

## ASTRONOMICAL NOTES.

OBSERVATORY OF VASSAR COLLEGE.

For the computations of the following notes (which are approximate only) and for most of the observations, I am indebted to students. M.M.

## Positions of Planets for January, 1875.

## Mercury.

On the 1st of January, Mercury rises at 7h. 4m. A.M., and sets at 3h. 53m. P.M. On the 31st, Mercury rises at 7h. 57m. A.M., and sets at 6h. 4m. P.M.

Mercury and Saturn will be in conjunction on the morning of the 27th, and must be nearly together in the evening; but they are so far south in declination, and set so early, that it will not be easy to see them.

## Venus.

Venus should be looked for in the morning, being west of the sun after the transit.

It rises at 4h. 56m. A.M. on the 1st, and sets at 2h. 46m. P.M. On the 31st, Venus rises at 4h. 13m. A.M., and sets at 1h. 51m. P.M.

Venus attains its greatest brilliancy on the 12th, at which time it passes the meridian a little after 9 A.M., at the low altitude of 31°.

## Mars.

On the 1st, Mars rises at 2h. 18m. A.M., and sets at 0h. 47m. P.M. On the 31st, Mars rises at 1h. 50m. A.M., and sets at 11h. 38m. P.M.

The apparent diameter of Mars is now very small, and its southern declination is large; of course it is not a good time for making observations on the planet.

## Jupiter.

Although Jupiter's relative position is becoming better, it is yet not very favorable to observers. Jupiter rises on the 1st at 1h. 41m. A.M., and sets at 0h. 29m. P.M. On the 31st, Jupiter rises at 1h. 53m. P.M., and sets at 10h. 35m. the next morning. It can be beautifully seen at early morning.

## Saturn.

Saturn, also, is far south in declination, rises in the morning, and sets early in the evening. On the 1st, it rises at 9h. 24m. A.M., and sets at 7h. 10m. P.M. On the 31st, it rises at 7h. 36m. A.M., and sets at 5h. 30m. P.M.

Saturn and Mercury are nearly in the same position near the last of January.

## Uranus.

Uranus is in northern declination among the small stars of *Cancer*. On the 1st, it rises at 7h. 18m. P.M., comes to meridian at 2h. 22m. in the morning, and sets at 9h. 26m. On the 31st, its position is very good. It rises at 5h. 15m. P.M., comes to meridian about midnight, at an altitude of 66°, and sets at 7h. 25m. the next morning.

## Neptune.

Neptune is too far off to be seen without the aid of good telescopes. It rises at 0h. 29m. P.M. on the 1st, and sets at 1h. 35m. the next morning. On the 31st, it rises at 10h. 31m. A.M., and sets at 11h. 37m. P.M.

## Meteors.

Very bright meteors were seen on the evenings of December 11, 12, and 15. One which passed from the zenith to the southwest, at 8h. 27m. P.M. on the 11th, was so large as to attract the attention of persons who occupied a brilliantly lighted room.

## Sun Spots.

The record is from November 16 to December 16 inclusive. The photographic picture of the 16th shows the group of spots seen on the 14th, consisting of several very small spots. The next picture was taken on the 19th, when one large spot appears near the place where we should look for the group. Clouds prevented photographing again until the 25th, when a large spot was seen near the center of the disk, preceded by a smaller one. On the 26th, no change took place, except that caused by the sun's axial motion. From this time until December 10, on account of clouds and wind, but three pictures were taken, and no spots were observed except a very small group on December 4. December 10, a group of good size appeared, of which five photographs have been taken, showing marked changes during its passage across the disk. The picture of the 10th shows three spots of moderate size just within the eastern limb. On the 12th, the most westerly of these was surrounded by small spots arranged so as to form nearly a complete circle. On the 15th, the group consisted of five distinct spots of good size. On the 16th, no change.

## GLUE.

"During the progress of a recent investigation, I observed," says S. Dana Hayes, in the *American Chemist*, "some chemical characters of commercial glue, that I believe have not been previously described.

Analyses of two samples of white glue, of the best grade, yielded the following results:

	No. 1 extra C. glue.	Frozen glue.
Moisture (loss of weight at 212° Fah.)...	16.70	16.28
Gelatin, with a little animal fiber and fats.....	79.85	80.42
Carbonate of lime.....	1.42	1.33
Sulphate of lime.....	0.41	0.34
Phosphate of magnesia.....	0.35	0.31
Alkaline salts.....	0.17	0.12
Silica, oxide of iron, etc.....	0.09	0.08
Oxide of zinc.....	1.01	1.12
Total.....	100.00	100.00

Analyses of ten more samples of frozen and sheet glue, of common grades, and from different makers, showed the proportion of water contained in them to vary from fourteen to eighteen per cent, averaging seventeen per cent. And the proportion of ash or mineral matter varied from three to six

per cent, averaging rather less than four per cent. Two of these samples contained about one per cent of white zinc, and two of them contained sulphate of lime.

"Analyses of two samples of commercial gelatin averaged sixteen and a half per cent of water, and 2.56 and 3.11 per cent of ash, respectively. There was no oxide of zinc or sulphate of lime in these gelatins.

