

THE
Scientific American,
PUBLISHED WEEKLY
At 123 Fulton Street, N. Y. (Sun Buildings.)
BY MUNN & COMPANY.

O. D. MUNN, S. H. WALES, A. E. BEACH.

Agents.
Federhen & Co., Boston. Dexter & Bro., New York
A. Finch, Philadelphia. E. B. Fuller, Halifax, N. S.
A. G. Courtenay, Charleston. S. W. Pease, Cincinnati, O.
Avery, Bellford & Co., London. M. M. Gardissal & Co., Paris
Responsible Agents may also be found in all the principal cities and towns in the United States.
Single copies of the paper are on sale at all the periodical stores in this city, Brooklyn, and Jersey City.
TERMS—\$2 a year.—\$1 in advance and the remainder in six months.

Scouring Castings of Iron.—Coatings with Zinc.

All castings of iron are surrounded with a scale which must be removed if the articles are to be galvanized or scoured bright. The way to remove this scale is to steep the articles for about 6 hours in a liquor composed of one part of sulphuric acid to ten parts of water, then take them out and scour them in warm soft water with fine sand. Some use the acid solution much stronger than the one described; it removes the scale sooner, but is more disagreeable to use.

Articles to be galvanized after being scoured bright and washed in warm clean soft water are dried, and are then fit to be dipped into the galvanizing pot. This is an iron pot placed on a suitable furnace containing molten zinc; the surface of it is covered with ground white sand or glass. This is to prevent the zinc escaping in the state of gas, it being a volatile metal. A vessel containing a strong solution of sal ammoniac, or the chloride of zinc, is placed beside the zinc pot, and into this is dipped (for about a minute) each article, previous to immersing it in the molten zinc. The articles must be cautiously and carefully handled in the molten zinc, in which they are kept from three to five minutes. After they are taken out of the zinc they should be cooled slowly, then washed in soft water. It is very difficult to make zinc take on smoothly, especially on chains for pumps.

Wire is galvanized or coated with zinc in the manner described, only it is reeled off a winch through the ammonia, or chloride of zinc solution, then slowly through the molten zinc, from which it is wound on another reel. It does not make much matter if a superfluity of zinc is roughly taken upon the wire as it can be smoothed by running it through a draw plate; but chains cannot be so smoothed. Sheet iron is galvanized in the same manner, and as the sheets can be rolled after being galvanized, a little roughness of surface does no harm.

