There were filed last year about ten thousand applications, the increased fee on which paid, of course, *fifty thousand dollars*. The whole expense of the Board and increase of salaries was but a trifle over twelve thousand dollars. It will thus be seen, that the inventors have already paid four times the increase in the expense to the Office. Not only this: under the operation of the law as it now stands, the Office has accumulated, within the past two years, a surplus fund of nearly *one hundred and fifty thousand dollars!* What reason, then, is there why this addition of $10 should be made to the fees? There is no good reason whatever; and for one I enter my protest against it, and call on the Senate to protect us from this wrong. AN INVENTOR.

New York, May 4, 1866.

Bills Concerning Patentees.

On the 2d of May, the following bills were reported in the House of Representatives:—

THE PATENT OFFICE AND PARIS EXHIBITION.

The regular order of business, being the call of committees for reports, was then taken up.

Mr. Jenckes from the Committee on Patents, reported a bill providing that upon appealing the first time from the decision of primary Examiners to the Examiner-in-Chief in the Patent Office, the applicant shall pay a fee of ten dollars.

The bill was considered and passed.

Mr. Jenckes, from the same Committee, also reported a bill to give increased pay to the Examiners and Assistant Examiners of Patents, from April, 1861, to August, 1865.

Mr. Washburne, of Illinois, required an explanation, which brought out the fact that the bill was to pay certain clerks for performing the duties of a higher grade.

Mr. Harding, of Illinois, compared it to an effort to pay colonels who act as brigadier-generals the pay of the higher rank, and moved to lay the bill on table.

The motion was agreed to.

Mr. Chanler from the same Committee, reported a joint resolution authorizing the Secretary of the Interior to appoint three Commissioners to examine and report on the patented machinery and inventions that may be exhibited at the Paris Exhibition of 1867, with power to employ the necessary draughtsmen and photographers, the expenses not to exceed fifteen thousand dollars.

Mr. Washburne, of Illinois, opposed the joint resolution, arguing that there was no necessity for it, and that it was only an attempt to draw money out of the Treasury to pay the expenses of three high-flown and elegant gentlemen who wished to visit Paris in 1867.

Mr. Boutwell stated that it was the rule in foreign countries to send to the Patent Office drawings of patents issued there, at a very trifling expense.

Mr. Chanler admitted that was so, but said there was considerable delay in sending drawings, and that this was a question of time. Drawings of patents were sometimes not received for three years.

Considerable debate ensued, after which on motion of Mr. Stevens, the joint resolution was laid on the table.

TYLER COTTON PRESS PATENT.

Mr. Hubbard, Connecticut, from the same Committee, reported a bill for the relief Philos B. Tyler, looking to the extension of his patent for an improvement in cotton presses, the same as though the patent had not been already extended.

The bill was opposed by Messrs. Upson and Washburne, of Illinois, and supported by Messrs. Hubbard, of Connecticut, Dawes and Broomall; the debate showing that the patent had been enjoyed for fourteen years, and that the patentee had received over $23,000 for his invention.

Mr. Washburne, of Illinois, moved to lay the bill on the table. The vote resulted: yeas, 68; nays, 59.

So the bill was laid on the table.

NEW INVENTIONS.

Hermetically Sealing Fruit Cans and other Vessels.—This invention relates to a new and improved mode of "hermetically sealing" cans, jars, or other vessels in which fruits, vegetables, meats, milk or other articles of food or other substances are placed, or the purpose of being preserved from decomposition or decay, and it consists in placing the vessel containing the fruit or other article of food or other substance which it is desired to preserve, within any air-tight chamber or receiver, from which the air, as well as that of the vessel containing the fruit, etc., is exhausted by means of an air pump, to the proper or requisite degree, producing a vacuum, or partially so, therein, and then hermetically sealing, in any proper manner, the vessel containing the fruit, etc, while in such vacuum, when the vacuum being destroyed, the vessel so sealed is removed from the chamber in which it was placed and its contents either or not subjected to the action of heat in any of the ordinary modes now practiced therefor, according as may be desired or deemed best. W. K. Lewis and J. W. Bailey, of Boston, Mass., are the inventors.