The presence of so much water was quite unexpected; and as the quantity is nearly the same in fresh and in seasoned specimens, it is not a make-weight, although steam is very freely used in the rooms where glue is packed by the manufacturers. The carbonate of lime comes from the quick lime used for cleaning and preserving the animal matter, or glue stock, while the sulphate of lime is formed by the addition of small quantities of sulphuric acid during the process of manufacture, to neutralize the lime that is carried forward by the solutions of glue. The oxide of zinc is said to be added to prevent souring, or the acidity caused by decomposition, and it also improves the color of the glue; but it is not very generally used, as these analyses indicate. I have heard of the use of sulphate of zinc, alum, magnesia, etc., by glue-makers, but I did not find any other substance than those named above in these specimens, which represented the article commonly sold and used.

The impure glues, or those containing the most mineral matter, became almost insoluble after they had been broken into small pieces and heated in a hot air bath (copper oven) at 212° Fah., for two or three hours, until they ceased to lose weight; they then soften and become dough-like, but do not dissolve when boiled in water for some time. The purer gelatins were not so much injured, and one specimen, containing only 2.56 per cent of ash, was not materially affected by this thorough drying. The solid sheet glue, while drying in this way, tumefied, and became very porous: the frozen glue did not alter in structure.

The conclusions drawn from these experiments was that the excess of lime combines with the gelatin and, perhaps, with the extraneous animal matters of the glue, at the high temperature, forming a compound like lime soap, as the whole quantity of lime is retained in the insoluble portion left after boiling the dried glue in water. Such an explanation accounts for the difference noticed in the effect of drying upon gelatin and common glue."

## Inventions Patented in England by Americans.

[Compiled from the Commissioners of Patents' Journal.]

From November 2 to November 26, 1874, inclusive.

ATTACHING TEAPOT HANDLES, ETC.—Tiffany & Co., New York city.  
BALE TIE.—W. Cooper, Tyler, Texas.  
BARREL.—A. Mason, New York city.  
BOOTS AND BOOT MAKING MACHINERY.—F. D. Ballou et al., Boston, Mass.  
CARBURETTING AIR.—T. B. Fogarty, Warren, Mass.  
CARTRIDGE SHELL.—W. F. Parker, Meriden, Conn.  
CHEMICAL TELEGRAPH, ETC.—W. E. Sawyer, Washington, D. C.  
DISTILLED WATER.—W. A. Lighthall, Brooklyn, N. Y.  
DRAIN PIPES, ETC.—H. Hirsch, New York city.  
DRESS PROTECTOR.—C. Murphy, Camden, Me.  
FASTENING BUTTONS, ETC.—Z. K. Young, Philadelphia, Pa.  
FILE CUTTING MACHINE.—C. Vogel, Fort Lee, N. J.  
FISH JOINT.—J. Hampson, Newburgh, N. Y.  
GRINDING AND POLISHING MACHINERY.—J. H. Volk, Chicago, Ill.  
IRONING MACHINE.—T. S. Wiles, New York city.  
LIGHTING GAS.—H. B. Stockwell et al., Brooklyn, N. Y.  
LOOM WEFT STOP.—J. J. Switzer, Boston, Mass.  
MECHANICAL TOY.—W. A. P. La Grove (of N. Y. city), London, England.  
NOISING DEVICE FOR ANIMALS.—W. Crighton, Fall River, Mass.  
PIANOFORTE.—A. Steinway, New York city.  
PREPARING TEXTILE FIBERS.—H. B. Meech (of N. Y. city), London, Eng.  
RATCHET BRACE.—J. W. Evans, New York city.  
REAPING AND BUNDLING GRAIN.—E. Horton, Hartford, Conn.  
REFRIGERATOR.—J. J. Bate, Brooklyn, N. Y.  
ROTARY MOTOR AND PUMP.—J. H. Field, Edgely, Tenn.  
SEWING MACHINE.—Singer Manufacturing Company, New York city.  
SHIELD FOR STOVES, ETC.—W. M. Conger, Newark, N. J.  
SPINNING MACHINERY.—G. Chatterton, Providence, R. I.  
STEAM ENGINE.—T. L. Jones, Natchez, Miss.  
STOCKING DARNER.—O. S. Hosmer, Boston, Mass.  
STOPPER.—N. Thompson (of Brooklyn, N. Y.), London, England.  
STREET LAMP.—E. Parkman (of Madison county, Tenn.), London, England.  
TELEGRAPH.—W. E. Sawyer, Washington, D. C.  
TRIMMING WALL PAPERS.—H. L. Todd, Corning, N. Y., et al.  
TYRES ON WHEELS.—E. Mellon, Scranton, Pa.  
WATER MEYER.—F. W. Brooks, New York city.

## NEW BOOKS AND PUBLICATIONS.

JOURNAL OF THE CHEMICAL SOCIETY OF LONDON. Price £1. 1s. (\$5, gold) a year. London: J. Van Voorst, 1 Paternoster Row.

