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LIST OF PATENT CLAIMS

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FOR THE WEEK ENDING FEBRUARY 22, 1853

SEPARATING ORES OR OTHER SUBSTANCES—By Hezekiah Bradford & Elisha Fitzgerald, of New York City: We claim giving to the reciprocating pan the peculiar motion described, by the means described.

Also, giving the back movement to the said pan, in a less period of time than the forward movement by means of a crank or cranks, whose axis of motion is below or above the plane of motion of the rear end of said pan, or by equivalent means, as described, and for the purpose specified.

Also, in combination with a pan, having the motions, or either of the motions, substantially such as specified, and on which the ore, &c, mixed in water, is supplied at some point towards the middle or back, the employment of a current or currents of water descending the inclined or curved surface of the said pan, as specified.

Also, making the rear end of the said pan with an inclination or curve upwards, as set forth.

Also, making the said pan, as specified, with apertures back of the place where the substances to be separated are applied, for the purpose set forth.

Finally, making the front and rear ends, or either, of the pan having a vibratory motion, with a gradual curve downwards, as specified, when the same is employed, in combination with currents of water, as specified.

GAS METERS—By A. A. Croll, of London, Eng.: I claim the mode of arranging movable partitions, or plates, so that the flexible material at the circumference of the plates, shall not be bent but in one direction, asset forth.

Also the arrangement and combination of the arms with the valves and movable plates, of a dry metre, as set forth.

SEWING MACHINES—By W. A. Johnson, of Greenville, Mass. (assignor to W. C. Bates, of Westfield, Mass.): I claim the making of the double loop stitch, having the loops upon one side of the cloth, by means of two needles combined and operating as described.

Also, the making a seam, or uniting two pieces of cloth, by means of the double loop stitch, consisting of a plain stitch from a single thread on one side, and on the other, of a continuous chain, formed of a succession of double loops from the threads.

SCYTHE FASTENINGS—By Alpheus Kimball, of Fitchburgh, Mass.: I claim the method of securing the blade of the scythe to the snath, by passing its shank through the end of the stationary metal cap, and securing it by means of the upward pressure of the screw, in combination with the claw and bush piece, constructed and operating as described.

SUSPENDING, LOWERING, AND LIBERATING SHIPS' BOATS—By Wm. S. Lacon, of Great Yarmouth, Eng. Patented in England Feb. 23, 1852: I do not confine myself to the precise arrangement of apparatus described for carrying out my invention; but I claim suspending ships' boats by having the chains or ropes so connected with drums or barrels, substantially as specified, that the two ends of the boat shall descend together, and with equal or nearly equal velocity, and so that the chains or ropes shall be free to disengage themselves from the barrels, in combination with the mode of controlling the turning of the barrels, by the weight of the boat, &c., as specified.

MORTISING MACHINES—By James Moreland, of Adrian, Mich: I claim the combination of the cross bar on the cross head, with the projecting dog on the movable way, for the purpose of withdrawing the chisel from the wood, on the back motion of the cross head, as set forth.

CUT-OFF MOTION FOR LOOMS—By A. B. Taylor, of Mystic, Conn., & Stephen Wilson, Jr., of Westerly, R. I: We do not claim the roller against the warp, by which the position of the weight is regulated; neither do we claim the ratchet wheel and worm pinion, moved by a pawl or click, from the lay, as these have before been used.

What we claim is, effecting and regulating the let-off motion by the variable counterpoise lever, in combination with the sliding worm pinion, when said worm pinion is acted on by the yarn beam through a direct strain communicated to it by the tension of the warp, the whole arranged and combined as specified.

TURNING IRREGULAR FORMS—By Lauren Ward (admr. of Richard Ward, deceased), J. B. Hubbell & H. C. Hubbell, of Naugatuck, Conn.: We are aware that machines have been made for turning irregular shapes, by means of sliding centre grooves, guides, patterns, cams, &c., and that cutters have been so formed and arranged as to assist the cams, &c., in giving the shape to the article, we therefore do not claim either of these, as such, as our own invention, but we claim the use of a cutter wheel for turning irregular forms, the cutters being so arranged that the pattern may be disclosed in reverse, on its surface, when combined with the feed motion described, so that in turning said cutter wheel, the desired irregular shape will be given to the article, without using guides or patterns, when the whole is combined and made to operate as described.

DESIGN.

CRADLE—By Alex. Edmunds, of Mount Pulaski, Ill.

The French Institute.

The astronomical prize given yearly by the above society has been divided for 1852 between the five astronomers, who have discovered seven planets in the course of the past year, ,viz., Hind of London, de Gasparis, Naples; Luther, Blik, near Dusseldorf; Chacornac, Marseilles; Herman Goldschmidt, Paris; a medal being conferred on each of the above; the prize for mechanics was awarded to M. Triger, civil engineer, for the invention of a process for expelling water out of swampy grounds, by means of compressed air, the operation having been for the first time effected in 1839, in forming a shaft 25 metres deep, through the quicksands on an island in the Loire, near Chalonnes, to get at the under surface.

