Improved Bow Iron.

The ordinary method of constructing carriage bows requires considerable skill, and takes a good deal of time to fit them all properly. Usually the bows are made of wrought or malleable iron, and the subject of this invention is to simplify as well as reduce the cost of construction.

The irons, shown covered with leather in the engraving, are received in a casting, A, which is for convenience formed of two pieces, or sides, fastened together, but it may be made of one single piece as well. The bows are made of stout hoop iron, and the ends inserted between the sides, A, and there secured by rivets. As one of the bows must be stationary, ribs are cast on one of the sides, A, which forms a sort of pocket in which the end of the bow is received; thus holding it in the proper position.

It is claimed that this plan of making the bow iron is much cheaper and better than the common one.

It was patented Jan. 16, 1866, by H. M. Bidwell, of New Haven, Ct., whom address for further information.

BIDWELL'S BOW IRON.

Photography on Silk

The following formula for printing on silk is one that, on the whole, has given me the greatest satisfaction, and is identical with the one published by me two years ago:—

Pour 20 ounces of boiling water on 100 grains of chloride of ammonium, and 60 grains of Iceland moss.

When nearly cold filter and immerse the silk in it for 15 minutes. To sensitize, immerse the silk in a 20-grain solution of nitrate of silver for 16 minutes. Let the nitrate bath be rather acid. When dry, prepare for printing by attaching the silk to a piece of cardboard a little smaller than itself, by turning the edges over and fastening with small bits of gummed paper. Slightly overprint. Wash in two or three changes of water, and tone in a gold bath made thus:—20 ounces of water, 2 drachms acetate of soda, 4 grains chloride of gold, and a few grains of common whiting. Filter and keep for 24 hours before using. Let the prints be toned slightly bluer than they are required to be when finished. Rinse them in water, and fix in a solution of hypo., 4 ounces to the pint of water. 20 minutes is ample time for fixing. Wash well.—*H. Cooper, Photographic News.*

White Enameled Plates for Photography.

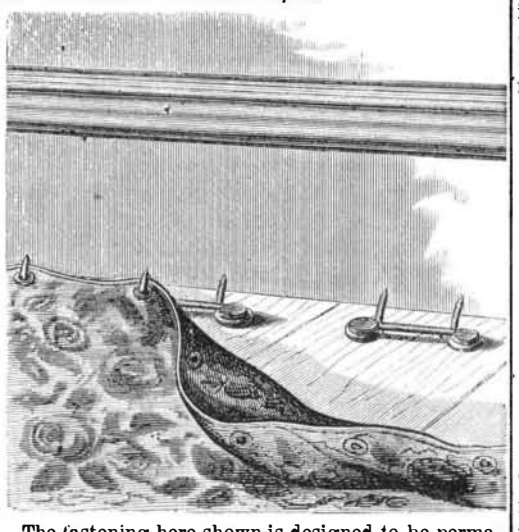
In a paper read before the Philadelphia Photographic Society by Mr. Wenderoth, he gives the following as the method by which he prepares white tablets for photographs. He coats the plate—a ferrotype or a glass plate—with a solution of albumen one ounce, water five ounces. He then adds to plain collodion so much fine precipitated chalk as will make a covering so thick as to prevent the plate from being seen through it. It should be poured on in the same manner as ordinary collodion, and care taken to prevent lines from being formed. Before coating, the collodion should be well shaken up, and then allowed to subside for a minute or two, to allow the heavy particles to fall to the bottom. When quite dry, coat with twelve parts of albumen and eight parts of water, adding two grains of chloride of ammonium to each ounce of the solution. Sensitize for one minute in a seventy-grain ammonia-nitrate of silver bath, then fume, print, and tone in the usual manner.

Stomatoscope.

"Among other novelties noticed in the *Med. Times and Gaz.*, is "a new instrument, to be termed the *stomatoscope*, exhibited last week to the Paris Surgical Society by its inventer, Professor Burns, of Breslau. A platinum spiral were (inclosed in a box-wood cup, to prevent the transmission of heat), brought to a red heat by the passage of an electric current from two of Middeldorps' elements, is placed in the mouth behind the teeth. The light reflected by a very small mirror is sufficiently intense to render the jaw transparent, so as to allow of the vessel proceeding to the roots of the teeth, the smallest specks of caries, etc. becoming visible. By reason of the transparency, even the labial coronary artery may in some subjects be seen at the level of the commissure, and its course followed. The instrument is therefore likely to form a useful means of exploration in dental affections.

ANDREWS & BURNHAM'S CARPET FASTENING.

Tacking down carpets is an antiquated and bad practice which ought to be abolished. Both the carpets and the floors are injured, thereby, and in some dwellings that have been occupied for years the boards are iron-clad. Tacks are always difficult to remove, and are, in many ways, not necessary to dwell upon, a weariness and vexation of spirit.



