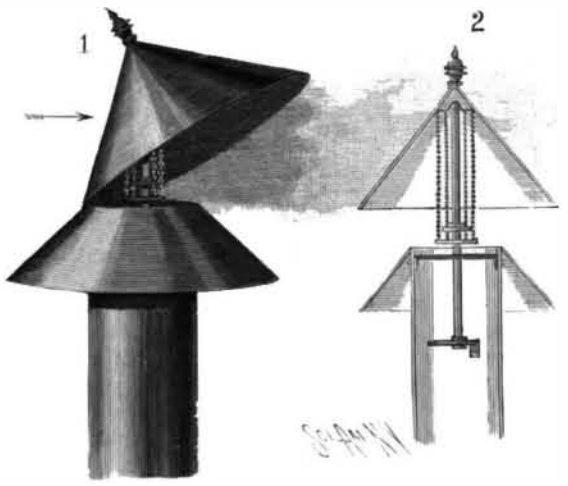
It is announced from the University of Geneva that Prof. Dussaud has invented an apparatus to enable the deaf to hear. The microphonograph magnifies the human voice in the same way that a lens magnifies. It is simply a telephone connected electrically with a phonograph, but a far more sensitive phonograph than Edison's ordinary model. A battery of one cell to sixty according to the degree of deafness, is used. Of course, the apparatus is useless in the case of absolute deafness, but such an infirmity is far rarer than is suspected. The London correspondent of the New York Sun, who describes this invention, says that 95 per cent of so-called stone deaf persons can be made to hear and understand by Dussaud's invention. Prof. Dussaud is preparing for the 1900 exhibition an apparatus which will enable 10,000 people who may all be deaf, in the common acceptance of the term, to follow a lecture.

When mine host in the ideal country inn, which all of us seek but none of us find, brings up a bottle of crusted wine covered with cobwebs and dust, this outward and visible sign is taken as convincing evidence of age. We grieve to have to record that the trust may now be misplaced. A bulletin (No. 7) of the Division of Entomology of the United States Department of Agriculture says that in France and Pennsylvania an industry has recently sprung up which consists of the farming of spiders for the purpose of stocking wine cellars, and thus securing almost immediate coating of cobwebs to new wine bottles, giving them the appearance of great age. This industry is carried on in a little French village in the Department of Loire, and near Philadelphia, where Epeira vulgaris and Nephila plumipes are raised in large quantities and sold to wine merchants at the rate of ten dollars per hundred. This application of entomology to industry is one which will not be highly commended.

Professor Forbes, who had just returned from Wady Halfa, expresses a highly favorable opinion with regard to the utilization of the power of the cataracts for generating electricity, and considers the general circumstances of Egypt exceptionally well adapted for its use as motive power, says a cablegram from the Cairo correspondent of the Times. Irrigation could be extended as well as cheapened by the saving in cattle, and especially in coal, which becomes enormously dear in Upper Egypt, owing to the expenses of transport from Alexandria. Professor Forbes considers that the cataract power would be available all the year round for working the railway, cotton ginning mills, sugar factories, irrigation machines, etc., also that it could be supplied over distances of several hundred miles at a cost much below that of coal. Professor Forbes has just left for England, but will return in September to make a complete survey and present the government with a project for utilizing the electricity to be generated at the Nile cataracts.

AN EFFICIENT CHIMNEY COWL.

The illustration represents a simple and inexpensive chimney cowl, designed to readily accommodate itself to the wind, no matter in what direction it may be blowing. The device has been patented by August Hirschel, and is being introduced by W. H. Boatwright, P. O. Box 2296, New York City. Fig. 1 shows its application, Fig. 2 being a sectional view. The smokepipe has at its upper end an outwardly and downwardly extending flange, and within the pipe are two brackets forming bearings for the lower portion of a spindle which forms a pivot for and supports upon its upper end a conical cap. The pivot end of the spindle is received in a socket bearing on the inner side of the cap, the bearing being made of tough glass, porcelain, china, or other material of a character not likely to become quickly worn. To permit the cap to rise slightly, or yield a trifle to the force of the wind, without rising enough to cause the spindle to leave its bearing, chains lead down from the inner face of the cap to a ring loosely mounted below a collar or flange on the spindle. By this arrangement the cap will be tipped to the side presented to the wind, as shown in Fig. 1, until its lower edge engages the conical flange on the top of the smokepipe, and the wind will be deflected to either side and prevented from passing down the smokepipe, the cap remaining balanced on the spindle when there is no wind.



HIRSCHEL'S CHIMNEY COWL.

THE HALL BRASS PIPE WRENCH.

A wrench especially adapted for use on brass or nickel plated pipes, and with which the pipes may be turned without bruising or scarring them in the least, is shown in the accompanying illustration, and is being placed on the market by the Walworth Manufacturing Company, 18 Oliver Street, Boston. Bushings for the different sized pipes, as shown in the small figures, are placed between clamping blocks, the inner one of which has limited movement within a yoke piece, through a screw threaded opening in one end of which extends the screw threaded end of a handle rod, by means of which the bushing may be clamped upon a pipe and any desired amount of friction applied by turning the handle. The clamping blocks are finished true and smooth, and with the tool is furnished a set of bushings for different sizes of pipe. The end block is held in place by a slot and pin in the yoke, but may be easily slipped in and out. The friction of this wrench is said to be so perfect that it can be used upon the most highly polished pipes without injuring them in the least, while it can also be applied to threaded brass nipples without injuring the threads.

THE HALL BRASS PIPE WRENCH.

THE Pintsch system of gas lighting has now been introduced in the Sixth Avenue trains of the Manhattan Elevated Railroad, in New York; three hundred cars have been equipped with it. It is a complete success, and a vast improvement over the old system of lighting by oil lamps. It took some years of newspaper agitation, supplemented by an act of the legislature, however, to compel the company to make the change.