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LIST OF PATENT CLAIMS

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REVOLVING FIRE-ARMS—By Robert Adams, of London, Eng. Patented in England Feb. 24, 1851: I claim combining with the frame and the hammer, the spring, for holding the hammer back, as stated. I also claim the sear attached to the trigger, by a swivel joint, and acting on the hammer, substantially as described.

I also claim the stop or projection on the trigger, for holding the chambers in position, when firing, as described.

EXERCISING MACHINES—By Richard L. Hinsdale, of New York City: I claim the bows on their hubs, and the strings and handles, either alone or in combination with the spring and vibrating platform, as described.

I also claim the elastic reciprocators made and operating as described.

Also the bows on the brackets, their equivalents, either alone or in combination with the spring platform, for the purposes of the invention, as described.

MOULD CANDLE APPLIANCE—By J. H. Randall, of Providence, R. I. Patented in England Dec. 12, 1852: I claim, first, a travelling apparatus for transferring from place to place, and in the process of casting, the moulds, in position with an oven for heating the wax, and a pot to prepare the fat for casting, and apparatus for drawing the candles from the moulds, as set forth.

Second, in combination with a series of moving stands of moulds, I claim the counterpoised books or the equivalent thereof, arranged and operating as set forth to aid in drawing the candles and centering the wick in such manner as to dispense with much of the care and skill heretofore required for the performance of this operation.

Third, I claim an elastic or yielding cap for the lower end or tip of the moulds, which performs the two functions of stopper, and the friction brake to stretch the wick, as set forth.

Fourth, I claim the wick clamp, constructed and operating as set forth.

MANURE CARTS—By Daniel Reid, of Washington, N. C.: I claim the measuring valve apparatus beneath the lower hoppers, in combination with the said hopper for discharging manure in hills, as set forth.

CORN SHELLERS—By G. W. Reid, of Evansville, Ind.: I claim the combination and arrangement of the sloping longitudinal slat screen, and the transverse slat screen, for the rapid and thorough separation of the corn from the cobs, as they are thrown from the concave by the shelling cylinder upon the said combined screens, as set forth.

SAWING BARREL HEADS—By P. J. Steers, of Cheshire, Mass.: I claim the finger, in combination with the movable shaft, for the purpose of converting the curvilinear motion of the saw into a rectilinear motion, as described.

MACHINES FOR SHRINKING HAT BODIES—By J. S. Taylor, of Danbury, Ct.: I claim the process of shrinking or sizing hat bodies by passing them longitudinally into or through a chamber, formed by placing several cylinders or rollers (having concave or other denomination of surfaces) in such a proximity as to form the said chamber, as set forth.

REPEATING FIRE ARMS—By C. N. Tyler, of Worcester, Mass.: I claim, first, arranging the cock in such a manner that it may be raised and will stand up, without being held by a sear or catch, and may then be gradually lowered again, without tripping to fire the charge, or may be tripped to fire the charge at the option of the operator, whether the devices employed be such as are described, or the equivalent thereof for producing the same result.

Second, the movable stop, operated upon by stud or button, protruding through to the outside of the stock, in combination with a fixed rest, and the jack, as described, for the purpose of preventing the jack being thrown far enough back to clear the tongue, through which the trigger acts upon it, whereby the escape of the driver or hammer, is rendered impossible while the stop is in operation.

Third, I claim the magazine constructed with a self acting driver, which places the cartridges in succession in front of the discharger, and with a discharger that will draw itself back and place the pulling rod in the proper position for transferring the cartridges into the breech, so that they may be transferred, as required, by simply pressing with the finger upon the pulling rod.

APPARATUS FOR DRAWING WATER FROM WELLS—By S. R. Wilnot, of New Haven, Ct. (assignor to Joseph Kent, of Baltimore Co., Md.): I claim the projecting stud, in combination with the spring, and grooved pulleys, for the purpose of contracting the spring, by the weight of the bucket, and causing the pulleys to grasp firmly the way in the manner set forth.