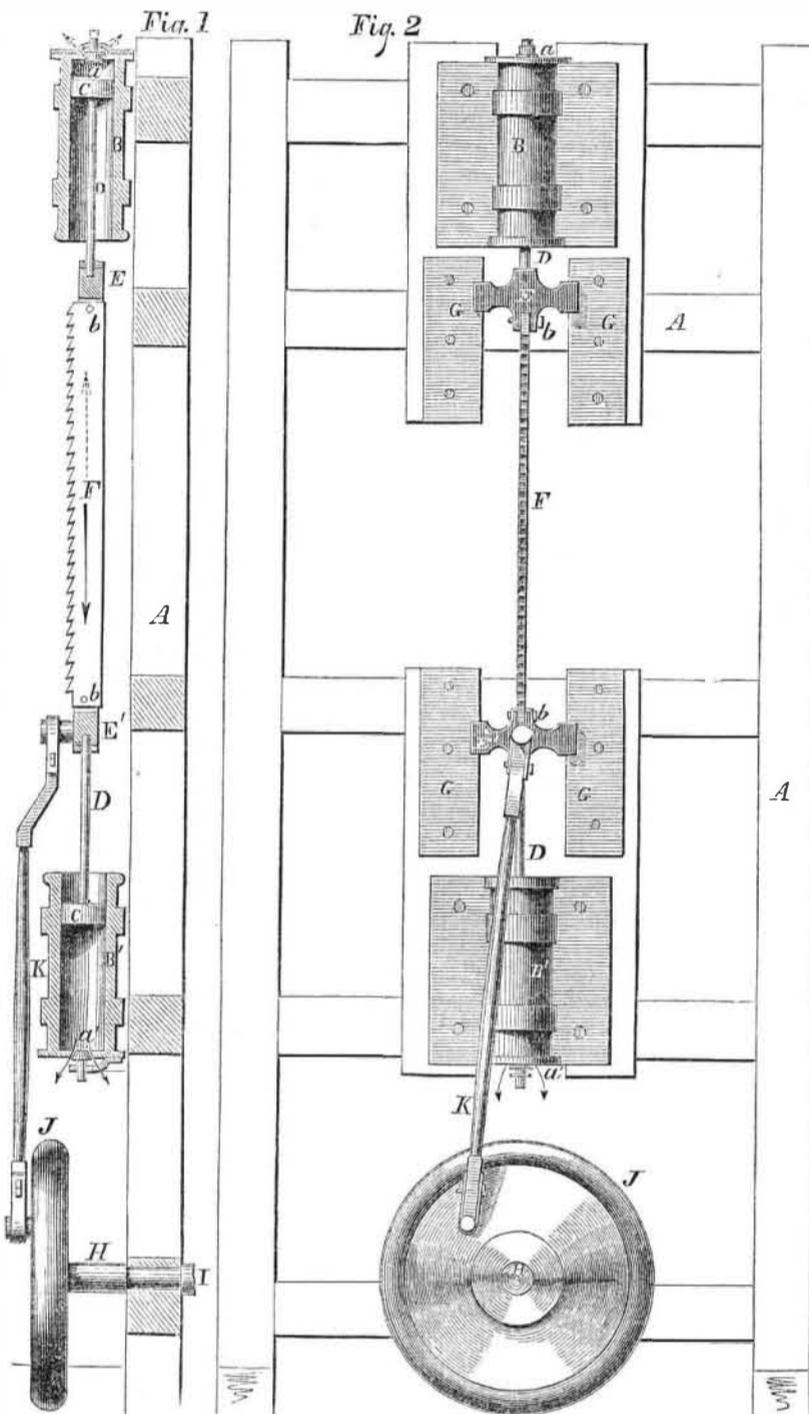
Boring in Hard Rocks.

In a brief article by H. A. Hildreth, in the *Mining Magazine*, published in this city, the great difficulty of approaching the fortifications of Sevastopol by sap and mine is attributed to the hardness of the rocks in the neighborhood of that city. The rock is *basalt*, which is nearly as hard as *trap*, and much harder than granite. The cost of boring in trap rock for minerals is about twice as much as in granite, and three times more than in sandstone.

Trap is among our hardest rocks, and it is this that forms the Russ and the new small block pavements of this city. A stupendous dyke of this rock, eight miles wide, commences at the Highlands of the "Nevisink," and flanks the west shore of the Hudson river for fifty miles above Jersey City. This dyke contains as much paving material as would suffice to pave all the cities of the United States for half a century to come. It is a fortunate thing for New York that such excellent paving stones can be obtained in such abundance and so near at hand.

It is reported that the British Government has made large purchases of gutta percha knapsacks manufactured by the American Gutta Percha Company, this city.

STRAINING SAWS BY ATMOSPHERIC PRESSURE.



On the 14th of August last, a patent was granted to A. Brown, and Abel Coffin, Jr., of Sabine City, Texas, for the excellent improved method of straining saws by atmospheric pressure, represented by the annexed figures—figure 1 being a transverse vertical section of the saw frame with the improvement attached, and fig. 2 a front view. Like letters on the figures indicate similar parts.

The improvement refers to that class of atmospheric straining of saws in which a cylinder is arranged at each end of the saw, with their inner ends open, and a piston in each, so actuated as to pull on the saw by simple atmospheric pressure, caused by the production of a vacuum between the pistons and the cylinder heads. The nature of this invention consists in the simple manner of producing this vacuum—atmospheric pressure having been applied to saws before, but not in the same way. The usual method of straining saws by atmospheric pressure by the use of two cylinders, is by connecting the closed parts of them by a pipe communicating with an air pump. The improvement represented simplifies such an arrangement; it obtains the necessary vacuum in the cylinders for straining the saw, and yet dispenses with the connecting