The fastening here shown is designed to be permanent. When once affixed to the floor it remains there and the carpet is slipped over it. It would be a great improvement in this fixture to have eyelets in the carpet which would prevent the wires from holding on one or two threads. A tack holds not so much by its body as its drawing into the wood. Carpets so put down can be taken up easily, swept, and put down again without going through the great labor of drawing tacks. We have no doubt but that housekeepers will appreciate this invention.

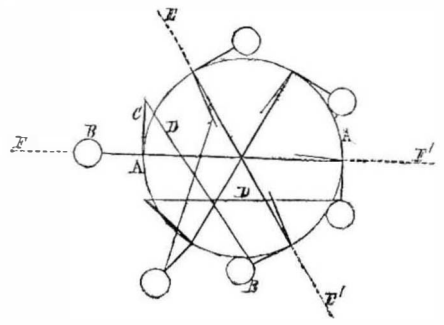
Patented August 29, 1865; address for further information J. P. Burnham, 1,159 Prairie avenue, Chicago, Ill.

Correspondence

Perpetual Motion.

Messrs. Editors:—The idea of perpetual motion is so fascinating to some that I am induced to throw a little light on one that has occupied a considerable attention—the one called Leache's, and exhibited along the Canada line. A friend of mine, Mr. B., saw it, and believed and invested in it. He examined every part and pronounced it a genuine "perpetual motion." He then without L.'s knowledge came to my shop and built a larger one with a 30-inch wheel.

I inclose a diagram and description of this wonder:—



A A represents the balance wheel; B the motive balls; C the angle irons connecting balls to the wheel and to each other; D D are the cords connecting the angle irons. D is represented only on part of the balls. It was supposed that the balls would fall out when at the point, E, but they would not until near the point, F. Now, when the balls, B, fall off from the rim of the wheel, they would, by aid of the cords, D, draw in the opposite ball, but it would not "come to time;" only two balls would remain out while four were in, and the wheel would not stir.

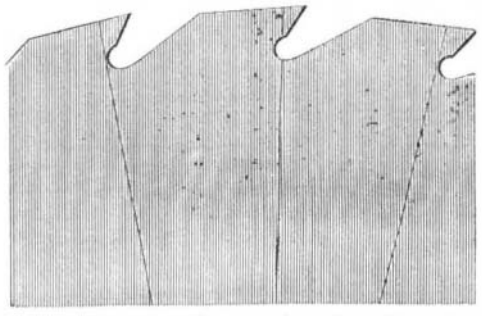
So much for this one; others compare favorably with it. S.

Brattleboro', Vt., April 27, 1866.

[This is one of the oldest forms of the delusion.—Eds.

Sawing Lumber.

Messrs. Editors:—In the Scientific American of March 31, page 212, I see an article from F. M. E., asking for information in regard to running circular saws. I have to say, that, first of all, the saw should run true on the mandrel, which is not always the case. The saw should range into the carriage half an inch in twenty feet. The mandrel should have nearly one-eighth of an inch end play. The guides should be one-sixteenth of an inch from the saw, or a little nearer, perhaps, in hard wood. The teeth should be



one inch and a quarter long, or deep, from the point. The under side of the tooth should range about eight inches from the center for hard wood, and ten inches for soft wood; or, if a large saw, twelve inches will not be too much.

I use a patent gummer, and cut out no more between the teeth than is necessary, leaving the tooth as strong as possible, as in the diagram. The top of the tooth should range one-fourth of an inch below the point of the next tooth back of it. I stand on the front side of the saw to file, and file all the teeth alike, nearly square across, but not quite, making the corners of the teeth on the side of the saw toward the carriage a trifle the shortest; this contracts the range of the saw into the carriage. When the teeth wear off on the side, pointed like a pegging awl, they must be swedged out or filed off and set again.

I have sawed lumber so smooth that you could scarcely count the cuts of the saw on it; and the smallest feed I have is three-fourths of an inch to each revolution of the saw. It requires less set for hard wood than for soft.

Years of experience have taught me that this is the proper way to keep a saw in order to do good work, and I find no difficulty in doing good work in all kinds of timber.

I also noticed on page 245, at the close of the piece written by T. D. Lakin, you asked the following question: "What is the object of giving end play to the mandrel?" I will answer: To make it self-adjusting, so as to range, the same as the governor on a steam engine as to speed or motion. When the saw is in operation, and is running out at the log, the log will crowd against the center of the saw; this will push the mandrel endways, changing the range of the saw as the front part is held by the guides; this will cause the saw to run into the log again, and if it runs in too much the slab, board, or plank will crowd on the back side of the saw near the center and push the mandrel out toward the log; this will change the range of the saw out again. This is very essential.