RAILS FOR RAILROADS—By Patrick O'Reilly, of Reading, Pa. Ante-dated Nov. 3, 1852: I claim the divided or double plate rail, as described, which is composed of a flanged arch or bridged rail, of the usual form, and about half the usual thickness and weight, with another rail of similar external form, thickness, and weight, on which it rides, the under side of the arch of the upper rail or rider forming a groove to fit over and rest upon the arch or tongue of the lower rail, the flanges of the upper rail resting upon and fitting those of the under rail, and the spike holes of the two corresponding, so that the same bolts or spikes will secure them firmly together, and to the foundation, the compound rail thus formed and proportioned having a double bridge and a double base, the two portions of which reciprocally support and strengthen each other.

Also, the method described of strengthening the joints of the ordinary bridge or rail, while leaving its middle of adequate strength, by moving a longitudinal section of its inside equal to about half the weight of the rails, half its length endwise, so as to break joint with the outside, or constructing the rail in two parts, to correspond in form and position with the two parts of the inner half, where divided from the outer, and moved as aforesaid, whereby the joints of the upper rail are rendered as capable of supporting the load at its middle, and the whole

made stronger, with a given quantity of material than by any mode of construction heretofore known.

RAILS FOR RAILROADS—By J. D. Steele, of Pottstown, Pa. (assignor to C. E. Smith, of Philadelphia, Pa.) Ante dated Nov. 3, 1852: I claim the construction of a rail in two parts, which is composed of a flanged \cap or bridge rail of the usual form, with another rail or splice plate, of similar external form, on which it rides, the under sides of the arch of the upper rail forming a groove, to fit over the arch or tongue of the lower rail or splice plate, and the flanges of the one overlaying and resting upon the flanges of the other, and the flanges may be rivetted together, the spikes or bolts fastening the rails at large to their bearings, may be made to pass through the flanges, and thus perform the double office of fastening them together and to their bearings, and the interior rail may have a solid or hollow tongue or rib, and it may have a length sufficient to give it a bearing on three sills or cross-ties directly under and adjacent to the joint, or it may be equal in length to the upper or main rail and break joints with it, as may hereafter be found most desirable.

DESIGNS.

GRATE FRAMES—By James L. Jackson, of New York City: three designs.

GRATE FRAME AND SUMMER PIECE—By James L. Jackson, of New York City.

Faraday on Static Electricity.

The following is a short abstract of a lecture recently delivered by Faraday before the Royal Institution, London, and taken from the "London Expositor":—

The branch of the subject to which he directed attention in this introductory lecture, was the different means by which what is called static electricity may be excited, the term "static" being applied to distinguish that condition of electric force which is excited by friction on any insulated medium, from the electricity which is developed in a current state by voltaic action. The professor strenuously endeavored, in the first place, to impress on the minds of his auditors the great importance and the extraordinary character of the force called into action by merely rubbing a glass rod with a piece of silk; that force being sufficient, when operating on light bodies, to overcome the attraction of the earth. Several experiments were exhibited to show the excitement of electricity by the least possible friction; among which the most curious was the divergence of the gold leaves of an electrometer by the movement of Professor Faraday's feet on the carpet whilst he touched the top of the instrument. With a view to prove that the bodies called electrics do not derive the power of exciting electricity from similarity of their constituent particles, the two highly electrical substances, gutta percha and collodion, or gun cotton, were adduced, and by the different results of their combustion, the opposite characters of their elements were exhibited. It has been generally supposed that in the excitement of electricity by friction, it is necessary that the rubber should be of a different material from the electric; but that this is not an essential condition was illustrated by the following experiment:—Two strips of dried flannel were rubbed against each other transversely the assistant holding one of the strips tightly stretched whilst Professor Faraday rubbed the other briskly across it, and on applying the latter to the electrometer, the leaves diverged. Another experiment exhibited in a very striking manner the excitement of electricity that takes place whilst combing or brushing the hair when dry. A long lock of hair combed out with a tortoiseshell comb exhibited strong electrical indications by the hairs diverging separately from each other, and when the electricity was collected by an insulated metal plate, it served, after a few repetitions, to charge a small Leyden jar, by which gunpowder was fired. The evolution of static electricity by evaporation was illustrated by pouring water into a small heated vessel placed on the electrometer. This mode of exciting electricity possesses peculiar interest from its being supposed to be the cause of the electrical phenomena of the atmosphere; though whether this arises from mere change of state, or, as some philosophers imagine, from chemical action, remains a problem to be solved. The professor stated, however, as a circumstance favorable to the latter hypothesis, that by no experiment yet devised has the excitement of electricity been rendered manifest by evaporation at the temperatures of the atmosphere. A small boiler was on the lecture table, for the purpose of showing the excitement of electricity during the emission of high pressure steam; but this means of excitement, though apparently opposed to all others previously known, may be

