



(Reported Officially for the Scientific American.)  
**LIST OF PATENT CLAIMS**  
 Issued from the United States Patent Office  
 FOR THE WEEK ENDING APRIL 25, 1854.

**REVOLVING FIRE ARMS**—Josiah Ellis, of Pittsburgh, Pa.: I claim the extension on the fore part of the rotating chambered breech for the prevention of the fouling of the spindle by the smoke in firing, and also as a means of connecting and locking the breech with the barrel, as set forth.

The connecting and locking the barrel and breech to the lock by means of a bracket and spring extending in front of the lock mechanism, as described.

I disclaim originality in the combining of a rotating chambered breech with a barrel and lock only in the particular manner set forth. Neither do I use what is called, the recoiled shield as such, the collar upon the extension, substantially, or preventing the actual recoil of the breech.

I also disclaim originality in the use of the vibrating tooth and the spring in the hammer.

**DESTILLING AND CONDENSING APPARATUS**—J. R. Stafford, of Brooklyn, N. Y.: I claim the employment, for the purpose of separating the more and less volatile products of distillation, of a vessel which has an opening for the escape or withdrawal of condensed matters and another opening, for the escape of the more volatile matters, and which has its temperature regulated by the admission of steam through a pipe passing through its interior or through a chamber surrounding it, as set forth.

[We think this is a very excellent improvement for the purpose named.]

**VINOUS FERMENTING IN CLOSE VESSEL**—A. Harvey & C. Child, of Cincinnati, Ohio: We claim, first, the application of pumps or exhausters and blowers or other equivalent apparatus, to draw the gas from one fermenting vat, and force it into the fermenting liquid in another of the same vat, as described.

Secondly, the arrangement of apparatus whereby a return current is created, and the circulation of the gases caused, that is to say, the return pipe and pump or mechanism equivalent, as set forth.

Thirdly, the check valves, the disseminating pipes for the purpose of preventing any contrary passage of the liquid from vat to vat, from that which is intended, in combination with the turn-off cocks for the purpose of isolating a portion of the vats and shortening the circuit when required, and the whole in combination with the pumps or valves, for the acceleration of the circulation, and by this means equalizing its action and removing the danger of bursting the vats.

Fourth, the pipe having two discharge nozzles at different heights of the liquid of the condensing vat and cocks in the upper nozzle, in order to regulate the amount of vent or discharge.

**DITCHING PLOW**—J. C. Tiffany, of Coxsackie, N. Y.: I claim, first, one or more adjustable coulters or cutters, in combination with a permanent coulters, with one or more adjustable boards, with a mold board or mold boards attached, as described.

I do not claim any of the parts or devices enumerated, separately or alone, but in combination and in combination only.

Second, I claim the flexible adjustable spreader for moving the soil from or returning it to the ditch as required, as described.

Third, I claim the flexible adjustable spreader in combination with the plow, as set forth.

Fourth, I claim the devices, substantially as described, or their equivalents, for changing the position of the rear end of the beam, for the better supporting the angular slot, and curved plate, as described.

**CAST-IRON CAR WHEELS**—Geo. W. Glass, of Allegheny, Pa.: What I claim is not the corrugating the disk of cast-iron car wheels, but the rendering them susceptible of contraction and expansion. Nor yet do I claim the making of car wheels with a space between the inner and outer disks or sides, as both these devices are well known. Nor do I claim the use of core holes in casting car wheels.

The constructing of cast-iron car wheels of the shape and conformation described, being wheels with two disks united at the rim and tread, and at the hub, by a semicircular or semi-elliptical arch, the greatest external curvature of the inner disk being immediately under the flange and below the point of contact of the flange and tread, for the better supporting the flange and tread in combination with the braces of the construction and shapes shown.

**TRAVELING BRIDGES**—Frederick Field, of Adrian, Mich.: I do not claim retractile draw bridges, nor any of the appliances by which such bridges are moved, I wish to distinguish my bridge from all others, and claim it as such, that it acts as a carriage as well as bridge, receiving its load upon it while resting on the abutments or one side of the span or spans to be crossed, carries the load over, and rests upon the other side to receive its return load, and so back and forth, leaving the spaces between the piers open for vessels, &c.

