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LIST OF PATENT CLAIMS

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FOR THE WEEK ENDING APRIL 19, 1853

WILLOWERS—By F. A. Calvert, of Lowell, Mass.: I claim the combination of a set of feeding rollers and endless feeding apron, having an intermittent motion imparted to them, for the purpose set forth, with the cleaning cylinder of a willower.

EXCLUDING DUST FROM RAILROAD CARS—By J. M. Cook, of Taunton, Mass.: I lay no claim to the application of vertical blinds, shutters, or screens, on the outside of railroad cars, and made to stand at angles of about forty-five degrees therewith, for the purpose of preventing the entrance of dust, smoke, or cinders into the windows thereof.

But I claim the manner of constructing and applying a deflector to the outside of a railroad car, the same consisting not only in making it to extend along the bottom horizontal or lower part, but up along the vertical side of a window opening, the air impinged against by the vertical face of the guard, will be driven or moved downwards, and made to pass under or over the guard, so as to prevent the dust thrown directly upwards from the track, as well as that moving horizontally, or otherwise, from entering the windows, as described.

PLANKING HAT BODIES—By Phineas Emmons, of New York City: I claim the combination of a reciprocating rotary rubber or presser, with an endless elastic apron, so that by vibrating said rubber, a reciprocating intermittent differential movement is given to the apron, thereby operating on both sides of the body and working it forward at the same time, substantially in the mode of construction and manner of operation, as set forth.

ROLLING BAR-IRON—By J. A. Hartuppe & Abram Alexander, of Pittsburgh, Pa.: We claim the combination and arrangement of the two parallel horizontal rollers, with the two vertical rollers, in such a manner that by raising or lowering the upper roller, to form a thicker or a thinner bar, one of the vertical rollers will be raised or lowered with it, and at the same time, the peripheries of all the rollers, be kept in contact and in their proper relative positions with each other, and also in such a manner that by moving the lower horizontal roller endwise in its bearings, to make a narrower or a broader bar, the aforesaid vertical roller will be moved laterally with the said lower horizontal roller, while at the same time the peripheries of all the rollers will be kept in contact, and in proper relative positions with each other, as set forth.

COOKING RANGES—By Alex. McPherson, of New York City: I claim the arrangement of the vertical end flues, and diagonal cross plate under the oven, for causing the gas to traverse under the entire surface of the oven of the cooking range, operating as set forth.

HARVESTERS—By John H. Manny, of Wadsworth's Grove, Ill. Patented in England Dec 9, 1852: I claim constructing the lower part of the finger or the upper, or both, with a recess on either side in front of the finger bar, and an angular ridge between the two recesses, to cut entangled fibres, whereby the clogging of the cutting apparatus is effectually prevented, as described.

Also constructing the fingers so that the sides of its upper half will overhang those of its lower half, the cutter playing between the two, substantially as set forth.

COTTON SEED PLANTERS—By Samuel Miller, of Washington College, Tenn.: I claim the combination of the open or latticed bottom of the seed hopper, with the teeth on the axle passing through them into said hopper, for the purpose of drawing or forcing out the seed, so that they may be drilled into the ground, the whole being arranged in the manner set forth.

SCREW BLANKS—By T. Newbury, Taunton, Mass.: I claim the detached tool posts, arranged as described, in combination with the comb arm and arm for carrying the threading tool under an arrangement and construction, as set forth.

GIG MILLS FOR DRESSING CLOTH—By Amasa Woolson, of Springfield, Vt.: I claim in a gig mill, or other machine for dressing cloth, hanging the cloth rollers in a revolving carriage, or its equivalent, by means of which the cloth is run in a reversed direction through the machine without the necessity of unwinding it from and re-winding it upon the cloth rollers, as before practiced.

SEWING MACHINES—By William Wickersham, of Lowell, Mass.: I lay no claim to the combination of a single hooked needle and two thread guides or carriers, as made to operate together in a knitting machine, and for the purpose of laying two threads over a needle, during the process of the formation of a knit fabric; but I claim the combination of a single needle and two thread guides, carrying separate threads, so operating, that during one passage of the needle through and out of the cloth, or other material to be sewed, one of the said guides shall lay its threads into the hook of the needle, while during the next passage of the needle through and out of the cloth, the other guide shall lay its thread in the hook of the needle, each guide acting, alternately as specified.

