SASH FASTENER—J. B. Whitherle, of Upton, Mass. I claim the combination and arrangement of the retractor, K, the pall, or catch, g', the spring, h, and the lever, d, applied in the window sash and in relation to the rack, b, of the sash frame, as specified.

PLANING MACHINE—J. A. Woodbury, of Winchester, Mass. : I claim, first, Protecting the face of the board in tongueing and grooving by pressure surfaces, constructed and operating with rotary cutters as described.

Second, The swivel guide, L, when made to operate substantially as described.

Third, Placing the under cutter at or near the end of the frame for the purpose specified, substantially as described.

APPARATUS FOR SUPPORTING AND ADJUSTING GRAVERS FOR ENGRAVING MACHINES—John Hope (assignor to himself and Thos. Hope), of Providence, R. I.: I claim the curved arm or bar, B, and the graver carriage, D, as combined, together and with the graver lever, E, and made to operate therewith, substantially as specified.

I also claim the adjustable weighted arm, F, in combination with the balanced tracer arm or graver. E.

I also claim constructing the tracer carriage, D, in two parts, bc, substantially as described, in order that the tracer or graver may be adjusted in a vertical direction to cylinders or rollers of different sizes.

I also claim making the arm, H, and the stop, L, adjustable on their shaft and rod as described, in order to bring them into proper positions to cause the elevation of the graver under any situation of it on the surface of the cylinder and when the lever, S, is moved backward.

I also claim making the weight. G, in two parts, l m, for the purpose specified.

MACHINE FOR FINISHING SOLDERE TUBING—Edmund Jordan (assignor to the Benedict & Burnham Manufacturing Company), of Waterbury, Conn.: I claim the files or cutters, c c, attached to a tilting stock which is fitted to a reciprocating slide, F, and operated by means of the connecting rod, D, crank, C, and stops. G G', substantially as and for the purpose specified.

I further claim the clamp formed of the two plates, I I, attached to the levers, H H, which are connected to a treadle, K, the whole being arranged to operate as and for the purpose specified.

[A notice of this invention will be found on another page.]

EXTENSION TABLE—George Pratt, of Boston, Mass., assignor to John A. Ellis, of Cambridge, Mass., and J. E. Hazleton, of Newton, Mass. : I do not claim a spring catch, nor the mere duplication of such.

But I claim the combination of the auxiliary turning stop h, and its recess, g, or the equivalent thereof with the main stop, f, applied to one of the slides, and the rebate made in the other, the whole being as and for the purpose described.

I also claim the combination and arrangement of the two spring catches, m n, catch bars, q r, and the space, p, whereby during the motion of the supporter, S, on its hinges, one catch is made to pass between the two catch bars and one catch bar to pass between the two catches.

SEWING MACHINES—A. W. Sangster (assignor to V. M. Rice, Joel Thayer, James Sangster, and Eliza Remington), of Buffalo, N. Y., I do not claim the hook detached from the shuttle, because I believe this has been made before; nor do I claim to have conceived the idea of making the rough or serrated foot piece, because serrated foot pieces are now in common use.

But I claim, first, The spring thread carrier, K, in combination with the stationary arm, L, and feeding mechanism operating together in the manner and for purpose specified.

Second, The combination of the shuttle, R, and hook. 7, fastened together, or their equivalents, operating substantially in the manner and for the purpose described.

Third, The shuttle carrier, U, the case, S, and the crosspiece, P, when operating together substantially in the manner and for the purpose described.

HOSE COUPLINGS—Charles Vander Woerd (assignor to Alvah Clark & Sons), of Cambridge, Mass : I claim the arrangement and combination of an elastic tube, E, with the heads of the couplings, A B, so as to cover the joint, j, and allow the same to be kept tight by the pressure of the liquid, substantially as shown and described.

[This invention consists in the employment of an elastic tube or ring placed within the coupling, and arranged in relation to the other parts that the pressure of the water within the hose will keep the coupling water-tight. There is also a peculiar means for connecting the heads of the coupling together.]

