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LIST OF PATENT CLAIMS
Issued from the United States Patent Office.
FOR THE WEEK ENDING JULY 15, 1851.

To John Boardman, of Little Valley, N. Y., for improvement in Washing Machines.

I do not claim the constructing or using of a revolving wash barrel with or without a rolling or tumbling pounder therein, but I claim the peculiar form of the revolving barrel with its fluted semi-cylindrical recesses in combination with a pounding frame constructed with a weighted hub and three parallel pounders as described.

To J. M. Bottum, of New York, N. Y., for improvement in securing pinions, &c., of watches in lathes.

I claim the employment of adhesive cement for securing staffs and pinions of watches or time pieces for lathe operation, in combination with a chuck, and a sliding tube, and a female centre, as described and set forth or in any manner substantially the same.

To E. K. Browning, of Utica, N. Y., for improvement in machines for cutting wood into shreds and crimping them for mattress stuffing, &c.

I claim the use of the splitters with the plane iron and the holder, and the movable weighted lid, or any thing which is substantially the same, combined and arranged in the plane stock, F, for the purpose of producing the article herein described.

To S. A. Clemens, of Springfield, Mass., for improvement in machines for dressing Sisal, Hemp, &c.

I claim the hinged jaw connected with the driving shaft, substantially as described, in combination with the cylinder to which it is hinged, and provided with a corresponding jaw substantially as described, whereby the driving power, in carrying around the substances to be dressed, clamps and holds them firmly during the entire operation as described.

I also claim, in combination with the cylinder and clamp for presenting and carrying around the substances to be dressed, as described, the knives and combs attached to one or more hinged bars, and provided with the necessary means for operating them, substantially as described.

I also claim, in combination with the cylinder, as described, the vat of water in which, at each rotation of the cylinder, the substances to be dressed are immersed, substantially as described.

To S. G. Dugdale, of Richmond, Ind., for improvement in Churns.

I claim the application of the spring wire, which connects the crank with the dashers, in the manner and form, and for the purpose set forth.

To Oliver N. French, of New London, Conn., (assignor to himself and Ebenezer Stevens, of Hopkinton, N. H.), for improvement in Axle Boxes for Journals for Railroad Cars.

What I claim is to support the case on the bearing by two projections or analogous contrivances, applied to its sides, in combination with making the top plate of the case, and the cap or side plate, in one piece, separate from the rest of the case, and holding them in place by recesses and projections or analogous contrivances, substantially as described, the whole being to enable me to entirely dispense with the use of the screws or nuts in the construction of a railway car axle box, and thereby avoid not only the injurious consequences which frequently result from their becoming loose, but also the necessity of that care and attention on the part of the carman or attendant, so necessary when boxes are used having any of their parts secured by screws.

To G. L. Haussknecht, of New Haven, Conn., for improvement in Carriage Springs.

I claim the employment of a semi-elliptical spring, in combination with a C spring formed by the extension of one of the arms, the combined springs thus produced being set transversely with the axle and attached thereto, and the body of the vehicle in the manner substantially as described.

To Harman Hibbard, of Henrietta, N. Y., (assignor to J. A. Hibbard), for improvement in Buggy Tops.

I claim the mode of connecting carriage tops with the seats by means of the bearers and clasp, so that they may, with facility, be removed from one carriage body and applied to another, in the manner substantially as described.

To Lewis Lillie, (assignor to J. W. Bates), of Troy, N. Y., for improvement in Fire-Proof Safes.

I claim the combination of wrought and cast-iron; the same forming a safe in the manner and for the purpose substantially the same as described.

To D. C. McCallum, of Owego, N. Y., for improved means for adjusting the effective length of bridge counter braces.

I claim the method of lengthening or shortening the counter braces of a girder or bridge truss, so as to produce and maintain any desired vertical strain or deflection of the girder or truss, by means of the counter brace, whether all of wood or provided with a metallic end or sheath; the plate of metal bearing upon the metallic end or sheath (or upon the end of the wood, when the metallic end or sheath is not used), at the top of the girder, and the nuts and the bolts passing through the clamping pieces, the upper chords, and the posts by which the plate of metal is drawn down upon the metallic end or sheath, and the adjustment of the length of the counter brace is effected, substantially as described.