Centrifugal Governors for Steam Engines.—In this invention the balls are arranged so as to swing in planes, not radial to the center as hitherto, but at an angle of 45 degrees, or nearly so, whereby all the forces are economized and made to act in unison with each other. The swing of the balls is similar to that of a pendulum, their movement being in harmony with the motion of the governor, and not in planes across and antagonistic to it, as is now the case, with the ordinary centrifugal governors. By this means, the inertia in conjunction with the centrifugal forces causes the balls to fall to the rear of the point of suspension, thus acting to close the valve, while the momentum and *dead* weight are equally free to gain upon the point of suspension to open the valve. The great defect in hanging the balls so as to swing in radial lines from the shaft is that they are forced to retain their positions relative to the points of suspension, though at every variation is the speed of the engine the balls have a tendency to change such position with regard to the governor shaft, that is to advance or to fall to the rear of their points of suspension, but as the radial mode of suspension will not permit it, a force is consequently lost, which if economized, as it is in this invention, would be quick and effective in operation, but as it is so checked, a "jam" or straining and binding of the joints is produced, that greatly obstructs and prevents the free action of the little force remaining. David Shive, of Philadelphia, is the inventor.

Printing Press.—This invention relates to a new and improved printing press for printing both sides of a sheet simultaneously or during one passage of the latter through the press. The invention consists in a novel and improved means employed for operating the platens and in an improved inking and feeding mechanism; nearly all the parts being made to operate automatically from a single driving shaft, the necessary dwells allowed the platens to give the ink rollers an opportunity to pass over the forms, after each impression, and the feed mechanism made to work intermittently, or during the time only that the forms are free from or not in contact with the beds. The object of this invention is to obtain a simple and economical press for the purpose specified, and which will operate smoothly and well, and not be liable to get out of repair or have its parts become deranged by use. Martin G. Imbach, New York City, is the inventor.

Burial Cases.—This invention relates to a further improvement in coffins to that for which a patent was issued to Mr. Fogg on the 6th day of February, 1866, the said improvement being made applicable to a straight-sided coffin or burial casket, whose lid is secured by hinges or the like, to one edge of the case, and opening so as to display the whole interior of the casket. The present invention consists in removing a piece from nearly the whole of one side of the casket, which piece is secured to the lid—which latter opens like an ordinary trunk or hinged box lid. Julian A. Fogg, Salem, Mass., is the inventor.

Locks.—This invention relates to a lock which is locked and unlocked by means of a key with a hinged bit. This key is introduced through a tubular key hole which revolves in a socket in the back plate, and to the inner side of which a disk is attached which carries a guard for the purpose of tilting the bit of key as the same emerges from the inner end of the key hole, and which also carries a nose for the purpose of pushing back the bolt or latch. Said disk is held in position and prevented from turning spontaneously, or from being turned with another instrument besides the key, by one or more tumblers, which are adjusted by the bit of the key when the lock is to be unlocked. Charles Claude, 96 Walker street, New York City, is the inventor.

Apparatus for Elevating Water.—The object of this invention is to raise water by the action of the waves. It consists in a floating vessel or buoy, having a large area of surface placed in the water along a coast where the waves and swell will have free access to it, the vessel having an open tube fixed in its bottom, which tube is carried upward within a large tube, which is connected with a reservoir fixed above the waves, or with a pipe that is conducted into a reservoir on the shore. Each of these tubes is provided with a check valve to prevent the return of the water. The patentee calls this invention a buoy pump. It will be useful in supplying water for driving a water wheel or other purposes, and can be applied at any coast where there is a continual swell of the water and where there are waves. The floating vessel is guided within a frame or by means of the standards which support the upper tube or reservoir. A. N. Shattuck, San Francisco, Cal., is the inventor.

Head Block for Saw Mills.—This invention consists first in a novel and improved manner of operating the uprights or knee pieces of the head block, whereby the same may be moved a comparatively long distance under the short movement of the operating lever. The invention consists, second, in having the shaft by which the uprights or knee pieces are driven forward in sections and connected by clutches, so that one or more of the uprights or knee pieces may be moved as occasion may require. The invention consists, third, in an improved means of graduating the set of the log to the saw, and, fourth, in an improved mode of dogging the log to the uprights or knee pieces. J. M Stanton and F. Stanton, Manchester, Hillsborough Co., N. H., is the inventor.

Clock and Watch Escapement.—This invention relates to escapements of clocks and watches, and consists in constructing the pallet in two parts, each mounted in a different axis, and pointing in the same direction, their faces moving in parallel arcs. They are connected to each other by means of arms fixed on their axis and extending toward each other, their ends being united to form a point, whereby the motion of each pallet is regulated and controlled by the other. The invention further consists in making the escape wheel take hold of the pallets on the inside of their faces, and work outward from their centers of motion, the power increasing as the escape wheel moves until it leaves the pallets, whereas in the old escapement the escape wheel takes hold on the outside of the acting face of one of the pallets, the power consequently diminishing until it leaves the pallet. Benjamin Bacon, Morrison, Whiteside Co., Ill., is the inventor.

NEW PUBLICATIONS.

