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LIST OF PATENT CLAIMS

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KNITTING MACHINES—By Timothy Bailey of Ballston Spa, N. Y.: I claim, 1st, releasing the hanging plates from the lever by the inclined projections, as they are drawn up, so as to let the uprights and lever raise the locking bar.

Second, the combination of the catch (fastened to the upright), spring, and lever, operated by the groove in the curve, to raise the locking bar, so as to allow the slur to operate and depress the sinkers, to divide the loops, and form the stitches, and to raise the lever so as to be caught by the lip upon the plate, to lock down the locking bar.

CAST-IRON CAR WHEELS—By A. G. Bristol & J. C. Jackson, of Rochester, N. Y.: We claim making car wheels with double plates, extending from the hub to the tread—the plate, forming the face of the wheel to be slightly curved backwards, so that a section of it, through the centre, shall present a very flat arch, whose extremities abut against the rim of the wheel, the back plate, as it spreads from the hub, to be curved in the same direction as the front plate, but as it approaches the tread, to be gradually depressed at equal intervals, till it meets the front plate—to be thus thrown into a fold a plate, forming two walls of a triangular cavity, of which the third side is made by the face plate, and in this form to be continued till it meets and unites with the tread—the whole to be in the manner and form substantially as shown.

DUPLEX ECCENTRIC VALVE-MOTION—By J. J. G. Collins, of Chester, Pa.: I claim the employment of cogs on or to eccentric wheels, for giving motion to eccentrics, or their equivalents, on a second motion, in combination with the guard or framing, attached to the clips or straps of the driving eccentric, and so formed and arranged as to unite both vibrating motions derived from the driving and driven eccentrics, into one motion, for working the slide and other valves of steam engines, as specified.

STRAW CUTTERS—By Absalom B. Earle, of Oneonta, N. Y.: I claim the method of cutting vegetable substances, by a combined chopping or percussive and shearing cut, produced by means of stationary knives at the mouths of the feeding troughs, moving knives, carried on an oscillating lever and revolving tappets, which actuate the oscillating lever, as described.

ENDLESS CHAIN HORSE POWERS—By H. L. Emery, of Albany, N. Y.: I claim the manner of constructing the converge gears, pinions, and pulleys of the endless chain horse-power, with their outer sides concave at their centres, sufficiently to receive their fastenings within the plane of the inner side of the arms, spokes, or faces, of such of the gears and pulleys which, when confined upon one shaft and overreaching the other shaft, may pass both shaft and fastening freely, the faces of the several couplings, or shoulders, upon the shafts, as also the ends of the shafts themselves, being in the same planes, and all the fittings and fastenings of the shafts, gears, and pulleys, agreeing with each other, for the purpose described.

VESSELS FOR MAKING INK—By Alex. Harrison, of Philadelphia, Pa.: I claim the arrangement and connecting together a series of vessels, for manufacturing ink, in the manner and for the purpose as set forth.

ZINC WHITE—By S. T. Jones, of New York City: I claim the use of a porous or fibrous bag or receiving chamber, with porous sides or bottom, or an air-tight chamber, with a straining or porous bag, adapted to the inside thereof, and used in connection either with a blowing or exhausting apparatus, so that the products of the distillation and oxygenation of zinc, or other volatile metals, may be separated from the accompanying air and gases, which latter will be forced, or otherwise drawn through the pores of the cloth bag or chamber, and escape into the atmosphere.

SAW MILLS—By O. B. Judd, of Rockton, N. Y.: I claim raising the tail block, as described, or in any other way substantially the same.

WATER WHEELS—By J. B. Nott, of Guilderland, N. Y. & Wm. S. Kelly, of Princeton, N. Y.: We claim a water wheel, composed of a scroll or section of scrolls, or arcs of circles, or sections of polygons, substantially as described, in combination with a fixed inter guide or guides, made in a manner substantially similar to the float or floats of the wheel, but with the direction in reverse, there being sufficient space between the outer extremities of the guide or guides, and the inner extremity of the float, to allow the water to pass between them in all positions—the space between them being substantially on the disc of the wheel, thus causing the driving current of water to pass between the two, in the direction of the wheels motion and act directly upon the inner face of the wheel, propelling the wheel in the same direction with the current—the water being discharged, nevertheless, at the extremity of the scroll, helix, or arcs of circles, or sections of polygons or either, of which the wheel may be composed, in a direction opposite to that in which the wheel revolves.

