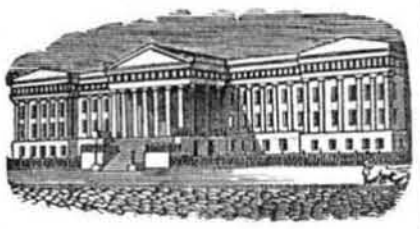

[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING FEBRUARY 7, 1854.

ROTARY ENGINE.—Ebenezer Barrows of New York City. Patented in England, July 3, 1851: I claim, first, the revolving steam wheel, having projecting rims, or flanges, revolving within the interior of a stationary cylinder, in which, there are two or more fixed abutments or stops, which fit steam tight, so as to close and divide the annular space, between the cylinder and wheel, into two or more steam chambers. The said steam wheel having four or more pistons, whose operation is controlled by a stationary curved groove or way in each cylinder head, so as to be alternately acted upon by the steam in the cylinder, and drawn within the wheel, so as to pass and clear the abutments or stops, substantially, as shown.

I claim, second, the six way cocks, or steam heads, having each a steam passage leading to its plug seat, two steam passages leading from its plug seat to opposite chambers of the cylinder, two exhaust passages leading from opposite chambers of the cylinder back to the plug seat, and one leading from the plug seat to the exhaust pipe, their cock plug being provided with suitable openings and passages, to make communication to or from the steam and exhaust pipes, to either division of the cylinder, or to close both, as explained.

I claim, fourth, the mode of uniting the face and side packing pieces of the pistons and abutments, so as to make them steam tight, at their corners by dovetailing them, as shown.

I further claim, making the steam cylinder within, and a part of the piston wheel the stationary rim forming the outer side of said cylinder, so that three sides of said cylinder shall revolve with the pistons, as set forth.

[See engraving of this invention, on page 25, vol. 8, Scientific American. A curious history could be written of this case had we time to enter into it—the application was pending before the office nearly four years, and a vast quantity of stationary, has been consumed, and a great deal of argument employed in getting it through. There is no doubt of the genuine validity of the patent, as every objection raised by the office has been successfully and pointedly met. Almost any other man except Mr. Barrows would have been disheartened long ago, in view of the repeated defeats, which he has met with, and we hope he will now realize something handsome as a reward for his preserving energy. Patents have also been secured for this engine, in Great Britain, France, and Belgium, through the Scientific American Patent Agency,

DENTAL CHAIRS.—A. Merritt Asay of Philadelphia, Pa.: I claim moving the chair seat vertically by means of the screw wheels, shafts, rack, and arms, as set forth.

TURNING LATHES.—Edward Bancroft, & Williams Sellers, of Philadelphia, Pa.: we claim the method of varying the motions of the mandril and screw or leader, by means of the two series of wheels, each series consisting of wheels of different diameters, and all the wheels of one series, being connected and turning together, and imparting motion to all the wheels of the second series, with different degrees of velocity, substantially as described, when this is combined with the method of locking, any one of the wheels of the second series with the shaft of the screw or leader, by having the wheels on separate sleeve arbors fitted to turn on each other, and adapted to receive a locking pin or bolt fitted to holes in a plate attached to the shaft of the screw, as specified, or any arrangement effecting the same end by means substantially the same.

We also claim the manner of supporting and sustaining the screw or leader by combining therewith a trough, as specified, having the outer end of the said screw or leader without a journal, as set forth.

MACHINES FOR RULING PAPER.—John & William McAdams, of Boston, Mass.: we claim first, a machine for ruling paper, in which, both the horizontal and vertical lines of the sheet are ruled in passing once through the machine, by any arrangement of devices which carries the sheet, after one set of lines is ruled, in a direction at right angles to its first course to another set of pens which rule the sheet across the lines first made.

Second, we claim changing the direction of the movement of the sheet, after passing from the first set of pens, by means of the travelling band, and revolving drums, as described.

Third, we claim lifting the pens so as to leave a heading to the sheet, by means of the roller, with its moveable tongue and cam projection acted upon by the edge of the paper and the motion of the feed roll, so as to lift an adjustable arm connected to the pen holder, as described.

