



[Reported Officially for the Scientific American.]

## LIST OF PATENT CLAIMS Issued from the United States Patent Office FOR THE WEEK ENDING JANUARY 28, 1854.

**PRESSES FOR MAKING MINIATURE CASES**—H. T. Anthony, of New York City: I claim the construction of the plates of a press for applying the covering materials to miniature and other like cases, by forming the face which gives the pressure of elastic materials, whereby the embossed or other raised figures and ornaments will not be obscured or injured during the process, while at the same time a superior quality of work is produced, as set forth.

**DAQUERROTYPIC PLATE HOLDER**—P. H. Benedict, of Syracuse, N. Y.: I claim the arrangement of a vice or analogous device upon the side or edge of blocks used for holding daguerrotypic plates while they are being polished or buffed, the vice constructed as described, and operating by holding the bent edge of the plate between its jaws.

**CULTIVATORS**—By Enos Boughton, of East Bloomfield, N. Y. I do not claim any part of the raising and depressing device; nor do I claim the knife or the wheels separately.

I claim the combination of the knife with the wheels, for the purpose of cutting up the ground and destroying thistles or any other weed, plants, or grasses therein.

**FIXING LIKENESSES IN MONUMENTS**—Wm. Boyd, of Garrettsville, Ohio: I claim combining with a monument or grave stone, a case having a concave mirror set in the back part, and having also within it a miniature likeness of the deceased, which may be kept secure from the action of the weather, or from liability to receive other injury, said miniature being attached to the cover of the case in such a way, that by opening the cover the likeness may be viewed by reflection in the mirror, as set forth.

**FOUNTAIN PENS**—By Wm. Cleveland, of Orange, N. J. I do not claim the employment of capillary action to supply the ink to the pen except when used under an arrangement and combination, consisting in the employment of the leading stem so fixed in the delivery aperture that it shall lead the ink down on one side of the aperture and allow the air to enter the other, as set forth.

**PRESSES FOR MOULDING GLASS**—By Wm. O. Davis, of Pittsburgh, Pa.: I claim the combination of the rocking shaft, connecting rods, swinging beam, and toggle joint lever; or their equivalents, as described, for the purpose of procuring a vertical pressure in presses, together with the mode of attaching them, so as to relieve the bed-plate and frame-work of the press of any strain.

**DIVIDED RAILROAD AXLES**—By S. L. Denney, of Christiana, Pa.: I claim the gradual conical enlargement terminating in the more abrupt curved portion, toward the inner end of one part of the axle, in combination with the alloy surrounding it and the adjustable connecting box, arranged and operating as described.

[See engraving of this invention on page 53 of this volume, Sci. Am.]

**COTTON PRESSES**—C. J. Fay, of North Lincoln, Me.: I claim the use of the slats or guide strips, arranged as set forth.

**SAW MILLS**—E. W. Johnson, of Perth Amboy, N. J.: I claim the arrangement of mechanism for driving two saws, or gangs of saws, and placing the whole upon the bed plate, as set forth.

**PROPELLERS**—Harry Leach, of Boston, Mass.: I claim the specified improvement in constructing a propeller, viz. of a combination with each of its arms, of two parts or flats, projecting in opposite directions, and an opening or passage arranged between them for the escape of back water, as described.

**APPARATUS FOR CLEANING AND BUFFING DAQUERROTYPIC PLATES**—Thomas Longking, of Brooklyn, N. Y.: I do not claim the buffing wheel nor any of the parts separately.

But I claim, first, fitting the revolving cushion with the ring, by which the canton dannel or similar covering is secured to the cushion, or removed, and a new cover substituted when required, as specified.

Second, I claim the arrangement of the gearing and shafts, by means of which the cleaning cushion is combined with the buffing wheel, as set forth.

**QUARTZ CRUSHERS**—T. O. Cutler, of Jersey City, N. J.: I claim the employment of balls to act by centrifugal action due to their rotation about a common center, as specified, when the said balls are combined and set against the inner periphery of a shell or concave which rotates on a common axis with the balls, and which, by reason of its rotation, distributes and holds the material to be ground, &c., in the concavity of the said shell, as specified.

**SHUTTER HINGES**—Harvey Lull, of South Coventry, Ct., (assignor to Harvey Lull and Richard Porter, of Wheeling, Pa.) Ante-dated Jan. 3, 1854: I claim the so forming of a self locking shutter hinge, cast in two pieces, as that the blind or shutter hung thereon may swing open or shut on a horizontal plane and lock, when opened to its limit, and so that also when locked open, the strain shall be taken off from the spindle and thrown on to cam arms, and thus effectually relieve the spindle from the weight or strain of the shutter, as described.

