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Industrial Statistics.

We are indebted to S. W. Huse & Co., publishers of *Vox Populi*, for the following industrial statistics of Lowell, Mass :—

The Middlesex Company make use, annually, of 2.000,000 teasels, 2,000,000 lbs. fine wool, 50,000 lbs. glue, $30,000 worth of dye stuffs, and $13,000 worth of soap.

In addition to the above, the Merrimack Manufacturing Co. use 1,000,000 lbs. of madder, 380,000 copperas, 60,000 alum, 50,000 sumac, 40,000 soap, and 45,000 indigo, per annum.

The Lowell Bleachery uses 40,000 lbs. indigo, and $30,000 worth of other dyeing materials, per year.

The population of Lowell in 1828 was 3,532. In 1840 it was 20,796. In 1850 it was 33,385. Increase in ten years, 12,289. Population of Lowell in 1855, 37,553.

The Lowell Machine Shop, located among the above mills, can furnish machinery complete for a mill of 6,000 spindles in three months.

The several manufacturing companies have established a hospital for the convenience and comfort of persons employed by them respectively when sick, which is under the superintendence of one of the best of surgeons and physicians.

In Lowell there are twelve great establishments, which have an aggregate capital stock of $13,900,000 ; they have 52 mills, including shops ; run 394,344 spindles, and 11,889 looms. They employ 8,990 females, and 4,397 males. They manufacture 2,374,000 yards of cotton goods per week, 44,000 of woolens, and 25,000 of carpets. They use weekly 765,000 pounds of cotton, and 91,000 of wool, and consume annually 62,317 gallons of oil, and 20,000 of lard, 29,750 tuns of anthracite coal, 33,300 bushels of charcoal, and 1,649,000 lbs. of starch. The average produce of each loom weaving No. 14 yarn is 45 yards per day ; weaving No. 30 yarn 33 yards per day.

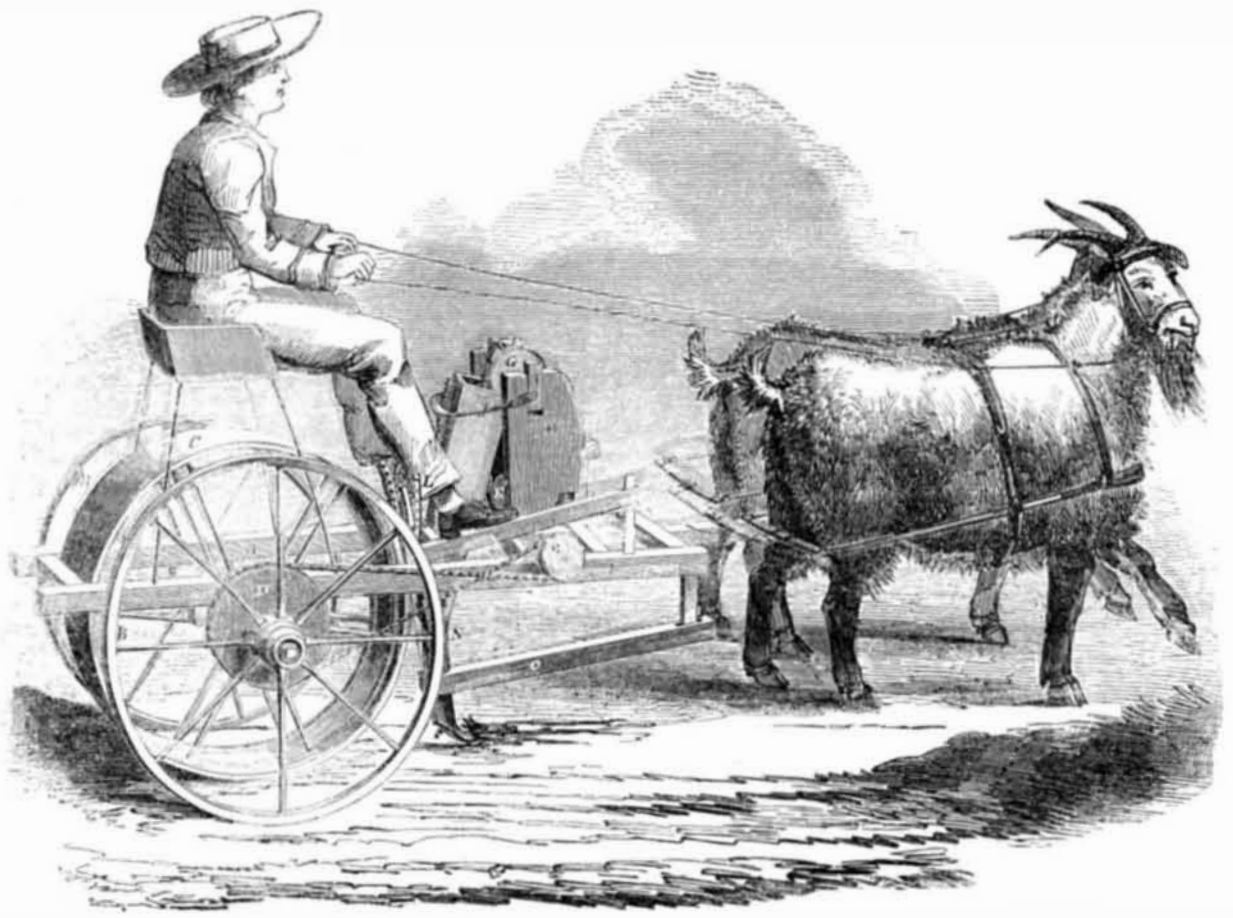
It is the water power of Lowell which, with the skill and energy of her citizens, have made it such a great manufacturing city. The factories although heated by steam are worked with water, there being no less than 34 breast wheels and 46 turbines employed—21 of these center-vent wheels. The total water power engaged for manufacturing purposes, we learn from Mr. Francis' work on Hydraulics, amounts to 8965 horse-power.

The Cotton Crop of 1856.

The Southern *Cultivator* says :—"In order to ascertain the extent of the crop, General McQueen, Member of Congress from South Carolina, adopted the happy and reliable expedient of addressing letters to the Representatives from the cotton-growing States, and from their several responses he has made up the estimate. According to his figures, the crop will not exceed 2,700,000 bales—about 800,000 bales short of last year."