**RAILROAD CAR SEATS**—Wm. E. Milligan, of New York City: I do not claim the device of making reversible seats in which the back turns down to form the seat, and vice versa, such having been used before, but I claim supporting the angle of the seat and back upon ways or in any equivalent manner, whereby it is transferred from one side of the chair frame to the other in making the reversal, as described.

**SECURING STONES IN FOUNDATIONS**—J. P. Avery, of Stonington, Ct.: I do not claim the use of dovetail joints of double dovetail form for uniting stone together, as such have before been used; nor yet do I claim making tight the vertical joints and binding the two courses together by a dowel or key driven through the stone in the top course and into or between the stones in the under course, as such has before been done by wedges let into the ends of the dowel, and serving to spread it to make tight the joints in and between the courses.

But I claim the combination and arrangement specified, of the dovetails, and tightening key, or its equivalent, when the said dovetails are constructed of taper flange form, fitting within or under projecting lips to the dovetail recesses in the stones, to draw and clamp the two courses together, the said dovetails fitting within the one stone of the one course and the two stones of another course, and being driven home by the intervening key to make tight the vertical and horizontal joints in the two courses and to clamp the two courses together firmly and permanently, as specified.

[See notice of this invention on page 236 volume 3.]

**FILE OR BILL HOLDER**—T. W. Brown, of Boston, Mass.: I am aware that spring bands have been applied to the two boards of a bill or file holder, so as to draw them towards one another, and upon papers interposed between them, and to admit of their being moved apart from one another, such a band having generally been made in whole or in part of india rubber, I therefore do not claim the application of spring bands to the boards.

But I claim the arrangement or application of the circular grooved annulus, a spiral spring, and the cords together and with respect to the two boards, so as to operate as specified.

**FIRE ARMS**—Charles Buss, of Marlboro', N. H.: I claim making the trigger guard so that it shall not only perform the function of a guard to the trigger, but that of a spring to press the strap or index holder against the catch wheel, as specified.

**ROTARY PUMP**—Reuben Burdine, of Washington City, D. C.: I claim the combination of the screw or screws upon the rotary shaft, with the radial curved wings or drivers (although I do not confine myself to the curved

form, as straight ones may be used) the whole contained within a cast-iron drum for receiving and directing the water intended to be elevated, as set forth.

**MACHINERY FOR LAYING ROPE**—S. & J. A. Bazin, of Canton, Mass.: We claim adapting the machinery for forming bobbins and soft coils by means of the ring, so actuated by the circular plate, and its rollers made to revolve or held stationary, as set forth, so as to form an extra twist in the rope when desirable, by giving an additional revolution to the bobbin frames, as described.

We also claim an improvement in the movable crane which consists in forming it of a bent shape with the right angular hinged arm operating as described, so as to feed the rope in a direction parallel with the axis of the winding reel.

We also claim stretching the rope after it is laid, by means of the double pulley, with grooves of different diameter, as set forth.

**FEEDING SHEETS OF PAPER TO PRINTING PRESSES**—Henry Clarke, of New Orleans, La.: I do not confine myself to the precise mechanical device, as described, for that it may be modified or varied.

But I claim loosening or detaching the top sheet of a layer of papers from those underneath it, by giving a part of said sheet a backward and forward motion, as shown, previously to its being operated upon by the pressure rollers or other device for conveying it to the printing press or other machine, to which the sheet of paper is fed, for the purpose of ensuring the feed of only a single sheet of paper at a time, as set forth.

[This is a very ingenious apparatus for the purpose, and is noticed on page 148 of this Vol.]

**FOLDING CHAIR BEDSTEAD**—Geo. H. Cottam, of Hampton Road, Eng. Patented in England Oct. 5, 1853. I make no claim to the parts separately; nor do I confine myself to the details given, provided the peculiar character of my invention be retained.

I claim the mode described, of constructing folding sofa or bedstead chairs, viz., of a combination of three frames and jointed arms, as applied and made to operate together, as specified.

**WEDGE MACHINE**—G. C. Jones, of Almar, and Peter King, of Whitefield, Me.: We claim the peculiar form of the chisel having two or more projecting chisels at right angles to the face of the main chisel, and an appendage for pushing back the spring, as described.

Second, the application of the spring, and its projection, for the support of the wedge while being shaved, as described.

Third, the peculiar form and arrangement of the grooves for holding the blocks to be shaved and giving shape to the wedges while being shaved, as described.