**ROLLERS FOR SCARPING THE EDGES OF SKELPS FOR LAP WELDED TUBES**—James McCarty, of Reading, Pa.: I claim a pair of rollers constructed, arranged, and adjusted as described, so as to bevel the opposite edges of skelp plates of different widths on opposite sides of the same.

**STEAM HAMMERS**—J. L. Morris, of Reading, Pa.: I do not claim attaching the hammer to a beam, which is operated by a piston in a steam cylinder, when the hammer is connected rigidly to the beam, as that would be equivalent to what is known as the "helve" steam hammer.

I claim, first, admitting steam to the cylinder above the piston, and exhausting the steam therefrom through ports, which are opened and closed by an annular valve working in the cylinder itself, or in a steam chest which is placed above, and forms a continuation of the cylinder, as described.

Second, I claim the combination of a bell crank lever with a trigger or catch, or other shape capable of operating as described, when the fulcrum of the said lever is attached and stationary in relation to the hammer block, and one end or arm is attached to the connecting rod of the hammer block and receives the necessary movement to actuate the trigger or catch, to set free the valve rod by means of a continuous descent of the connecting rod after the hammer is arrested by striking the blow, as set forth.

[This is a good improvement. See notice on page 20, this volume.]

**ELECTRO-MAGNETIC ENGINES**—Chas. G. Page, of Washington, D. C. Patented in England May 5, 1851: I claim the employment of the axial action or force of the electric current as a mechanical agent or motive power for the various purposes named, the power being produced by the combination or united operation of a helix or helices, an axial bar or bars of iron, and a cut-off, or its equivalent, for regulating the motion of the axial bar or bars, under a general arrangement in principle, as set forth.

And I claim also the employment of co-operating electro-magnets or armatures, in combination with axial bars, helices, and cut-off, or its equivalent, substantially as set forth.

Lastly, I claim the employment of square wires in the construction of helices for electro-magnetic purposes, as set forth.

[This invention of Dr. Page is published on page 66, Vol. 7, Sci. Am., with a full description.]

**WATER GAGES FOR STEAM BOILERS**—Wm. Palmer, of New York City: I claim the use of the double tubular case in combination with the lever, having a float at one end working in one of the tubes, and a compensating plate or equivalent device, at the other, working in the opposite tube, for the purpose set forth.

I also claim the use of the lever having a float at one end and a compensating plate at the other, whether working in a double tubular case or otherwise, in combination with an upper and lower rod valve for operating a bell by means of the steam escaping through these valves, whether using the pad die wheel or any equivalent device for that purpose, to indicate the minimum or maximum of the water in the boiler as set forth.

**MANUFACTURE OF SHEET-IRON**—E. G. Pomeroy, of Pittsburgh, Pa.: I do not claim the use of the described materials, in combination, as a paint or composition that may be forced into the surface of iron.

But I claim incorporating, as described, solid carbonaceous matter with the surface of iron so as to protect it from oxydation and beautify it at the same time.

**CONSTRUCTION OF PRINTING BLOCKS**—Benj. Underwood, of Brooklyn, N. Y.: I claim the peculiar construction of the type described, so that when combined in a case such as specified, any given design may be produced for printing oil cloths, carpets, or other fabrics, as fully set forth.

I also claim the formation of blocks for printing oil cloth carpets or other fabrics by the combination and arrangement of sections or type, such as described, by which an endless variety of patterns may be produced from the same sections variously disposed, at a comparatively small cost.

**CARPET BAGS**—M. J. Thring, of New York City: I claim constructing the carpet bag with its top and bottom of equal or nearly equal widths, and arranging round its front a strong metallic frame, and attaching to the front and near the center of said metallic frame, by hinges or loose joints, a metallic swinging cover, which extends from the center to the top of the frame, and has a ledge on its inner face, the said cover serving to close up the mouth of the bag, and in connection with the metallic frame to keep out all dust and rain. The whole being constructed, arranged, and operating in the manner specified.

**MACHINE FOR PAGING BOOKS**—By Edward Town, of Jersey City, N. J.: I claim the arrangement of type in spiral columns around a cylinder, for the purpose of printing successive numbers, the cylinder being moved laterally while it revolves by means of a screw on the end of its shaft, as described.

I also claim the right to use any number of cylinders on a single machine, as set forth.

**STEAM HAMMERS**—P. L. Weimer, of Reading, Pa.: I make no claim to being the originator of not admitting steam into the cylinder until after the hammer has struck its blow; the same being effected by others, although by different arrangement of device from that which I employ.

I do not claim admitting steam into the cylinder of steam hammers by means of the recoil of the anvil caused by the blow of the hammer.

But I claim the arrangement of the toggle, the catch, two arms, the weight and shaft, for the purpose of opening the valve admitting steam into the cylinder from the concussion or spring of the anvil in its bed, caused by the force of the blow of the hammer.