George Carstensen, one of the designers and architects of the Crystal Palace in this city, died suddenly in his native city, Copenhagen, Denmark, on the 4th of January last.

HURD'S SEED DRILL.



The accompanying figures illustrate the Seed Sower of R. Hurd, of Moline, Ill.

Figure 1 is a perspective view of the machine at work on the broad prairie—it is drawn by an original, grave, and majestic, but, withal, a spanking team. Figure 2 is a vertical section of the machine.

The seed is kept in a box, and a series of small cups, on an endless belt, pass through it, carrying up the seed (a grain elevator,) and depositing it in a conveyor, from which it is conducted through the drill or spout, into the furrow in the rail, and then covered by a broad-faced wheel which follows after in the path of the drill.

A is the frame, which has two carriage wheels, B B ; and a broad wheel, C, which follows directly behind the seed drill, pressing down the soil, and covering the seed. The seed box, H, is secured on the frame, and contains the seed, *a*. A small pulley, G, and another, E , are secured in the frame and rotate on spindles. An endless belt, having a series [of small metal cups, F F, secured on it, rotate over these pulleys, as rep resented, lifting and carrying up the seed, elevator-like, and depositing it in the conveyer spout, whence it passes down into the drill. The seed box or hopper, *a*, has a bottom. *b*, secured to a spring, *c*, which allows it to open upwards when a seed bucket or cup passes into the box, and it prevents the seed falling out. The toe or share of the drill is secured to the hind end of bar O ; the latter is pivoted to a vertical piece in front of the frame. The drill share is made to receive the tubular conveyer, N, and it is wide enough to be raised upon it a short distance to make furrows or drills of any depth desired. Two flat metal rods, L L, perforated with gauge holes, are secured—one at each side—to the bar O, and are held by pins in the cross bar, M, of a small frame, and thus the drill is set to any depth required. By raising these rods and securing the pin in one of their lower holes the toe of the drill may be raised to make a shallow drill, and *vice versa*. The bar, M, forms part of a small frame on the top of the truck frame, A. This frame is pivoted in a vertical standard at each side, (one is shown in fig. 1, placed a short distance in front of pulley, E'.) The longitudinal bar attached to it, extends to the back of the conveyer under the driver's feet, where it is connected to a cross piece, on which is the handle, M. By raising this handle, therefore, the driver can raise the drill share entirely out of the ground in an instant, to clear any obstruction. When it is desired to stop the seed from being deposited, the top axle of pulley, G, can be raised to tighten the elevator band to such a degree that it will not revolve ; or it can be

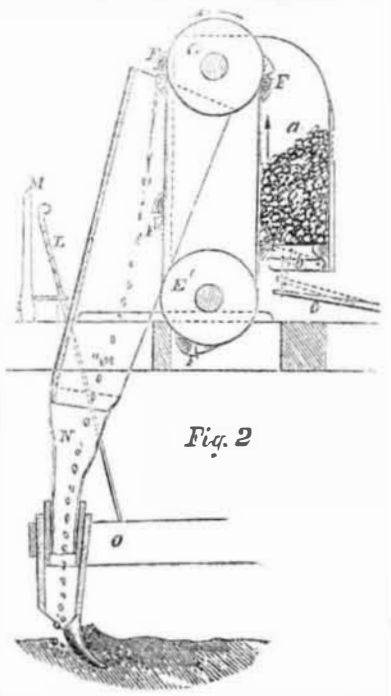


Fig. 2

lowered to slacken the band sufficiently so that it will not revolve. The bearings of the axle of the pulley, G, are set in movable boxes, I, in the prights, H ; these movable boxes are secured to a metal *bail*, J, which is held in a graduated catch bar behind the top of the conveyer. By raising the bail, J, the belt of the seed conveyer is tightened ; or it is slackened by depressing it ; it can also be held at any suitable point by the catch rack.

As the machine is drawn forward, the elevator receives motion from the cord passing from pulley, D, on the carriage axle, around the lower pulley, E, of the elevator. The grain or seed is deposited with certainty by this machine, because the driver can always see whether or not the elevator discharges its seed into the conveyer of the drill. The seed cups operate with certainty to take up seed from box *a*, regularly and uniformly ; they can also be set in greater or less number on the belt, to deposit more or less seed, as may be required to plant either in regular drills or in hills.

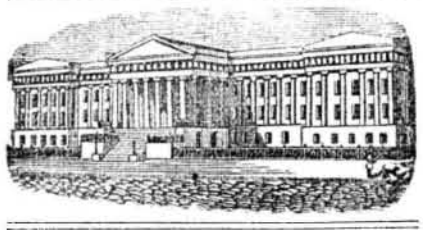
The patent was issued for this machine on the 25th Dec., 1855, the claim for which will be found on page 130. Vol. 11, SCIENTIFIC AMERICAN. At that period the patentee resided at Spring Hill, Ill., he now resides at Moline, in that State, to which place letters requesting further information should be directed.

Transatlantic Telegraph Company.

The stock of the company engaged in the mammoth enterprise of uniting Europe and America by telegraph amounts to seventeen hundred and fifty thousand dollars (1,750,000 It has been subscribed as follows, the shares being $5,000 each :—London capitalists take 101 ; Liverpool, 86 ; Glasgow, 37 ; Manchester, 28 ; other English towns, 10, and the balance, 88 shares, in America. America owns, therefore, $440,000, or a little more than one-fourth of the cable.

Although opposed to the calculations presented last week, we may mention that an experiment is obscurely reported to have been made by a Mr. Siemens, in which communication was effected as rapidly as twenty words per minute, through 3,000 miles of continuous wire cable above ground.

A factory for making oil from cotton seed is now in operation at India Point, near Providence, R. I.



[Reported officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING FEBRUARY 10, 1857.

STUFFING LEATHER—Joseph Armstrong, of Woburn Center, Mass.: I do not claim the usual process of stuffing a wet hide or skin, in which process the moisture or water in the hide has to be removed by evaporation after the tallow or grease has been rubbed into the hide; nor do I claim stuffing wet hides by a fulling mill wherein by the percussive force of the beaters thereof the water or tan liquor is more or less forced out of the hides and the grease simultaneously driven into them as in this case desiccation of the hides by subsequent exposure to the atmosphere is necessary. Nor do I claim irrespective of my specific application of it, the use of a press to expel a liquid from an article or substance; nor do I claim the mere use of a peg-lined cylinder for the purpose of impregnating hides with grease, but as I have made an improvement in the process of currying by which I not only dispense with desiccation of the hides by evaporation induced by exposure of them to the atmosphere during the application of oil or grease to them, but also the handling and working or labor incident thereto, and perform the operation of expelling the water or tan liquor from them in much less time comparatively speaking—

I claim in the currying process, the same consisting in employing a press as stated previous to and in connection with the application of the oil or grease by a peg-lined cylinder or other equivalent means as set forth, the press removing the liquor and compacting the hide, and the peg-lined cylinder subsequently restoring or plumping it, and impregnating it with grease as explained.