CUT OFFS—By F. E. Sickels of New York City: I claim operating the catch, or hold, and liberating the valves of cut-offs on the movement to close or return motion of the valve, after it has been partially operated upon in opening, substantially in the manner as described, so as to leave as little of the catch to be operated, to effect the liberation of the valve, as may be desired to be accomplished on the return movement; thus being enabled to liberate the valve and cut off the steam, as near the first of the return movement, as may be desired.

GRAIN WINNERS AND WEIGHERS—Thos. T. Strode, of Coatesville, Pa.: I claim combining a balance lever weigher with the lower portion of the winning machine, whereby the grain, when cleaned, is weighed and removed therefrom, by a portable receiver, as described.

I also claim constructing the balance lever weigher and mounting the same upon pivots, or knife edge bearings, whereby its rearward projecting ends, are made to serve as ways, or inclined planes, upon which is mounted a portable receiver, so as to balance the

weigher, whilst its frontward ends are graduated and furnished with weights, by which the number of bushels weighed at each time, may be indicated as described.

WATER GUN FOR EXTINGUISHING FIRE—By Hiram Strait, of Covington, Ky.: I claim, first, the combination of the flange cap and guard, constructed and operating in a manner substantially as described.

Second, constructing the barrel of the fire gun of successive layers of sheet metal, and casting the breech, trunnion ring, and flange thereto, in manner substantially as described. [Another Annihilator.]

BORING HUBS FOR BOXES—By Henry Sidle, of Dilliburg, Pa.: I claim the iron shaft in two parts, with the socket and screw in the centre, so as to increase or diminish the length of the shaft, and also to feed the bits, as described, whereby a hub may be clamped, bored at both ends for the boxes, and removed from the machine, without removing the cutters from the shaft, replacing them, or changing the ends of the hub or shaft.

GRAIN DRIERS—By T. E. Weed, of Williamsburgh, N. Y.: I claim, first, the centre hollow shaft for the double purpose, first, for forming the support in the centre for the steam chambers and pans, as described; and, second, for forming a passage for the steam to pass into each of the chambers, for heating the machine.

Second, I claim, substantially as described, the arrangement of the air chambers behind the doors and pans, with openings in them, for a thin blade of air to escape in a circle from the centre, at a right angle, or nearly so, with the main shaft, and the pipe extending through the machine, as shown, for supplying the chambers with air, operating substantially as set forth.

FLOATING DOCKS—By O. T. Williams, of Smithland, Ky.: I do not claim forcing air into a vessel, immersed, or partly immersed in water, for the purpose of rendering it buoyant, or of admitting water for the purpose of allowing it to sink; but I claim so forming a cylindrical or prismatic dock, as to perform the operation of elevating a vessel above the surface, by combining the buoyancy obtained by injecting air into the cylinder, with the forced revolution of the cylinders on their axes, while lying on the water, as set forth.

Second, I also claim making the rigid submerged elevator, in such a manner as to be actuated by compressed air, only so long as to get rid of the contained water, and to be freed from the interior pressure, while sustaining its load above the surface of the water, whereby the liability to accident from the escape of air, under high pressure, is avoided, substantially as described.

Third, I also claim, in combination with a flexible tube for conveying injected air, the use of the revolving pipe, directly connected therewith, whereby the pipe may be turned, as described, for varying the direction of the current of injected air, by turning the flexible tube, as set forth.

Fourth, I also claim, in combination with the flexible tube for the injection of air, the opening in the bottom of the cylinder, and the vents in its top, whereby the dock is rendered buoyant, while wholly immersed in water, and freed from interior pressure, on rising to its maximum height on its surface, substantially as set forth.

Fifth, I also claim the double pulley or analogous turning apparatus, whether a rope or a chain with friction rollers in its links be used, for the purpose of turning the opposite elevators in opposite directions, for the purpose of raising the vessel above the water, in the manner set forth.

LIGHTNING VESSELS—By Orrillus T. Williams, of Smithland, Ky.: I claim the elevator, formed by combining jointed frames of inflexible materials, with flexible enclosures, made air-tight above and open below, when said jointed frames are so constructed as to attach themselves to the bottom of a vessel after being let down by its side, and the flexible enclosure so arranged as to admit of the injection and retention of air beneath it, for the purpose of buoying up the vessel, substantially as set forth.