resolved into excitement by friction, caused by the forcible rubbing together of the particles of condensed steam as they issue from the jet. Professor Faraday did not, however, allude to the searching investigations and ingeniously contrived experiments by which he established this interesting fact; a satisfactory evidence of which is, that when the injection pipe is heated, to prevent condensation, the excitement of electricity ceases. The last means of electrical excitement noticed was the unequal expansion of some crystalline bodies by heat; which was illustrated by experiments with tourmalin, the substance in which this property was first observed.

Strange Steamer.

On Friday last, while visiting the steamboat wharf, a curiosity was presented to our view in the shape of a new steamer, designed by the well-known engineer, Mr. David Napier, of London. We were naturally anxious to witness the performance of this new aquatic traveller, and having a few hours to spare at the time, we started with her on a trip to Dumbarton and back. She is about the same length and breadth as the other Dumbarton boats, but in other respects differs widely from any of them, or any of the other boats on the Clyde. There is a swell on each side of her, under which the paddles work, but no elevation in the shape of paddle-boxes, which are so small in diameter, that they do not rise much above the level of the deck; her bulwarks running all round on the level; her engine-room is elevated about three or four feet above the deck, and immediately behind it, and about the same height, is a platform for the pilot, who steers her with a horizontal iron wheel of simple construction. Close by the pilot there are two long iron handles coming up from the engine room, by which the captain regulates, stops, or reverses the motion at pleasure and with ease, the engineer having nothing to do with that process as has hitherto been the case.—We will not attempt any minute description of the engine; suffice it to say that it stands in a small space—perhaps that of a parlor table, and bears no resemblance to any engine we have ever seen previously. Its outward appearance is a somewhat complicated mass of pipes, with two horizontal cylinders, or steam chests, into each of which a large slide works perpendicularly. The paddle shaft emanates from the ends of the steam chest or cylinder, and has four eccentrics on it, which appeared to do the work of cranks. The paddle wheels have only four floats on each. She made the down run in one hour and forty minutes, and the up in one hour and fifteen minutes—stopping at Renfrew in both cases. The engineer told us that he expected a much higher speed yet—that being her first day; besides he informed us that he required only one wagon of coals to perform two trips from Glasgow to Dumbarton and back.—What will be the result of this scheme we know not, neither are we prepared to give any opinion on the engine. We are favorable to the small number of floats, providing the diameter of wheel was much larger, and the floats of a better form.

[The above is from the "North British Mail." The distance which she made in one hour and fifteen minutes is at least 23 miles; this is fast running, but not quite as fast as some of our North River boats.

Ship-Building on the Clyde.