MELODEONS—J. C. Briggs, of Woodbury, Conn.: I distinctly disclaim everything in my device which is similar to Swan's invention, or to Hamlin's, mentioned.

I do not confine myself to the particular means described of graduating the force of the spring, a, nor to the particular position of the expression chamber, relatively to the exterior of the wind reservoir and pump.

But I claim the expression chamber, C, with its valve, f, arranged and operating in the manner and for the purposes substantially as described.

[The expression chamber embraced in this improvement in melodeons controls the passage of air to the wind-receiver in such a manner as to give any expression to the instrument, to produce the softest tone perceptible to the ear, also the loudest which the instrument can execute. This chamber is not intended to be used as a substitute for the common 'swell," its object is to extend the powers of such instruments.]

FIRE ARMS—Francis S. Brettell and Joseph B. Frisbie, of Alleghany City, Pa.: We wish it understood that we do not confine our improvement to be used in revolving fire arms only, but the same may be used in any other class of fire arms.

We claim the arrangement of the pawl or catch, k, notch, b, and claw, m, on the hammer, and the cam, g, on the trigger, or any other arrangement substantially the same, for the purpose of keeping the hammer and the trigger in their respective positions when at full cock, as set forth.

MAKING ENVELOPES—Theodore Bergner, of Philadelphia, Pa.: I am well aware that jets of compressed air have been used to assist in folding envelopes, as in the case in the machine of M. Remond, which is unlike my invention.

I do not claim the folding hinges exclusively, a similar device having been used heretofore.

I am also aware that atmospheric pressure is claimed for holding the blank during the operation of folding, in Wm. H. Lowes' patent, April 8, 1856; but I claim—

First, Giving the sliding rod, D, a downward movement by means of link, E, lever, F', rod, G, and cam, H, in the manner and for the purpose set forth.

Second, Giving a sliding movement to the frame, V, by means of link, x, lever, W, rod, z, and cam, A', thereby operating by means of lifters, g, g, g, g, 2, the folding hinges, i, i, i, i, 2, in the manner described.

Third, The compartments, r, r, in combination with pipes, S, and cylinder, R, the latter being provided with a piston t, 2, which is operated by cam, S, on the shaft, I, the whole being constructed substantially in the manner set forth.

Fourth, The stamp, P, working in the swivel bearing, O, and operated by cam, Q, pin, r, rod S, I, and cam, T, in the manner and for the purpose specified.

Fifth, The employment of cam, 4, lever 1, rod, Z, arm y, and spiral spring, 5, to turn swivel bearing, O, on its axis, substantially in the manner and for the purpose set forth.

Sixth, Operating the parting vessels, 12, 12, by the lever, M 1, rod, n, and cam, N, substantially as described.

Seventh, Applying the curved arm, H, working in a slot, k, through the folder, P, for removing the finished envelopes to the inclined table, K, and operating it by cam, G, and cam arm, F, as shown.

ATTACHING THILLS TO SLEIGHS—J. M. Batchelor, of Foxcroft, Me.: I am aware that thills have been previously attached to sleighs in such a manner that the thills may be adjusted or moved to either side of the sleigh, but the modes previously adopted have been complicated and the thills could not be adjusted without considerable difficulty. My improvement is extremely simple, may be applied to sleighs at a small cost, and the thills may be adjusted with the greatest facility.

I claim attaching the thills, G, to the bar, E, which bar is fitted within a grooved bar, D, attached to the sleigh, the bar, E, being allowed to slide within the grooved bar, D, and secured at the desired points by the spring catch, M, substantially as described for the purpose set forth.

[By this improvement the thills of a cutter or sleigh can be adjusted and set at any point to suit the circumstances of the track. The thills of sleighs are generally secured permanently, and are incapable of being thus adjusted this improvement completely obviates this defect by a most convenient arrangement.]

EXTENSION HOPPERS FOR SEPARATORS, GRAIN MILLS, &c.—John Bean, of Hudson, Mich.: I claim the combination of an adjustable extension piece, a, with the hopper, B, in the manner and for the purposes substantially as set forth.

[This is a grass and grain separator, and possesses qualities desired by every farmer. By providing an extension hopper, with an adjustable end, also a shoe which has a screen and a fan, all arranged in a peculiar manner, this machine separates all the grass seed from the grain. The sound grain passes into one receptacle, the grass seed into another, and all foreign substances are thrown out.]

PRINTING STAMP—Wm. H. Elliot, of Plattsburg, N Y.: I do not claim the joint, H, as a stop for terminating or stopping any motion of the die carrier, B, around pin or center, K, and giving to said die carrier a new and distinct motion, a device for this particular purpose being found in a hand stamp invented by Mr. P. A. Ramsey, of Boston. The principal object of joint, H, in my invention being to confine one portion of die carrier, B, as early as is requisite to a direct or longitudinal motion.

I claim, first, the crank, F, joint, H, or their equivalents, when used in combination with type or die, C.

Second, The same in combination with the treadle.

Third, The self-adjusting ink pad, E.

Fourth, Tilting the ink pad, E, so that by the action of the type or die upon it, it may be revolved.

Fifth, The combination of the die or type, C, with the crank, F, when arranged as specified in relation to the two pads.

SHOES FOR TRUSS FRAMES—Reuben Comins, of Troy, N. Y.: I claim furnishing that description of shoe which at the part where the braces rest is of an inverted, T, or angular, or curved form, with two projecting plates on its under side which in their horizontal section, are of T form, said plates passing through the stringers on each side of the vertical rods, and thus forming an opening or jaws for the vertical rods to pass between, and extending down from the surface of the shoe, which rests upon the stringers, to the nuts and washers upon the underside of the stringers, substantially as and for the purposes set forth.

