Scientific American

NEW-YORK, MARCH 27, 1852.

Government Rewards for Discoveries.

Many entertain the opinion that it would be better to abolish the patent laws altogether, and adopt a system of government rewards for useful discoveries. If we are not much mistaken, the New York Daily Times advocated a system of this kind, not long ago. There is one scientific gentleman, of no common fame, who has—that is, Dr. Jackson, of Boston, in his address before the American Institute at its last Annual Fair. We have, upon various occasions, stated that such a system could not be carried out fairly—that it was impracticable, and liable to the grossest abuse. We expressed such sentiments when commenting on the Report of the present Commissioner of Patents, wherein he recommended rewards to be applied out of the Patent Fund for certain inventions. Dr. Jackson, in his address above alluded to, stigmatized scientific men for taking out patents; we rebuked him for so doing, and defended the acts of such men as James Watt and Dr. Hare. He thought the system of the Paris Academy, as displayed towards Daguerre in granting him a pension for making his discovery, superior to Patent Laws, and one he would like to see adopted in this country. While we have no objection to academies, societies, and persons offering rewards for useful inventions, we most assuredly affirm, and have affirmed, that a national system of rewards for inventions could not be carried out. We do affirm that the present patent system of our country, with some amendments in the laws respecting court trials, and the conducting of the affairs in the Patent Office, is the best and only rational mode of affording protection to inventors, and of placing within their reach the means of being compensated for being the first to bring out their improvements.

A case is now before our country, which gives force to the correctness of the opinions we entertain, and it is one with which Dr. Jackson himself is associated.

Every person in our land has heard of the "Ether Discovery," as it is termed; that is, the application of ether by making patients inhale it, so as to render them nervously insensible while undergoing surgical operations. The discovery, we believe, is a most valuable one, but there are no less than three claimants of it, two of whom are now living the other, Dr. Wells, is dead. The Legislature of Connecticut examined the claims of Dr. Wells, and awarded him the honor of being the first discoverer. The Paris Academy of Sciences examined the claims of Dr. Jackson, and awarded him a gold medal and the honor of being the first discoverer. Dr. Morton, the other claimant, made an application to the present Congress for a reward for being the first discoverer, ether being used in the army and navy of the United States. We see it stated, in many of the papers, upon reliable authority, that a majority of the select committee, to whom the petition of Dr. Morton was referred, have agreed to recommend that $100,000 be granted to him for his useful discovery. As soon as Dr. Jackson heard that Dr. Morton had made application for the reward, he posted off to Washington and opposed his claim. The minority of the committee, we have been informed, are in favor of dividing the reward, granting $50,000 to each. The controversy between Drs. Morton and Jackson has been bitterly personal, and the whole affair, in our opinion, is a keen reproof to Dr. Jackson for the sentiments he has uttered. We do not pretend to say who is the real discoverer; we do assert, however, that it would be an act of positive injustice to award Dr. Morton the $100,000 and Dr. Jackson nothing. If Dr. Wells had been alive, he perhaps could have established his claim against both of these gentlemen. The application of the ether was not of much consequence before chloroform was discovered and applied as a substitute, and this is the invention of another person—a Dr. Simpson, of Edinburgh. Now, if the Congressional committee desire to be generous on a broad principle, and if chloroform and not ether is employed in the navy and army of the United States, we advise a donation to Dr. Simpson, as well as Drs. Morton and Jackson.

This case gives us an opportunity of showing how superior the Patent Laws are for affording remuneration and justice to all parties—inventors and the people,—in comparison with any system of government rewards.—Here, allowing Dr. Morton to have secured a patent for his discovery, all he has to do to get remuneration for its use by any person, is to bring an action of damages against the person who used it. An opportunity is then afforded, also, to a counter claimant, to establish his rights of priority before a competent court of justice. This system of committee caballing and manœuvring, to lighten the pockets of Uncle Sam, and to get special monopoly privileges, we do detest. Give us broad, just, and workable laws, and let them be carried out faithfully—none of your special systems, where favors are sought for and obtained by particular parties in a particular manner.

It may be as well to add here, that Mr. Guthrie, of New York, is also a claimant with Dr. Simpson, for the discovery of chloroform. There is no way of settling such matters so well as by a trial at common law—the way provided by our Patent Laws.

The Human Hair, Its Treatment, Oils, &c.