During the past three or four years, the Chemical Society of London has been engaged in an undertaking which deserves the support and recognition of all who are interested in the progress of physical, and especially chemical, science. For the past few years of its existence, the society published quarterly a report of its proceedings, including the papers on chemical subjects which had been read at the meetings. Afterwards it was found desirable to issue the Journal monthly; and this format retained till the year 1871, when, with the aid of funds, partly derived from voluntary subscriptions by the Fellows of the Society, partly from a subsidy received from the British Association for the Advancement of Science, the society undertook the task of printing, not only papers read at the meetings in London, but abstracts giving the results of every memoir on chemical or allied physical subjects published either at home or abroad. The monthly Journal of the Chemical Society thus becomes a complete chronicle of the progress of chemistry all over the world. Taking the last number of the Journal, we find that the 100 pages of which it consists contain about 150 abstracts of papers taken from seventeen different Journals, including the *Annales de Chimie et de Physique*, the *Comptes Rendus* of the French Academy, the *Berichte* of the Berlin Chemical Society, Poggendorff's *Annalen*, and the *Journal für praktische Chemie*. The student of theoretical chemistry or the manufacturer, the mineralogist, the physiologist, or the scientific agriculturist, may here find a complete and yet concise record of all that has been lately done in the department in which he is specially interested. We trust that such an important undertaking will not be allowed to fall to the ground for want of support.

THE POLARIZATION OF LIGHT. By William Spottiswoode, F.R.S., etc. Price \$1. New York: Macmillan & Co., 21 Astor Place.

Mr. William Spottiswoode is the Vice-President of the Royal Society; and, although an amateur, is widely known as a profound and accomplished chemist. The book before us (No. 6 of Messrs. Macmillan's excellent NATURE SERIES) contains the substance of lectures delivered to the work people in the employ of Messrs. Spottiswoode & Co., printers, etc. The branch of optical science herein treated is clearly elucidated, and its great importance in technology and its beauty as a study of natural phenomena demonstrated in forcible and pleasing language.

TABLES FOR THE DETERMINATION OF MINERALS BY THEIR PHYSICAL PROPERTIES, ETC., for the Use of Students in the Field. Translated from the German of Alban Weissbach, by Persifer Frazer, Jr., A.M., etc.

We have here an exceedingly useful and compendious guide for explorers, who frequently have to pronounce on substances *in situ*, where no laboratory is at hand. The eminent author gives many new lights on classification, and his aim has been throughout to render the science of mineralogy as clear and accessible as its complicated nature will permit. The translator's work has been done faithfully and intelligently.

INSECTS OF THE GARDEN, THEIR HABITS, ETC. By A. S. Packard, Jr., Editor of "The American Naturalist," etc. Also (by the same Author) INSECTS OF THE POND AND STREAM. Price 25 cents each. Boston, Mass.: Estes and Lauriat, 143 Washington street.

Two numbers (of twelve) of a most interesting series of handbooks of natural history. We commend them especially to the notice of our young readers, as popular expositions of a most fascinating study.

THE STONE AGE, PAST AND PRESENT. By E. B. Tyler, Author of "Primitive Culture," etc. And "Theory of a Nervous Ether," by Dr. Richardson, F.R.S. Price 25 cents. Boston, Mass.: Estes and Lauriat, 143 Washington street.

The first of these essays is an interesting treatise on the use of stone implements, and it points out some forcible instances of the survival of the use of such tools to this day. The second paper is a *resumé* of the theories on a subject which has been widely and discursively treated, with some original speculation on the supposition, which has long engaged the attention of the eminent author.

REGISTER OF RURAL AFFAIRS. Price 30 cents. Albany, N. Y.: Luther Tucker & Son.

Messrs. Luther Tucker & Son, Publishers of the Albany, N. Y., CULTIVATOR, have issued their illustrated Annual for 1875 in a very attractive form. It contains a large number of engravings of interest and use to agriculturists, and is full of practical suggestions and directions of importance to horticulturists and fancy gardeners.

THE INTERNATIONAL REVIEW. \$5. Six times a year. New York: A. S. Barnes & Co.

The number for January and February contains several valuable articles. Dr. McCosh, President of Princeton College, reviews the late utterances of Professor Tyndall, about the potency of matter, and shows the weak points of his reasoning. Professor Vogel gives an article on Baron Liebig. Professor Hart discusses the proposed Centennial Exhibition and that of Vienna.

THE CHEMIST'S AND DRUGGIST'S DIARY FOR 1875.

A useful and convenient form of diary, published by the proprietors of our esteemed contemporary, the CHEMIST AND DRUGGIST, London, England.

ANNUAL REPORT OF THE TREASURER OF THE UNITED STATES TO THE SECRETARY OF THE TREASURY, for the Fiscal Year ended June 30, 1874. Washington, D. C.: Government Printing Office.

MR. JAMES VICK, one of the largest seed dealers of Rochester, N. Y. has just published the first number of his FLORAL GUIDE for 1875. This is a good sized magazine, beautifully illustrated, and containing descriptions of the best flowers and vegetables, with valuable directions for culture. It is issued quarterly in English and German, and sent to any person for the nominal price of twenty-five cents a year.

THE DOUBLE CENTURY CALENDAR AND SILICATE NOTE BOOK is the title of a pocket volume forwarded to us by Mr. C. W. Younggren of Amboy, Ill. The silicate part is useful—the balance obscures an advertisement of a well known watch concern.

## DECISIONS OF THE COURTS.

## United States Circuit Court.—District of Massachusetts.

PATENT EGG BEATER.—EDWIN P. MONROE vs. THE DOVER STAMPING COMPANY.

[In equity—September 3, 1874.]