[This invention is designed to prevent the end thrust of the diagonal braces on the bottom and top stringers of the frame. A metal shoe, with a central stop for the end of the diagonal braces to rest upon and butt against, is placed on the top of the lower stringer, and on the under side of the upper stringer. In each of the shoes, two T-shaped projections are cast to form jaws. These pass entirely through the stringers, and serve for the vertical screw strain rods to pass through, and for the nuts of the same to come against. With this arrangement the thrust of the vertical braces is removed from the stringers, and thrown upon the rods and shoes, and thus all liability of the stringers being crushed at the point where the strain comes upon them is avoided. This is an important improvement in the construction of heavy bridges.]

GUNPOWDER—Elisha B. Dodson, of Reading, Pa.: I claim the treatment of mineral coal, as described, preparatory to using the same as a substitute for charcoal in the manufacture of gunpowder and blasting powder, as set forth.

RAKING ATTACHMENT FOR REAPERS—Peter Harnist, of Marinetown, Ill.: I claim operating the rod, M, to which the rake head, L, is pivoted by means of rock shaft, N, arms, g, f, and connecting rods, P O, in combination with spring, Q, crank, K, and bar, S, when the same are constructed and arranged for joint operation, substantially in the manner and for the purpose set forth.

[By an arrangement of certain devices and gearing, the rake in this Harvester receives all the motions to perform the raking operations in a simple and correct manner. A reciprocating motion is given to the rake, also up and down and back and forth movements, whereby the grain is raked direct from the platform, and discharged, then the rake is brought forward for another operation.]

RAZOR STROPS—Edwd. K. Godfrey, of New York City: I claim the use of an independent strop stock, without handles, in combination with adjustable and independent backs, substantially for the purposes set forth.

ATTACHING THE EYES TO THE BLADES OF HOES—Henry Havell, of Newark, N. J.: I do not claim the individual parts of a hoe, neither do I claim welding the malleable iron eye to the blade.

But I claim the cap, A, which forms a socket with the blade, B, to receive the malleable iron eye, and becomes a part of the same, in the manner and for the purpose substantially as described.

SEED PLANTERS—Thos. B. Houghton, of Bloomington, Ill.: I claim operating the planting slide and tube by means of a crank receiving its motion from one or both of the carriage wheels, substantially in the manner described.

I also claim the reciprocating frame, x, or its equivalent so constructed and operated as to guide the planting tube, and make it deposit the seed in the ground at the desired point, substantially as described.

GUIDES FOR SEWING MACHINES—Addison Hull, of Brooklyn, N. Y.: I do not claim generally the attachment of the guide to the foot piece which presses on the cloth during the sewing operation.

I claim the attachment of the guide plate, C, to a spring bar, E, or its equivalent, which operates independently of the foot piece, A, holding the cloth during the sewing operation, and is adjustable laterally to the same, and the connection of the same by a vertically slotted connection, d, e, with a slotted sliding plate, C, working through the foot piece, A, substantially as described, whereby the guide plate is made adjustable and changeable, as set forth.

[In this sewing machine a guide is applied in connection with a foot piece which confines the cloth to the table, and admits of its being readily adjusted at any suitable distance from the needle, and renders it self-adjusting to cloth of various thicknesses while under operation. This improvement is simple, and efficient for the purpose.]

RAMMING PERCUSSION CAPS—Charles Hicks, of Haverstraw, N. Y.: I claim, first, the pistons, E E, arranged in a row and receiving reciprocating rectilinear and circular movements simultaneously operating in combination with the traveling carrying plate or other equivalent devices for carrying the caps, substantially as described.

Second, Producing the circular movement of the pistons by means of pinions, C C, on the said pistons, gearing with a toothed rack, G, that receives a sliding movement laterally to the frame which carries the pistons, and imparts to them the rectilinear movement from a lever, K, operated by a cam, J, on the crank shaft by which the rectilinear movement of the pistons is produced substantially as described.

Third, The employment of the stationary plate, W, in combination with the reciprocating pistons and the traveling carrying plate, F, substantially as and for the purpose set forth.

[A number of pistons having a reciprocating rectilinear motion, and a motion on their axes are combined in this machine, with suitable means of carrying a number of charged caps, and presenting them to these pistons, to be properly rammed with the percussion powder. By these improvements percussion caps are charged rapidly, and in a very superior manner.]

METHOD OF SURFACING FELT HATS—Alvin Hurd, of Danbury, Conn.: I claim surfacing the hat upon the elastic cover or bed for the purpose, and in the manner substantially as described.

FEATHERING PADDLE WHEELS—Lewis T. Howard, of Smith Mills, Miss: I claim connecting the cranks of the paddle shafts with each other around and with the stationary governing wheel, E, by means of the connecting bars, K K, and the grooved rollers, b b, or their equivalents, substantially as set forth.

SEED PLANTERS—John Hildebrand, of East Berlin, Pa.: I claim the combination of the above described spring connection, V and W, slides, L and M, scraper, T and U, and the vibrating head cam, O, when arranged for the purpose set forth.

GAS MAKING PROCESS—James Hansor, of Wandsworth Road, England: I claim the treatment of the compound gas fuel made in the manner described, and worked in the retorts as set forth.

SEED PLANTERS—Reinhold Boeklen, of Jersey City, N. J.: I claim the distributor, D, having chamber, l, and recesses, g, and worked between the compartments, b and c, by means of the link, E, and slide, C, in combination with the cut-off, E', and plate, F, the whole arranged and operating substantially in the manner and for the purpose set forth.

CONTROLLING THE THROTTLE VALVE OF MARINE ENGINES—Wm. H. Elliot, of Plattsburg, N. Y.: I do not claim regulating and controlling the supply of steam admitted to the cylinder of a marine engine by the varying pressure of the water, caused by the varying depths to which the vessel may be immersed.

Neither do I claim the devices employed by me for that purpose separate from the combination and arrangement in which I use them.

But I claim the chamber, A, cylinder, D, plunger, H, and spring, S, when arranged in relation to the engine and to the hull of the vessel and to each other, in the manner described and for the purposes set forth.

SMELTING ZINC-IRON ORE—Joseph C. Kent, of Cooper Iron Works, N. J.: I claim the peculiar process of alternating in the blast furnace the Franklinite and other ores of iron and zinc with ordinary ores of iron, for the production of cast-iron and oxyd of zinc, by which process I maintain the equilibrium of heat, and keep the furnace in successful operation, as described.