**OPERATING THE FEED-TABLES OF PRINTING PRESSES**—George Little, of Utica, N. Y.: I claim the mode described, of operating the feed tables of printing presses, together with the guides composed of india rubber, or other suitable resisting material.

**APPARATUS FOR FEEDING PAPER TO PRINTING PRESSES**—Wm. Kuhlensmidt & Wm. Hauff, of New York City: We claim, first, the employment of a semi circular roller, so constructed, arranged, and operated that it will, in its backward movement from the paper cylinder, loosen or detach the top sheet of a layer of paper from those underneath it, and then take hold of the back end of said sheet, and in its forward or return movement toward the paper cylinder, raise the said back end of the sheet, and gradually separate the whole surface of the same from contact with the under it, and then feed it to the fingers of the paper cylinder, as described.

Second, we claim taking up the sheet by its back end instead of by its front end, for the purpose set forth.

**FIELD FENCE**—D. R. Prindle, of East Bethany, N. Y.: I claim the method described, or its equivalent of fastening together the adjacent posts or standards of a field fence, that is, by passing a piece of metal having a head on one end through two adjacent posts, and securing the same by a wedge or its equivalent at the other end, the standards or posts being so beveled as to cause any desired angle to be made by an two adjacent panels.

**GLASS FURNACES**—Frederick Schaum, of Baltimore, Md.: I claim in glass furnaces making the external and internal configuration of the breast-work of the furnace wall with the re-entering positions so as to partly embrace the pots and to furnish room for additional or extra teaze or ring holes, as described.

**BRICK MAKING**—J. C. Fr. Salomon, of Washington, D. C.: I claim the combination of the swing crane, mold-box and plat n. for pressing brick, arranged and operating together, as set forth.

**FORMING AND HARDENING HAT BODIES**—Albert Spencer, of New York City, and August Loeschner, of Brooklyn, N. Y.: We claim the use and arrangement of the series of blow pipes, as set forth, when used in combination with the two or more fan brushes and feeding apparatus, as set forth.

**FORMING ROOFS**—W. Sterling, of Bridgeport, Conn.: I do not claim the application of cements for roofs or plastering the same on boards or timber, the contraction and expansion of which causes the cement to crack. Neither do I claim the plastering of cement on lath.

But I claim the use of reticulated wire imbedded in cement, where cloth is used as a foundation, for the purpose set forth.

**BULLET MOLDS**—Wm. M. Storm, of New York City: I claim, first, a hand bullet mold, so constructed that it may be forced open against the adhesion of the lead, so as to deliver its ball by the pressing together of its handles by the strong grasp of a single hand, whereby are attached the important ends described.

Second, in combination with a mold constructed as described, I claim the sheaves which are operated by the strong grasp of a single hand on the handles, or their equivalents, whereby the ball is deprived of its spruce and released from its matrix by the closing or compressing together of the handles.

**MACHINE FOR CUTTING AND SKIVING BOOT COUNTERS**—Varanes Snell, of North Bridgeport, Mass.: I claim arranging the knife at a proper angle in a traversing knife carriage, so that in reciprocating motion the arc of a circle for rounding the counter and chamfering its edges substantially as described.

I also claim holding the clamp upon the leather while the counter is being cut, and releasing it from the same after the operation is finished, by means of the traversing pawl, acting in combination with the lever, and notched plates, as set forth.

I also claim a machine for cutting and skiving boot and shoe counters which has a clamp for holding the leather while it is being cut, and for releasing it after the operation is performed, and a traversing knife which moves in the arc of a circle, and rounds and skives the counter at the same time, as set forth.

**TOOLS FOR MACHINERY**—De Witt C. Smiley, of New York City: I do not claim caps having flexible bottoms; but I claim the combination of the interior chamber with the cap, having a flexible bottom, when said interior chamber has its bottom extended to fill the interior diameter of the cap, and form a diaphragm dividing the cap into an upper and lower chamber, said diaphragm provided with two valves, one opening upward and the other downward, arranged and operating in the manner described.

**RAILROAD CAR SEATS**—W. B. Thomas, and Samuel Hickock, of Buffalo, N. Y.: We claim the combination of railroad car seats with hinged or pointed legs, constructed and operated as described.

**STRINGS EYE BATH**—Simeon Fowle, of Pembroke, N. Y.: I disclaim the invention of bale, or of a cap, and of elastic cups for cupping.