Shepley, J.: Complainant alleges that defendants infringe the invention secured to him by letters patent, reissue No. 1,062, dated October 16, 1860, for a new and improved egg beater. Defendants, under license from the patentees, were manufacturing and selling egg beaters under and in conformity to letters patent of the United States granted to Turner Williams and E. D. Goodrich, assignees of Turner Williams, dated May 31, 1870, and numbered 108,811. The beater described in complainant's patent consists of a frame, to be clamped to a table or other support, with two concentric beaters, which are, by suitable gearing, revolved in opposite directions. The vessel containing the eggs to be beaten is held up to the beaters, which project downward from the frame, so that the beaters will be immersed in the matters to be beaten. By turning the crank the beaters are revolved concentrically in opposite directions. In the Monroe patent the first claim is for, "in combination with a rotary egg beater, an arm having at one end bearings for the journals to rotate in, and at the other a clamping device for the purpose of securing the beater to the table with its shaft or bearing in a vertical line, as set forth." It is not contended that defendants infringe this claim. The second claim is for "the beaters revolved in opposite directions by suitable mechanism, substantially as set forth." The Monroe beaters revolve in opposite directions, and the beaters in the Turner Williams patent also revolve in opposite directions. Here their resemblance begins and ends. The Monroe beaters revolve concentrically. The axes of the beaters in the Williams machine are at some distance apart, and the orbits described by the revolution of the blades of the beaters intersect each other. The currents produced in the matter to be beaten are entirely different. In the Monroe beater the fluid material tends to arrange itself mainly in two concentric layers, which are carried around in opposite directions by the beaters, the centrifugal force tending to accumulate the material around the circumference of the vessel. In defendant's beater this action takes place, for the reason that the orbits of the blades intersect at two points in their circumference. After the blade of one beater has passed through the material, another beater, moving in an opposite direction, passes through the same material, obliterating the track made by the other, and so on alternately. There are other obvious and important differences in the mode of operation of the beaters, which render it too clear to admit of any doubt that the invention described in the Turner Williams patent is not an infringement of the patent to Monroe.

Bill dismissed.

Held by the court:

Making and selling egg beaters having two beaters rotating on axes separate and apart from each other, is no infringement of a patent for such an implement having two beaters rotating on the same axis, although in both cases the beaters revolve in opposite directions.  
(James B. Robb, counsel for complainant.  
Thomas W. Clarke, counsel for defendants.)

## United States Circuit Court.—District of New Jersey.

PATENT MITER MACHINE.—GEORGE W. LA BAW et al., COMPLAINANTS, AND WILLIAM HAWKINS et al., DEFENDANTS.

[In equity.—Before Nixon, Judge.]

This is a suit for alleged infringement of letters patent No. 3,445, for "Improvement in miter machines," reissued to George W. La Baw, May 18, 1869, and extended by the Commissioner of Patents for seven years from May 20, 1869.

The defendants filed a joint and several answer, alleging, among other things, that the surrender made by the complainant of his original patent was not for a good and sufficient cause, and that the reissue was for a different invention, denying the infringement and setting up prior public use. They admit that they have constructed and sold miter machines containing knives or cutters in combination with mechanism for operating the same for cutting miters, under the authority of letters patent granted to one Stephen W. Hall, August 17, 1858, but deny that the said Hall machine infringes upon the invention described in the bill of complaint.

It is the judgment of the court that the defendants have infringed the second claim of complainant's reissue, and there must be a decree for an injunction and an account.

Held that:

Whenever a patent is reissued or extended, the presumption is that it is for the same invention, and the action of the Commissioner is conclusive against a charge of fraud in obtaining the extension or the reissue, as well as in other objections, unless it appears upon the face of the papers that the new patent is not for the same invention as the original.

The testimony of witnesses of whose names no notice was given to the complainants is admissible to show the state of the art; but will receive no consideration upon the question whether there had been a prior knowledge and use of the invention.

It will require strong evidence to overcome the presumption that a patented machine is substantially different from one patented before, which arises from the Commissioner's having not only issued the second patent with the knowledge of the other, but having afterward reissued it and extended it.

The experts produced by the parties having disagreed whether the machine covered by the patent in suit was anticipated by one previously patented, the court examined the question direct and held that it was not.

A patent will not be set aside upon the mere testimony of a single witness that many years ago he saw a machine like the one described; it must be regarded at most as an abandoned experiment, no second machine having been known.

Although man may make valuable improvements upon a patented machine, if he infringes on the elements of the original machine, he cannot use the elements of the original machine without infringing on the first patent.

(C. A. Durgin and J. Marshall, for complainants.  
Runyon & Leonard, for defendants.)

LOOKING GLASS PATENT.—THE FLORENCE MANUFACTURING COMPANY vs. THE BOSTON DIATITE COMPANY.

[In equity.—May Term, 1874, to wit: September 3, 1874.]