Among the races of men, there are hair of nearly all colors—black, brown, yellow, red, and all the intermediate shades; green hair belongs to certain sea kings and mermaids; blue beards, however, are not uncommon in Persia; a blue and yellow make a green, but fashion has not yet brought this color of hair into market, although things of a more ridiculous complexion have at times been marks of *haut ton*, and so may green hair some day hence. Black is the most prevalent color of the human hair—then brown. There are lank hair, woolly hair, curled hair, soft hair, coarse hair, and all the intermediate curls, and quality of fabric. A hair is a tube, and the colored barber who mounted on his sign, Cato Jackson, "Capillary Abridger," had a strong taste for scientific nomenclature. The color given to the hair is by an oil which passes up the interior of the tube. Iron is the principle coloring ingredient in it. The hair of the human head is generally lighter in childhood than in middle age, and it grows grey as old age advances. Many instances are recorded of hair becoming suddenly gray by fear and grief. Byron has well pictured one case in his "Prisoner of Chillon,"

"My head is grey, but not with years,
Nor grew it white in a single night."

The cause of change in the color of hair is not very well known.

It is believed that a man of 50 years of age will, by our custom of cutting the hair, have cut from his head about 13 feet of hair in twenty-five years, and he will have shaved off about 8 feet of beard. Physiologists deprecate the custom of cutting the hair of the head, and shaving that of the chin. They say that cutting the hair diverts the blood from the brain to the surface of the head. Bichat attributes superior strength to the ancients owing to their allowing the hair to grow with out cutting.

When the hair falls from the head, its reproduction is almost like that of the teeth when lost by disease, extremely difficult—perhaps impossible. Many causes contribute to make the hair decay early in some people. Intense study and mental labor tend to bring early baldness upon soft-haired people especially. Men of literary and scientific pursuits, become bald more early than those engaged in physical employments. People having strong, hard hair, do not become bald as early as those who have soft hair. We are speaking of the early decay of hair apart from disease. Dandruf makes the hair decay early, and there are many other cutaneous diseases, which act destructively upon the hair. Females do not become bald as early as men. Thin hair on a man is not looked upon as a marked defect, nor is a heavy crop considered a decided mark of beauty. It is otherwise with females; as of old, the long hair of woman is a crown of beauty—a glory unto her. To preserve the hair for a long period, the head (while the hair is strong and good), should be kept clean by being washed often and carefully brushed, especially on the crown, every evening. By washing the head with a solution of borax, say twice per week, those predisposed to dandruf will find a perfect cure for it. An article in the "Philosophical Transactions," says that if the ashes of vine branches are boiled in red wine, and this (the liquid) applied, milk-warm, to the hair every evening, it will prevent the hair from falling out. A mixture of good brandy and olive oil is good to prevent the hair from falling out, by applying it with a sponge before going to bed, and brushing the head well. The head must be well brushed when these lotions are applied.

A plaster of honey and wood ashes, we have been informed, will make the hair grow on bald places. It is put on at night before going to bed. It is also stated, in the work referred to, that if a quantity of the finest roots of the common burdock, taken out of the ground in the month of December, are bruised in a marble mortar and boiled in white wine, say a handful of roots to a pint of wine, for fifteen minutes, then strained and the clear liquor applied, slightly warm, to the head every night before going to bed, that it will make baldness disappear. There are many known cases of persons who had their hair restored partially—a little fine hair came up, remained for a little while, and then vanished. When the hair is once lost, we believe it is not possible ever to restore it as it was before; there may be some cases of perfect restoration, but we know of none.—The best way to treat the head, to preserve the hair, is to brush it often, but not with too hard a brush, and wash it every night or morning with clear cold water, and rub with a towel till it is about dry. Use a little pure olive oil, but very little, to anoint the hair. Perfumes are an abomination to people of exquisite taste and cleanly habits. As Beau Brummel said, "pure air and country washing" were his cosmetics. Fevers of every kind affect the hair and make it fall out. After a fever or during the fever, the hair should be shaved or cut short, this prevents it from falling out.

There are powders for taking off hair. These are made of unslacked lime and orpiment. This is moistened with water and applied in the state of a paste. Unslacked lime itself forms a depilatory powder.