A large number of pecuniary rewards were bestowed in the various departments of medicine and surgery; among the successful competitors we notice the name of Orfila, the celebrated writer upon Poisons and their Antidotes.

Riddle's Report of the Great Exhibition.

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It will be seen that each distinct formation gives rise to a great variety of fertility, even where the basis remains the same; but it is of great importance to the farmer to ascertain the general nature of the rocks and strata on which his farm lies. In these soils which we have mentioned, no notice has been taken of organic matter, because this does not seem in any way connected with their formation. The primary strata are distinguished by having no traces of organic remains in their composition. It is in the tertiary strata, especially those which have been formed by the destruction of animal and vegetable substances, that organic matter becomes a peculiar object of attention; and it is doubtless from this reason alone that the alluvial soils formed by the deposit of a variety of earths in a state of great division, and mixed with a portion of organic matter, form by far the most productive lands. They will bear crop after crop with little or no addition of manure. These soils are found along the course of rivers which traverse extensive plains, and which have such a current as to keep very fine earth suspended by a gentle, yet constant, agitation, but not sufficiently rapid to carry along with it coarse gravel or sand. Wherever there is an obstruction to the current, and an eddy is formed, there the soil is deposited in the form of mud, and, gradually accumulating, forms these alluvial soils which are so remarkable for their fertility. In these soils the impalpable matter greatly predominates; but the intimate mixture of the earths with organic matter, in a state which has been called humus, prevents their consolidating into a stiff clay, and the gases which are continually evolved from the organic matter, keep the pores open, and give scope to the growth and nourishment of the root.

Organic matter is no doubt essential to great fertility in a soil, but some soils require more of it than others. Humus, which is the form organic matter naturally comes to by slow decomposition in the earth, gives out certain elements which the roots can take up in their nascent state, and from which they obtain the carbon so abundant in all vegetable productions. But organic matter, in every stage of its spontaneous decomposition, keeps the pores of the soil open, and admits, even if it does not attract, air and moisture to the fibres of the roots.

Professor Liebig, however, takes a different view of this subject. He says:—"Land of the greatest fertility contains argillaceous earth and other disintegrated minerals with chalk and sand, in such a proportion as to give free access to air and moisture. The land in the vicinity of Mount Vesuvius may be considered as the type of a fertile soil, and its fertility is greater or less in different parts according to the proportion of clay or sand which it contains.

The soil which is formed by the disintegration of lava cannot possibly, on account of its origin, contain the smallest trace of vegetable matter; and yet it is well known that when the volcanic ashes have been exposed for some time to the influence of air and moisture, a soil is gradually formed in which all kinds of plants grow with the greatest luxuriance."

This fertility is owing to the alkalies which are contained in the lava, and which, by exposure to the weather, are rendered capable of being absorbed by plants. Thousands of years have been necessary to convert stones and rocks into the soil of arable land, and thousands of years more will be required for their perfect reduction—that is, for the complete exhaustion of their alkalies.

Air, water, and the change of temperature, prepare the different species of rocks for yielding to plants the alkalies which they contain. A soil which has been exposed for centuries to all the influences which affect the disintegration of rocks, but from which the alkalies have not been removed, will be able to afford the means of nourishment to those vegetables which require alkalies for their growth during many years; but it must gradually become exhausted, unless those alkalies which have been removed are again replaced:—a period, therefore, will arrive, when it will be necessary to expose it from time to time to a further disintegration, in order to obtain a new supply of soluble alkalies; for, small as is the quantity of alkali which plants require, it is nevertheless quite indispensable for their perfect development.

The first colonists of Virginia found a country, the soil of which was similar to that just mentioned; harvests of wheat and tobacco were obtained for a century from one and the same field without the aid of manure; but now whole districts are converted into unfruitful pasture land, which, without manure produces neither wheat nor tobacco. From every acre of this land there were removed, in the space of one hundred years, 12,000 pounds of alkalies in leaves, grain, and straw. It became unfruitful, therefore, because it was deprived of every particle of alkali which had been reduced to a soluble state, and because that which was rendered soluble again in the space of one year, was not sufficient to satisfy the demands of the plants. It is the greatest possible mistake to suppose that the temporary diminution of fertility in a soil is owing to the loss of humus; it is the mere consequence of the exhaustion of the alkalies.

Let us look at the condition of the country around Naples, which is famed for its fruitful corn land. The farms and villages are situated from eighteen to twenty-four miles distant from each other, and between them there are no roads, and consequently no transportation of manure. Now, grain has been cultivated on this land for thousands of years, without any part of that which is annually removed from the soil being artificially restored to it. How can any influence be ascribed to humus under such circumstances, when it is not even known whether humus was ever contained in the soil?