And for the purpose of enabling a machine of the above description, or one in which two thread guides and a single needle are employed to sew with two threads, to be used for producing the chain stitch, with one single thread, passing through one of the eyes of its two thread guides, as described, I claim the improvement of making one of the said guides, viz. the guide with the long slot for receiving the thread, in its passage to and through the other guide, as specified.

Also the above described peculiar mode of sewing cloth, or other fabric, viz. by combining two threads with the fabric, by drawing them through from the same side of the cloth and through each other's loops, interlooping them in plegma stitches, so that the threads alternately bind each other, substantially as specified.

I do not claim a hooked needle, having a contrivance, such as either a lever turning on a fulcrum applied to, or a needle or wire, made to extend and work through the shank of the hook, as is used in knitting machinery; but I claim the improved arrangement of applying the closing slide of the hooked needle, to the same side as the barb or hook, so

that it may slide in a groove in the needle or carrier, parallel to the motion of the needle, in the manner specified.

PURIFYING ROSIN OIL—By S. L. Dana, of Lowell, Mass. (assignors to the proprietors of locks and canals of Massachusetts: I do not confine my claim to the use of lime as a base in the above process, although I prefer it, alumina, magnesia, potash, or soda, or oxide of lead, may be used in the proportion which their atomic weights bear to that of lime.

I claim the above described process, or its equivalent, of preparing a rosin oil, free from the peculiar and offensive odor which characterizes the rosin oil of commerce, by combining, as above described, the fluid formed by the first distillation of rosin or rosin oil, however produced, with slacked lime or other alkaline, earthy, or metallic base, equivalent thereto, as described, and distilling from the compound thus formed a deodorized preparation of rosin oil, as described.

RE-ISSUES.

TRIMMING BOOKS, &c—By L. F. Markham, of Cambridgeport, Mass. Patented April 18, 1848: I claim a turning and adjustable book holder, arranged as described, so as to be made to assume either of the three positions specified, and so that the three edges of a book may be trimmed, by a single adjustment of the same in said holder, and by the movement of said holder on its pivot, consecutively to each of the aforesaid three positions, whether such holder be combined with a reciprocating knife or cutter, having any other shape or motion.

Also the adjustable frame in combination with the trimming book holder, or the turning and adjustable book holder, for the purpose specified.

Also, the combination of the table, on which the book holder is supported, arranged so as to be gradually raised, to convey the edges of the book to the knife, with a reciprocating knife or any other knife or cutter having any other shape or motion.

FIRE ARMS—By Benj. Chambers, of Washington, D. C. Patented July 31, 1849: I claim a hinged breech piece, which is easily moved into and out of place, in closing and opening the gun, for the purpose of loading, swabbing, &c., substantially as described.

Also, in combination with a gun having a dissected screw breech, the flanged shield through which the cartridge is made to pass into the chamber over the dissected screw, without danger of being broken by the ends and edges of the threads, as set forth.

Also, in combination with a rammer for charging guns at the breech, the projecting central point, whereby the cartridge, in being driven to its place in the chamber, is perforated at its base, to receive the point of the percussion cap, for the purpose of insuring the ignition of the gunpowder, as set forth.

Also the enlargement near the shoulders, of the rammer, whereby the shield through which the cartridge has been rammed, is made to adhere, by friction, to the rammer, and to be drawn out of the breech of the gun, without requiring a separate operation for taking it out; in these claims I shall not confine myself to the exact arrangements of parts described, but shall vary the same at pleasure, while I attain the same ends by means substantially the same.

CANNON LOCK—By Benj. Chambers (assignor to Joanna Chambers), of Washington, D. C. Patented July 31, 1849: I claim the method of securing the lock to the gun, by means of the sectional or quarter screws, for the purpose of speedily opening or removing the lock, to supply it with the cap, pellet, or other material, by which the gunpowder is ignited, and for firmly holding the same in place on the gun when it is to be discharged, as described.

Also, forming the gun lock in such a manner that the hammer rod and the percussion rod shall be in separate pieces, laying axially within the same barrel, whereby the coiled main spring is made to urge the hammer rod against the head of the percussion rod to discharge the piece, and the recoil spring on the percussion rod, is made immediately to draw back and hold the valve which closes the interior of the lock, against access of smoke and gases, as set forth.

DESIGNS.