The hair can be colored by a solution of the nitrate of silver, dissolved in water, and applied with a sponge. It makes brown hair black, red hair brown, and white hair of a reddish-brown. The liquid should not be allowed to touch the skin. A mixture of lime and litharge made into a paste with water, and applied to grey hairs, will render them black. It should be applied before going to bed, and the beard or whiskers tied up in a cloth. It takes considerable trouble to brush out the stuff next morning, and it renders the hair harsh, a little olive oil is then necessary to soften it.

To make a beautiful oil for the hair, take a pint of olive oil and bring it up to 200° of heat in a clean pan, (not iron), and add half an ounce of pearlash and stir well for ten minutes. Take it off and set it to cool, when cold, a sediment will be found at the bottom. Pour off the clear through a cotton cloth, and put it up in a bottle for use. The pearlash combines with the margarin acid in the oil, leaving the olein; this will not get thick and will be free from odor. It can be colored red with garancin, (a preparation of madder), but hair oils should never be colored. All the hair oils of the perfumers are either of a red or yellow color. This is to please the eye of the buyer, who mistakes an adulterated for a superior article. Hair oils should be clear and nearly colorless. By exposing the olive oil, refined as described, to the sun, in well corked bottles, it will soon become colorless, limpid as water, and exceedingly beautiful. Any person can thus prepare his own hair oil.

An excellent way to treat the head is to wash it every morning with cold water, and dry it well, rubbing it stiffly with a coarse towel. When the hair is dry, put on a little of the prepared oil described, and brush well, but it is not best to use too hard a brush. On every Saturday evening the head should be washed with half an ounce of borax dissolved in a quart of water. This will form a soap with the oil in the hair, and when a good lather is made, wash all off in cold water, and dry well with a coarse towel, then brush it down and sleep on the subject. Next morning it should be anointed with the prepared oil spoken of. No oil is required to be used by some people; no more should ever be applied by any person than will barely suffice to take off its harshness and render it smooth and soft.

An interesting chapter will be given next week on customs respecting the hair, and national characteristics.

Knapp's Chemical Technology.

The third volume of this great work is now published by H. Bailliere, of London, and 290 Broadway, New York. This volume is the London edition, and not like the former two volumes which have been republished in Philadelphia, it will not be republished. This London edition is sold for $5 the volume, and cannot be republished so well at that low price here. It contains over 30 wood engravings, and is well printed, and has nine large colored copper-plate engravings.

The introductory chapter is on the principles of nutrition; the second paper is on the quality of different waters—and the supply for towns, different modes of filtering for city and domestic use illustrated. It is a most instructive chapter this for every family. It has another paper on milk, cheese-making, &c. Another for preparing meat for food. Another on the culture and manufacture of tea. Another on that of coffee, and it has a most elaborate paper on sugar making. The processes of sugar making and refining are more minutely described in all their branches than any other work on chemistry applied to the arts. We have often been asked the question, "is the third volume of Knapp's Technology published yet?" We have given its price and where it can be had—it is a work by itself. Mr. Balliere is the greatest importer of foreign scientific and mechanical works in our country, such as Prof. Muller's Principles of Physics and Meteorology, Graham's Elements of Chemistry, Weisbach's Mechanics, &c. Mr. Balliere is the agent for the sale of that new great London work by G. D. Dempsey, C. E., named "The Machinery of the 19th Century." Each part is $1,50, (we give the price, knowing that this is valuable information to our readers). Part 1 contains splendid engravings of the Columbian Printing Press; Tile and Brick Machinery; Bishopp's famous Disc Engine; Fairbank's Crane, &c. The drawings are all to scale—working drawings, and as such, the work is of immense importance to all our engineers and machinists. These works are for the mechanics' library.

The Fire Annihilator in Boston.

An able correspondent, (signing himself K.) of the "Boston Olive Branch," attended the lecture of Mr. Phillips, the patentee of the annihilator, which was delivered in that city last week. He asserts that Mr. Phillips' experiment "did not establish anything more than the public generally have been willing to allow, namely, that to a very limited extent—in certain circumstances, his machine, particularly, if of inordinate dimensions, may prove serviceable." The said correspondent is well acquainted with chemistry—this is very evident from his letter. He ridicules the idea asserted by the advocates of the annihilator, that the gas generated in the annihilator can support respiration; he considers the apparatus a catch-penny trick, and were it a Yankee invention he would call it a humbug, but as it is a foreign one, he does not like to be so blunt as with his own countrymen.

American Bad Rails.