Fourth, we claim forming grooves in the feed rolls, so that the pens may rest over these grooves and not upon the rolls between the passage of the different sheets, as above set forth.

Fifth, we claim guiding the sheet straight to the second set of pens, after the direction of its movement is changed by means of the converging bands which carry the edge of the sheet against a proper guide or against the side frame work of the machine, as specified.

Sixth, we claim forming the last roll which carries the sheet after it is ruled to the receiver, of a polygonal or angular shape, so that its revolution may give a vibratory motion to the sheet for the purpose specified.

MACHINES FOR MAKING NUTS.—Jacob Reese, of Sharon, Pa.: I claim, first, the use of the trough of cold water in combination with the rotating die box, for the purpose of cooling each die or mould after it has discharged its nut, and preventing the water from coming in contact with other parts of the machine, or with the nuts which are made in it.

Second, I do not claim the rotating of the mould box, but I do claim the use of the guide head, constructed as herein before described in combination with the lever, and guide for the purpose of communicating to the rotating mould box the peculiar motion required, consisting of a succession of sudden yet steady quarter revolutions, each followed by a pause or rest, during which the mould box is held firmly in its place in the manner described.

WINNOWERS.—Michael Shimer of Union Township, Pa. I do not claim the adjustable side alone but I claim the moveable side in combination with the inclined screen, said combination subserving three purposes, for preventing the grain from passing over the edge of the screen until it has been properly presented to the blast or draft, for partially cutting off the draft, as the state of the grain may require, for expanding the draft of the blast in such a manner that the pure grain will not be carried over, into the horizontal part of the trunk.

Second, I claim the square rubber in combination with the circular flanch formed on its lower extremity as described for the purpose of mashing or grinding all impurities, softer than the wheat, and also for preventing the grain from passing out of the bottom of the hopper before it has been thoroughly pulverized, as described.

WINNOWERS.—Josiah Turner, & W. C. Steroc of Sunapee, N. H: we do not claim the toothed cylinder or thresher with its corresponding toothed concave, nor do we claim either of the devices described separately.

We claim the combination of an oscillating cradle of slanting slat or blind work, as within set forth with the two blowers and the the fender, as set forth.

MAKING BATTERY CONNECTION WITH AN ELECTRO MAGNETIC COIL ON THE TRAVELLING CARRIAGE OF A TELEGRAPHIC REGISTER.—John M. Batchelder, of Cambridge Mass. and M. G. Farmer, of Salem, Mass.: we claim the combination of the system of progressive levers with the battery wires the base board and marble platform, so as to operate as specified.

POLISHING PLOUGH HANDLES AND OTHER ARTICLES.—Thomas Blanchard, of Boston, Mass.: I do not claim the invention of an endless polishing or smoothing belt, but what I do claim as new and of my invention, is the above described mode of applying and operating said belt with respect to the article to be smoothed or polished, the same consisting in not only making the said belt to traverse or run on sustaining pulleys or their equivalents, but at the same time to rotate such belt and sustaining contrivances in such manners around the article to be smoothed or polished as to cause the belt while in motion on its rollers to run in contact with and around the surface or article to be reduced, smoothed or polished.

I also claim, the combination of the feeding carriage, its guides, and the guide rollers or the mechanical equivalents therefor, with the endless polishing belt provided with machinery for imparting to it, its compound motion or movement in two directions, as specified.

MACHINES FOR CLEANING AND ASSORTING BRISTLES.—George Edward Burt, of Westfords, Mass., assignor to George Edward Burt, & David C. Butterfield, both of Westford aforesaid: I claim the combination of machinery for combining or straightening the bristles, and machinery for separating and assorting them as specified.

I claim the combination of the two moveable combs or rakes, and the two lifter wheels, and their carrying endless belts, so arranged as described, the whole being for the purpose of first holding the mass of the bristles by one part or portion of it, and lifting and combing the remainder of it, and subsequently seizing and lifting it by such combed part or portion, and combing the part previously seized all as specified.

And in combination with the machinery for combing or straightening the bristles, and machinery for assorting or separating them, I claim the endless guide belt, the spring band and rapping apparatus or hammer, as applied and made to operate, as specified.