MODE OF APPLYING THE POWER OF THE STEAM ENGINE—Jacob Widmer (assignor to himself and Howard Gilbert), of New Haven, Conn. : I claim, first, The combination of the rack, d, with the cams, B B, and groves, b, when constructed, arranged and made to produce the result, substantially in the manner set forth.

Second, I also claim the combination of the levers, h and h, with the rack, d, and cams, g and B B, when the whole is constructed, arranged and made to operate substantially as described.

RE-ISSUE.

ELECTRO-MAGNETIC ALARMS—A. R. Pope, of Somerville, Mass. : Patented June 21, 1853 : I do not claim the communication of intelligence by the electric circuit and magnet as a part of my invention or the vibration of the armature for this purpose.

But I claim, first, The mode of breaking and completing the circuit, or vice versa, that is, by the spring circuit breaker operating to cause the vibration of the armature.

Second, So combining a hammer and bell with the self-vibrating armature, that the vibrations of the latter shall produce a continued ringing of the bell under circumstances substantially as described.

Third, The combination of these parts, namely, the circuit breaker, hammer bell, and vibrating armature, or their equivalent or equivalents, with a self-acting spring or key in a door or window to operate so as not only to bring them automatically into action when the door or window is open, but maintain a continuous or continued ringing of the bell by the interruption of the electric current without intervention of other machines.

ADDITIONAL IMPROVEMENTS.

POLISHING APPARATUS FOR WATCHMAKERS' LATHES—J. M. Bottum, of New York City. Patented March 13, 1855—additional improvement dated June 8, 1858 : I claim the construction and arrangement of the polishing apparatus combined with the parts claimed in my former patent, as and for the purposes specified.

TIGHTENING THE TIRES OF CARRIAGE WHEELS—R. R. Scott, of Philadelphia, Pa. Patented March 23, 1858—additional improvement dated June 8, 1858 : Disclaiming the exclusive use of two sets of taper keys for drawing together the two ends of the tire, I claim the ends, B and C, of the tire, with their respective slotted blocks, b and c, the taper keys, and the bolt, G, when arranged for joint operation substantially as and for the purpose set forth.

DESIGNS.

STOVE DOORS—R. H. N. Bates, of Providence, R. I., assignor to himself and Isaac Backers, of Canterbury, Conn., and J. P. Barstow.

A New Gnomon.

A correspondent informs us that a friend of his has invented a new gnomon for sun-dials, which is simply a piece of thread or twine carried at an angle from the center of the dial to a post set at one side. This gives the time at noon with accuracy, which no other gnomon will do.

Dialing.

MESSRS. EDITORS—From the notice of sundials in a late issue of the SCIENTIFIC AMERICAN, I am led to make the following remarks :—

There is no more beautiful or ingenious instrument than the sundial; when correctly made and its use properly understood, it can present the true time with an unvarying exactitude to be found only in the works of the Divine Artificer, upon which its power depends. The only difficulty lies in the variable nature of the shadow's progress through the varying nature of the sun's course, which will give a different reading to the hour circle from the mean, or average or clock time. While the dial indicates solar time, varying with the season, the clock presents equable or mean time, being the precise or exact division of the hours and minutes to their equable length, yet there is no real difference between the two. They both come to the same conclusion, and both precisely accomplish in a given period their due degree. Hence with the smallest possible trouble it is easy to find the very thing sought, and at any time to discover the true clock time. The following table will answer for such indication to any person using a dial :

The sun's center is on meridian, and the dial shows noon on			*H. m. s.*
Jan. 1,	when the clock time shows		12 4 3
Feb. 1,	"	"	12 13 57
Mar. 1,	"	"	12 12 32
April 9,	"	"	12 0 0
May 9,	"	"	11 56 55
June 9,	"	"	11 57 31
" 21,	"	"	12 0 20
July 1,	"	"	12 3 29
Aug. 1,	"	"	12 6 00
Sept. 1,	"	"	11 59 46
Oct. 1,	"	"	11 49 35
Nov. 1,	"	"	11 43 43
Dec. 1,	"	"	11 49 23

By this it will be easy to see how much difference should be allowed for the equation of time, and at any period to find the clock time by the dial indication.