Two or three of the accidents which have lately occurred on the Erie Railroad, were occasioned by the breaking of rails, and all such rails were of American iron. The company, in consequence of these accidents, have resolved to take up all the American iron, and replace it with a stronger article. There is about ten miles of it.

[We take the above from a worthy exchange, and have seen the extract in more than one paper. Is it really a fact that these accidents were occasioned by American bad iron?

Reported Officially for the Scientific American

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING MARCH 16, 1852

DOUBLE PLANE IRONS—By Fordyce Beals, of Pittsfield, Mass. : I disclaim all contrivances, arrangements, or forms of cap, or iron, which together compose a double iron, now in general use.

I claim the new and improved mode of fastening and adjusting the cap to the arm, by means of a projection and slot, forming a dovetail slide, giving new facilities for the operation, and also a level surface to the back of the iron. Also the elongation of part of the width of the cap, and its occupying the place of a removed part of iron, giving the operator new facilities in nicely adjusting cap to edge of iron, without removing it from the stock, the same as described, using for the purpose the aforesaid arrangements of parts, or any other substantially the same, and which will produce the same effect in like manner.

CARPETS—By Thos. Crossley, of Roxbury, Mass. : I lay no claim to the invention of making a carpet by the process of plying and ingraining, in connecting together the plys, or different layers of cloth, whether woven, either with plain (uncolored) or colored yarns. Nor do I claim the process of producing figures by printing them in colors. Nor do I claim to weave a carpet with an uncolored pile or warp, in the Brussels process of weaving, and afterwards printing the figures thereon in colors.

But I claim an ingrained, plied, printed carpet, made by a combination of the process of weaving in two or more plys, and ingraining the same. and subsequently printing the figure or figures on both sides of the same, as described—the discovery having been made by me, that the plying process prevents the colors printed on one ply from penetrating the other ply, so as practically to injure its other surface, to an extent which renders it unfit for the reception of colors, and use as a carpet, as stated, a great improvement in trade being the result of such.

[This patent takes us all aback.—ED.]

GRATE BARS—By F. P. Dimpfel, of Philadelphia, Pa.: I am aware that grate bars have been heretofore so constructed, of metal, that the loose ashes of the furnace might accumulate in cavities therein and protect the bar; but these have been found inefficient in practice, as any loose substance, merely accumulating in the cavity of a metallic grate bar, will shake off even with the edges thereof, and thus expose the bar to the action of the fire.

I claim the construction of grate bars for furnaces of clay, soapstone, or other refractory substance, for the purpose and in the manner specified.

SOFA BEDSTEADS—By J. T. Hammitt, of Philadelphia, Pa. : I claim, first, the combining the back of the sofa with the seat, by means of sliding pivots, in the manner set forth.

I also claim the sliding table and washstand, in combination with the sofa, substantially in the manner set forth.

JOINTS AROUND GLASS TUBES FOR PHILOSOPHICAL APPARATUS—By A. B. Latta, of Cincinnati, O. : I claim the method used for promoting the drying or evaporating of the liquid matter from the packing, by drilling holes in the barrel, the said holes being afterwards filled with solder.

I claim the method of making the joint at the end of the tube, which is effected by the friction of the packing around the tube, which forces the end of the tube against the bottom of the bore, and produces a joint, when the stuffing box is forced to its place, as set forth.

SHOVEL PLOWS—By James Lattimeer, of Chattoogaville, Ga. : I claim the combination of the wing, or half shovel plow and the adjustable scraper, arranged on different stocks in the said beam when the said scraper is arranged on the land side and rearward of the plow, and so that the grass, weeds, &c, shoved off by the scraper, will be thrown into the furrow made by the plow, the whole being arranged in the manner and for the purpose set forth.

COTTON GINS—By T. J. Laws, of Washington, Ark.: I do not claim the use of a mote brush, in combination with gin saws and the ordinary stripping brush, as I am aware that a cylindrical mote brush, revolving in the same direction with mine, has been used before.

But I claim making the mote brush (revolving in the direction described), with wings, so as to act by a current of air, as well as by contact with the cotton on the teeth of the saws, substantially as set forth, in combination with the saw and grate.

TREATMENT OF HYDRO-SULPHURETS, AND IN MANUFACTURING CARBONATES AND SULPHUR COMPOUNDS—By Chas. Lennig, of Philadelphia, Pa.: I claim the manufacture of carbonate of barytes and strontia, by processes as described, and in combination therewith, employing the sulphuretted hydrogen gas, evolved in the aforesaid process, for the producing of sulphur or sulphuric acid.