SAFETY INDICATORS FOR STEAM BOILERS—Lucius J. Knowles, of Warren, Mass.: I do not claim arranging and connecting a tubular or elongated vessel, C, with a steam boiler, substantially as described, in combination with so supporting the said vessel, C, at one end or part of it, and applying to it a lever or other proper means, that it may expand and contract, and operate said lever, or means, essentially in manner and for the purpose specified.

I claim connecting the pipe, I, with the boiler by means of the feed pipe, B, the same being productive of an advantage, as stated.

SEED PLANTERS—Jacob Landes, of Selma, O.: I disclaim the making of a seed cut-off with a concave face. I also disclaim the giving of a vertical movement to a cut-off, as both of these features are old.

I claim, pivoting the cut-off, G, to the bar, d, so that the cut-off shall have an oscillating movement, and thus stir the seed when it oscillates, in the manner and for the purposes set forth.

[In this seed planter there are adjustable clearing devices for removing clods and other obstacles in the path of the furrow shares, which is a good arrangement. The valves of the machine, to allow the seed to drop, are operated to receive a quick motion at the proper times for depositing the seed correctly in the furrows. The improvement is adapted for planting corn, or any other kind of grain. The seed is also stirred by a device. This is positively necessary for correct planting, especially when moist, steeped seed is used.]

FENCE ADAPTABLE TO UNEVEN GROUND—G. R. McIlroy, of Covington, Ky.: I claim the combination of the adjustable bar and oblique pin with an angularly braced panel and bearer, or any ordinary panel, as seen in figures 2 and 3, on which the angular or other bar may be supported, so that the panels may be moved sideways at the bottom, so as to bring them perpendicular upon uneven ground, and secured in that position by one or two adjustable bars or seats, substantially as described.

REAPING AND MOWING MACHINES—Jeremiah W. Mulley, of Amsterdam, N. Y.: I claim constructing and arranging the platform of combined reaping and mowing machines in parts, when one or more of said parts may occupy at pleasure such position in relation to the cutters as to form the track clearer for mowing, or the platform for reaping, in the manner substantially as set forth.

ORNAMENTING DAGUERREOTYPE CASES, &C.—John F. Mascher, of Philadelphia, Pa.: I claim the process of ornamenting daguerreotype cases or other articles in imitation of tortoise shell, wood, or marble, or other substances, by first covering the surfaces thereof with stained or colored paper of suitable character, or staining or coloring the surfaces themselves in a suitable manner, and afterwards coating them with gelatine and bichromate of potash, in any manner substantially as specified.

[This is a useful improvement for ornamenting the surfaces of the various articles mentioned. They are made to resemble tortoise shell, marbles, etc., by a very simple process, and are then rendered water-proof by a cheap chemical compound.]

PREPARING INDIA RUBBER CLOTH—Gulielmus B. Millerd, of Cochester, Conn.: I do not claim the process described of boiling caoutchouc in alkali, to desulphurize its surface, nor the buffing or grinding its surface to produce roughness thereon.

Neither do I claim the attachment of a sheet of caoutchouc to cloth, either in an extended state to produce an elastic fabric, or in a free state to produce an unelastic fabric, where the union is effected by the application of cement to the caoutchouc, or by subsequent vulcanization.

But I claim the application of a sheet of vulcanized caoutchouc, previously prepared by buffing its surface or surfaces, substantially as described, to a sheet of cloth or between two sheets of cloth previously prepared by being thinly coated with an unvulcanizable solution of caoutchouc on the tangent side or sides, the sheet of caoutchouc being applied in an extended state to produce an extensible and elastic, or in a free state to produce an inelastic fabric, by simple pressure, and without the use of cement or subsequent vulcanization.

ABDOMINAL SUPPORTER—Julia M. Milligan, of New Albany, Ind.: I claim the application of the whalebone or any other article substantially the same, and the cords or strings, as used in the manner described, by which the requisite mechanical support may be obtained.

CHAIN PUMPS—Edmund Morris, of Burlington, N J.: I claim the application of an elastic flexible tube, arranged as set forth, in combination with the box or chamber in which it is enclosed, for the purpose of retaining water to assist in packing the pump, substantially as described.

GAUGES AND WATER REGULATORS FOR STEAM BOILERS—Michill Nutting, of Portland, Me.: I do not confine myself to the use of water as the fluid to fill the expanding chamber, as alcohol, air, or other fluids may be used for this purpose.

I claim the arrangement of the expanding chamber in relation to the opening for steam in the heating apartment, so that the steam from the boiler, when it is admitted to this apartment, is suddenly brought into contact with the surface of the lower part of the chamber, within the apartment, and remains in contact with the same until the water in the boiler rises to the top of the opening which admitted the steam when the contact of the steam with the chamber is suddenly cutoff, as described.

RAIL FOR STREET RAILROADS—Samuel Nicolson, of Boston, Mass: I claim my street rail, constructed essentially as described, or with recesses in its side or sides for the reception of the paving blocks, each recess of one side being opposite either a recess of the other side or space between two recesses of the other side, essentially as explained

SUSPENDING AND ADJUSTING STICKS IN SAWING MACHINES—Ezekiel Page, of Platea, Pa.: I am aware that it has been attempted to saw clap boards by revolving a log on the center over a circular saw, but this made straight parallel radial cuts, and would not answer for oars, and I am not aware that oars were ever sawed out radially from a log which is the only way to prevent warping, and is a very important feature in their manufacture discovered by me.

I claim constructing the head and tail blocks of a sawmill, in which the log is so suspended as to rotate, with the vertical and lateral adjustments arranged and combined as set forth, so that the log may be sawed radially and tapering, for the purpose of getting out oars therefrom, as specified.

VENTILATING STOVES—Luther M. Parsons, of Wawkau, Wis.: I do not claim separately the pipes, H, bent pipe, J, bar, K, with its valves, e, and expansion spiral rod, a', for these separately, or in themselves considered, have been previously used.

But I claim the arrangement of the pipes, H, bent pipe, J, bar, K, provided with valves, e, and the expansion rod, a', as shown and described, for the purpose specified.

[This stove is so constructed that the fire is fed with air from near the ceiling, where it is most impure in a room. Pure air is carried in from the outside of the building by a tube, and conducted into a heating chamber of the stove, and when it is sufficiently warmed is distributed through the room. The objects contemplated by this improvement are good, and embrace correct principles in heating and ventilation.]

