stated with honor in the British navy; the charges upon which he had been dismissed were found to have been false, and he was soon afterwards promoted to be Admiral of the West India fleet. In this service, his attention was directed to the peculiar pitch of the remarkable lake in the island of Trinidad, and his inventive mind soon made it subservient to useful purposes. He secured patents in 1852 for making tubes and manufacturing oil from this substance, and some very excellent lubricating unguents have been made from it in the vicinity of New York. He was also the inventor of a rotary steam engine, which was used for some time in one of the British frigates, and quite a number of improvements relating to ships-of-war. Of all his inventions, however, perhaps the best is his vertical tubular marine boiler, for which he obtained a patent in January, 1843. This boiler has two water chambers, one above the other, connected by a series of water tubes between which the heated products of combustion pass from the furnace. In this boiler, a constant circulation of the water is secured, and so far as we can judge, this is essentially the one which has been lately adopted, and is now held to be the best in the American navy. An illustration of this invention was published on page 200, Vol. II., of the Journal of the Franklin Institute for 1850; and as our motto is, "honor to whom honor is due," we state these facts for the honor of the deceased noble inventor, who is now beyond the reach of flattery or blame, and who, after a thousand hairbreadth escapes from death on sea and land, lived long beyond the common age of man.

WATER GAS—A SENSATION.

The engineer in charge of the water gas works at the Girard House has seen fit to publish a letter in our excellent cotemporary, the Philadelphia *Ledger*, in which he charges that Mr. Seely signalized his arrival in that city, to investigate the water gas operations, by asserting that he had come "to prepare a sensation article, and that his stay was marked, while in that city, by a long confidential interview with one of the officials of the city gas works." The engineer gives these as the reasons why he could not accord to Mr. Seely the privilege of manipulating the works. He thought also that Mr. Seely "might possibly—either ignorantly, if not wilfully—disarrange the apparatus." If Mr. Seely is such an extraordinary character as is here represented, and made the "sensation" assertion here imputed to him, it would show conclusively that he was wholly unfit, scientifically and morally, to undertake such an investigation. But Mr. Seely made no such announcement. It is wholly unlike him, and is utterly inconsistent with all the facts of the case. As to the fears of the engineer that Mr. Seely might ignorantly or otherwise disarrange the apparatus, those who know Mr. Seely as a practical chemist, and his high character for honor and integrity, need not be told of the perfect absurdity of the engineer's fears.

Mr. Scely did have an interview with one of the officials of the city gas works, *but not until he had exhausted all the privileges that were accorded to him by those in charge of the water gas works.* He purposely avoided all intercourse with any one who was even suspected of hostility to water gas, until he had concluded his investigations. When parties feel obliged to resort to such tricks as the above, in order to support their cause, it suggests the suspicion, at least, that they must have a bad job on hand.

A GREAT REFORM COMMENCED.—We are pleased to find that the practice of having the scholars learn all their lessons during school hours has been adopted in a portion of our public schools, and it will, doubtless, be extended to them all. We hope that this step is but the beginning of a great reform, and that the whole practice of stuffing the mind with a mass of undigested matter will be abandoned. An eager desire to make a great show for the time or for the money expended is the most pernicious vice of our educational system; it leads to a hasty slurring over of lessons half understood, and begets a habit of being satisfied with vague ideas which is very apt to continue through life. The most rapid mode of teaching is that which requires every lesson to be thoroughly mastered and comprehended before it is passed by. A scholar with this habit of study will soon overtake another who is far in advance with crude and superficial notions of his studies. If parents or teachers are very anxious that a child should learn rapidly, let them insist that the lessons shall be few and short; no more than the child can learn both thoroughly and easily.

PATENT AGENCY DEPARTMENT—EXTENSIVE ARRANGEMENT FOR 1861.

The editors and proprietors of this journal desire to return their warmest thanks for the unbounded confidence which has been bestowed upon them by the inventors of the United States. During the year, now near to its close, the business of their office has largely augmented, and they confidently look towards the opening of a new year for a large increase in the amount of their professional business.

They will continue, as heretofore, to procure patents in the United States, Great Britain, France, Belgium, Holland, Austria, Russia, Prussia, Spain, Sardinia, and other countries where patent laws exist. In connection with their home and foreign offices, they have also a branch office opposite the Patent Office in Washington, and which will continue, as heretofore, under the special charge of one of the firm, and is now reorganized on a still more efficient basis to attend to all matters of our clients where personal intercourse at the Patent Office is important. With the view of placing the Patent Office department of their office upon such a basis as to promote to the fullest extent the best interests of inventors and patentees, the proprietors, Messrs. MUNN & Co., will not only continue to prepare Specifications, Drawings, Caveats, Assignments, Licenses, &c.; attend Rejected Cases, Re-issues, Extensions, Interferences, Disclaimers, Appeals, &c., but will also advise with patentees and assignees upon all questions of infringement, even to the prosecution of suits in the United States courts. Their arrangements for this and every other branch of professional business are complete, and parties who wish to counsel with and employ them can rely upon their utmost fidelity, and also upon such charges as will enable all patentees to seek the protection of the law in defence of their just rights.