BURNERS FOR ARGAND LAMPS—By Austin Olcott, of Rochester, N. Y.: I claim arranging the grooved tube for adjusting the wick inside of the wick—and outside of the screw, that is, between the wick and the screw, and extending the pin from the wick holder, through the groove in the tube, into the score between threads of the screw, thereby dispensing with the perforated tube heretofore used upon the outside of the wick, and leaving the wick open on the outside, so that the material to be burned may have free and unobstructed access around the wick.

CUTTING SCREWS ON RAILS AND POSTS OF BEDSTEADS—By J. Parsons Owen, of Norwalk, O.: I do not claim, of themselves only, reversible cutter heads. But I claim constructing the reversible cutter-heads of arms, placed at right angles to one another, and carrying reverse right and left hand cutters (four) in combination with the eccentric snug and flanch of the screw spindle, for the purposes and advantages specified.

CONNECTING WASHERS WITH SPINDLES IN SPINNING MACHINERY—By Horace T. Robbins, of Lowell, Mass.—I do not intend to confine my invention to the application of the spring clasp, or holder, to the countersunk button, as the same holder may be used with a flat button, by having the bobbin countersunk, so as to let the bobbin down over the spring clasp, or holder, such, in fact, constituting the peculiar essence of my invention.

I therefore claim the spring clasp, or holder, or its equivalent, either with or without teeth, in combination with the spindle, or as applied and used therewith, substantially in the manner and for the purpose of holding the washer.

PLANING MACHINES—By Dan. Stearns, of Rome, N. Y. : I claim constructing, arranging, and operating a reciprocating plane, which cuts off the shaving by its forward stroke, and feeds the board by its backward stroke, and the clamps and gripes, or stops, with which such a plane is connected, as described, so that the board is fed at the back stroke of the plane, and planed at its forward stroke, a distance equal, or thereabouts, to the throw or stroke of the plane, whereby a greater length is planed by a given number of strokes of the plane, than in reciprocating planes that feed themselves by their own motion, as heretofore constructed; and also, the injurious shocks and strains are avoided, which, in those planes, are caused by the necessity of making the cut considerably shorter than the stroke.

CUPPING AND BREAST GLASSES—By Wm. S. Thomas, of Norwich, N. Y.: I claim the improved exhausting apparatus described, for surgical and other purposes, said apparatus consisting of a combination of a tubular spring piston with a barrel, substantially as set forth.

PATTERN CARDS FOR JACQUARD LOOMS—By Samuel T. Thomas, of Lowell, Mass., and Edward Everett. of Lawrence, Mass : We claim the combination of the buttons with the metallic card, as described —the buttons being so rivetted or attached to the card, as to allow of their being turned, for the purpose of closing or opening the holes to which they are respectively attached.

HOT-AIR REGISTERS—By Wm. Turton, of Bushwick, N. Y.: I claim the crown wheel, or section of a crown wheel, in combination with the pinion wheel, or section of a wheel, attached to the fans as set forth.

RAILROAD CAR BRAKES—By Thomas Walber, of New York City : I claim the arrangement of the followers (four) with their brake blocks (three), and two links, whereby the power, operating to separate the followers, throws the brake blocks on to each side of each wheel, for the purposes described.

Second, I claim the steam piston and rod, wedge, nut, and screw, in combination with the brakes, arranged and acting as described, whereby the said brakes can be actuated by steam from the locomotive, or by hand, as described.

INSTRUMENTS FOR INHALING POWDERS—By Ira Warren, of Boston, Mass.: I claim the instrument described, for inhaling powder, &c., into the throat and lungs, the said instrument consisting of a receiver with holes in its bulb, or end, covered by and working loosely in an exterior tube, which prevents any of the medicine from lodging in the mouth, substantially as described.

HINGES FOR STOVE DOORS, &c.—By C. J. Woolson, of Cleveland, O.: I claim the connecting and hanging of the door or doors, upon the fronts of stoves or grates, so that they may be opened or closed without marring the beauty or affecting the convenience of the same, in either case, or exposing to view the hinges, or inside of the door, as described

JACK CHAIN MACHINERY—By H Marshall & S. S. Cook, of Stamford, Ct., (assignors to John Bostwick, Jr., & Elbert White) : We claim the arrangement on the bed plate of the nipping jaw, the mandrel, and pin, with the turning lever (furnished with a pin) moving under the table in the manner. substantially as set forth.