BUST OF DANIEL WEBSTER—By Thos. Ball, of Boston, Mass.

WATER COOLER—By E. M. Manigle & George Phipps, of Philadelphia, Pa.

CLOCK CASE FRONTS—By Charles Chinneck, of New York City (three designs).

COOKING STOVE—By Jacob Beesley (assignor to Wm. P. Cresson), of Spring Garden, Pa.

COOKING STOVE—By S. H. Sailor (assignor to O. W. Warnick & Frederick Leibbrandt), of Philadelphia, Pa.

The Hoosic Tunnel.

In relation to the action of the Joint Special Committee of the Legislature of Massachusetts, in favor of granting the aid of the State to the "Hoosic Tunnel" Railroad Company, the Report arrives at the following conclusions, viz. —That the tunnel route will make a reduction of twenty-two to seventy miles in distance between Troy and the city of Boston, and all the northern towns of Massachusetts—that it will reduce the summit elevation 640 feet, perpendicularly diminish the grade from 83 to 39 feet to the mile, obliterate seven entire miles of curves, replace a ferry that costs \$25,000 yearly, by a bridge, and enable a freight engine to take twenty-five long freight cars in place of ten to fourteen—the usual number on the three divisions of the Western—thus reducing the cost of transportation about one half, and enabling Boston to participate in the western business, amounting to three and a half millions of tons on the Hudson, and increasing at the rate of more than half a million yearly. The committee are satisfied from the evidence that the tunnel will ventilate itself, as the steam and smoke are proved to condense against the roof and give no trouble. As respects the cost, they consider it proved that the tunnel will range from one to two millions, and attach little weight as to the cost of some English tunnels, as they were made of gigantic and unnecessary size,

when railroad tunneling was not understood, and being through wet clay, required very expensive masonry.

The committee are satisfied the tunnel may be made in four years, either with or without the machine, which worked to their satisfaction. Considering the tunnel essential to the prosperity of the State, and not seriously injurious to the Western Railroad, which derives nine-tenths of its net income from the local business, and little profit from the through trade, which has been for some years diminishing, they recommend the passage of the bill.

Caloric—Perpetual Motion.

MESSRS. EDITORS.—In the Scientific American of January 29, on page 54, I find in an article upon the caloric engine, the following sentences:—

"Thus this engine is constructed upon the principle of heat force; that is, if a certain amount of heat can be retained, it will produce repeated effects upon innumerable quantities of water—a thing utterly at variance with mechanical philosophy."

"This was certainly a kind of perpetual motion engine, the same heat and the same air being used over and over again."

Now I think that here is a theoretic error. Heat can theoretically be used over and over again, and it only remains to reduce this principle to practice to realize the fact that heat is unlike gravitation. To illustrate my meaning, let us take the case of a common steam engine. No heat is lost by the condensation. And if the apparatus were not too cumbersome—that is, if we could prevent all loss by radiation—we should be able to use the 20 pints of water heated from 50° to 110° in condensing an amount of steam equal to one pint of water, by heating air to produce a force 4 times as great as that produced by the steam. The only way to avoid the conclusion that heat can be used more than once, seems to me to be to deny that the water at 110°, from the hot-well of a common steam engine would tend to expand air at 50°, which is utterly at variance with facts.—There is a fundamental difference between the force of caloric and that of gravitation, that the latter leaves a power exhausted, while in the case of the former an additional force can be obtained by the natural radiation of the heat, after the caloric has once been used to obtain power by expansion, very nearly the same power being capable of being obtained for the contraction. P. M. H.

[If there is a theoretic error in the principle we announced, our correspondent has failed to point it out. When he talks about an additional force being obtained from the radiation of heat he must mean that it is a force different from heat itself, or that it is a portion of the amount of heat generated. We can form no idea of the effects of heat apart from bodies possessing gravity. We measure the quantity of heat generated by the temperature of bodies possessing gravity. Our correspondent (and many others) have confused ideas about using heat over and over again.