pipe and the air pump usually employed. This is accomplished by providing each cylinder with a free snifting valve, by which the reciprocating action of the saw itself is made to produce the necessary vacuum in the cylinders behind the straining pistons. F represents the reciprocating saw attached at its ends by pins, b, to cross heads, E E'. H is the revolving driving shaft of the saw, to which it communicates reciprocating motion by means of a pitman, K, loosely attached to the lower cross head, E', of the saw, and operated by a wrist pin on a wheel, J, made fast to the revolving shaft, H. The saw is made to reciprocate in a true vertical course by guides, G G, along or up and down which the cross heads, E E', slide. These guides are firmly connected to the fixed framing, A, of the mill. B B' are the vacuum cylinders, provided with heads, or closed at their outer ends but open at their inner ends. In these cylinders the straining pistons, C C', are arranged and connected by rods, D, to the cross heads, E E', of the saw. They are made to pull on both ends of the saw by ordinary atmospheric pressure acting on the faces of the pistons exposed to the inner or open ends of the cylinders, and thus straining the saw, or keeping it straight and free from buckling, a

vacuum being maintained between the pistons and closed ends or heads of the cylinder, by which means the simple atmospheric pressure is made available as a straining force, the pistons of course reciprocating with the saw, as in other arrangements of the kind.

a a' are puppet snifting valves, freely hung, and provided for the closed ends of the cylinders, B B'.

OPERATION—Previous to starting the saw to cut, or feeding the log, the saw receives a reciprocating motion—up and down—which suffices to expel any air from the inside of the cylinders through the snifting valves, a a', as shown by the arrows, fig. 1. The valves, it will be observed, open outwards, and are fitted snug in their seats, so that when the air is expelled the pressure of the atmosphere on the outside closes them, and thereby a vacuum is always maintained in the cylinders. The pistons, C C', in the cylinders are therefore exposed to the pressure of the atmosphere on their two inner ends, acting in opposite directions to stretch the saw. With valves and pistons carefully fitted to work air tight, a vacuum will be constantly maintained in the cylinders, and no air will be required to be driven out at each stroke. But even with a small leak, sufficient air cannot get inside between the seat and valve, to vitiate the vacuum to such an extent as would injure the straining power of the full pressure of the atmosphere exerted on the outside of the pistons. When the saw is not cutting, it will be observed that, by reciprocating it once or twice after it has been standing still, it will not buckle, in driving out any air that may have found access to the cylinder. When the cylinders are once cleared of air, the snifting valves will remain fixed and stationary, and the pistons will then have the full pressure of the atmosphere (15 lbs. on the square inch) acting on them to keep the saw perfectly strained. The improvement is a beautiful and simple one; it does away with the branch connecting pipes and air pump, and does great credit to the inventors.

More information may be obtained respecting it by letter addressed to the patentees at Sabine City, Texas.

A Man of Science Gone.

Professor Johnston, the author of "*Chemistry of Common Life*," and well known in the scientific world for his professional ability, died recently, in Durham, England, in his 59th year.

Three years since Prof. J. was in the United States, and delivered the Annual Address before the New York State Agricultural Society, at Syracuse. He was the author of a number of excellent works on Agricultural Chemistry, and was distinguished for his profound knowledge of agricultural science. He was highly respected in our country, both for his scientific acquirements and his manly virtues. All his works have been republished in this city; this shows the estimation in which he was held, and the practical character of his writings.

Coal of Recent Formation.

At Haroe Island, the Kane Arctic Expedition found coal apparently of recent formation. The grain of the wood was still perceptible, but it was interspersed with small masses of a very pure resin. The supply was limited in depth only by the frost, and was so loose that it could be shoveled up without difficulty. It was found to burn well.

Adulterated Food in England.

At the late meeting of the British Association, Dr. Pearson, in the chemical section, asserted that there were only two articles manufactured for food which were not adulterated, common salt and refined lump sugar. He challenged any gentleman present to add another article to the list.



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS
Issued from the United States Patent Office
FOR THE WEEK ENDING OCT. 23, 1855.

DOVE-TAILING MACHINE—John Bell, of Harlem, N. Y. : I claim the combination of the box, clamp, or frame, E, or its equivalent, for holding the pieces to be dove-tailed or tenoned, with the series of rotating cutters, substantially as described.

I also claim, in combination with the double inclined tables, the double set of rotating cutters, having the planes of the edges of the cutters working parallel with said tables, substantially in the manner and for the purpose set forth.