[For the Scientific American.]
Extinguishing Fires in Ships.

On reading the account of the burning of the steamer Amazon, with the sad loss of life attending that heart-rending catastrophe, a train of reflection was re-kindled in my mind, such as has been presented to it on every recurrence of the kind, since the burning of the Lexington; and the question "cannot some means more effectual be devised to save our fellow men from such dire calamities?" has been brought home with force to my consideration. I would simply remark that the following is a general description of a fire engine, for which I made application for a patent during the past year, but which the Commissioner decided did not possess sufficient novelty to secure a patent :—

Construct in the lower part of the vessel a water-box of suitable size and strength, let it communicate freely and at all times with the water by a pipe, through the side or bottom, yet in such a manner that it may be closed if necessary, place it so low down in the hold that it may have two or two and a half feet water in it; in this box firmly secure four working cylinders, similar to those in ordinary fire engines, with the necessary valves attached to them, let the rods attached to the plungers or pistons of these cylinders connect with a crank, on the shaft of which, secure a bevel pinion; let the pinion connect with a driving wheel, so calculated that it will give to the pinions four revolutions to one of its own, let the shaft to which this driving-wheel is attached, extend upwards through the deck, about three feet, and terminate with a cap with chambers in it, to receive bars, or handspikes, similar to a ship's capstan ; use 8 bars, 10 feet long, made of tough unyielding timber, and so attached to the cap that when not in use they may be turned upwards and secured in that position. When wanted for use, let 40 or 48 men take the bars and press them around, and every revolution will discharge 16 cylinders ; let the cylinders be 14 inches diameter, with 12 inch stroke, and each one will contain 1764 cubic inches, the whole 16 containing 28,224 cubic inches, equal 130½ gallons; let the men make two revolutions per minute and they will discharge 261 gallons, equal to 4½ hhds. of 60 gallons each, during that minute. There is little doubt, that under such trying circumstances, they could make double that number, but I will take that as the average of speed. Place one of these engines in the bow, and another in the stern of the vessel, as far from the region exposed to the fire as they can be; man them and set them at work, and in ten minutes they would discharge 5,220 gals., or 87 hhds. of water, on the burning mass; and could not any of the ill-fated vessels whose destruction has been recorded, have been saved from their fiery doom by such a flood? From each of these engines, let two discharge pipes, 1½ inches in diameter, terminate in the most exposed part of the vessel, with a hollow globe of about 10 or 12 inches in diameter perforated with numerous holes of a proper size, always open, so that the moment the engines start, the water will be sent to the spot where it is needed, without any exposure of men to direct it there. When these pipes are not needed, they may be closed, and ordinary hose attached to other discharge pipes, or all may work together. I have said nothing about power, for in such a crisis despair itself would nerve every man and woman on board, to exert twice or thrice their usual force, and the great danger would be, that the machinery would give way under their frantic exertions, unless securely guarded against.

I have noticed, in all records of burnt vessels, when allusion has been made to their fire engines, that in a few minutes they were rendered entirely useless, on account of the intense heat, being directed, as they must be, from a position near the fire ; and in most cases the engineer is the first officer driven from his post; but in this case the last who would be driven from their posts would be the men working the engines.

The readiness with which such an engine could be put in operation would be greatly in its favor, for, in ordinary cases, the first 8 or 10 minutes after the first alarm decides the fate of the vessel; and in this case, as the engine is always in readiness, not one minute would elapse before the streams would be pouring upon the fire, and that could be done, too, by the passengers themselves, without the direction of the officers, whose presence might be needed elsewhere; for, doubtless, the passengers, to relieve the tedium and monotony of the passage, would occasionally operate the engine for amusement and recreation, and thus become acquainted with its mode of operation.

But suppose, as is sometimes the case, fire should originate low down in the hold, so that it would be necessary to flood the vessel; to meet that case, let a four-inch pipe, prepared for the purpose, with a stop-cock or valve, communicate with the hold from the water box; open these valves, and the vessel would soon be flooded. while, at the same time, the engines might be pouring the water down the hatches.

Again, suppose that instead of fire, the vessel has sprung a leak; let there be prepared for this event a suction pipe, connecting the engine with the well; stop the pipe that supplies the box with water, and use the engine for a force pump. With two engines, or even one of this kind, could not the Helena Sloman have been saved? JOSHUA CLEWES.

