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LIST OF PATENT CLAIMS

Issued from the United States Patent Office.

FOR THE WEEK ENDING JUNE 10, 1851.

To Chas. F. Brown, of Warren, R. I., for Balanced Rudder.

I claim the employment, for the purpose of steering ships and other vessels in water, of two rudders, hung upon and at equal distances from the same centre of motion, and with their surfaces parallel, or nearly so, with each other, in such a manner that the same resistance is offered to each by the vessel's motion through the water, and both are balanced substantially as herein described.

[See an engraving of this patent in No. 34, Scientific American.]

To Davis Dutcher, of Springfield, N. Y., for improvement in Churns. Ante-dated Feb. 15, 1851.

I claim the combination and arrangement of the arms (two) with their rollers (two), which are controlled by the crank and the swinging arms (two), with their floats (two) kept in proper place, both in churning and gathering and working the butter, by the resistance of the cream, as herein described and shown.

To T. W. Hill, of Leominster, Mass., for improvement in Comb Cutting Machines.

I do not claim the mere use, in a die of a clearer for forcing out of the die, the article produced thereby, but I claim the combination of the two series of lifters and bent levers *n*, (arranged upon the travelling carriage) with the pressure roller, in such manner, that the continued motion of the carriage, shall operate the lifters after the combs are cut, substantially as described.

To Robert Newell, of New York, N. Y. for improvement in Permutation Safety Locks.

I claim, first, the application of the lever, *B* 5, and dog, *B* 6, with the tusk, 40, to be acted on by the talon, 39, and allow the spring, 38, to throw the tusk, 40, into the notches on the lower part of the followers and auxiliary followers, so as to prevent any portion of these parts, if any of the tumblers are lifted after any end shake motion has been given to the bolt, by any improper attempt to unlock it.

Second, The combination of the tumblers, *A*, slides *B* 1, and follower, *A* 9, through the tenons, 18, notches, 30, tongue, 29, and jaws, 24, to lift the slides, *B* 1, and followers, *A* 9, to the same extent as the tumblers, *A*, and lifted by the key sections on locking the bolt, and to sustain the slides, *B* 1, until the tusk, 34, takes the notches, 31, on the slides, and holds them so that the bolt cannot be retracted until all the tumblers, *A*, are lifted to meet the notches, 30, and allow the springs, 25, levers, *A* 0, and auxiliary followers, *A* 8, to lift and place the followers, *A* 9, in the same position as when the bolt was projected, substantially as described.

Third, the mode described of so arranging and combining the cylinder, *C* 4, by the flanges, *C* 5, angles, 60, tumblers, *C* and *A*, and pins, 47 and 49, with the detector lever, *D*, at the part *C* 1, as that no one of the tumblers, *A*, can be separately lifted without placing the part, *C* 3, of the detector lever over the key hole, with the edges of the notch, 55, covering the open space around the drill pin, 57, by which arrangement no movement of the cylinder, *C* 4, can be made without producing the same effect, so that if powder is introduced into the cylinder, *C* 4, and the cylinder is moved, with the intent of entering a blow-pipe to spread the powder on either side of the cylinder, the part *C* 3 and notch 55 instantly cover the key hole and prevent the entry of the

blow-pipe for such a purpose; these parts being constructed, arranged, and operating substantially as described.

Fourth, the combination of the cylinder, *C* 4, block, 62, and hole, 63, to receive and pass out any gunpowder put in for the purpose of exploding, to destroy the lock, and at the same time, prevent the powder from reaching any other part of the lock.

Fifth, the application of the safety-valve block, 64, to vent the explosion of any gunpowder that may be confined in the cylinder, *C* 4, by plugging both the key hole and the hole 63.

Sixth, The mode of fitting the key hole cover, *C* 3, with the notch, 55, in the detector lever, *D*, to match the neck, 56, on the key shank; such means also preventing the introduction of any pick or false instrument, after any movement has been given to the cylinder, *C* 4, by the notch 55, being as small as the drill pin, 57.

Seventh, the application of the guard-piece, 65, on the detector lever, *D*, to prevent a pick reaching the pin, 45, of the detent dog, *B* 8.

Eighth, the application of the cam pointed piece, *C* 6, on the detector lever, *D*, to move the pin, 47, and detent dog, *B* 8, so attached, that if the key hole cover is cut or drilled off, the piece, *C* 6, falls away and leaves the detent dog, *B* 8, still holding the bolt.

To I. S. Richardson, of Boston, Mass., for improvement in Churns.