SCYTHE FASTENING—Cyrus Clapp, of Montague Mass. : I claim the fastening of scythes to snaths, by means of the concave socket, d, d. (fig. 4) and section of a ball, e e. (fig. 1) to which the scythe, g, is attached, and the center bolt, f, as described, the whole being arranged substantially as, and for the purposes specified.

FELTING HAT BODIES—Wm. W. Cumberland, of Newark, N. J. : I claim, first, the arrangement and combination in the manner substantially as set forth, of the hollow cone, F, and solid cone, G, placed within it; the larger ends of said cones being uppermost, having a wedging space between them of a proper size and angle, whereby the hat body, placed between them in the wedging space, will tend to hold itself by its own weight, in the space, as it is rolled between the cones, as fully set forth.

Second, the combination and arrangement in the manner, substantially as described, of the reciprocating yielding roller frames, L L, with the table, B, one of them having such a motion, around the shaft, D, as to croze, or change the position of the hat body by the friction of the rollers upon the hat body upon one side, and the friction of the hat body on the table on the other side.

Third, the combination of the weights, K K, the roller frames, L L, levers, I I and J J, and the pivots, j, j, attached to the cone, F, for the purpose of lifting the weight of the cone, F, and thus diminishing the friction of it upon the collar of the shaft, D, on which it rests below.

Fourth, I do not claim felt hat bodies by means of rubbing surfaces, carrying a roll between them; nor by means of an elastic cone carrying a roll.

But I claim as my invention partially felt hat bodies, enclosed, in their more tender state, in a hollow elastic cone of vulcanized india rubber, or other suitable material, lined with cloth, the larger and uppermost in which the hat body is placed in an open conical form, corresponding to that of the cone, F, as shown, so that bending or crimping, produced by the revolution of the elastic cone, between two surfaces, at a less distance from each other than the diameter of the cone, but not so near to each other as to cause the sides of the hat body within it to rub against each other, or the hat body, to form itself into a roll.

COAL LIFTERS—John B. Creemer, of Philadelphia, Pa. : I claim the dish, H, and feet, J, in combination with the screen, operating as described, and for the purposes set forth.

GAS REGULATORS—Julius C. Dickey, of Saratoga Springs, N. Y. : I claim the valve chamber, B, cast in one piece with the perforated plate, I, in combination with the adjustment of the valve place outside, as described, and for the purposes set forth.

DAQUERRETYPE PLATE VISE—Samuel S. Day, of New York City : I claim the combination of the clamp, e, with the screw rod, c, bow, d, and cam piece, f, to hold the daguerreotype plate between and between the lips, I, and J or K, and g, in the manner and as specified.

FINISHING CARPETS—Samuel Fay, of Lowell, Mass. : I claim giving to woven figured fabrics, such as carpets, the finished appearance derived from the application of heavy pressure, whilst placing the goods in a roll, for convenience of transportation, and without distorting the pattern, by an irregular undue stretching of the fabric, substantially as described.

CARD PRINTING PRESS—Thomas Harsha, of West Union, O. : I claim attaching the box, S, which contains the form, to the lever, G, and connecting said lever with the ink rollers, c, d, and feed rollers, M, as shown, so that when the lever, G, is moved, and the form brought over the ink bed, J, the paper will be fed over the bed, Q, on which the paper is printed; and when the lever is moved over the bed, Q, in order to print the paper or cards, the charged ink rollers will pass over the ink bed, J, whereby the ink bed is kept properly charged with ink, and the paper fed over the bed, Q, on which the paper is printed, and the paper or cards printed, by simply moving or operating the lever, G, as described.

I also claim passing the paper between two knives, T U, arranged substantially as shown, in relation with the lever, G, so that the printed paper or cards will be cut off in proper lengths as the form is pressed upon the paper, the knives cutting off a previous impression at each depression of the lever.

[The above invention is a printing press on a very small scale, intended for the aid of postmasters, merchants, and others, who have occasion to use business cards or stamps. By the peculiar arrangement of parts, the paper or cards are fed on to the type by the movement of the impression lever. The construction is quite simple and effective. Presses like these can be afforded at a very small cost. They will enable any person to become his own printer.]

MELONDRONE—Geo. G. Hunt, of Walcottville, Conn. : I claim the described construction, whereby two, four, or more sets of reeds may be operated by one and the same valve, in the manner set forth.