Shepley, J.:

This suit is founded on the letters patent granted to Dudley & Clark, assignees of W. N. Dudley, on the 29th of September, 1868, for an improved hand mirror. The mirror was constructed by first using a base piece of wood or other suitable material, preferably of similar contour to the glass designed to be mounted on it, and elongated at one end, with a strip of metal or other stout material at its back to form a stiffener for the handle of the mirror. The base piece, with its handle extension or stiffener, is laid, face downward, on a mold, and a composition of any suitable plastic material, in sufficient quantity to cover the back of the glass and the base piece and surround the handle stiffener, is applied, when an upper mold of suitable configuration, and with its interior embellished with any ornamental devices, is pressed down on the plastic composition, thus making a smooth finished ornamental outer back and handle. The advantages claimed for his new manufacture by the patentee are that the handle and back of the mirror are "smooth finished and may be highly polished, impervious to damp, exempt from warping, with its consequent liability of fracturing the glass, and preservative of the wooden or other base piece, which may be of a cheap and rough construction; and that by its end extension, with strengthening strip at the back, gives not only a general stability to the whole article, but especially stiffens the handle at its junction with the back or body, where it is naturally weakest or most liable to break."

The claim is: As a new article of manufacture, a hand or portable toilet mirror, constructed, substantially as described, of a base piece B, with its handle extension piece or stiffener C, glass A, and outer back or handle D, made of any suitable composition or cement, substantially as specified.

Respondent made hand mirrors, in other respects like those described in the Dudley patent, but having no "wooden or other base piece of suitable material" behind the "glass designed to be mounted on it," and having no extension from such base piece into the handle. In the smallest and weakest part of the handle two nails of iron were embedded in the plastic composition, which formed the entire frame and handle of the mirror, but they did not extend behind the mirror, or form any base or support for the glass or the frame behind or around it.

This is clearly no infringement of the Dudley patent. The practice of molding a plastic material around a skeleton, or partial skeleton, of a mirror, of greater rigidity is as old as anything known in the arts, was practiced by the Assyrians in molding bronze, and has been in common use to the present day. Hand mirrors date back to an equally remote antiquity. Hand mirror frames, molded from a plastic composition of paper, mache and other plastic compounds, were well known before the date of Dudley's invention. Frames for pictures and photographs of a plastic composition of shellac and other substances, molded and ornamented, were well known and described in Merck's patent of December 16, 1868, for his new composition of matter. The patentable matter in Dudley's patent must, therefore, be found, if found anywhere, in his new composition of a base piece, with its extension or handle stiffener, with the other elements in his combination. Without such combination there would have been no article of manufacture. It is not every new article put upon sale in the market which is a new article of manufacture. If one were to substitute a Claude Lorraine glass for the plate with its stiffened back in the Dudley hand mirror, it would be a new article of commerce, but not a new manufacture.

In the case of *Clark vs. Scott* (2 *Official Gazette*, 4), Judge Hatchford held that hand mirrors made of cement, applied in a plastic state and afterward hardened and having embedded in the cement, and concealed from view, two flat wires or strengtheners, made of metal, which run from the body of the mirror part through the neck and into the handle, and which serve to strengthen and stiffen the article, particularly at the junction of the handle with the body, were infringements of the Dudley patent. But this was upon the ground that he found in those mirrors the base piece, the handle extension piece or stiffener, the glass and outer back and handle of cement. He says "the defendant's design was a base piece of support for the glass, and the wires extend through the neck and in the handle as stiffeners." But in defendant's mirrors there is no base piece or support for the glass, and no substitute or equivalent thereof. He makes a hand mirror with a molded frame of plastic compound, and he reinforces or strengthens the handle with metallic rods. There was nothing new in this before the date of the Dudley patent.

In a hand mirror containing a wooden back with an extension for a handle strengthened by metal rods, the whole being covered with a composition, to which form is given while plastic in a mold, the novelty consists in the introduction of the wooden back and strengthened handle.

A patent for such a mirror is not infringed by one in which the back and handle are formed entirely of cement, though the handle is strengthened at its weakest part by nails embedded in it.

*Clark vs. Scott* (2 *Official Gazette*, 4), commented on and explained.

[E. W. Bond, for complainant.  
T. W. Clarke, for defendant.]

## REPEAL OF PATENTS.—OPINION OF THE ATTORNEY GENERAL.

The following letter of the Attorney General is of great interest to patentees and the legal profession, as it contains an announcement of the principles which will control the Government in the matter of its joinder in suits to repeal patents:

DEPARTMENT OF JUSTICE,  
Washington, D. C., November 19, 1874.

SIR: On the 6th instant an application was made to me by Messrs. Curtis and Corwin for leave to use my name in a suit upon the relation of *George R. Fearing, Esq.*, to vacate a patent issued to *K. F. Sturdevant*, for a coil or ribbon of black wood for the use of pegging machines. It was alleged as a ground for this application that there was a want of novelty in the said ribbon or coil. Accompanying this application were several affidavits to the effect that Sturdevant had recently raised the price of said blanks from twelve and a half to twenty cents each, and that a similar article was offered in the market for eight cents.

I was induced to think, upon the showing then made, that the leave asked for should be granted, and that the suit should be allowed to proceed to the necessary steps for the commencement of the suit. Since then, an application has been made to me by Messrs. Curtis & Corwin to amend the bill, and at the same time Mr. Sturdevant, with his counsel, Mr. Roberts, and others, claiming to represent the manufacturers of boots and shoes, asked to have the order made for the use of my name in said suit rescinded.

It is somewhat difficult to determine in what cases the Attorney General should allow his name to be used as a witness as contemplated by the Supreme Court in the case of *Mowry vs. Whitney*, 14 Wall, 34. "The ancient mode," says the court in that case, "of doing this in the English courts was by *scire facias*, and three classes of cases are laid down in which this may be done."