HAND STAMP—Perley A. Ramsay, of Boston, Mass.: I do not claim stop, J', as a guide, for the purpose of guiding arm, G, or confining it to a longitudinal motion, several devices for that purpose being found in hand stamp invented by Wm. H. Elliot. The principal object of stop, J', in my invention being to terminate or stop the motion of arm, G, around axle, E, thereby causing said arm to take a new and distinct motion.

I claim the arm, G, pivoted to the truck, D, in combination with the stop, J', and ink roll, K, operating in the manner substantially as set forth.

Second, I claim the method described of hanging the ink roll, for the purpose set forth.

CORN PLANTERS—Martin Robbins, of Cincinnati, O. I claim the reversible hopper and arm with the vibrating claw or tappet, connected as described, with seeding mechanism, in combination with the jointed rod or chain provided with buttons or similar devices, for the purposes explained.

SEWING MACHINES—Thomas J. W. Robertson, of New York City: I claim the spiral groove in the needle leading upward from the eye on one side, in combination with the looper, in the manner and for the purpose described.

I also claim the loop guide, c, in combination with the looper for laying the loop, as described.

I also claim the guard pin, e, or its equivalent, for the purpose set forth.

SEED PLANTERS—Silas G. Randall, of Rockford, Ill.: I claim in combination with the shoe or spade, composed of the pieces, E f, the spreading bars, H, arranged and operating in the manner and for the purpose substantially as set forth.

ATTACHING THE ARMS OF HORSE POWERS—Cyrus Roberts, of Belleville, Ill.: I claim the combination of the radial rigid arms, and intermediate hingsd and suspended sweeps with the master wheel, substantially as set forth.

ROTARY STEAM ENGINES—John B. Root, of Buffalo, N. Y.: First, I claim the central hub, A, when used as a support for friction rollers, in the manner and for the purpose set forth

Second, I claim the arrangement of friction rollers within the piston, H, upon the central hub, A, substantially in the manner described.

Third, I claim the piston, H, when used and acting upon friction rollers, substantially in the manner described.

Fourth, I claim the combination of the sliding frame, J, the self-adjustable boxes, i i, the driving ring, K, and the wedge, L, for the purpose of regulating the bearing of the friction rollers upon the piston, H, and central hub, A, substantially as set forth.

METALLIC ROOFING—Benjamin Ross and John C. Campbell, of Syracuse, N. Y.: We claim the method described of connecting together metallic plates or shingles for roofing by their own weight, when the series of plates so connected are fastened only at the upper and lower edge of the roof.

FACING MILL STONES—Benjamin D. Sanders, of Holliday's Cove, Va.: I do not claim any of the parts described used separately.

But I claim the instrument described, consisting of the slotted beam, C, cross arm, D, elastic pointer, i, box, B, carrying the adjusting screw, b, spindle, a, and adjustable base or stand, A, or the equivalent of these devices, constructed and arranged in relation to each other for joint operation, substantially in the manner for the purpose set forth.

SELF-ADJUSTING WIND WHEEL—Edward A. Tuttle, of Brooklyn, N. Y.: I do not claim a horizontally revolving wind wheel as such, or suspending them upon a second horizontal shaft simply.

I claim placing the sails, D D, or a greater number, in a position before the wind, as shown, and then causing them to perform complete rotations upon their axis, e e, in the time relatively with those of the wind wheel, and in the direction as specified, by connecting them with the crown wheel, E, in any manner producing the same result, for the purpose set forth.

I also claim the particular mechanism shown and described, viz., the crown wheel, E, and vane, v, connected with the sails, D D, by means of the pinion wheels, h h and l l, and wheels, F F, arranged in the manner substantially as shown for the purpose set forth.

I also claim combining with the horizontal rotary motion of the sails upon their axes, c c, the perpendicular adjustable vibratory motion described, by which they are rendered self-regulating in a most simple manner, although presenting reverse sides to the wind at each succeeding revolution of the wind wheel.

I also claim the method of assisting the sails to perform their rotations upon their axes, c c, by means of the reverse projecting rims, y y" upon the bottom edges, and operating in the manner described.

SEED PLANTERS—H. Thomason, of Lafayette, Ind.; I do not claim the slide, F, nor the mode of operating the slide by the wheel, I, with the pins, a', attached, and the bent lever, K, for these parts are well known.

Neither do I claim operating the slide, F, by hand, irrespective of the means shown and described for effecting the purpose.

But I claim operating the distributing device or slide, F, by means of the lever or rod, G, having the arm, e', attached to its fulcrum bar, d, which has a spring, e, connected with it, and the collar or tube, H, on the handle, C', of the implement. The collar or tube, H, being provided with an arm, h, extending underneath the arm, e', of the fulcrum bar, d, the whole being arranged substantially as shown and described for the purpose set forth.

[This improvement in seed planters relates to the distributing device, which is operated by the attendant. A movable tube is fitted on one of the handles of the implement, and this tube is provided with an arm which operates a lever connected with the distributing device. By this means the attendant having hold of the handles can operate the seed distributing device at pleasure. The seed can be planted either in drills or hills, as may be desired.]

HARVESTING MACHINES—Walter A. Wood, of Hoosick Falls, N. Y.: I claim making the raker's seat or stand adjustable in the arc of a circle on the rear part of the frame, substantially in the manner and for the purpose set forth.

HARVESTING MACHINES—Walter A. Wood, of Hoosick Falls, N. Y.: I claim in combination with the finger bar A, and shoe, C, a track clearer, E, hung to said bar by a spring, F, and playing vertically between, but resisted laterally by, the lugs, a a, on said shoe, when said parts are constructed and arranged in relation to each other, substantially as set forth.

HARVESTING MACHINES—Walter A. Wood, of Hoosick Falls, N. Y.: I claim connecting and disconnecting the gears, P Q, by a clutch lever, U, with its cam planes, and handle extending up through the support to a convenient position for the operator, and when made and operated in the manner and for the purpose set forth.

INDICATING THE HIGHT OF WATER IN THE HOLDS OF VESSELS—Wm. R. Warden, of Boston, Mass.: I claim operating the alarm apparatus, situated as described, by means of the balls, W, ball carrier V, inclined tube E, and lever, i, with their co-operating mechanism, the whole operating together in the manner as set forth.