Second, I also claim making jointed elevator frames, in such a manner as to adjust themselves to the form of a vessel's sides, whereby the flexible enclosure for air, is allowed to come in close contact with the outside of the vessel, in the manner and for the purposes set forth.

Third, I also claim, in combination with a flexible enclosure for retaining the air, the hook, upright or chain, brace, and stretcher, whereby the elevator is made capable of attaching itself to the vessel and of raising the same, without the necessity of passing a support beneath the keel, as set forth.

DESIGNS

FOR STOVES—By James Leffel, of Springfield, O.

PARLOR STOVES—By N. S. Vedder & Wm. L. Sanderson, of Troy, N. Y., (assignors to Warren, Swetland & Little, of Half Moon Village, N. Y.)

World Makers.

Science is a collection of facts acquired by observation, and systematized for usefulness. There are many men, however, who have a scientific reputation, much of which is derived from mere assertions respecting natural phenomena—their own deductions—which may be altogether erroneous. This, we believe, is the case with the "World Makers," those Astronomical and Geological philosophers who have given utterance to their opinions respecting the manner this world and other worlds have been formed. The recent lectures of Prof. Guyot, of Cambridge, Mass., delivered in this city, to demonstrate the harmony of the Bible and orthodox faith with science, was, in our opinion, an exhibition of science "falsely so called," because opinions were put forth for facts.

He asserted that the *days* in which certain great creative acts were performed, as mentioned in the first chapter of Genesis, were not days of 24 hours' duration, but great cosmogonic periods—they were epochs merely. Of chaos, as mentioned in that Book, he says:

"We know of only one state—the gaseous state of matter—which answers to this description. If the air in this room was not lighted, it would very well represent this void without form. Dark, invisible gaseous matter was the true state of chaos. When we dissolve or ana-

lyze a substance, we find always that we immediately go back to this very state of gas or chaos. He explained the gestation of an egg, as showing periods of development similar to those of creation. It was the opinion of St. Augustine that matter was originally a gaseous state, and that the days of Creation were vast periods. The 24 hour day is a modern idea in the history of the church. Next we read that God said, 'Let there be light.' He did not say *make* light; he did not create light; that, or rather the chemical principle which produced it, existed. It was simply developed, by the fiat of the Almighty. The text is in perfect accordance with the present opinion of the wisest astronomers and men of science. Now comes in the action of gravitation; molecules begin to attract each other, and the result is light and heat. As this attraction goes on, nebulae are produced. As, at the present day, the concentration of nebulous matter advances, we find more brilliant centres of light, which shows clearly that the development of light was the first visible step in the process of creation.

La Place thought the solar system was, at first, one vast nebula, in a high state of heat from chemical action. It revolves and cools, and a ring near the equator is broken off; this ring of matter, or condensing gases, continues to revolve, but is soon broken in pieces, and the fragments form planets, still keeping the momentum which they had from the main body of nebular matter. Thus planet after planet were formed as the original nebula condensed and shrunk up. The farthest planets were formed first, down even to the sun itself. He proceeded to explain the planetary motions, which are known to be what would have been supposed they would be from the origin of the moving force. Perhaps the chemical elements may not yet be fully explained; but these, with the mechanical theory of La Place, will explain all existing motion. A similar theory has been advanced in this country by Prof. Stephen Alexander, of Princeton. Now suppose that the great primitive nebula, rotating upon its axis, is in fact the beginning of things. We shall be able by this theory to explain not only our own system, but the entire phenomena of the universe. The formation and dispersion of globes is still going on. Though immense distances prevent us from seeing the movements of what we call fixed stars, they do move, they are keeping up the revolution of the great primitive nebula from which they sprung. We see then, that these motions produce just such a separation of matter as is laid down by Moses. The lecturer proceeded to explain the variety produced by these motions. It was the same order of development that subsequently produced such pleasing varieties of organic matter."