It must be remembered, however, that a dial to be exact must be most carefully placed. Simply setting a dial north and south is not at all sufficient. Pains must be taken to secure a true meridian, and before the dial is located, that meridian should be found with great exactness, so that in setting the dial (if horizontal) the gnomon shall be perfectly adapted to the true meridian of the place where it is to stand.

It would seem that an agreeable and really useful accompaniment to the dial would be a prolongation of the horary circle, sufficient to allow the scale of signs to be inscribed, and the style to track out the sun's path through the heavens, and thus unerringly indicate his place in the ecliptic. If in either side of the astronomic signs the names of the months were written, it would be a most pleasing occupation to notice month by month the progress of the sun in his vibrations backward and forward, and to children it would show clearly the motion of that planet. R. W.

[The above communication on the construction of sundials is not only interesting but valuable, and the facts contained have the freshness of positive experiment, and are consequently of interest to our readers.—EDS.

Inter-oceanic Canal to the Pacific.

MESSRS. EDITORS.—In the last number of your paper I notice an article on the "Inter-oceanic Canal to the Pacific," which, so far as the report of Lieut. Craven is concerned, is perfectly accurate, but is, I think, calculated to mislead those who are not acquainted with the previous history of the project; and as the subject is one of great and universal interest, it is important that no undue prejudice be raised against it.

The proposed route was originally explored by W Kennish, Esq., C.E., whose plans and estimates were published on his return, and submitted to the consideration of eminent engineers, both of this country and in Europe. Their opinion as to the practicability of constructing a canal, without locks, sufficiently capacious for the passage of the largest vessels from ocean to ocean, was unanimously favorable, provided the data furnished by Mr. Kennish should be found correct. The expedition under Lieut. C. was therefore sent, not to survey any new route, nor to make further explorations, but merely to verify the statements of Mr. Kennish. He has not contradicted a single one of these statements so far, and his hasty condemnation of the project is, therefore, wholly without reason, for all the difficulties he urges against it were met and estimated for, in the report of the original survey. In this state of the case it is impossible to pronounce judgment until the report of Lieut. Michler, Topographical Engineer of the late expedition, shall have appeared, when the question will be settled by the scientific world.

These facts should be made known, in justice to the promoters of an enterprise of which, if successfully completed, the whole world may well be proud. Yours,

JAMES A. ROCKWELL.

New York, June, 1858.

A Pleasant Testimonial.

MESSRS. EDITORS—I took out two patents through the Scientific American Agency, bearing date April 21st and July 21st of last year, and I now wish to return you my sincere thanks and good-will for the reliable and beneficial information I received from you and your Examiners. You gave me no trouble in securing my rights; and I now discover that you have made my claims to cover both inventions much broader than I expected, which has made my claims of much more value to me. I shall soon have another case, and shall surely call at your Patent Agency to have it prepared.

JOHN WOODVILLE.

Chilicothe, Ohio, June, 1858.

[We are gratified to receive this pleasant testimonial from our client, and to learn from him that, in consequence of the care taken in the drawing up of his claims, his patents are, on this account, much more valuable to him. It is notorious that inventors who undertake the preparation of their own cases are generally not only bothered very much by the Patent Office before their claims can even be examined, in consequence of defective papers, but when they do succeed, it is rarely, if ever, that their claims can stand a litigation.—EDS.

Successful Copper Mining in Australia.