[This is the Bridge which was experimented on last fall at the Novelty Works, this city, an account of which we presented to our readers at the time.]

To Sylvanus Miller, of Urbana, O., for improved Rake to Harvesting Machines.

The guide, arranged as described in connection with the tilting roller, for the guidance of the rake in a path similar to that which it would receive from the human hand—by which it removes periodically the grain or grass from the bed, and frees itself by the retraction of the teeth of the rake endwise.

To Wm. E. Milligan, of Troy, N. Y., for improved arrangement of the flues and water spaces of steam boilers.

I claim general arrangement of the tubes and flues of the boiler, in the manner described; that is to say, the water tubes connected with an upper and lower tube sheet, in combination with the flues of less length than the tubes, which flues are also connected with an upper and lower flue sheet, whereby two horizontal flues are formed in such connection with each other by means of the vertical flues, that the product of combustion from the fire place shall pass into the upper horizontal flue, and thence down the vertical flues into the lower horizontal flue; having thus the facility of parting with its heat on the one hand by radiation through the flues to the water spaces surrounding them, and on the other through the tubes to the water circulating through those, and this whether the said tubes and flues are placed vertically or horizontally, the whole being constructed and operating substantially as set forth.

To Wm. Panton, of Milton, Mass., for improvement in machines for Splitting Leather.

I do not claim as my invention, in connection with the upper feed roller, the use of a lower one, such as is usually termed a spring or pressure roller, or one having a hard or practically inelastic surface. But I claim as my improvement in machinery for splitting or dressing wet hides, the employment of an elastic surface roller (or roller made of gum elastic or other like material placed around an axle or shaft), and an inelastic roller (as feed rollers) in connection with the cutting knife, made either stationary or, what is better, to have a vibratory or reciprocating motion, all substantially as specified.

To Erastus Stebbins, of Chicopee, Mass., for improvement in Molasses Gates or Faucets.

I claim the arrangement of the spring which bears the gate against the seat (said spring being arranged so as to bear against the outer edge instead of the central part of the gate), in connection with making the said gate separate from the lever, and to work on a projection or screw therefrom, essentially as specified.

To James Watner, of Springfield, Mass., for improvement in Revolving Breech Fire-Arms.

I claim the arrangement for securing the barrel to the stock, viz., the combination of the stud with the notch in the back strap, and with the notch and pin as described.

To Dennison Woodcock, of Independence Centre, N. Y., for improvement in machines for Sawing and Dressing Staves.

I do not claim the use of a cylindrical saw, as such has frequently been used, but I claim the employment of the saw seated loose upon a pulley so as to form an eccentric position with the same as specified, in combination with the cutters, the several parts constructed and operating together, for the purposes set forth, substantially as described.

DESIGNS.

To Elijah P. Penniman, of Rochester, N. Y., for two Designs for Stove Plates.

To Apollon Richmond, of Providence, R. I., (assignor to A. C. Barstew & Co.), for Design for Plates of Parlor Stoves.

A New Steam Engine.

Messrs. Editors—A scheme has occurred to me which you can propose to your numerous readers—mechanics and engineers—which some of them may be induced to experiment upon, so as to arrive at a practical application of it to a useful purpose, namely, the obtaining a rotary motion from a rectilinear one, by means of a right and left hand screw inscribed on the outside of a drum or cylinder; the drum being fixed on a fly-wheel, paddle, or propeller shaft, with two fixed guides along the outside of the drum, on which slide two sets of friction wheels, moved from the cross-head of a steam cylinder, and are alternately connected and disconnected in the grooves of the screws, according to the alternate motion of the steam piston; or, instead of disconnecting, it can be obtained by a continuous or endless zig-zag groove around the drum. The object gained by this arrangement is a uniform application of the power exerted during the whole length of the stroke of the engine. The screws being made of whatever pitch experiment may determine safe, as in this instance it is one thing to move, and quite another to be moved.

The above is new as far as I know at present, and if given in this form I think all will understand it.

D. McA.

Philadelphia, July 14, 1851.