Elmira, N. Y.

The Yacht America.

Some time since, an English paper, envious of the fame of the yacht America, started a report that the purchaser of that beautiful craft was disappointed in her, and was anxious to sell her at a reduced price. This report, which was eagerly seized upon by the English papers, was, without doubt, unfounded. It will be seen, by the following extract of a letter, dated Malta, Feb. 6, that the performance of the yacht, on her Mediterranean voyage has been highly satisfactory :—

"The America, the wonder of the day among yachts, arrived here on the 2nd inst. She came in in beautiful style, after laying-to for four hours in a heavy gale from the N. N. E. Her noble owner, Lord de Blanquiere, is loud in her praises as a vessel of remarkable speed and buoyancy. She will be within four points of the wind and do her fifteen knots an hour with ease. Since leaving England she has had a fair share of heavy weather, and had there been any truth in the prognostics of her detractors, that her masts would be carried away in bad weather, and other similar follies, there was every possible opportunity of their being realized. But the pretty craft nobly did her duty, doing her 14 knots for a whole night, when running with but her jib set, and setting all bad weather at defiance. During her stay she has been visited by numbers of persons. The America will proceed to-morrow to Alexandria."

Liquors Made in the United States.

The Census Report gives the amount of whisky made in the dominions of our Republic at 42,133,955 gals.; rum, 6,500,500 gals.; beer, 1,177,924 gals.,—total, 49,812,379 gallons of whisky, rum, and beer. The amount is more than two gallons for every man, woman, and child in the country, per annum. A great deal of this is exported, but perhaps we import more brandy and wine to make up for it. New York and Pennsylvania are the great distilling and beer making States in the Union. Some consider beer to be a healthy beverage, others do not.

Gum Elemi.

This is a concrete resinous exudation, of which there are several varieties. The gum elemi of commerce is said to be furnished by Amyris hexandra of the West Indies. It is also said to be furnished by the Canarium of balsamiferum of Ceylon, and by the Icica icicariba of the Brazils. It is imported in cylindrical cakes covered with palm leaves; but, as it is scarce and costly, it is sometimes adulterated with common fir-tree resin. Its chief use is to form pastilles, or to burn as incense : it has been recommended as an ingredient in ointments, and also in some kinds of varnish. Fresh elemi is soft and viscid, but becomes hard and brittle by cold and by age; it is yellow, translucent, and of a peculiar odor, somewhat resembling fennel : it yields a volatile oil when distilled with water. It contains about 60 parts of an acid resin, soluble in cold alcohol, and 20 parts per cent of an indifferent crystallizable resin soluble in hot alcohol.

Maryland Institute---Chemistry.

We learn by the Baltimore Sun, that Mr. Campbell Morfitt, author of "Applied Chemistry," is now inducted regular Professor of Chemistry in the Maryland Institute. His opening lecture before the institute is said to have been a brilliant one. In speaking of chemistry he said :—

Chemistry is a material relative of all—a great storehouse, filled with knowledge suited to the wants of all. Chemistry is the only true socialist; for while it furnishes benefit to every community, it is upon fixed rules, which neither policy, persuasion nor legislation can change. She is immutable in her ways, acting as naturally as astronomy; with greater precision than mathematics; greater certainty than human jurisprudence; more universal than justice; with greater industry than art or handicraft, because her operations never cease; and with as much benefit to mankind as all the theories of faith, because in her works she manifests by unvarying attributes, and by her faithfulness of universal good, the unmistakable existence of a first great cause—a Providence.

Chemistry brings its aid to medicine—points out the evil and recommends the remedy; teaches how to fix dyes and colors; how to temper iron and steel; to mix and perfect the different preparations of the chandler, the glass maker, the refiner of metals, of sugar, and of all other substances; enters into every ramification of the labors of the living, and is sometimes called to lift its torch of light over the grave, to see if the stealthy hand of crime had added no drug to hasten the departing hour of the dead.

It is, therefore, not a confined art, but a universal agent. It has not a limited field for its operations, but an unbounded plain. In short, its usefulness extends to all the wants of man and its boundaries are co-extensive with nature itself.

[How true this is! We have heard novices in science—enthusiasts in mathematics assert that mathematics alone was *a true science.* This is a great error.