WOOL CLEANING MACHINES—William H. Watrous, of Brooklyn, N. Y.: I do not claim the picker cylinder, the fan blower, or the reciprocating screen, and the devices for operating the same individually, as these have all been applied for analogous purposes.

But I claim the combination of the picker cylinder, B, reciprocating screen, E, exhaust screen, R, and fan blower, M, arranged and operating in the manner and for the purposes specified.

LOCOMOTIVE COW CATCHERS—Joel Wisner of Aurora, N. Y.: First, I claim the bar or jaw, B, legs, G, feet, J, and teeth, C, when operated by the springs, D, or their equivalent, in combination with the forward end beam of the locomotive.

Second, I claim the stud, H, and joint, I, in combination with the bar, B, when constructed and operated substantially in the manner and for the purposes described

CUTTING DOVETAILS—E. G. Matthews, of Clear Water, Minnesota Ter. (assignor to Harvey Church, of Troy, N. Y.): I claim, in combination with the fixed stock, Q, the mitering knife, f, and scouring and cleaning knives, e e, as set forth, for forming at one operation the miter and dovetail tongue or groove.

I also claim, in combination with the fixed stock and mitering and dovetailing cutters described, the traversing of the block or board in a clamped condition past the same, for the purpose of having the miter and dovetail formed, as set forth.

CALENDAR CLOCKS—E. P. Monroe, of Albany, N. Y. (assignor to Gilbert H Scribner, of New York City): I claim the displacing of cards for the purpose of enumerating and designating the day said cards being suspended upon wires, as described, and displaced by means of a hand, as set forth, moved and operated by the machinery of the common hour clock or by any other machinery appropriate for the same purpose.

PATCHING BULLETS—Frederick D. Newbury, of Albany, N. Y., Assignor to Richd. Varick De Witt, Jr., of same place: I claim the method of securing a patch upon conoidal or similar bullets by compressing the upper portion of the patch under a thin ledge of the metal of the bullet, substantially as described.

RE-SAWING LUMBER—S. P. Winne, of Albany, N.Y I claim, first, connecting the slides, G H, of the two roller frames, F F, by arms, K K, as shown and described, for the purpose specified.

Second, I claim connecting the two upper and outer rollers, L, in the frames, F F, to the two lower rollers, O S, in the frames, P R, by means of the rods, f f', arranged as shown, so that a rotary motion is communicated to the lower rollers from the upper ones, and the upper rollers allowed to have an independent lateral movement as described.

[By a peculiar arrangement of feed rollers, plank, or timber of any kind, can be sawed directly through the center, and also into strips or boards of different widths—two different kinds of stuff being sawed at the same time by the same saw. The improvement is ingenious and useful.]

SPRINGS FOR VEHICLES—Darius Babcock, of Homer, N. Y. (assignor to Thos. Harrop and Darius Babcock) : I claim the combination of the C springs, B B, and sinuous spring, D, connected by rigid bars, E, to the body of the vehicle, substantially as shown and described.

[This improvement embraces a combination of a C-spring with a "sinuous" spring, whereby a cheap and durable carriage spring is obtained, and the weight of the body of the carriage is brought to bear upon the ends of the axles instead of their conter portions.]

FISHING ROD REELS—Edward Deacon, of Brooklyn N. Y., assignor to John Warrin, of New York City : I claim connecting the crank shaft, F, with the reel shaft, E, and also disconnecting it therefrom, by means of the slotted sleeve, placed or fitted upon the shaft, F, and within the socket, C, substantially as shown and described.

[By this improvement in fishing rods, the crank spindle may be readily connected with and disconnected from the reel spindle of the line, whereby the fisherman, in throwing out the line, will lie enabled to do so with greater freedom and ease than with the common line reel.]

MAKING SEAMLESS TUBES—William S. Platt, of Waterbury, Conn., Assignor to W. S. Alfred and Clark M. Platt : I claim so forming the groove upon each sector that the breadth and depth thereof shall gradually diminish from one end to the other, whereby the size of the central hole formed by a set of the said sectors when arranged for operating, shall increase or diminish as the sectors vibrate or rotate, in the manner and for the purpose set forth.

METALLIC BEADS—John R. Wendt, of Boston, Mass.' Assignor to J. R. Wendt and Augustus Rogers, of same place : I do not claim making a piece of metal into a tubular form, nor swaging a piece of metal by dies, when these processes are separately considered, but what I do claim is my improved manufacture of hollow beads of metal as made by the operations or reducing the metal to a tubular form, and that of compressing it axially in dies as specified.

IMPROVED WINDOW BLINDS—Daniel Kelley and Wm. Livingston, of Grand Rapids, Mich. : We claim constructing the slats, D, as shown, and having strips, e, attached to the stiles as described, whereby the slats when closed, will overlap and be flush with each other at each side, and the slats rendered perfectly weatherproof and the light excluded.

[This improvement in blinds renders them weather proof and capable of excluding the light entirely. The slats are so formed that when the blind is shut they lap on one another, and be perfectly close together with their surfaces flush. They are also so formed that weather strips may be secured to the stiles of the blind interposed between the ends of the slats and blinds.]

HUSKING CORN—Ezra S. Holmes, of Lockport, N. Y. I do not claim the motive parts of this machine, nor the compound crank, nor the ways, slides and arms, nor the shears, for they have been used before.

I claim, first, the huskers, consisting of the guides, S, q, q, S, S, p, shown in figure 3, and of the hands, a, f, g, Z, Z, Z, C, shown in figure 4, or their equivalents operating in the manner, and for the purpose substantially as described.

I also claim, second, the combination of the huskers, figures 3 and 4, with the shears, figure 2, said combination acting in the manner and for the purpose substantially as described.

DESIGNS.

COOKING RANGES—Charles J. Shepard, of Brooklyn, N. Y.

COOKING STOVES—Jas. E. Stevenson, of Albany, N. Y.

PARLOR COOKING STOVES—Daniel Wilson, of Nashua, N. H., Assignor to the Union Stove Company of same place.

NOTE.—FIFTEEN of the Patents granted last week and contained in the above list, were secured through the "Scientific American Patent Agency."

Architectural Ornaments of Plaster.