On the 29th of September, 1845, the work at the famous Burra Burra mines was commenced by twelve miners; they now give employment to 1,031 miners, and support a population of nearly 5,000 persons. Since the commencement of the working, the mines have produced 128,400 tuns of copper ore, yielding 25,700 tuns of copper, which, at the present moment, would be worth in Adelaide $13,415,000. The wages distributed in these mines amount to $4,125,000, while the dividend paid on each $25 share amounts to $1,000. The present value of its shares is $1,600.600. Such an instance of successful mining operations has rarely, if ever, been witnessed in any country.—*American Mining Chronicle.*

Cotton Mills in Saxony.

The kingdom of Saxony possesses, as the mother of the German cotton mills, the largest number of any of the German States, viz., 139 mills, working 554,646 spindles, with a yearly consumption of 34,200 bales of North American cotton, and 34,000 bales of other kinds. A large mill has just been built which will run 50,000 spindles, and consume yearly about 3,500 bales of North American cotton, and 2,000 bales of other kinds. The total number of mills now in working order is 134, running 604,646 spindles, and consuming annually 36,700 bales of North American, and 36,000 bales of other kinds. The largest mill has 50,000 spindles in working order, and the smallest 120 spindles.

Uses of the Potato.

This valuable and nutritious esculent is not only useful to us in the many tempting forms in which it is presented in its unmistakable character, but the farina extracted from it is largely used for other culinary purposes. The famed gravies, sauces, and soups of France are largely indebted for their excellence to that source, and its bread and pastry equally so; while a great deal of the so-called Cognac imported into America from France is the product of the potato, and imbibed as the pure essence of the grape. The fair ladies of our country perfume themselves with the spirit of potato, under the designation of *eau de cologne.* But there are other uses which this favorite esculent is turned to abroad. After extracting the farina, the pulp is manufactured into ornamental articles, such as picture frames, snuff-boxes, and several descriptions of toys, and the water that runs from it is a most excellent scourer. For perfectly cleaning woolens and such like articles, and curing chilblains, it is also successfully employed.

Recent Patented Improvements.

The following inventions have been patented this week, as will be found by referring to our List of Claims :—

FEEDER FOR STEAM BOILERS.—George Brodie, of Little Rock, Ark., has invented a new feeder for boilers, the object of which is to gradually supply steam boilers with water equal at all times to the amonnt evaporated, and used so that the water within boilers will be constantly kept at a given hight, and by the most simple means, requiring the least possible expenditure of power for its operation.

MACHINE FOR FINISHING SOLDERED TUBING.—Edmund Jordan, of Waterbury, Conn., has invented an improved machine for finishing soldered tubing, in which a peculiar means is employed for operating a file or cutter for the purpose of filing or finishing off the soldered seams of the tubes, and there is also a clamp for holding tubes while being operated upon by the cutters. The inventor has assigned his invention to the Benedict and Burnham Manufacturing Company of the same place.

IMPROVED PROCESS OF TANNING.—Jesse Morgan, of Sumterville, S. C., has invented an improved method of tanning leather, which consists in treating hides or skins when they have been partly tanned by the usual process, with a compound of sugar or other saccharine matter, glaubers salts and chloride of soda, for the purpose of completing the tanning process more expeditiously than when it is completed in the usual way, and at the same time making leather equal in quality, weight and durability to that tanned entirely by the old process.

HELYPSOMETER—This is an instrument for taking the altitude of the sun at sea or on land, to which the inventor, J. Oakes, of New York, has given the above name. The end attained by this instrument is, that with it the altitude of the sun can be taken when the natural horizon is obscured by fog or is invisible from other causes. It consists of two parts, one of which is employed to record the altitude by the action of the sun's rays upon a sensitive coating of similar nature to those employed in photographic processes, and the other to measure the altitude thus recorded. The first mentioned portion of the instrument consists of a hollow hemisphere whose equatorial plane is kept in a horizontal position or as nearly so as possible, and has a small orifice in the center, and whose concave is prepared with the sensitive coating. The rays of the sun being admitted through the orifice produce a mark upon the sensitively prepared concave surface, and by applying the measuring portion of the instrument to measure the distance in degrees of a circle from the equatorial plane of the hemisphere, the altitude is obtained, being represented by the said distance in degrees.