SAFETY ATTACHMENT IN FRONT OF RAILROAD CARS—Charles M. Hahn, of Washington, D. C. : I am aware that rollers have been suggested or described as forming a part of a safety attachment to railroad carriages, in combination with a device, which may perhaps be considered by the office as an equivalent of the bar, and in manner somewhat similar to my method. I therefore disclaim such combination as referred to by the office.

But I claim the peculiar and novel combination and arrangement of the vertical and horizontal rollers with the bar, as described and represented.

SEED PLANTERS—Daniel B. Neal, of Mount Gilead, O. : I claim the arrangement of the shovel, c, the slotted and grooved slide, a, and gauge slide, b, when constructed and operated in the manner and for the purpose set forth.

SEALING PRESERVE CANS—Stimmel Lutz, of Philadelphia, Pa. : I do not claim broadly a self-sealing can, with a roove prepared with a cement, nor do I claim a ground stopper and seat; nor a screw cap and mouth, made air-tight whether cement be used or not.

But I claim sealing a double sided can or jar at the outside, at or near the bottom, in the manner and for the purpose set forth.

PRESSING COTTON SEED FOR EXTRACTING OIL—Oscar Robinson, of Norriton Township, Pa. : I claim the application of sulphuric acid, or acids in general, to free cotton seed as it comes from the cotton gin, from all surplus and cotton fiber, previous to the extraction of oil from the seed.

MACHINE FOR SWEEPING GUTTERS, &c.—Robert A. Smith, of Philadelphia, Pa. : First, I claim an adjustable cutter, B, made to conform to, or correspond with the shape of the gutter to be swept, so constructed and arranged that it may be removed from and applied to the end of the shaft which carries it with facility, substantially as described.

Second, I claim the guard or gauge wheel, c, arranged so as to prevent the gutter brush from being carried too hard against or over the curb stones, so as to derange or injure it.

Third, I claim so arranging the gutter wheel by means of an angular axle, that the lowest portion of the tire, and the lower portion only, will come in contact with the curb stones, substantially as described.

MACHINE FOR COMPOSING AND SETTING TYPES—Wm. S. Loughborough, of Rochester, N. Y. : I claim, first, the presentation of the type cells in the machine, those of each case in the font, forming the arc or segment of a circle in the manner specified.

Second, the means above described, or their equivalents, which shall deliver the types from the various cells into the jaws of the transits, fixed to a wheel, or other rotary motion, for conveying the types from the slides, or their equivalents, to the galley or composing chamber.

Third, the combination of the lever, G, head, i, tappets, T, and springs, Y and S, with the line register, a, and its appurtenances; the lever O, rule or justifier, M, detent, g, and the index, N, and index plate, K, whereby the operator is enabled, simply by touching the keys, to do the entire business of composing types, and without a transfer of each line separately.

ELASTIC DIAPHRAGM STEAM PRESSURE REGULATOR—Joseph Woodruff, of Rahway, N. J. : I do not claim the convex or cup edged piston as it may have been used before.

But I claim the chains, H, as arranged in relation to the cupped edge or convex surface of the piston, for controlling and guiding the piston, and keeping it in its central position, without coming in contact with any substance to cause friction, when operated upon by the diaphragm, as set forth.

WHIFFLE TREES—Geo. H. Yard, of Trenton, N. J. : I claim the traversing slide, I, provided with a point fitted to the hole in the hook, G, in combination with a sliding pin, L, to fasten it, when the end of the slide is put into the hook to fasten the end of the trace on to the hook, substantially as described.

The Patent Office once more—Defence of the Secretary of the Interior.