The "North British Mail" says, there are at present 100 vessels in course of construction on the Clyde, and of these only 6 are timber-built, all the rest being built of iron. It is also notable that these iron vessels consist both of steam and sailing vessels, though the former class preponderates. The tonnage of the ships now in construction on the Clyde amounts to upwards of 60,000 tons. The engines of the steam part of this great fleet have an aggregate of more than 14,000 horse-power. The probable value of the whole, though necessarily inexact, cannot be much short of £2,000,000 sterling! Yet, in a few months, this enormous amount of shipping will be off the stocks, and its place supplied by a new production, equally valuable. The number of workmen employed in building the vessels and making the machinery is about 15,000.

The number of hands employed in raising the raw materials from the basin of the Clyde within a circuit of 20 or 30 miles, for these and similar great works, is still more immense. Another most gratifying feature of the ship-building trade of the Clyde is, that the employers in nearly all the establishments were workmen themselves within the last thirty years. Most of them had attained the period of middle life before they turned their attention to iron boat-building at all. The men are not only the architects of their own fortunes, but the creators of a new branch of industry.

Recent Foreign Inventions. Improved Treatment of Tin Ores.

Mr. John Mitchell, of Calenick, Cornwall, has just specified his patented improvements in purifying tin ores, and separating ores of tin from other minerals. The invention consists in a mode of applying common salt for the purpose of purifying tin ores, and separating ores of tin from other minerals. The invention consists in a mode of applying common salt for the purpose of purifying tin ores, and separating therefrom the other metals with which they are usually associated. Before proceeding to operate, and in order to ascertain the proper proportion of salt to be used, the patentee takes 8 oz. samples of the tin ore, previously stamped and washed, and submits them in mixture with different proportions of salt, (say 1 or 2 ozs.) to a temperature of about 163° of Daniell's pyrometer, for about three quarters of an hour, using a reverberatory or other furnace. If, on analyzing the oxides thus produced, either sample is found to be pure, then the quantity of salt used in calcining that sample is a proper proportion to be used. The ores, previously stamped and washed, and salt are mixed together and placed in a reverberatory or other furnace, where they are subjected from three to four hours to a heat of 163° of Daniell's pyrometer, which should be raised gradually but not exceeded, the object being not to decompose the oxide of tin, but to cause the chlorine of the salt to combine with the other metals present, so as to render them soluble in water. At the conclusion of the roasting, the ore is thrown into water and washed, after which it is smelted in the usual way.

CLAIM.—The mode described of applying common salt for purifying tin ores, and separating ores of tin from other minerals.

SULPHATE OF AMMONIA—Wm. Hunt, of Stoke Prior, patentee.—The object of this invention is to obtain the sulphate of ammonia from the ammoniacal liquor of gas works.—This is effected by making the said liquor to traverse a condenser filled with pebbles and coke, and there brought in contact with sulphurous acid gas obtained by calcining pyrites of any description to drive off the sulphur therefrom. The sulphurous gas may be introduced at the top of the condenser and descend with the falling liquid, or it may be introduced at the bottom; the gas, however, must be cool before it is brought in contact with the ammoniacal liquor. The result of the union of the gas with the liquor, is to convert it into a sulphite, by subsequent evaporation and exposure to the air, the sulphate will be produced. This invention should arrest the attention of our gas companies.

Patent Cases.

U. S. Circuit Court, New York, Judge Nelson presiding.—Blakes Fire-Proof Paint, Wm. Blake, versus J. G. Belknap. This was a suit to recover damages for an alleged infringement of a patent for Blakes Fire-Proof Paint. This case was decided on May the 4th. Verdict for plaintiff six cents, thus sustaining the patent.

Piano Forte Legs.—Warren Hale, versus A. E. Brooks. This was an action for an infringement of a patent for making piano forte legs or irregular surfaces. On May the 5th a verdict was given for plaintiff of \$1,000.

A submarine telegraph, from the port of Genoa across the Mediterranean, via the Islands of Corsica and Sardinia, will be speedily executed, and the British Government has issued orders for a branch from Cape Bon, on the African coast to Malta.