1. When the king, by his letters patent, has, by different patents, granted the same thing to several persons, the first patentee shall have a *scire facias* to repeal the second.

2. When the king has granted a thing by false suggestion he may, by *scire facias*, repeal his own grant.

3. When he has granted that which by law he cannot grant, he may, by *scire facias*, for the advancement of justice and equity, may have a *scire facias* to repeal his own letters patent.

And the court further remarks that "If an individual finds himself injured, either specially or as a part of the general public, it is no hardship to require him to satisfy the Attorney General that the case is one in which the Government ought to interfere, either directly by instituting the suit, or indirectly by authorizing the use of its name, by which the Attorney General would retain such control of the matter as would enable him to prevent oppression and abuse in the exercise of the right to prosecute such a suit."

When Sturdevant's patent was issued, the question as to the novelty of the invention claimed by him was expressly decided by the Commissioner of Patents, and upon the refusal of the patent another decision of the same kind was made. I am now called upon by the relators, upon the allegation that there was no novelty in said invention, to proceed in the courts for the purpose of reversing these decisions.

To allow this would be practically to give an unsuccessful party objecting to a patent the right to appeal to the courts, and would seem also to put out of department in the attitude of attacking the acts of another department of the Government. Whenever it appears that the Commissioner of Patents has become satisfied that, through fraud or mistake, a patent has been improperly or illegally issued, the Attorney General, as a general rule, in my opinion, ought, upon the relation of an individual who finds himself injured thereby, to allow a suit to be brought on behalf of the Government to set aside such a patent. I do not mean to say, however, that the views or wishes of the Commissioner should be conclusive upon the Attorney General, but his action in such cases ought to look as well to the rights of the patentee as to the interests of those who seek its cancellation.

Taking a case like the one before me, in which the question is as to the novelty of the alleged invention, I have determined that where the Commissioner withholds his consent to a suit in the name of the Attorney General to vacate a patent issued by him, such suit ought not to be brought until the validity of the patent in question has been denied or at least gravely doubted in a judicial proceeding between private parties, as where the patentee sues some infringer of his alleged patent. Exceptions to this rule may be admitted where persons, alleging a want of novelty in a patent, infringe it, and the patentee delays suit with a view of allowing a third party to claim for damages to accrue, or where, with doubts as to the validity of his patent, there are special circumstances of injustice or oppression on the part of the patentee. But to preserve something like consistency in the action of the different branches of the executive department of the Government, and to afford adequate protection to the discoveries and labors of inventors, it is necessary, in general, that the rule above stated should be observed. If the invalidity of a patent appears in a litigation about it between private parties, the Attorney General, upon a proper application, ought to interfere to prevent the patentee from harassing other persons with suits for the use of his pretended invention.

When fraud is alleged as a ground of suit in the name of the Attorney General, to repeal a patent, nothing more than to satisfy him of the existence of the fraud is necessary to the application, as such a case cannot go upon the ground that the facts disclosed to the Attorney General were not presented to or passed upon by the Commissioner of Patents.

Mr. Sturdevant has given satisfactory reasons for advancing the price of his peg wood blanks, and that it was by an arrangement with the manufacturers of boots and shoes, and for their benefit; and I am further satisfied that the public interests do not require me to take any steps to vacate his patent. You will, therefore, withdraw the bill filed, and decline any further use of my name in this matter.

(Signed) GEORGE H. WILLIAMS,  
Attorney General.

George P. Sanger, Esq., U. S. Attorney, Boston, Mass.

## Recent American and Foreign Patents.

### Machine for Rolling Blanks for Nut Bars.

George Johnson, Haverstraw, New York.—This invention consists of a revolving clearer having notches in its periphery, in combination with a pair of rolls for rolling notched bars. The notches of the clearer correspond to the notches in the rolls for forming the hexagonal nuts, so as to mesh with the notches in the soft, hot iron as it is received and discharged by the clearer.

### Improved Water Elevator.

Henry M. Sweet, East Haddam, Conn.—The shaft passes through a box flange which is attached to the brake lever. This box flange is made to slide in a slot of a curb sufficiently to throw a pinion out of gear with a wheel. The pinion is thrown out of gear, at the same time that the brake is applied, by manipulating a lever, by means of which the bucket may be stopped, when full of water, at any desired point.

### Improved Garter.

Samuel Chard, Mianus, Conn.—This consists of an outside spring band and an inside adjusting band, severed at one point, and connected together. The inner band will be made a little less in circumference than the limb which it is designed to clasp. It is placed over the top of the stocking, and exerts, through the spring band, a gentle pressure sufficient to hold the stocking securely to the leg.

### Securing Handles to Burial Caskets.

William S. Wood, Newtown, N. Y.—An ear plate extends from one end to the other of the handle, and is of some ornamental design. A stay plate is placed on the inside of the casket and is secured by screws and nut rivets having square shanks, which pass through square holes in the stay plate, and through the side of the case, and are riveted thereto to keep them in place before the handles are attached. The stay plate extends down through the case to near the bottom with a rib on its outer side, and has a tendency to stiffen the side of the case and keep it in shape when lifting upon the handles.