GENERAL NOTICES OF CHEMISTRY.—By Edmund C. Evans, M.D.—Published by Lippincott of Philadelphia.

This is the title of a work of over 400 pages, translated from the French of Pelinge Fremy. It is, as its title and preface, by its author, indicat, intended for "persons, who unaccustomed to scientific studies, wish to acquire a general knowledge of chemistry and its principal applications."

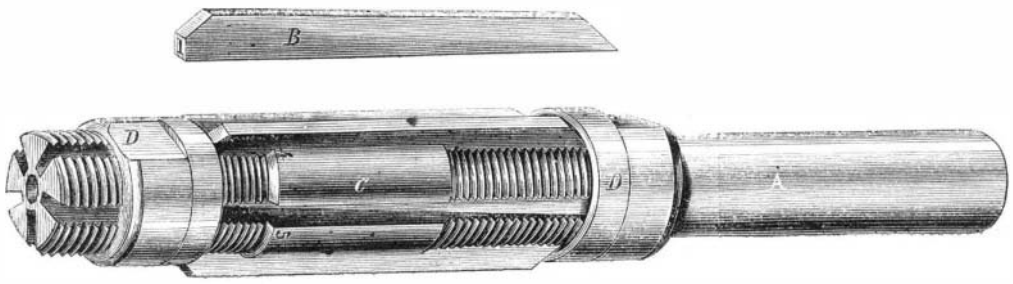
"Among the numerous facts which compose this science, we have chosen those which recommend themselves by their importance in the arts; these we have attempted to make clear by freeing them from formulas and details purely scientific which we have given in other weeks."

There are but few persons who received their education forty years ago who have any knowledge of chemistry; lawyers, clergymen, retired merchants, farmers and the general reader can from this work acquire a general knowledge of chemistry without puzzling their brains over symbols and formulas, which to those ignorant of chemistry seem like algebraic problems.

THERE are seventeen manufactories of paper collars in New England, and each girl employed makes about one thousand of them daily.

Improved Expanding Mandrel.

Every machinist must at some time have found trouble with the ordinary mandrels in use. Not only with mandrels, but with taps, rimmers, and similar tools. It often happens in shops where much repairing is done, as on railroads, that a great deal might be saved if the thread of a tapped hole could be made a little larger, when worn, instead of making it an eighth bigger, as is the usual plan in the absence of anything better for the purpose. The same remark applies to rimmers and boring tools; if the rimmer could cut a *little* larger the hole could be made round. And so on through a great many incidental cases within the experience of all.



CRITCHLEY'S EXPANDING MANDREL.

The subject of the present illustration is a tool that supplies the want in question. In detail, it is an arbor, A, having any number of grooves, five in the present instance—fitted with keys, cutters, or expanding tools, B, according to the nature of the work or office of the tool.

A screw thread is cut on the body of the mandrel, and a portion of it is left in the center, as at C, to strengthen and prevent springing. The cutters are beveled at each end, and confined in their places by nuts, D, so that it is only necessary to slacken them off and slide the cutters down in the tapered grooves to expand or counteract their outside diameters, and thus adapt them to all kinds of work. This can readily be made a most useful implement, as before stated.

It was patented through the Scientific American Patent Agency Dec. 19, 1865, by John Critchley, of Portsmouth, N. H. For further information address him at that place.

St. Elmo's Fire.

On the morning of the 7th of last month the curious phenomenon known as "St. Elmo's fire, was observed in the Irish Channel, by Captain Briggs, of the steamer *Talbot*. About one o'clock A. M. on that day the *Talbot* fell in, off the Isle of Man, with a heavy snow storm, which lasted three hours, during nearly the whole of which time from each mast head of the vessel, and also from each gaff end, a beautiful blue light was seen to proceed. During a part of the time a similar light proceeded from the stem head, and this light, being in an accessible position, was closely examined by Captain Briggs. "I found," he says, "that the light which appeared large at a distance, was made up of a number of jets, each of which expanded to the size of half-a-crown, appeared of a beautiful violet color, and made a slight hissing noise. Placing my hand in contact with one of the jets, a sensible warmth was felt, and three jets attached themselves to as many fingers, but I could observe no smell whatever. The jets were not permanent, but sometimes went out, returning again when the snow was heaviest. This was from one to three A. M. At daylight I carefully examined the place, but no discoloration of the paint was to be seen. The stem in this part is wood, with iron plates bolted on each side, and it appeared to me that the jets came out between the wood and the iron. The barometer stood at 29·1 inch. The ship is an iron one, but I did not observe any alteration or other effect upon the compasses. I have seen the same phenomenon abroad, but never before in these latitudes." Professor Frankland, of the Royal Institution, who has communicated Captain Briggs's account to the *Philosophical Magazine*, mentions that a thunder storm passed over Cheshire on the evening of the 6th, and points out that the brisk discharge seen by Captain Briggs to issue from various parts of his ship indicates a negative charge either in the surrounding atmosphere or in the snow flakes which were falling so thickly at the time.—*Mechanics' Magazine.*

INCREASED TAX UPON INVENTORS.