[We publish the above both for the benefit of our correspondent and others. The principle of changing the one motion into the other, as set forth, is not new, nor is it a good plan: the friction is very great. Every person who has studied the "Mechanical Movements" is acquainted with this mode of changing the motion. We have a model in our office which illustrates this. A hollow drum, with a zig-zag groove around its periphery, and having the upper end of a pendulum vibrating in the said groove, with a weight attached to a cord on the drum spindle, will make a very simple clock; the drum acts as an escapement moving round the hands on the dial.—ED.]

No. of Patents Issued in each Year from 1821 to 1850.

Year	No. of Patents	Year	No. of Patents
1821	167	1836	677
1822	203	1837	429
1823	117	1838	509
1824	224	1839	410
1825	300	1840	452
1826	327	1841	494
1827	334	1842	517
1828	366	1843	553
1829	439	1844	502
1830	551	1845	502
1831	575	1846	619
1832	473	1847	572
1833	579	1848	660
1834	608	1849	1076
1835	746	1850	995

By the foregoing list it will be perceived that, in thirty years, no less than 16,067 pa-

tents have been granted. They have increased from 167, in one year, to 995. The number issued has not been uniform from year to year, by any means. For example, in 1835, there were 746 granted, while in 1845 there were only 502—244 less. This we cannot give any reason for at present. In 1849 there were 81 more patents granted than in 1850; this was owing to the dispatch that was used when Mr. Ewbank went in, to clear up accounts. The examinations were, perhaps, too hastily made.

Observations on the Mammoth Cave.

The last number of Silliman's Journal contains an interesting account of the Mammoth Cave, in a letter addressed to Prof. Guyot by Prof. Silliman, Jr., who has recently made an exploration of its mysteries; and also, in connection with Mr. E. N. Mantell, made a collection of the animals found there. One atmospheric phenomenon attracted the attention of these gentlemen, and taxed their ingenuity for a satisfactory explanation, viz.:—The blast of cool air blowing outward from the mouth of the cave, which rendered it nearly impossible to enter with a lighted lamp. If the external air has a temperature of 90° Fahr., the blast amounts to a gale; but if the air without has a temperature of 59—60°, no current is observed and the flame of a lamp held in a favorable position, indicates none. It immediately occurred to me (said Prof. Silliman) that there must be two currents, one above of warmer air, passing inward, and one below of colder air passing outward, and the reverse; but experiment soon satisfied me that this was not the case. Only one current could be discovered, and on enquiry of our intelligent guide, I had found that this phenomenon had attracted his attention, and that he was satisfied from many observations that only one current existed, and that this flared out when the external air was above 60° and inward when this was below 60°.

The phenomenon is accounted for by Prof. Silliman on scientific principles, as follows: The mouth of the cave is the only communication between the external air and the vast labyrinth of galleries and avenues which stretch away for many miles in the solid limestone. The air in these underground excavations is pure and exhilarating, which may in part be accounted for by the nitre beds of incredible extent, as the nitrogen which is consumed in the formation of the nitrate of lime must have its proportion of free oxygen disengaged, thus enriching this subterranean atmosphere with a larger portion of the exhilarating principle. The temperature of the cave is uniformly 59°, summer and winter, and this is probably very near to the annual mean of the external air. The expansion which accompanies an elevation of temperature in the outer air is immediately felt by the denser air of the cave and it flows out in the obedience to the law of motion in fluids, and the outward current continues without interruption as long as the outer air has a higher temperature than the cave.

The phenomena of life within the cave are comparatively few but interesting. There are several insects, the largest of which is a sort of cricket, with enormously long antennæ. There are several species of Coleoptera, mostly burrowing in the nitre earth. There are some small species of water insects, supposed to be crustaceous. Of fish, there are two species, one of which, as is well known, is entirely eyeless; the other has external eyes, but is quite blind. The only mammal, except the bats, is a rat, which is very abundant. Prof. Silliman is of opinion that the excavations of the Mammoth Cave have been formed by water, and by no other cause.

How to Toast Bread.

If you would have a slice so toasted as to be pleasant to the palate, and wholesome and easily digested, never let one particle of the surface be charred. Chestnut brown is even too far deep for a good toast; and the color of a fox is rather too deep. The nearer it can be kept to a straw color, the more delicious to the taste, and the more wholesome it will be. This is done by keeping the bread a proper distance from the fire and exposing it to a proper heat.