I do not claim the combination of an endless platform, a roller, and a series of pressure rollers as employed in the hereinbefore mentioned machine of the said Lorenzo D. Grosvenor, but what I do claim, as of my invention, is the combination and arrangement of the two endless brush belts and two series of draft rollers, and their two sets of endless bands, as made to operate together and assort the bristles, as specified.

I claim the combination of the combs and their grooves, with the delivering rollers, so as to operate as specified.

BIT OR DRILL STOCKS.—Dexter H. Chamberlain, of Boston, Mass.: I am aware that a hand drill has been constructed so as to have its drill shaft supported in a stock and rotate, by means of two beveled gears, one of them being fastened on top of the drill while the other was affixed on a separate shaft disposed at right angles with the drill shaft, and having the crank applied, so as to enable a person to rotate it and thereby put the drill shaft in rotation, therefore, lay no claim to such a device, in the said drill stock as exhibited, the crank of it is made to rotate in a plane parallel to the axis of the drill shaft.

The consequence is, that during a rotation of the crank, there is an uneven pressure exerted on the drill, the said pressure being increased at one moment and diminished at another, and in the direction of the axis of the drill. A steady pressure on the drill longitudinally as well as laterally is very desirable particularly when a small drill is used, as without it the drill is not only liable to be broken or injured, but to be made to deviate from its desired course in passing through anything. The complication of the construction of the beveled gear bit stock, and the disadvantages incident to it while in use render it an instrument of little value and utility.

Neither do I claim making a tool stock and the bell crank in one piece of metal, so that their rotations may be equal and simultaneous, but what I do claim is the arrangment of the bell crank separate from, and so as to play or rotate within the tool shaft stock, as specified, the said bell crank having a spur gear to work into a pinion fixed into the end of the tool shaft, and to impart to said tool shaft an accelerated motion essentially as specified.

TOOL HOLDERS.—Dexter H. Chamberlain of Boston, Mass.: I do not claim a split or jaw socket, having a screw and screw nut applied to it for the closing of its jaws upon the shank of an awl or tool inserted between them, but what I do claim as my invention, is my improved method of arranging, constructing, and applying together the jaws and confining screws, the same consisting in making the jaws separate from the screw shank, (on which the screw is cut) and in other respects substantially as described, and not only providing the screw nut with a closing concavity or socket, but the screw shank with a closing socket for the jaws to rest in, the whole being so that when the screw nut is screwed down upon the jaws, the combined action of the jaws and the screw nut shall operate to simultaneously close the jaws at their upper and lower ends as specified.

MANUFACTURE OF TIN FOIL OR SHEETS.—John J. Crook, of New York, N. Y.: I claim the New article of manufacture herein described that is to say sheets or foils composed of tin, and lead formed in separate strata, but so that the exposed or external surface shall be pure tin only for the purpose, set forth.

BLOCKS FOR HORSE COLLARS.—Louis S. Davis, of New Paris, Ohio: I do not claim as novel, the construction of a horse collar block in expanding sections.

I claim the four parted collar block of which the front pair of sections are hinged together at the gullet, and the back pair at the neck of the block, as described, the same being combined with a stationary bolt placed at the intersection of the partings, the said bolt serving to unite the base and cap, and also forming a fixed bearing for the right and left hand screw, which in conjunction with the pins on the block and the diverging grooves in the base and cap, effect prolongation and proportional lateral expansion of the block, or device equivalent.

OMNIBUS REGISTER.—F. ●. Deschamps of Philadelphia, Pa.: I claim attaching the secret slide to the bolt of a lock, as described, so that it can only be moved to expose or conceal the numerals on the diais by a key which properly fits the lock.

I also claim, combining the secret slide with a stop bar, as described, so that both move together in such a manner that when the apparatus is left free to work, by the stop, the numerals on the concealed dials are not exposed and when the numerals are exposed to view the apparatus is made inoperative by the stop.

[This ingenious invention is noticed at length on page 260, Vol. 8, Sci. Am.]

METALLIC HUBS—J. B. Hayden, of Easton, N. Y.: I do not claim the flanges either with or without radial slots or recesses for the purpose of admitting the spokes.

I claim the disc, in combination with the recesses or saw cuts formed in the end of the spoke, into which the disc is fitted, and acts to secure said spokes in a permanent position, and effectually prevent them working in the hub, as described.