I am glad that this subject is brought before the public in your valuable paper, hoping that a free interchange of views and opinions will lead to a better understanding in this branch of business, where so much skill is required to become a master.

I do not approve of the shape of the teeth as T. D. Lakin represents them; they are too hooking and too cross-cutting. I wonder at the proceeding of some sawyers. If they file an up and down saw, they will file it nearly square across, and about straight on the under side, not hooking in the least; but a circular saw they file beveling enough to cut stove wood, with twice as much hook as it should have. I know of no reason why the teeth on one kind of saw should be different from those of another, when they are designed for the same kind of business. I am satisfied that saw teeth after the pattern I sent you will prove highly beneficial when they are thoroughly tested.

J. W. Churchill.

Pittston, Pa., April 9, 1866.

Cure for Cholera.

Messrs. Editors:—I send to you below the recipe of the Liverpool Dock Committee of 1849, for the cure of cholera. It was shown that 157 men of the north works, and 93 men at the dock yards who had been attacked by diarrhea or cholera, had taken the medicine prescribed, and the whole of them had recovered. Ten men of the north works, and thirteen at the dock yards, similarly attacked, but who had not taken the medicine, had died. In not a single case had the prescription failed.

Recipe for Diarrhea and Cholera.—Three drachms of spirits of camphor; three drachms of laudanum; three drachms of oil of turpentine; thirty drops of oil of peppermint.

Mix, and take a teaspoonful in a glass of weak brandy and water for diarrhea, and a tablespoonful in weak brandy and water for cholera.

Lose no time in sending for medical attendance when attacked, and inform the doctor of what has been taken.

Medical men assert, and experience shows, that this is an excellent remedy and well worth being kept on hand by every family. W. W. Hubbell.

Philadelphia, April 28, 1866.

Visibility of Steam.

Messrs Editors:—Will you, for the benefit of a certain party, answer the following question: Whether the vapor that a person can see coming out of an exhaust pipe from a steam boiler is, properly speaking, called steam? Lorenzo D. Redfield.

New Haven, April 30, 1866.

[Steam is the vapor of water; that seen coming out of the exhaust of a steam engine is steam, commonly speaking. Steam under pressure, confined, is invisible, and can only be seen when mixed with atmospheric air.—Eds.

Board Measure.

Messrs. Editors:—I find that there is considerable difference in the manner of reckoning the number of feet, inch-board measure, which a log will contain. In most of the books or tables the compilers have put down the number of boards which can be sawed from a log, allowing for saw cuts as well as slabbing; but none that I have seen give the number of feet, allowing only for a fair deduction for slabbing.

I have worked it in this manner. Multiply the diameter of the log by 3, divide this product by 4, then multiply the quotient by the length of the log, and the product will be the number of feet, board measure. For example, suppose a log measures 16 feet long by 12 inches through, $12\times3=36\div4=9\times16$ feet=144 feet.

I have found out a very simple plan to avoid reckoning even as much as this. Take a lumberman's rod which he uses in finding the contents of boards, use the side of it which is marked as the same length as the log, lay the rod across the diameter of the log, and whatever the rod calls for in board measure, multiply by 9 and the result will be exactly the same as I have reckoned it, above.

Heber Wells.

Paterson, N. J., May 1, 1866.

Hardening Dies.

Messrs. Editors:—In the Scientifc American of April 28th, James Ayres desires information on tempering a die so that it will not crack on the edge. The reasons given by you, undoubtedly, have something to do towards causing the edges to crack; but there are other reasons. In the first place, the steel chosen may not be suitable for that purpose; again, in forging, most likely the smith cuts off a piece one inch and one-half from a two-inch bar, about what he thinks will do. He makes it that, and flattens it to an inch, then holds it on the edge of the anvil, and by repeated heating and hammering reduces the edge to the proper thinkness. In doing so I presume the edge of the die was frequently bent back and forth when cold, perhaps nearly broken, and afterwards strained in hardening. Every blow struck on steel after it is past a red heat, is an injury to it, no matter for what purpose it is used. Many mechanics pound away on a chisel or a turning tool until nearly stone cold. When the tool breaks or is not satisfactory (which is sure to be the case), then the steel is bad, or not tempered good, when it is the forging, and nothing else. Perhaps Mr. Ayres makes his die too hot, and yet not uniformly so. If I had a die of the description given, to temper, I would keep it as cool as possible on the edges, unless I used the edge for cutting purposes. Then I should make the edge hot by not leaving it long in the fire. When dipped in water it should not be taken out until cold, as the edge cools first, and consequently shrinks from the outer edge (that being hard), and the heavier part hot when taken from the water. The expansion of the middle causes the outside to give way, as the heat travels back. You are right, Messrs. Editors, when you say cold water is as good as anything to temper in; you might say the *best* thing. All this humbugging about composition baths, and things of that sort ought to be (and is by some) classed with Salem witchcraft. Some years ago I made pistol work. When I commenced, the boss said the man who did the work before me annealed it in a cast-iron box, and thereby spoiled it. Some mysterious agency passed from the cast iron through the charcoal dust and entered the steel, and thereby converted it to cast iron. I said to my employer, I could remedy all that, and did. I hung up a horse shoe over the door. Of course, I simply did not burn the steel. P. McCormick.