We have quoted enough for our purpose, which is to object entirely to the Nebular hypothesis; they have no business to propound such a theory and link it with religion, and endeavor to make the Mosaic account of the Creation as flexible as india rubber, to square with their notions. We have no objection to their theorizing upon established facts, but we do object to a theory of suppositions. Mr. Field recently delivered a lecture in St. Louis, and advanced the same doctrines; and we may say at once, that nearly all our Scholastic Professors entertain the same opinions. The doctrine they inculcate is founded on the doctrine of the old Materialists, "matter is eternal." This Mr. Field plainly asserts, by quoting the heathen adage, "*ex nihilo nihil fit*,"—from nothing, nothing can be made. We believe, with the author of "The Footprints of the Creator," that a great battle for truth will be fought with science, but at the same time there can be no such a thing as science apart from logic. This is the fault we find with the gaseous theorists, they have propounded a theory with a wretched logic to recommend it, and, what is worse, they torture revelation because they are not courageous enough to attack it openly and manfully.

Neither La Place nor Prof. Stephens is the originator of the Nebular theory, as a whole. It is an old story newly vamped up. "Burnet's Sacred Theory," asserted that the earth before the flood was "a fluid mass, a chaos of various substances differing in density, the

heaviest of which fell to the centre, and the rest on the top according to their gravity."

Whiston, in his theory of the earth, supposed it to be originally a comet, and was such at the time mentioned in Genesis, when it was then placed as a planet in our system. Before that, he says, "it was without form and beauty, it was a molten mass hotter than molten iron and had a dense fluid atmosphere—a surrounding *chaos*." At the Creation, the earth was put into its orbit, and wheeled along in its course, but part of the heat it had before received, still remained, and which he believed would take 6,000 years to cool—that the earth we live on is a mere crust on the top "of a hot fluid mass, the heaviest parts deepest down."

He believed the flood was caused by the tail of a comet. A recent letter from one of our correspondents propounds the same views, and the author of it believes that the American continent is part of that comet, and the Indians a race peculiar to that comet. Buffon believed that the earth, and all the planets in our system, were formerly a part of the body of the sun, and that a comet fell upon it, and struck off the planets in our system, as sparks are struck by a blacksmith from a bar of red-hot iron. Thus La Place and Stephens and Guyot are only patchers of the older World Makers.

We cannot account for the reasons why they wish to make the earth originally a mass of gas, unless it be that they are afraid to deny the quality of eternity to the matter of which it is composed. But to us it is just as easy to conceive of the space which the world now occupies being a blank, as to conceive that we ourselves had no existence before we came into being. There are too many who mistake the operations of matter for the qualities with which it is endowed by its Creator. Man, with all his intellect, is just as incapable of understanding the origin of the world, or of comprehending the idea of creating something out of nothing, as a butterfly is of reasoning of the origin of man. If the earth were an original mass of gaseous fluid, it could not be chaotic in that state, at least there is no reason for supposing it was, for fluids and gases are governed by as certain laws as the solids are. If this world were originally in a state of gas, and if we allow its materials, in that state, to have been 1,700 times expanded (a moderate calculation), then our nebular globe must have had a diameter of $7,912 \times 1700 = 13,450,400$ miles. Just imagine a mass of gases in chaotic confusion, according to Guyot & Co., of more than thirteen millions of miles in diameter, and this tossing away through space like a ship without sail or rudder. These philosophers, while they talk of, have strange ideas of the Divine Government.

There is another point to which we wish to allude, that completely annihilates their theory—it is this: was gold ever in a state of gas? No. It might have been held in solution as a fluid, but not as a gas, and it is found in its natural state as a metal unoxidized, thus proving that gravity, as a mechanical law, nor any chemical law with which we are acquainted, had anything to do with the production of gold, *per se*. Shallow theorists talk of matter, as a whole, forgetting that matter is a mere term for more than sixty different substances. They leave logic out of their deductions, and common sense too, when they talk about the laws of matter, and matter as a whole, and leave out of question the endowed properties of matter.

We can easily conceive of a world without a race of men, or races of animals. We can also easily conceive of a world without gold or silver, iridium or platinum; and if we consider the world made up of substances, *a b c e*, we can easily arrive, by mathematical inquiry at the point (*a b c e*)—(*a b c*) = *e*. Now if we can arrive at this deduction, what is to hinder the mind from supplying the next link to our argument (*a b c e*)—(*a b c e*). Logic, chemistry, mathematics, and observation, incline us to believe, that this globe—the various substances of which this earth is composed—were made and arranged, in a very short period by the Great Architect of the Universe. There is one thing positively certain, there are no nebulae—no gaseous chaotic masses—now rolling away independent of the law of gravitation; and what evidence have we that there ever was? None.