MESSEURS. EDITORS—Under the head of "Encroachments on the Patent Office," its best friend, the Secretary of the Interior, is, to say the least, unfairly assailed, though the zeal of the writer, it is admitted, had some apparent reason in rumors "fast and thick" concerning the appropriation of a few rooms for the preservation of important records, which could no where else be preserved, and which only were taken upon the fullest consultation with the friends and acting head of the Patent Office, the President himself exercising a personal and supervisory interest. I receive and read your valuable journal regularly—an inventor—therefore justice to the cause you advocate induces me to request the insertion of the following: The Patent Office is not the property of inventors exclusively, but very largely the reverse—see the Secretary of the Interior's Report for 1853, as follows: "The amount thus far expended and appropriated (for building the Patent Office) is \$1,367,750, of which \$1,048,750 has been paid out of the Treasury, and only \$319,000 out of the Patent Fund." Besides this, near \$300,000, it is believed, has been further appropriated out of the Treasury, and that by the sanction of the present head of the Interior, towards the further construction of the building. Therefore, should any man, having the best interests of science and the promotion of the useful arts at heart, find fault? It is time enough when the least retardation of our business occurs. So far, this has not been the case in the slightest degree. I have conversed with the Examiners; they say, and I know it to be so, that neither their rooms nor their duties have been at all affected, whilst the models, model rooms, in short, everything pertaining to, and touching the interests of the inventors, remain intact, and this in accordance with the personal feelings and expressed wishes of the Secretary, as a further illustration of which, his Reports for 1853 and 1854 will amply vouch, and those who know anything about it, will say that nothing but urgent necessity would have caused him to have secured the small room occupied by the Indian Bureau, unless for the safe keeping of its archives, which contain evidences which but too many would rejoice to see obliterated. In conclusion, permit me to say that the ideas suggested in one of your late No's. of an independent Bureau of Patents, is worthy of consideration, and sound reasons why may form the basis of another communication. JUSTITIA.

Reply.

The above is a very lame defence of the Secretary of the Interior; but we have no doubt that it is the best and only one that can be conjured together. He says that the Patent Office building does not belong either to inventors or to the Patent Office Department, because Congress ordered its erection and the people paid for it; ergo, the Secretary has the right to turn the Patent Office out of doors, break up its business, suspend its operations, and cut the whole concern adrift; and he will do it, no doubt, if allowed to keep on much longer at the rate he is going.

How absurd the reasoning looks when applied, as it may be with equal justice, to any of the other Departments. There are the Treasury and State Offices, for example, noble buildings, built by order of Congress, and paid

for out of the public treasury. Those Departments have no stronger claim to the occupancy of their respective buildings than has the Patent Office Department to the structure specially set apart for it. The Secretary of the Interior would not dare to molest, or even suggest to the heads of either of the Departments first-named, that they had no right to occupy the rooms ordered for them by Congress. Yet why not experiment on them as well as on the Patent Office?

The Secretary of the Interior, it is claimed, recommended an appropriation for the further extension of the Patent Office; this is presented as evidence that he is the "best friend" of the Department and inventors, not their enemy, as charged by the SCIENTIFIC AMERICAN. What a noble and generous act, truly, for the Secretary to recommend an enlargement of the Patent Office—and then take possession of it himself! What a benevolent and self-sacrificing individual he is, to be sure!

We have all along insisted, as our readers well know, that various acts of the Secretary relative to the Patent Office, of which we have complained, would, necessarily, have the effect to retard and confuse the operations of the Department. We have charged him with utter incompetency so far as related to its management; and we have called upon the President to take the reins out of his hands and appoint a new, vigorous Commissioner. Our friend "Justitia" thinks it will be time enough for us to complain when the least retardation of business occurs. "So far," he says, "this has not been the case in the slightest degree."

We are surprised that the Secretary should permit any of his friends to promulgate such a glaring untruth as the above. Let any one look at the scanty list of patents which appear in our this week's journal, and see for himself what an alarming falling off in the business of the Patent Office has taken place. Let him look back for the past two months, and he will see that this decline has a steady downward progress. Three months have barely elapsed since Commissioner Mason retired, and Secretary McClelland assumed the dictatorship of the Patent Office, yet within this brief space of time, the amount of business performed in the establishment has fallen off nearly fifty per cent.; new business has, all the while, been pouring in with undiminished volume, but receives only partial attention; new applicants are subjected, in many cases, to outrageous delays; unfinished affairs remain in statu quo; the concern appears to be fast choking up, and has, apparently, almost come to a stand-still. These facts speak out in thunder tones of condemnation against the Secretary of the Interior. They establish, alas! too fully, the correctness of our assumptions. With such evidences staring him in the face, "Justitia" will find a fruitless task in apologizing for his "best friend" of the Patent Office.

Great Ocean Steamers.