Newark, N. J., April 30th, 1866.

[There are some who will differ with Mr. McCormick about hammering steel nearly cold. We will for one. We have never had better cutting tools than those hammered well at a black heat and tempered properly. If a die or other tool is put in the water and held at one point until it is half black and half red, it will in most cases crack at the water line. It naturally does so because it is pulled asunder from the effect of contraction drawing one way and expansion urging in another. The proper way is to keep the article moving slightly until it is cool enough.—Eds.

Tax on Inventors.

Messrs. Editors:—I see by the report, that on a motion of Mr. Jenckes, of R. I., the House of Representatives at Washington has passed a bill imposing a fine of ten dollars for an appeal from the primary Examiners in the Patent Office to the Board of Appeals. I hope this bill will not pass the Senate.

Inventors have to pay fees enough now, but to be obliged to pay a fine of ten dollars for the want of brains or a want of appreciation in a primary Examiner, is rather too bad. The Patent Office is the inventor's trustee; it is making money; it is abundantly able to employ competent talent, and to afford every facility to its *cestui qui trusts*, in obtaining what the law says they ought to have To put on additional burdens now, argues a want of any proper consideration of the duties and responsibilities of the Office. I suppose it is merely to get rid of trouble. It is their business to take trouble. That is what they are paid for, and that is what the law intends; but to add to the burdens of inventors, only to diminish the burdens of lazy or incompetent Examiners, is simply abominable. An Inventor.

Boston, May 3, 1866.

Hot and Cold Solutions.

Messrs. Editors:—"F. T. E." asks why salt does not dissolve in hot water in larger quantities than in cold. The simplest answer to such questions is, that it is its nature; and chemistry obeys its laws as rigidly as nature obeys hers.

Different salts have different points of solution; an instance of the vast difference in the behaviour of certain salts in hot and cold water is that of one of the alkaline salts of which 60 parts are soluble in 100 parts of water at a temperature of 57°, at 97° 833 parts are dissolved, while at 219° (the boiling point), only 445 parts are in solution. Again, the sulphate of lime is sparingly soluble, requiring 400 parts of water to one for its solution above the boiling point; its solubility rapidly decreases, until at 300° it is totally insoluble; hence the large amounts of calcareous deposits in, and so destructive to, steam boilers. H. H. W.

New York, April 27, 1866.

The Metrical System--A Farmer's Experience.

Messrs. Editors:—In your issue of March 31st, a correspondent seems to be afflicted at the prospect of the introduction of a rational and enlightened system of weighing and measuring. Out West a farmer carried a load of wheat to the railway depot, and sold it for $1 50 per bushel. The load weighed 2,230 lbs. The clerk, after some calculation, says, "You have 36 bushels and 10 lbs." The farmer demurred; it then came out 37 bushels and 10 lbs. The farmer next took a load of oats into the city, and sold them at 50 cents to feed a banker's horse. They were weighed on the city scales; the check was delivered in the bank to a man who had a gray hair here and there. After a little legerdemain, he said, "You have 34 bushels and 20 lbs.;" the farmer demurred; the calculations were gone over again, when a mistake of one in the column of hundreds was discovered equal to 3 bushels and 4 lbs. Again the farmer carried wheat to the depot; the accountant made a mistake of 30 cents in figuring up the price of the odd pounds, which often give more trouble than all the rest of the load. When challenged, he said it would take a school teacher to make the calculations.

They are some of the vestiges of slavery, and when our teachers become learned enough to know how to exercise themselves to keep their consciences void of offence and not to offend one of the little ones by unsearonable services, our absurd system will cease to exist in the land. J. E.

Verona, Wis., April 20, 1866.

A Bill to Fine Inventors for Appealing from one Set of Examiners to another Set.

Messrs. Editors:—I see that the House of Representatives has passed a bill adding ten dollars to each case appealed to the Board of Examiners-in-Chief in the Patent Office.

Now, I am very sure that if Congress understood the facts in the cass, they would not add this unnecessary burden to the difficulties of inventors. When this Board was established in 1861, the same law that established it, added five dollars to the fees to be paid in every case filed, whether appealed or not. This was done for the very purpose of paying the increased expenses of the Office, in consequence of the creation of the Board, and the increase of salary of the Commissioner, Chief Clerk and Librarian.

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 Phildelphia.

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.