**CHURNS**—I. L. Dickinson, of Richmond, Ind.: I claim the combination of the movable or rotating dashers, with the breakers, as described, so that said breakers may remain stationary, while churning and revolve with the dashers to collect the butter, as described.

**FORNITURE CASTERS**—Le Roy S. White, of Chicopee, Mass.: I do not claim making the shank of the caster detachable from its socket; nor do I claim the employment of a spring to hold the shank in the socket; nor the arrangement of said spring in a groove made in and around the shank, and the making the spring to bear against the internal surface of the socket made without a groove.

But I claim the arrangement of the sustaining groove of the spring in the socket, instead of in the shank, so that when the shank is being drawn out of the socket, or when it is win or out of the same the spring will remain in the socket.

And in combination with the spring and groove made in the socket, I claim to make the groove of the shank with its upper side flaring and the upper end of the shank beveling, as described, the said flange of the side of the groove and the top rendering the shank capable of being detached from or attached to the socket.

### RE-ISSUE.

**OPENING AND CLOSING GATES**—S. G. Dugdale, of Richmond, Ind. Patented originally Oct. 11, 1853: I claim, first, opening, closing, fastening, and unfastening the gate, by moving the bottom of the gate in an oblique direction forward to the post upon which it is hung, as specified.

Second, I also claim the use of the pendulous and vertical levers and arms in combination with the hinges of the gate, as set forth.

### DESIGNS.

**CANNON STOVE**—William Resor (assignor to Wm. and R. P. Resor & Co.) of Cincinnati, Ohio.

**COOKING STOVE**—By Conrad Harris and P. W. Zoiner, of Cincinnati, Ohio, assignor to Alex. Bradley, of Pittsburgh, Pa.

**COOKING STOVE**—Peter Seibert (assignor to Alexander Bradley,) of Pittsburgh, Pa.

### Care of the Eyes.

Dr. Dafter says: "So many women complain of weak eyes, that we have thought it wise to give some directions as to reading and writing, by which the sight may be preserved uninjured. Observe then, that the light should never be allowed to fall on the paper, or on the eyes of the reader, or writer, but the left side; for then the eyes are not annoyed with the shadow of the pen, as will be the case, when the light comes from the right side. That writing tries the eyes more than reading is a popular error; and, in writing, blueish paper is better for the eyes than pure white. When the eyes feel fatigued, bathing them in cold water will both strengthen and relieve them. In reading great relief will be found if the eyes are turned from the book to some soft and harmonious colors. Brilliant colors, therefore, in paper or paint, should not be chosen for a library or sitting-room, where either reading, or writing, or sewing is going on. For sewing, that peculiarly feminine employment, is quite as trying to the eyes as study; and fine sewing at night is really very injurious, and should be avoided if possible. Generally the eyes should be used, in all these occupations, as much as can be in the morning. Ground glass shades, at night, are bad, as they deaden the light too

much; the common paper shade, which concentrates the light downward is better."

### The Precious Metals.

**TOUGHENING GOLD**—Wolf proposes, in the Practical Hand-book for Jewellers, to fuse the brittle gold in a new crucible, and when melted to throw in one or two pieces of sulphur of the size of a pea, to shake the crucible a little with the tongs, and to cast it rapidly into a heated mould. He also proposes to render small pieces malleable by coating them with powdered borax, and heating them in the blow-pipe flame, until the surface commences fusion.

Both of these methods are resorted to at the United States Mint, but the choice of either depends upon the nature of the accompanying metals that give the gold its brittle character. When there is a quantity of iron present, the gold is fused with a mixture of sulphur, potash, and soda, which will remove it by making the very fusible mixture of sulphurets of iron and alkali. If tin, arsenic or antimony be present, a good flux is a mixture of borax, soda, and saltpeter, the last for oxidizing the foreign metals into their respective acids, the soda to give base to those acids, and the borax to collect the slag. In both these cases a sand or clay crucible is preferable to a black-lead pot, in which last the graphite acts reducingly. Where lead is present this process may partially effect its removal; but it is more completely effected during quartation and by washing the fine gold thoroughly with hot water, after extracting the silver by nitric acid. Another method of removing lead would be to fuse the gold with a little saltpeter, borax, and silica, whereby a fusible slag of oxyd of lead would result, and might be skimmed from the surface of the gold. Palladium and platinum, not unfrequently present in California gold, are also removed by the nitric acid in parting silver from gold. Grains of iridosmin have been observed in California gold, in distinct particles, even after three or more fusions, and seem to have no tendency whatever to enter into an alloy; but, whilst casting such gold, these particles collect at the bottom of the pot, from their greater specific gravity, and, by remelting in a small crucible, and carefully casting, they may be obtained mixed with a small quantity of gold. The latter is dissolved by nitromuriatic acid, and the iridosmin obtained pure.