The method of culture in that district explains the permanent fertility. A field is cultivated once every three years, and is in the intervals allowed to serve as a sparing pasture for cattle. The soil experiences no change in the two years in which it lies fallow, further than that it is exposed to the influence of the weather, by which a fresh portion of the alkalies contained in it are again set free or rendered soluble. The animals fed on these fields yield nothing to these soils which they did not formerly possess. The weeds upon which they live spring from the soil, and that which they return to it as excrement must always be less than that which they extract. The fields, therefore can have gained nothing from the mere feeding of cattle upon them; on the contrary, the soil must have lost some of its constituents.

Experience, has shown, in agriculture, that wheat should not be cultivated after wheat on the same soil, for it belongs, with tobacco, to the plant which exhaust a soil. But if the humus of a soil gives it the power of producing grain, how happens it that wheat does not thrive in many parts of Brazil, where the soils are particularly rich in this substance?

The cause is, that the strength of the stalk is due to silicate of potash, and that the grain requires phosphate of magnesia, neither of which substances a soil of humus can afford, since it does not contain them. The plant may, indeed, under such circumstances, become an herb, but will not bear fruit.

Potash is not the only substance necessary for the existence of most plants; indeed, the potash may be replaced in many cases by soda, lime, or magnesia. But other substances beside alkalies are required to sustain the life of plants. Phosphoric acid has been found in the ashes of all plants hitherto examined, and always in combination with alkalies or alkaline earths. Most seeds contain certain quantities of phosphates. In the seeds of different kinds of corn, particularly, there is abundance of phosphate of magnesia.

The soil in which plants grow furnishes them with phosphoric acid, and they in turn yield it to animals, to be used in the formation of their bones, and of those constituents of the brain which contain phosphorus. Much more phosphorus is thus afforded to the body than it requires when flesh, bread, fruit, and husks of grain are used for food; and this excess is eliminated in the urine and solid excrements.

A Western Silk Factory.

The editor of the "Cleveland Herald," being on a visit to Wheeling, thus describes a large silk factory there:—

Not the least interesting of Wheeling manufactories is the silk factory of John W. Gill, Esq. He commenced the culture and manufacture of silk at Mount Pleasant, Ohio, some twelve years ago, and removed his establishment to Wheeling in 1845. His establishment is the largest of the kind in the United States, employs a capital of $20 000, and Mr. G. manufactures about $15,000 worth of silks per annum. He would manufacture much more extensively, but for the difficulty in obtaining stock. He buys all the American cocoons and reeled silk he can get, but can only keep his looms in operation about three months of the twelve. Mr. G. attributes the slow progress of silk growing in this country to the morus multicaulis speculation, which disgusted everybody with the business. He regards the morus multicaulis as worthless. The White Mulberry is found to be the best for feeding silkworms, and it is hardy and of rapid growth. Mr. G. says an acre of the mulberry will net a family $100 a year for raising cocoons, and the labor can be performed by women and children in six weeks. The worms do not need artificial heat, and no extraordinary attention in the Ohio Valley climate. The quantity of cocoons raised is now increasing, and Mr. G., who is an enterprising gentleman of great wealth, is resolved to continue the manufacture of silk, not as a matter of profit, but, if possible, to induce a more general attention to the American silk business, we can and should become independent of Europe in silk fabrics.

Mr. Gill has thoroughly tested the capacity of the United States to produce and manufacture silk, and he is satisfied that no country is better adapted to the business than the valley of the Ohio. He has manufactured every variety of staple silk, embracing satins, velvets, dress silks, hat and coat plushes, brocades, vestings, levantines, surges, florentines, flag silks, handkerchiefs, scarfs, cravats, gloves, stocks, shirts, sewing silks, coach lace, and trimmings, tassels, twist buttons, &c., to the value some seasons of $25,000, and the first premiums have been awarded to his goods wherever they have been exhibited.

We are confident that it but a very little attention was devoted by our farmers to the raising of silk worms, it would be a great benefit to our country. We can raise as fine silks and grapes in the United States as in any country, and there is no occasion for importing raw silks or manufactured wines.

Extension of a Patent.

On the petition of Enoch Hutchinson, of New York, praying for the extension of a patent granted to him on the 20th of May, 1839 for an improvement in ships' gallies, for the distillation of salt water, for seven years from the expiration of said patent, which takes place on the 20th day of May, 1853.

It is ordered that the said petition be heard at the Patent Office on Monday, the 18th of April, 1853, at 12 o'clock M.; and all persons are notified to appear and show cause, if any they have, why said petition ought not to be granted.

Persons opposing the extension are required to file in the Patent Office their objections, specifically set forth in writing, at least twenty days before the day of hearing; all testimony filed by either party to be used at the said hearing, must be taken and transmitted in accordance with the rules of the office, which will be furnished on application.

S. H. HODGES, Com. of Patents.

Washington, Feb. 5, 1853.

The Geanga Iron Works, Ohio were burned down on the 23rd ult.