### Improved Voltaic Battery.

Dr. Robert Arthur, Baltimore, Md.—This invention relates particularly to an improvement in the mechanical construction of the batteries known as the Hunsen or carbon and the Grove, although it is applicable to other forms. The invention is the result of difficulties encountered in the employment of these and other well known batteries for running a small electro-magnetic engine, and for operating an electro-magnetic pallet for condensing gold in the operation of filling teeth. The battery is composed of the following elements, namely: An outer jar or cylinder with lower end closed, having a groove or depression in its bottom containing mercury; an inner perforated cylinder having one or more tubes attached; and a carbon plate provided at the upper end with a platinum tube, and fragments of zinc in suitable quantity, the latter being placed in the annular space between the outer jar and inner perforated cylinder.

### Improved Mooring Attachment for Buoys.

Henry Brown, Charleston, N. C.—The object of this invention is to provide a means of replacing the worn out loops of buoy bottoms and ballast balls, without the expense, time, and trouble usually involved in the repair of the same. It consists in making the bottom plate of the buoy with a pocket, which receives a detachable mooring link, to be fastened therein by a keyed bolt. It also consists in casting the ballast ball with two holes, which intersect each other at right angles at the center, one of which said holes receives the tapering shanks of two loops, and the other a bolt which passes through the said shanks and locks them.

### Improved Water Piston for Hydraulic Presses.

John F. Taylor, Charleston, S. C.—This invention consists in a hydraulic piston formed of the usual packing rings, so united with a cut and an elastic ring that a very durable and efficient piston is obtained, while the cost thereof is comparatively small.

### Improved Car Coupling.

Ezra N. Gifford, Cleveland, O.—This invention relates to certain improvements in car couplings, and it consists in the peculiar construction of a slot or recess in the side of the coupling catch, in which rests the end of a cross bolt, by means of the peculiar conformation of which said recess the said catch is controlled in its motion and position, and the danger of its loss obviated. It consists also in the inclined shape of the shoulder upon the front of the coupling catch; and the mode of locking the short cross bolt by embedding its bent end in a recess in the drawbar, whereby the said bolt is protected from incidental knocks, is always kept in place, and is easily detachable. The invention further consists in the peculiar construction of the drawbar in combination with the coupling catch and bolt.

### Improved Velocipede for Picking Cotton.

Charles and George E. Hess, Huntsville, Ala.—This invention relates to means whereby a person may be enabled conveniently and with the least possible labor to pick cotton from the pod or stalk, and place the same within a bag, the said picker and his bag being supported relatively to each other during the whole operation, while the bag is readily conveyed along from point to point without manipulation.

### Improved Gas Cooking Apparatus.

Thomas Peacock, Wood Green, Eng., and John C. Peacock, Finsbury Park Road, Eng.—This invention consists in economizing the heat derived from a combustion of gas by preventing the walls, top, and bottom of stove from radiating the heat generated within the oven, and it also consists in ventilating the oven by an exact supply of air, while the products of combustion are drawn off at the lowest possible level.

### Improved Bracket for Dentist's Chair.

George W. Gray, Albany, Oregon.—A slotted plate is attached to a metal plate which is attached to the chair by means of a pivot joint, so that it can be inclined in any position, carrying with it a sleeve in which slides an upright tube. The last is held as desired by a set screw. A T joint is attached to the top of the upright through which passes a sleeve which slides on a feather. On the end of the arm which slides through the sleeve is an upright tube, on the upper end of which is a ball and socket joint. The ball is clamped in the socket by a set screw. A table of any form is arranged on the arms, which extend from the stem of the ball. On this table are arranged any instruments or materials used in filling and excavating teeth. Water cups are attached by means of sliding rings. When the patient is seated, the table is adjusted by means of the various mechanisms described, to bring the instruments and materials into convenient position for use.

### Improved Button Boot.

Edward F. Wells, New York city.—The lower portion of the overlapping flap of a button shoe is made in one piece with the quarter. A flap piece constitutes the upper part, which is sewn to the main portion, the slit extending about half way down the latter. The seam, at the place where it bears inside against the leg, is not so liable to be hurtful as an inside seam along the instep.

### Improved Rotary Harrow.

William J. Murphy and William H. Cock, Murfreesborough, Tenn.—There are two rollers, a foot in diameter, into which are screwed knives. To a cross bar is bolted another set of knives, so arranged that their paths may be midway between the paths of the knives of the rollers. There is besides a roller which is designed to roll and smooth the ground in the rear of the harrow.

### Improved Wheel Plow.

John B. Herman, Blair, Neb.—The plow beam is connected to the bar by a universal joint, which gives it a free vertical and lateral movement, so as to allow the plow to be laterally adjusted to cut a deeper or a shallower furrow, or a wider or narrower furrow, as may be desired. There are besides novel devices which enable the plow to be readily adjusted to run deeper or shallower in the ground, and others by which the caster wheel may be readily adjusted to take the downward pressure of the plow, and thus decrease the friction and enable it to be drawn by less power, and mechanism which permits the plow to be readily lowered to and raised from the ground when desired, and holds it securely in place when suspended.