The *Persia* steamship belonging to the Cunard line, recently launched at Glasgow; the *Adriatic* belonging to the Collins line, and the *New York*, belonging to C. Vanderbilt, now building in this city, will be, when completed, the largest merchant-steamers in the world. They will be about 5,000 tons burthen each, and will afford ample opportunity for proving the quality of each in the contest for the mastery of the Atlantic. The hull of the *Persia* is of iron, and her engines are to be the side lever kind. The *Adriatic* and *New York* are being built of timber. The former is to have large oscillating engines, the latter beam engines. The keel of the *New York* is straight, and so are all her water lines, and her center of displacement is amidships; the *Adriatic* has hollow water lines, and has her center of displacement 20 feet abaft midships. The former is built much stronger than the latter, and has more capacity for cargo. It is believed that the *Adriatic* has the finest formed hull for speed, and that it will be the fastest steamer afloat. Time, however, will try them all; their comparative performances will be of great importance to the commercial and engineering classes of all countries.

Durability of Iron Ships.

The iron ship *Richard Cobden*, which was built 12 years ago, at Liverpool, will repay a

visit from any one who is interested in iron ships. She has been 12 years in the East India trade, and has not had the slightest repairs done to her; has never made a drop of water, and will, to all appearance, last for an unlimited length of time. This vessel has completely set aside the old notion of A 1. for 12 years. —[Liverpool Mail.]

Military Literature—America Ahead.

The following clever extract is from the *London Athenaeum*:—"American papers are remarking on the absence of all literary effort in the Crimea, and are therein noting—very much to their own glory—a characteristic difference between the surroundings of an American and of an English army. The contrast is fair.—The self-laudation is not unjust. Our readers know that when the Yankees marched into Mexico they carried with them a printing press, and published a newspaper along the line of invasion. Across prairies, through dangerous passes, over mountain ranges, sometimes on mules, oftener on men's shoulders, occasionally in wagons—traveled press, paper, type and ink—editors, contributors, and pressmen—fighting, foraging, writing, working onward. Infinite were the uses of the press. It carried orders through the camp. Every morning the soldier read in it the story of the previous day. It anticipated the gazettes. It disseminated orders of the day; it perpetuated the gossip of the camp; reflected public opinion in the army; made known every want; supplied every information; exercised, inspired, and animated every heart. Had the Americans been in the Crimea, they would have had daily papers at Balaklava, Eupatoria, Yenikale, and Constantinople; and these papers reflecting the humors, incidents, and life of the camp—would have ranked among the best historical documents on the war. As it is, our soldiers in the Crimea are indebted to the London journals for authentic information of what occurs in the camp itself, and within a mile or two of their own tents. Jonathan is far ahead of us in some respects."

Benefits of the New Steamboat Law.

The "New Steamboat Law" works well on the Western rivers, as is seen in the great diminution of the number of fatal disasters. The inspectors at New Orleans report, that during the year ending September 1st, the number of boats subject to their inspection have carried six hundred thousand passengers; yet there has not been an explosion of a boiler or collapse of a flue, nor have any lives been lost on passenger boats from the effects of steam or collisions. The report at Cincinnati is almost, if not quite as favorable.

The steamboats on our Western rivers, which before the new law went into force, were justly considered no better than floating magazines of destruction, have become as safe and well managed as any steamboats in the world. We challenge the steamboat records of any other part of our country, or any other country, to show such an immunity from accident, such safety of life, as the report of the inspectors on the Ohio and Mississippi rivers for last year. Three years ago the public were horrified almost every week with the terrible details of Western steamboat explosions; now 600,000 passengers have been carried during the past year without the loss of a single life; what a happy change. The inspectors deserve great praise for the manner in which they have performed their duties, and we hope they will never cease to be vigilant, strict, and fearless in enforcing the law.

Lanterns for Lighthouses.

The Philadelphia *Ledger* states that Messrs. Merrick & Son, of that city, are now making three great lanterns for lighthouses on the coast of Florida. The largest—12 feet in diameter by 10 feet in height, is intended for the lighthouse on point Jupiter. This lantern is of iron, and is to contain the purest plate glass. It will contain a Fresnel light of the first magnitude. A second lantern is for the lighthouse on Cape Florida, and will contain a Fresnel light of the second magnitude. This lantern is 10 feet in diameter by 8 1-2 feet high. The third is designed for the iron lighthouse on Coffin's Patches. The foundry of Messrs. M. at this time presents a busy scene, there being 470 workmen engaged in its several departments.