**PLATINOID METALS**—Platinum is associated with several other metals in the platinum sand which is found in some gold-districts.—They have not been found as a distinct deposit in California, but have been observed in the United States Mint in the operations of assaying and parting. These associated metals are palladium, rhodium, iridium, and osmium, to which we must add the lately discovered metal, ruthenium. They have a sufficient resemblance to be classed together, and are obtained by a similar hydrometallurgic treatment. The grains of iridosmin, alluded to under gold, have been qualitatively examined and found to contain the new metal ruthenium, as was observed by Claus in relation to the iridosmin from other localities. Palladium has been observed, and at times in sufficient quantity to render the gold brittle. The quantities of platinoide metals found in the California gold are small, about 1½ lb of iridosmin having been obtained from about 25 tons of the gold, 3-100000, but the greater part has, of course, passed into the coin, the coarser grains only being left.—[By Prof. Booth in the transactions of the Smithsonian Institute.

### French Rivers Breaking up.

The breaking up of the rivers of the north of France, after the late heavy snows and severe frost, threatened to cause great damage, but seems to have passed over without either serious collision or inundation. The explosion of the Seine, near the Pont Neuf, as the rising water cracked the frozen crust, was heard a mile. A large police force was ready, all the boatmen had double lashed their boats, the bathing houses were made fast with huge iron cables, and the washerwomen's rafts were hooked into pilasters and parapets. In forty eight hours the river was clear. The Seine rose three feet in half an hour, and the current was laden with icebergs that would have done honor to Spitzbergen.

### Arsenic Eaters.

The Styrian peasants, says Professor Johnston, eat arsenic as the Chinese eat opium.—They eat it for two specific purposes—to acquire plumpness and freshness of complexion, and to improve their "wind," so as to enable them to climb long steep mountains without difficulty of breathing. And, strange to hear, these specific purposes are attained. The young poison-eaters are remarkable for blooming complexions, and full, rounded, healthy appearances. The peasant, after dissolving a slight particle of arsenic in his mouth, ascends heights with facility which he could not otherwise do without the greatest difficulty of breathing.

### Bed Clothes.

The perfection of dress—day or night—where warmth is the desideratum, is that which confines around the body sufficient of its own warmth, while it allows escape to the exhalations of the skin. Where the body is allowed to remain in its own vapors we must expect an unhealthy effect upon the skin. Where there is too little ventilating escape, insensible perspiration is checked, and something analogous to fever supervenes. Foul tongue, ill taste, and lack of morning appetite betray the result.

### Amorphous Phosphorus.

Considerable attention has been drawn of late to a variety of phosphorus bearing the above name, which has been recommended for the manufacture of lucifer matches, &c., both as being less injurious to the health of the workmen, and less apt to ignite on being handled. From the researches of Puttfacken, however, it appears that the substance in question, although undoubtedly possessing the above valuable properties, is merely a low oxyd of ordinary phosphorus, and not, as was supposed, an allotropic modification.

### A Remedy for the Vine Disease.

It is doubtless well known to most of our readers, that the vineyards of Southern Europe and the Madeiras have been blighted by a microscopic acarus, the "Oidium Tuckeri," and that the price of wines, raisins, &c., has been considerably raised. It has, however, been ascertained that the use of manures, rich in iodine, enable the vine to resist these destroyers. In certain districts of Spain, decomposed seaweeds are ordinarily used as manure. In those parts in which the amount of iodine in the soil may average 1-600000 the vines have entirely escaped.

### California Postage.—Extortion.

We have received many complaints from California respecting the exorbitant rates of postage charged upon our paper. A subscriber from San Francisco says that he has been charged 75 cents per quarter, postage, upon the Scientific American! We have taken pains to inquire of the proper authorities here, and find that 6½ cents if paid in advance, is all that can be legally charged. We trust that our subscribers there will submit to no such extortion.

### Strychnine for Panthers.

A farmer in California recently killed a large panther in the following manner:—"The animal attacked his pig-pen, killing a fine hog and eating about half of it. He then anointed the other half with strychnine, and left it on the same spot. The ensuing night brought the depredator again to its feast; and the next morning a huge she-panther and three cubs were found extended lifeless on the ground. The animal was of an extraordinary size, measuring six feet from the nose to the root of the tail, and nine from tip to tip.

Glass bottles were first made in England, about 1558. The art of making glass bottles and drinking glasses was known to the Romans in the year 79, A. D.,—they have been found in the ruins of Pompeii.

The most stupendous canal in the world is one in China, which passes over two thousand miles, and to forty-one cities; it was commenced in the tenth century. A monster work of man.

The largest and oldest bridge in the world is said to be that at Kingtung, in China, where it forms a perfect road from the top of one lofty mountain to the top of another.