### Improved Sheaf Dropper for Harvesters.

Perry G. Nichols and William O. Nichols, Cresco, Iowa.—The table is pivoted to the frame for tilting. It has an arm extending below the pivot at one end, to which a cord is fastened, which is suitably connected with a bell crank. The last communicates with a foot treadle in front of the driver's seat, so that by a downward movement of the foot treadle a catch will be pulled back to unfasten the table, and the table will be tilted to dump the sheaves. The table will then be turned back by gravity, the weight of the next sheaf put on by the binders, and it will be fastened by a catch and spring. The catch is so arranged relatively to the binder's table that the binder next to it can reach it readily to unfasten it by hand.

### Improved Peg Box for Pegging Machine.

George H. Davis, Oxford, Mass.—This invention consists of a peg box with two feed channels for stock, to make pegs of two sizes, and feed mechanism and shifting apparatus, adapted for use in connection with the pegging machine patented by C. Varney, and so arranged that the operator can shift the feed mechanism at will without interrupting the operation of the machine, to use pegs of different sizes in different parts of the work. The invention also consists of certain improvements in connection with the cutter, and an improved form of the peg driver.

### Improved Compound Metal Working Machine.

George L. Jones, Vanille, Wis.—This invention relates to improvements in the compound metal working machine patented by the same inventor, under date of September 2, 1873. The punching mechanism, substantially such as previously employed, operates a supplementary punch, so that bands, tyres, etc., may be punched at certain points with large holes, and at others with small ones at the same time.

### Improved Whiffletree Tug Fastener.

James L. Graft, Petrolia, Pa.—Instead of boring the whiffletrees longitudinally to receive rods, cylindrical metal caps are applied to each end of the whiffletree. A sliding rod, having a knob at one end and a plate at the other, is formed at a right angle to each cap. A short pin projects from the center of the disk in a plane parallel with the sliding rod. A bar slides in a socket formed on the rear side of the cap, while the plate projects interiorly of the socket and a pin projects through the loop formed on the end of the socket. A coiled spring is placed in the cap between the end of the whiffletree and the plate. The ends of the traces are inserted in the loops on the cap, the pins having been first drawn back into the sockets by pressure applied to the knobs, and there secured. To release the traces, the bars are drawn toward each other by cords, which are joined to a ring between centrally arranged pulleys.

### Improved Soap Bubble Toy.

William A. Harwood, Brooklyn, N. Y.—This is a little tin cup with another small cup attachment on the bottom, forming an inclosed chamber, in which is a hollow cone with a hole in the top. A small tube like a pipe stem enters the chamber at the top, and there is a passage from the cup into the chamber. There is also a small hole through the bottom of the chamber containing the cone, and around the outer edge of the bottom of this chamber is a flange projecting downward a short distance. The pipe blows along the surface of the water, and carries small quantities along with it down through the exit passage to form the bubble.

### Improved Saw Gummer and Sharpener.

Henry Baughman, Dorn's Gold Mine, S. C.—This invention has for its object to improve the construction of the saw gummer for which letters patent were granted to the same inventor, February 18, 1873, and December 9, 1873. To an upright frame is bolted a block, and a support for the block, against which the straight saw is clamped to be operated upon. The inner end of this block may be inclined to one side and the other, to give a bevel to the saw teeth. The clamp, by which the saw is held, has a rabbet on its inner side for the back edge of the saw to rest upon, and is so constructed that, when one tooth is gummed and the clamp allowed to drop down, the inclination of its slots will carry forward the clamp, and with it the saw. As the clamp is again raised by a lever, a tooth of the saw will catch upon a stop attached to the block, by which the saw will be held, so that it cannot be carried back by the backward movement of the clamp, thus bringing the next tooth into position to be operated upon by the gumming wheel. Another new feature is the provision of an orifice in the block for the escape of filings.

### Improved Heat Radiator.

Owin Marrin, Brooklyn, N. Y.—This invention consists in providing the inner cone of the radiator with flexible plates projecting from its base, and arranged at suitable distances apart to regulate the size of the openings, through which the heated air, gases, and other products of combustion ascend in the flue.

### Improved Saw Tooth Swage.

Alonzo G. Rouse, Jacksonville, Fla.—In using this swage, the tooth of the saw is first inserted between projections, its edge projecting into a recess. Blows with a hammer upon the stock will cause the said projections to form small transverse grooves in the upper and lower sides of the tooth. The swage is then removed and adjusted to bring the edge of the tooth between another projection and the inclined end of a die. Hammering upon the end of the stock will thus bring the edge of the tooth to the proper form, obliterating the grooves and finishing the edge or point of the tooth.

### Improved Polishing Machine.

William S. Wood, Newtown, N. Y.—In this device motion is effected by a rotary spindle with a chuck plate, to which is attached a spring pivot carrying a box or holder for the grinding substance, in such a manner that the pressure and stroke or motion are entirely at the command of the operator.

### Improved Brick Mold.

John Treadway, Haverstraw, N. Y.—This invention consists of a removable key or wedge block placed beneath the reciprocating plunger of the machine and above the platform, whereby the amount of pressure on the brick is raised according to the quantity or condition of clay in the mold.

### Improved Soap Frame.

John H. Keller, New Orleans, La.—This is a soap frame for forming soap blocks, constructed of iron side walls strengthened by longitudinal re-enforcing wooden bars, and of wooden end walls bound by the vertical flanges of the side walls, the whole being firmly clamped together and to the bottom part.