The Commissioner of Patents in his Annual Report to Congress, recommended an amendment to the law, providing that upon all appeals from the primary Examiners to the Examiners-in-Chief, that a fee of $10 be required of the appellant. The Committee on Patents reported to the House a bill based upon the Commissioner's recommendation, which was considered and passed. On January 1, 1866, there were over $130,000 surplus to the credit of the patent fund, which has been extracted from the pockets of inventors. There is, therefore, no good reason why this extra tax should be put upon this useful class of our citizens for the right to appeal.

Applicants for patents now pay enough for their privileges. We hope, therefore, that the Senate Committee will report against the House bill.

The measure is uncalled for, and we consider it unjust. If the Patent Office was running behind in its expenditures, then there would be some reason for the proposed bill. Instead of this, the surplus to the patent fund is constantly increasing.

BROWN'S SELF-CLOSING GOVERNOR.

When governor belts become unlaced and slip off the pulley, the engine runs away, and in a short time

gets up such a velocity as to greatly injure the work and machines. It is desirable to avoid such disasters, and the simplest and most direct agent for the purpose is the best.

The one here shown is the essence of simplicity The plan consists in making the bearing, A, the driving shaft, B, runs in, movable horizontally on the frame, C. When at work, the tension of the belt holds the pulley, shaft, and valve in the chest, D, below, in their proper position for driving the balls, and for supplying steam to the cylinder; but so soon as the belt slips off the bearing, A, is thrown around by the spring, E, acting on it, turning the valve in the chest by a square, F, formed on it at the top, so that the openings through which it receives steam are closed, stopping the engine directly. The valve can be set so as to close only partially instead of wholly, and thus maintain a moderate speed on the engine. These governors can be quickly applied to any engine, old or new, and will prove very satisfactory. Rights for Western and Pacific States for sale.

For further information address Messrs. A. & F. Brown & Co., Nos. 57 to 61 Lewis street, New York.

EXPERIMENTS WITH NITRO-GLYCERIN OR BLASTING OIL.

On the afternoon of the 5th, Mr. Nobel, the Swedish engineer and inventor, who has now become famous in connection with nitro-glycerin, conducted a series of experiments at Nolte's quarry, on Eighty-third street in this city, with the design of showing that his blasting oil is not so dangerous as it is reputed to be. The gentlemen present, about twenty in number, appeared to be pretty well satisfied with the demonstrations, and several of them who had had previous experience on the subject, seemed to fully indorse Mr. Nobel's statements. At the end of the experiments there was no fear of being near the oil, and the packages were freely handled by some who at the beginning were careful to keep at a very respectful distance; it reminded one of the ancient fable of the fox and the lion.

The experiments were as follows:—A small quantity of the oil was poured upon a flat piece of iron and struck with a hammer. A sharp explosion was the consequence, but an examination showed that only the oil directly under the face of the hammer was consumed. A small vial of the oil was packed with dust saturated with an inflammable substance, in small wooden box. The saw dust was set on fire by means of a fuse, and in a few moments the oil exploded, with a loud report, and the box was apparently annihilated. A lighted match was applied to a small quantity of the oil, and it appeared that in that way it could not be exploded. Wood naphtha (methylic alcohol) was dissolved in the oil, and it was shown that neither by heat nor by percussion could the mixture be exploded. When the mixture was washed with water, the naphtha was thereby separated, and the oil resumed its ordinary explosive properties. The concluding experiments were to illustrate the practical use of the oil in blasting.

The experiments lasted about two hours, no accident occured, and all passed off very smoothly, with the exception of the final tests, where there was some delay on account of the attempt to use fuses which were not properly prepared for burning under water.

We understand that the experiments are shortly to be repeated and on a larger scale.

MR. BECKWITH, Commissioner for the United States to the Paris Exposition, writes to Secretary Seward that there are as many assistant commissioners with him as he wants, and that persons really desirous of assisting the United States exhibition at that great fair can do so best at home.

STARCH PASTE.—This paste is often used by photographers for mounting their prints; but it is very apt to turn sour and moldy after keeping for a short time. If a little alcohol be mixed with the starch immediately after it has been dissolved, fermentation will be prevented, and the starch will keep good for a long time.