I claim, the combination of the rock shaft, levers, connecting rod, and swing for the churn, for the purpose of producing the perpendicular movement of the dasher, substantially in the manner herein described, to be denominated the Oscillating Perpendicular Dash Churn.

To A. C. Arnold, of Norwalk, Conn., for improvement in crossing the fibres in forming the bats for felt, cloth, &c.

I claim, first, the employment, for the purpose of carrying webs, sheets, or layers, of any fibrous material, of an apron of material pervious to air, having a box in which a vacuum is produced placed at the back, the side of the box next the apron being perforated, or otherwise rendered pervious, so that the external air, rushing through the apron to fill the vacuum within the box, forces the material close to the apron and confines it there, in combination with the manner herein described, of throwing off or releasing the material from the apron, by suddenly closing the valve in the pipe communicating between the vacuum box and the apparatus for producing the vacuum, and at the same time opening the valve in the said pipe to admit air into the box; or by any means substantially the same.

Second, the flap operating in the manner and for the purposes substantially as specified.

To G. H. Corliss, of Providence, R. I., for improvement in Governors.

I claim the method, substantially as specified, of steadying the movement of governors or regulators of motion, by apparatus described, or the equivalent thereof.

To Sommers Crowell, of Reading, Pa., for improvement in Railings.

I claim making the dovetailed tenons, whether to the palings, or top and bottom rails, wedge shaped in the length of the railing, the taper at the opposite ends being reverse, and making the grooves in the rails or palings in the same manner, that the palings cannot slide in either direction, binding the whole firmly together, substantially in the manner described.

To Albert Eames, of Springfield, Mass., for improvement in machines for facing and polishing stone and other substances.

I claim the method, substantially as described, of grinding, facing, or polishing the surface of stones and other substances, by means of a grinder, rubber, or polisher, connected and combined with a spindle, from which it derives a rotary motion, by means of universal and sliding joints, substantially as described, that the said grinder, rubber, or polisher, may be carried over any and all parts of the surface to be worked, whilst its surface is self-adapting, as described.

To Wm. Gardner, of New York, N. Y., for improvement in Governors.

I claim the employment of a loose wheel or

pulley propelled by the prime mover, and driving its shaft, through the action of a separate elastic force, weight, or pressure, such as procured by the spring in combination with the several racks and pinions, or their equivalents, as described, for operating the adjusting or regulating slides, substantially in the manner specified and for the purposes set forth.

To C. H. Guard, of Brownville, N. Y., for improvement in Carriage Springs.

I claim connecting the axles of wheeled vehicles, by means of curved spring perches, which are combined with the supporting springs of the vehicle, that have a great degree of curvature than themselves, substantially in the manner and for the purpose set forth.

To John O'Neil, of Xenia, Ohio, for improvement in Washing Machines.

I claim the triple and concentrated action of pressure blocks upon the clothes; being constructed and operated, substantially in the manner described.

To Hugh and James Sangster, of Buffalo, N. Y., for improvement in Lanterns.

We claim the mode of attaching the lamp to the lantern, by means of the springs and flanges, substantially as set forth.

To T. J. Sloan, of New York, N. Y., for improvement in method of finishing the heads of screws.

I claim the method described, of finishing the heads in the manufacture of wood screws, partly shaving the head with a cutter before nicking, and after nicking subjecting it to a second shaving operation, to complete the shaving by means of a cutter, whose edges form with each other a more acute angle than the edges of the cutter first employed, as specified.

To Wm. Van Anden, of Poughkeepsie, N. Y., for improvement in Centrifugal Sugar Drainers.

I claim the contrivance for discharging, and at the same time cleansing the strainer whilst in motion, by means of an elevator rising in a spiral groove, substantially as described, or by an elevator rising in vertical or inclined grooves, which is essentially the same.

To N. T. Allen, of Ludlowville, N. Y., for improvement in Grain Harvesters.

I claim gearing the operating parts of the machine from both the wheels, in combination with the arrangement by which portions may be driven by either so as to equalize the driving power upon each, and thus to allow the machine to be much more easily guided and controlled.

DESIGNS.

To S. W. Gibbs, of Albany, N. Y., (assignor to Jagger, Treadwell & Perry), for Design for Stoves.

To W. G. Hallman, of Philadelphia, Pa., for design for Stoves.

To A. Cox, Elias Johnson & D. B. Cox, of Troy, N. Y., for two designs for Stoves.