DRESSING SPOKES—By Ansel Merrell, of New Bedford, Pa. (assignor to Ansel Merrell & J. M. Irvine, of Sharon, Pa.): I claim the combination of the cam lever, having a screw thread thereon, with the adjustable dogs and supports set forth, whereby the rough stick or block may be held firmly at any required angle to the carriage and at a variable distance below the knives, in order that it may dress spokes of variable taper and of different length and thicknesses.

DAGUERREOTYPE PLATE HOLDER—Reuben Knecht, of Easton, Pa.: I claim the application of the eccentric wheel to the projection of the arms, which is effected by turning the swivel, which is firmly attached to the wheel aforesaid, and the application of the oblong aperture to the projection of either arm, according as one or the other of the arms require a further projection, for the purpose described,

SEWING BIRDS—J. E. Merriman, of Meriden, Conn.: I claim employing, in connection with a sewing bird, a spring tape measure arranged in a case placed directly under the belly of the bird; the said case being so situated that it may have, if desired, a handsome pin or needle cushion placed on its top; this arrangement rendering the sewing bird capable of measuring as well as holding the cloth while the sewing or measuring operations are being performed, and it also makes it more convenient for use and ornamental in its design, as set forth.

LIME KILNS—C. D. Page, of Rochester, N. Y.: I claim the form, as described, of the stock or cupola, in combination with the arrangement of flues from the fire chambers for the introduction of the products of combustion at the lower end, as specified, to insure the burning of the central part of the charge, as specified.

I also claim cooling the calcined lime preparatory to drawing it out and exposing it to the atmosphere by causing a current of cold air to pass through the saddle or its equivalent, placed at the bottom of the stack, and on to which the calcined lime descends, as described.

PLOWS.—John S. Hall, of Manchester, Pa.: I claim the hinges constructed in such a way that the edge of the front part of the mould board may lap over the edge of the back part or wing of the mould board it to prevent clogging.

PORTABLE DOOR LOCKS—J. W. Webb, of Washington, D. C.: I claim the claws, in combination with the bar, and thumb-piece, constructed as described.

PLANING MACHINES—J. A. Woodbury, of Winchester, Mass: I claim, first, the combination of the rotary cutter, with the presses and bed.

Second, I claim the combination of the Bramah wheel, so called, with the rotating disc cutter and its accessories, for the purpose of planing, as set forth.

Eating and Drinking.

I believe that unwarranted and monstrous errors are propagated, by different writers, on the subject of food and drink. Each man has a whim or hobby, so that it has at length come to the point that if a man will live healthfully to a great age, say a hundred years, he must eat nothing but grapes and drink nothing but rain-water. The gentleman who advocates the grape diet contends that wheat bread ought not to be eaten, that it has too much earth in it, and tends to stiffen a man's joints and muscles half a century sooner than if he subsisted on grapes.

There are certain districts in the United States where new notions of every description flourish with amazing vigor, as far as the number of converts are concerned; among these mere notions are the injurous effects of tea and coffee as a daily drink.

I think that it is demonstrable that a single cup of weak tea or coffee at a meal, especially in cold weather, and most especially in persons of a weakly habit or constitution, is far more healthful than a glass of cold water.

Tea and coffee doubtless do injure some people—that is, some persons may not be able to drink them without its being followed by some discomfort; so will even water, if used too freely; and I think it will be found that, in nearly every such case of uncomfortableness after a cup of tea or coffee, this condition of things has been brought about by the too free use of these articles, or that the tone of the stomach has been impaired by improper eating.—[Hall's Journal of health."

Ammonia in Distilled Waters.

Boussingault refers to the necessity of determining the quantities of ammonia contained in well-water, river-water, &c. Since the time (1802) when De Saussure ascertained the first traces of ammonia in the air, since Brandes (1825) discovered it in rain-water, and especially since the time when Liebig distinctly proved this occurrence of ammonia, no complete investigations into the quantity of ammonia contained in natural waters has yet been made.

Boussingault has now begun to determine the ammonia in such waters by means of a distillatory apparatus. He regards it as certain that a water charged with a small quantity of ammonia will have given off the whole of this with the watery vapor when two-fifths of the water have distilled over.