Inventors and patentees will promote their best interests pecuniarily and otherwise by availing themselves of the extended facilities of this agency, which is acknowledged to be the largest and most efficient in the world. The experience of Messrs. MUNN & Co. extends over the past sixteen years, during which time thousands of inventions have been patented through their agency.

ANECDOTES OF THE STEAM ENGINE.—In our next number we shall commence a series of articles on "The Early Inventors of the Steam Engine." These papers will be illustrated with handsome engravings of all the old steam devices and engines that have been invented from the days Hero, of Alexandria, who lived 300 years before the Christian era, down to original steam engines of the Marquis of Worcester and the immortal James Watt. The information will be selected from rare and authentic documents, and will contain curious and useful historical anecdotes and mechanical data, well calculated both to instruct and amuse the general reader.

MIRRORS FOR THE CAPITOL AT WASHINGTON.—Thirty beautiful mirrors and fifteen cornices have been prepared at the establishment of B. W. Merriam, No. 84 Chatham-street, this city. The largest mirror is eight feet eight inches in hight by sixty-eight inches in breadth. It is surmounted by a figure of Washington delivering his inaugural address. The other mirrors range from four feet eight inches to five feet eight inches in hight. The fitting, molding and gilding were all executed at the above establishment, and the whole style is rich and appropriate.

TO PAPER MANUFACTURERS.—Since the introduction of envelopes, the outside leaf of most letters and notes is useless and wasted. People generally, to avoid the appearance of meanness, use a whole sheet, when a half one would answer every purpose. What is wanted to remedy the evil is, that paper manufacturers should manufacture letter and note paper in substantial half sheets; also, a stamp might be put in the center of the sheet, at the top, instead of on the corner as is now done, so as to distinguish it from the whole sheets.

A FOAM BREAKER.

MESSRS. EDITORS:—On page 261 of the present volume of the SCIENTIFIC AMERICAN, I notice a description of a "foam collector" for a steam boiler, which has led me to send you an account of a simple foam breaker, used very successfully, where nearly the whole contents of the boiler (it being of a gummy nature) would otherwise have been converted into foam. It may be of use to some of your readers. It consisted of a division in the boiler a short distance above the liquid, nearly flat on top end, slightly inclined from level, with a large valve near the middle opening upward, and a hole toward the lower end of the plate dividing the boiler, into which a pipe was tightly inserted long enough to extend down through the boiling liquid nearly to the bottom of the vessel. The valve was loaded to perhaps one-eighth of a pound to the square inch, and was opened near one-eighth of an inch by the passage of the steam and foam. The globules of foam or froth being driven with considerable force against the valve and through the contracted aperture into the upper chamber of the boiler, were broken, and the liquid composing them, passing down through the pipe, returned to the boiler below. J. M. S

Chester, Pa., November 8, 1860.

THE HOOSAC TUNNEL.—A steam engine is being put up at the shaft for the purpose of more readily drawing to the surface the rock and water In five days, having stopped work in the shaft in order to put up the engine, the water has filled up the hole 100 feet deep. The experiments previous to the destruction of the new machines for drilling, by the burning of the Globe Locomotive Works, gave very encouraging indications of success It was found to be practicable to drill in the hardest granite at the rate of one inch per minute, which is considered equal to three inches per minute in the Hoosac rock, and more than ten times as rapid as hand drilling.

RAW mellow apple (says Hall's *Journal of Health*) is digested in an hour and a half; while boiled cabbage requires five hours. The most healthful dessert is a baked apple. If taken freely at breakfast, with coarse bread and butter, without meat or flesh, it has an admirable effect on the system, often removing constipation, correcting acidities, and cooling off febrile conditions better than medicine.

THE ELECTRIC TELEGRAPH IN INDIA.—The telegraph which crosses the Kistna river, in India, is a galvanized iron wire rope 1¾ inches in circumference. It is made of three strands of wire twisted together, each strand having seven wires. It is carried from rocks 400 feet high above the river, and is secured to large posts of teak wood. The distance between the two points of support is 6,000 feet; the cable curves down at the middle to 60 feet above the water. It has been in operation for about twelve months.

IN 1700, Yale library contained but 40 volumes; in 1766, 4,000; in 1835, 10,000; and in 1860, 38,000. Added to this last number, the Linonian Brothers' Law and Medical libraries in the same building make a total of 67,000 volumes, under the care of Yale College, while the number of unbound pamphlets is estimated at 7,000. The oldest printed book in the collection is a copy of the tracts of St. Augustine, printed in Zurich in 1467.

THE GREAT EASTERN.—The London *Engineer* states that the owners of the *Great Eastern* have received $70,000 from the New York consignees, though the accounts have not been closed to show the results of the trip to this country. It is however expected that the receipts from passengers and visitors will very nearly cover the expenses.

LAKE SUPERIOR MINES.—We learn by the *Miner*, that up to Oct. 18 last, 3,085 tuns of copper have been shipped this year from the Lake Superior region. This is more than was shipped last year. All the mines seem to be in a prosperous condition. All the companies are increasing the number of their stamps.