To J. F. Rathbone, of Albany, N. Y., for design for Stoves.

To David Stuart & Jacob Beesley, of Philadelphia, Pa., (assignor to W. P. Cresson, for design for stoves.

(For the Scientific American.)

Practical Remarks on Illuminating Gas.

[Continued from page 310.]

VENTILATION OF GAS LIGHTS.—A few practical remarks upon the ventilation of gas lights may not only be appropriate but acceptable to the reader; its importance cannot be doubted, and yet the subject has commanded but little attention. Much care and attention is paid to the well-lighting of apartments, and far too little is directed to their perfect ventilation. In practice it is well known to be much easier to warm and light apartments, than to properly ventilate them, although the latter may be considered of full as much importance.

Wherever or however light is produced, heat is always evolved. Whether light is obtained from candles, lamps, camphene, gas, or any other organic substance, the elements which supply light are identical in character, although they may differ in their proportional relations to each other. Hydrogen and carbon are the light giving materials, and if a substance is deficient in these two elements, it cannot be used for illuminating purposes; and every substance is resolved into a gaseous state before light and heat are evolved; we have a beautiful illustration before us every evening of the principles of the decomposition of material, its new combinations, and the evo-

lution of carburetted hydrogen gas, in the candle and the lamp, and wherever and however light and heat are produced, whether it be from the pine knot of the backwoodsman or the more unique carcel lamp of the citizen, the same effect is produced. Every candle, every lamp is an illuminating gas apparatus on a small scale; the oil or material to be decomposed, ascends the wick by a capillary attraction through channels formed by fibres of the cotton lying beside each other, and in these channels it becomes heated by the flame to a high temperature and generally is decomposed into an aeriform fluid, which fluid is an illuminating gas. During the combustion, whether the process be effected by oil, gas, or other material, the elements hydrogen and carbon combine chemically with oxygen, supplied to them from the surrounding air; the hydrogen and oxygen produce aqueous vapors (pure water) and the carbon and oxygen produce carbonic acid. In combustion as well as respiration, the effect produced is the same, and the air being deprived of its oxygen, nitrogen is set free, which is as injurious by its negative, as is carbonic acid gas by its positive properties.

The quantities of heat, water, carbonic acid, and nitrogen, resulting from the combustion of any of the materials enumerated, as compared with one another, correspond so closely with the relative quantities of light from each, that the estimate is sufficiently near for practical purposes. Gas yields a brilliant, steady, uniform light; that from candles and lamps is variable. The quantity of light from gas can be increased or diminished as quickly as the wish for it can be expressed. If properly arranged, gas lights illuminate objects in a room from a convenient and agreeable elevation; candles and (portable) lamps are generally placed too near, and in too direct a line with the eye. For these and many other reasons, it is well known that many other persons who use gas accustom themselves to a stronger light than they had been satisfied with from candles or lamps; hence the difficulty in closed apartments of preserving a pure atmosphere and an agreeable temperature. There is no mystery about the matter; each full sized gas-burner yields light and heat equal to that of twelve mould candles of six to the pound. Suppose twelve of such candles to be burning at the same time, and as close together as they could be placed; is it not likely the effects would be soon perceptible? In large and lofty rooms, the heated products ascend towards the ceiling and there remain for a considerable time without materially affecting the lower stratum of air. It is otherwise however in small and low rooms, when the effects of the vitiated air are very rapidly and perceptibly felt.

The identity of the two processes, respiration and combustion, so far as their effects are concerned, cannot escape notice. In both instances air is deprived of oxygen, and heat, water, and carbonic acid are emitted; in the former case, the air which enters the lungs, is retained there for a short period in the act of breathing, and then expelled, materially changed in its character and properties. A portion of the oxygen entirely disappears, combining with vapor of carbon in the air cells, thus forming an equal volume of carbonic gas; the nitrogen is believed to be entirely passive, and to remain unchanged; but when deprived of oxygen it will not sustain life. In the latter case the material to be consumed unites with the oxygen of the air, which is the great supporter of all combustion, and new combinations are formed; the hydrogen unites with the oxygen forming aqueous vapor, and the carbon with the oxygen forming carbonic acid, the same as in respiration. J. B. B.

(To be Continued.)

Scarlet Fever.

The Baltimore Sun says that a number of responsible gentlemen have called upon the editor, confirming the truth of perfectly curing scarlet fever by, rubbing the patient three times a day with fat bacon.

To Quell Fire.

Muddy water, and dirt also, is better than clean water to put out fire.