We may, consequently, by submitting large quantities of water, as 10 litres or more, to a preliminary distillation, obtain a concentrated fluid, so as to treat this in the still set apart for the determination of the ammonia. Where the water is not too poor in ammonia, it may be placed in the apparatus itself.

The author then instituted experiments to test his method, and from these it appeared that distilled water to which a known quantity of ammonia had been added furnished more ammonia than had been mixed with it; so that apparently all distilled water contains ammonia.

Weak Eyes.

A number of our cotemporaries, have been lamenting over "the vast number of people who now wear spectacles," and assert that our grandfathers and grandmothers maintained their vision strong and clear for a greater number of years than we, "their weak-eyed descendants." This we think is a mistake. It strikes us that the present is just as clear and strong sighted as the past generation. Spectacles are cheaper than they were twenty-five years ago, and gold ones are very fashionable at present with some who have not the least necessity for their use; this may account for an apparent increase of weak eyes.

Manufacture of Steel.

The conversion of cast-iron into steel is desirable, if it can be effected rapidly and economically; for articles might be cast directly from a blast-furnace or a cupola, and then steeled to a greater or less depth, without altering their form, inasmuch as only a small quantity of carbon, a small percentage of the weight, is required to be removed. For a large number of purposes, this steeling need not proceed to a great depth, especially where toughness of body is not a requisite.

Attempts have been recently made to effect this decarbonization of cast-iron by burning off a part of the carbon in cast-iron, since it is known that the intermediate qualities of steel between bar and cast-iron are due to its intermediate state of carbonization. Riepe's process (Lond. Journ. Oct. 1850) is a modification of the process for decarbonizing cast-iron in a puddling-furnace by regulating the heat in the finishing process, and adding iron towards the latter part of the process. He also proposes imbeding cast-iron in clay and keeping it at the welding heat of steel, to effect the same purpose; and still further, the oxydation of castings by atmospheric air. The process of making malleable castings is also based on the same general principle. Such process, as far as we know, can only produce inferior qualities of steel, although they may possibly produce a material having exactly the due quantity of carbon; for as the metal is subjected to a comparatively small amount of working, a considerable proportion of the impurities, silicium, phosphorus, metals, &c. will remain in the mass and deteriorate the quality of the metal. The superior quality of steel is mainly due to a more or less perfect removal of injurious constituents, while, at the same time, much iron is oxydized and removed. By any of the processes yet known, it is impossible to avoid labor and loss of iron in making steel, and these seem to be in direct proportion to the quality of steel to be made. Late examinations by Miller of castings rendered malleable by cementation, seemed to prove that not only carbon, but even silicium had been extracted. This startling assertion needs further investigation; for, should it be confirmed, the present modes of making bar-iron and steel may eventually give place to, or be modified by, processes of cementation.

It would be an important addition to the metallurgy of iron, if we possessed a rapid, economical, and efficient method of partially converting wrought-iron into steel; for iron may be more conveniently forged than cast into many forms, and, if then steeled externally, or at certain required points, they would possess a core of tough metal with an exterior capable of being hardened. Hence, patents have issued and processes been proposed to effect this object; but we may conclude that the experiments have not been successful, since they have not come into general use. Charcoal, mixed with a little borax, salammoniac and saltpeter, has been proposed (Lond. Journ. xxxvi. 26) as a material to imbed articles forged of iron. As prussiate of potash has a marked effect in converting iron into steel, a bed of charcoal imbued with a solution of the prussiate might answer the desired end. The greatest difficuly lies in limiting the depth of the transformation into steel, since the depth seems to depend on the length of cementation, so that large and small pieces cannot be cemented at the same time in the same bed.—[Transactions of the Smithsonian Institute, Profs. Booth & Morfitt.

Manure Gatherer.

A. R. Hurst, of Harrisburgh, Pa., has invented an implement for gathering the manure of barnyards and sheds in heaps for greater convenience of loading upon carts. This is done by arranging upon runners a tool similar in its construction to an ordinary manure fork, yet larger and stronger, in such a manner that it can be set to rake the ground, gathering up the manure, or tilted so as to release its load. It is intended when used in yards to be drawn by a horse. The inventor has applied for a patent.