I claim the combination of the ruined cap, connected tubularly with the ball, and arranged and operating as described, to be used for purposes named.

**REACTION WATER WHEEL**—Isaac True, of Rochester, Ind.: I claim the employment of the beveled surfaces and the curved projecting surfaces, in combination with the indenting, substantially in the manner specified, in the construction of percussion and reaction water wheels, whereby the effective force of the percussion is greatly increased, as set forth.

**INVALID BEDSTEAD**—C. D. Van Allen, of New York City: I claim the arrangement and combination of the elevating and depressing bed, with the stationary suspension mattress, whereby the bed is raised to and lowered from the patient, when necessary, instead of moving the pa-

tient thus avoiding the necessity of moving or disturbing the patient, as set forth.

**GUARD FINGERS FOR HARVESTERS**—W. F. Ketchum, (Assignor to Rufus S. Howard) of Buffalo, N. Y.: I claim molding and casting the blank for the tooth in the open form described, (without a chill) then malleating dressing up and bending them into the proper shape as required.

**DESIGNS.**  
**DOOR AND PANEL OF COOKING STOVES**—M. C. Burleigh, of Great Falls, N. Y.  
**FRONTS OF CLOCK CASES**—William B. Lorton, of New York City.  
**AIR TIGHT STOVES**—Garretson Smith and Henry Brown, of Philadelphia, Pa.  
**STOVE PLATES**—John Burgess, of Troy, N. Y.: assignor to Geer & Co., of same place.

**RE-ISSUE.**  
**FIRE AND BURGLAR PROOF SAFES**—F. C. Goffin, of New York City, (Assignor to A. B. Ely, of Boston, Mass.) Originally dated 14th Feby. 1854. I do not claim forming safes or doors with double casings. What I claim is the use of glass or slag in a vitrified state in the filling of safes or vault doors, either poured molten into the spaces, or inserted in plates substantially, as described.

[One of the applications in the above list was made one year ago. Inventors' rights are grossly outraged by such delays, and we hope to have recorded in this list the last case of the kind. Judge Mason should see to it that cases are not suffered to linger so long in the office.]

**Scientific Memoranda.**  
**CLEANING METAL CASTINGS**—To cleanse metal castings, they are usually thrown into water acidulated by sulphuric or muriatic acid; but as some metal is removed and the surface left rough, the process is objectionable. Thomas and Delisse found by their experiments that if several organic substances were added to the acid water, the scale of dirt and oxyd was removed, but the surface of the material unattacked. Elsner found that tar added to the acid water completely cleansed an iron casting, while another piece of casting in the usual acid water was nearly dissolved.

**ENAMELED IRON**—After cleaning the surface to be enameled, the enamel is laid on as a paste and burned in under a muffle. F. Walton (Lond. Journ. Arts, 1847) uses three successive layers, which are as often heated in the muffle. The first coat is made by fritting 6 pts. pounded flint-glass, 3 pts. borax, 1 pt. red lead, and 1 pt. oxyd of tin. One part of this frit, mixed with 2 pts. calcined and ground bones, is ground fine with water, spread over the metallic surface as a thick paste, dried, and then heated to redness in the muffle. The second coat is made of 32 pts. calcined and ground bones, 16 pts. kaolin, 14 pts. Cornish granite, and 8 pts. potash in solution: the paste thus made is fritted for 2-3 hours in a furnace and then powdered. Of this frit 5½ pts. are mixed with 16 pts. coarsely-powdered flint-glass, 5½ pts. calcined and ground bones, and 3 pts. ignited and ground flints. The mixture is then ground with water, spread over the first coat and burned in. The third and last coat (which is similarly treated) consists of 12 pts. powdered feldspar, 4½ pts. kaolin, 18 pts. borax, 3 pts. saltpeter, 1½ pt. potash, and 1½ pt. oxyd of tin.

**SOLDERING SALT**—(Chloride of zinc and ammonium).—Vessels may be tinned with this salt without previously cleansing their surfaces. It is made by dissolving 1 lb. zinc in muriatic acid, adding 22 pts. salammoniac to the solution, and evaporating to dryness; the yield is 2½ lb. of the double salt. To use it, the salt, moistened with water is brushed on the surface to be tinned, a little solder laid on it here and there, and the surface heated until the solder fuses, when it flows wherever the salt was put, and unites with the metallic surface.