For example let us take a cubic foot of air and heat it to 491°, and it will exert a pressure, of 15 lbs. on the square inch. Cut off the fire influence and the cubic foot of air will expand to two cubic feet, at the atmospheric temperature and exert a pressure of 0. (Air heated to 491° doubles its volume). Now can this expanded 491° of heat be used over again to heat another cubic foot of air to 491°? No. How then can it produce repeated effects upon innumerable quantities of matter? You can compress the two cubic feet of air expanded to atmospheric temperature into one foot, and it will then be brought back to 491°, and exert the pressure of 15 lbs. on the square inch, but then you must just exert as much force to compress it as the force to be obtained after it is compressed. The idea which has been propagated, that heat can act above and beyond the laws of gravity upon bodies possessing gravity is preposterous. We thought we had said enough to show how ridiculous the assumption is, that a certain amount of heat can produce repeated effects upon innumerable quantities of matter, but we see that we must strike a harder blow still.

It is stated that "the hot air engine uses the same heat over and over again, except

30°, which is allowed to escape every stroke. This is done, it is stated, by interposing packages of wire gauze between the feed and working cylinders, which takes up the heat from the escaping hot air, and gives it out to the inlet cold air, thus the same quantity of heat produces repeated mechanical effects except the loss of 30° every stroke."

We have fairly quoted the allegations of the advocates of using heat over and over again, and will show by plain figures that it is all moonshine and a deception. Air doubles its volume by the application of 491°. The advocates of hot air say 480°, and we will grant them the point. Well, the working cylinder of the Ericsson engine has a six foot stroke. Allowing the air to be heated to 480°, it will move the piston 6 feet with a pressure of 15 lbs. on the square inch. If allowed to expand to double its volume, its pressure will be reduced to 0. The whole of this stroke would be 12 feet, and the average pressure 7½ lbs. on the square inch, for the expenditure of the fuel that heated the contents of the 6 feet deep cylinder, that is the 480° of heat generated by a certain quantity of coal, would move the piston 12 feet with an average pressure of 7½ lbs. on the square inch. It could not do any more, for the heat would be reduced to that of the atmosphere. But according to those who advocate the hot air regenerator, the 480° will make the piston move 52 feet, with a pressure of 15 lbs. on the square inch, by allowing it to come dashing against a resisting medium of wire gauze at every stroke, and then making another quantity of cold air dash against the gauze upon the principle, we suppose, of hyperbolic reasoning. This is the way they do it. The first stroke, 6 feet (72 inches) is performed by the air heated to 480°, this air comes rushing out against the wire gauze and gives out all its heat, except 30°. Cold air is then poured through the wire gauze, which gives out all its heat, to expand all the air which goes under the piston, and raises it up a second time, the whole six feet, excepting the amount of heat, (30°) lost, which must be deducted. Now let us cut off the heat from the fire, at the end of the first stroke, and see what amount of work will be done by these wild hot air theorists. 480° is the amount of heat applied to the air; the loss of each stroke is 30°, 72 in. being the length of the stroke. Well (480° - 30° = 16) (72 ÷ 16 = 4½) The loss of distance each stroke for 30° of heat is 4½ inches.—Well, first stroke 72 inches; second stroke 72 - 4½ = 67½. Third stroke 67½ - 4½ = 63 inches, and so on for fifteen strokes, when the loss of 30° each stroke will have reduced all the heat to 0, and it will be found that instead of the engine (as it only can do by pure scientific deduction) moving 12 feet with 7½ pounds pressure, it will have moved 52 feet, with a pressure of 15 lbs. on the square inch, or nine times the actual power which upon any consideration can be derived from 480° of heat. We can tolerate no more nonsense about using heat over and over again to produce repeated mechanical effects upon innumerable quantities of matter: more especially with those who can see by some hocus pocus, that if no loss is caused by radiation and exhaustion, 480° can be made to propel a steamship from Sandy Hook to the Cove of Cork.

Dr. Swaim, of Philadelphia, says, in relation to the "Curious Properties of the Number Nine," if any row of two or more figures be reversed and subtracted from itself, the figures composing the remainder, will, when added horizontally, be a multiple of nine:—

42	846	3261
24	648	1623

18=9×2. 198=9×2. 1638=9×2

This is merely a curiosity, from which he derives no result of practical utility.

Government Sale of Muskets, &c.

On the 19th inst. a sale of about 5,000 flint muskets and other military equipments, took place at the Marine Barracks at Washington.

The boiler of the dredging machine used in the Brooklyn Navy Yard exploded last week, blowing the latter to pieces, and two men, the engineer and fireman lost their lives.

Bunker Hill Monument was twice struck by lightning a few days since.