**TINNING**—According to Becquerel, well-cleaned vessels of iron and copper may be tinned by dipping them into a solution of the double salt of chloride of tin and sodium, at a heat of 160° assisted by contact with zinc.

**SOLDERING WROUGHT AND CAST-IRON**—Fittings of soft cast-iron are melted with calcined borax, the mass pulverized and sprinkled on the parts to be united. They are then separately heated and welded together on an anvil by gentle blows.—[Journ. Fr. Inst.

**WELDING POWDER**—to melted borax, 1-10 salammoniac is added, the mixture poured on an iron plate, and an equal weight of quicklime ground up with it. Iron or steel to be welded is first heated to redness, the mixture laid on the welding surfaces, and the metal again heated, but far below the usual welding heat.—The pieces unite firmly by hammering.

Were the earth reduced to a plenum it would be no larger than an ounce weight.

**Scientific Association.**  
 The American Association for the Advancement of Science met in Washington, at the Smithsonian Institution, on the 26th inst. Prof. Dana, of Yale College, was introduced as the new President, by ex-President Pierce, and delivered a short and very appropriate address.—He said:—

"Gentlemen of the Association:—In taking this place with which you have honored me, permit me to allude briefly to one or two of the objects which have brought us together.

One great end, as proclaimed in the name of the Association, is the 'advancement of science,' which implies that we are not to delay sluggishly or ignorantly over old facts, but earnestly to gather in the new, that our 'facts' be not ephemeral, which the next passer-by will dissipate, but sure eternal facts, as enduring as adamant, that shall give solidity, increasing extent, and beauty, to the edifice of truth. Such facts are best welcome when least adorned, and disencumbered as nearly as may be of the rubbish of words. They reach their ultimate end when a clear insight into principles enables the philosopher to point out their exact place in the sublime system of nature, thereby to exalt our knowledge of its Divine author.

But there is another prominent object in view in this annual meeting. It is the cultivation of good feeling, kindly sentiments and sympathy among the lovers of science in the land; that with one aim before us—truth, and not self—as the end of every investigation, we may go forward harmoniously, rejoicing in each other's success, and glad for the new light we may each receive. This end alone accomplished, the meeting will have been abundantly profitable. But with success in both objects, we shall have occasion to remember long this gathering in Washington in 1854; and may such be the result."

[We will give abstracts of the useful papers read before the Association in future numbers.]

**Composition of the Sheathing of Ships.**  
 M. Bobierre has paid considerable attention to this subject, and has arrived at the following conclusions as to the cause of the rapid destruction of some copper and bronze sheathing:—1. When unalloyed copper is employed, the presence of arsenic appears to hasten its destruction.—2. All bronzes which appear to have stood well, contained from 4½ to 5½ per cent. of tin, that quantity being necessary to form an homogenous alloy. When the percentage of tin is only 25 to 35, which is very frequently the case, no definite alloy is produced, and the mass is of unequal composition, and being unequally acted upon, is soon destroyed.—3. When impure copper is employed the alloy is never homogenous, and is unequally acted upon in consequence. We thus see that the so frequent destruction of the sheathing of copper-bottomed vessels arises from the tendency to use inferior brittle copper, and by diminishing the proportion of tin, to economise the difference between the price of that metal and copper, at the same time that the cost of rolling is also less, in consequence of the greater softness of the poor alloy. Bobierre thinks that the addition of a very small portion of zinc very much improves the bronze, by producing a more perfect and uniform distribution of the positive metals, and consequently a much more definite alloy.—[Comptes Rendus.

**Sand and Tar.**  
 Experiments have proved that porous sand and other stones, when steeped for about 8 hours in hot coal tar, (160 Reaumur,) acquire a greater degree of hardness and become impermeable to water. Bricks require only 4 hours, and the coal-tar a temperature of 90 degrees Reaumur to become as hard as rock. The latter would answer best for sidewalks.

**An Artificial Man.**  
 The "Memorial Bodelais" states, that not far from St. Sever, France, there is living an old military man, who has a false leg and a false arm, both movable by means of springs, a glass eye, a complete set of false teeth, a nose of silver, covered with a substance perfectly resembling flesh, and a silver plate replacing part of the skull.