A large mansion at the corner of Broad street and Girard avenue, in Philadelphia, presents a great number of ornamental brackets made of ordinary plaster, which have now been in place for four severe winters without the least show of any injury. The brackets are placed under the projecting edge of the roof, and are each four feet long. They received four coats of Silver's Marine Paint, the last two of which were sanded. The house is exposed on all sides, and the result of this experiment, the first of the kind which has come to our knowledge—indicate that this cheap and fragile material may yet be quite extensively employed for such purposes. There are buildings in this city and Brooklyn presenting molded forms on their fronts, the material of which is *principally* plaster, and several patents have been taken for mixtures of the same with coal ashes, blood, and other combining materials to make a harder and stronger stone.

The Ice Crop.

The present winter has been cold throughout the South ; and as more or less ice has been secured in each locality, the demand from the North will probably be less than usual this summer. The ice stored by the ice companies here this winter has been about one half million tons, which is more than ever before, and of a better quality than usual.

During the past year 23,730 flasks of quick silver were exported from San Francisco, which, by Custom House valuation, were worth $1,183,185.

Repairing Old Plating Solutions.

MESSRS. EDITORS—As I have experienced much annoyance, as an Electric Plater, from solutions becoming entirely useless after a few months' working of them, I have thought the following recipe would not be unacceptable to some of your readers, who may be engaged in that art. For a long period of time my only plan, when a solution became useless, was to evaporate it, and concentrate or decompose it with sulphuric or hydrochloric acid. This I found to be such a very troublesome and expensive method, to say nothing of inhaling the deadly gases, especially when hydrochloric acid was used, (which produced prussic acid in a pure state.) that I determined to adopt some other plan, if possible. By a careful examination of different solutions, when they had become inert, I became convinced their inertness arose from a loss of cyanogen by evaporation, thus leaving a large amount of free carbonate of potash in the solution, which manifests itself by coating the positive plate with an insoluble crust, not only preventing the cyanogen still in solution from distilling the metal, but causing a great resistance to the galvanic current.

The plan which I have adopted with complete success, is as follows:—Take 1 lb. (Troy) prussiate of potash, and dissolve it in 5 lbs of water, and add 2 lbs. strong sulphuric acid ; place this compound in a glass, or, what is better, a lead retort over a slow fire, runing the tube of the retort in a slanting direction five or six inches into the metallic solution. In a few minutes the cyanogen will begin to disengage, and it requires but thirty or forty minutes of rapid ebullition to obtain most of the cyanogen. The retort should be provided with a safety tube at the top, half filled with water, so that should a sudden condensation ensue in the retort, the air would rush in through the tube instead of the metalic solution being drawn up into the retort. The proportion here given will be found sufficient to repair four or five gallons of solution, and put it in excellent order for reworking. This method will be found especially valuable for the cyanides of copper, brass, &c., as the cyanogen is rapidly driven off by the heat necessary to work those solutions.

JAMES POWELL.

Cincinnati, O., Feb., 1857.

Liquid Quartz—Artificial Stone

MESSRS. EDITORS—Your attention has recently been particularly called to this subject, and has necessarily led you to further investigation. In your last article upon "Liquid Quartz," you contended (very properly, too,) that the flint in solution should be in proportion of at least fifty per cent. to that of any alkaline solvent agent, used in dissolving it in water as a base for artificial stone and all like purposes—and that you hoped such a long-sought desideratum would ere long be achieved by some one.

To my knowledge, several scientific men are of the opinion that that is already found in the liquid quartz made by Benjamin Hardinge, Esq., of this city ; the careful analysis made by them having shown the fact that the quartz in the liquid he makes is in far greater proportion than that you suggested. I am also warranted in stating that it was demonstrated to their satisfaction that Mr. Hardinge, by his apparatus, can manufacture it cheaply and in large quantities.

J. HUTCHINSON.

No. 17 Broadway, New York.

Maelstrom.—The Great Whirlpool.

MESSRS. EDITORS—I have been informed by a European acquaintance that the Maelstrom, that great whirlpool on the coast of Norway, laid down in all geographies, and of which we have heard such wonderful stories, has no existence. He told me that a nautical and scientific commission, composed of several gentlemen appointed by the King of Denmark, was sent to approach as near as possible to the edge of the whirlpool, sail around it, measure its circumference, observe its action, and make a report. They went out, and sailed all around and all over where the Maelstrom was said to be, but could not find it ; the sea was as smooth where the whirlpool ought to be as any other part of the German ocean.

I have been instructed to believe that the Maelstrom was a fixed fact in the ocean, that its eddy was several miles in diameter, and that ships, and even huge whales were sometimes dragged within its terrible liquid coils, and buried forever "in ocean's awful depths."

Now, Messrs. Editors, I write to you for information on this point. Is the Maelstrom really blotted out of existance by this Danish Commission, or can I still fondly cherish some terrible thoughts of its reality.

New York, 1857. R. R.

[We have heard something respecting the Danish Whirlpool Commission going out and finding the Maelstrom nowhere, but we have not seen their report, and personally, we cannot give our correspondent positive information whether the Maelstrom is choked up or not. Some of our nautical correspondents may be able to throw more light upon the troubled waters.

Colored Spool Cotton.

MESSRS. EDITORS—I wish to call the attention of manufacturers of colored spool cotton to the wants of the public.

It is a notorious fact that colored spool cotton is not so smooth and good as white, and that there are no gradations of size, although much required, also no fast colors. Why cannot cotton thread be colored, so as not to fade, as well as cotton cloth ? I suppose it would cost a little more ; consequently the makers destroy their business by manufacturing an article entirely unfit for use. Silk thread has to be used, although much dearer, in a great many instances where cotton would be employed if it would not fade. There is a great and general complaint among the ladies and dress makers on this subject.

Any manufacturer who would attend to this matter would insure a reputation and a handsome remuneration. F. D.

[There are many common colors of spool cotton which are more permanent than those of silk, such as green, blue, brown, orange, &c. But black silk thread is more permanent in color than black cotton thread, and as this is the most common colored thread used, it is really the most important. Spool cotton can be dyed as permanent in color as cotton cloth, but to dye a fast black on cotton thread it will cost at least three times more than to dye black silk—weight for weight. The question to which our correspondent directs the attention of spool cotton manufacturers, is one of considerable interest, because they have much yet to learn in this branch of the cotton manufacture, and it is by such hints as the above that they are put in remembrance of their deficiencies.

Mineral Rods.

MESSRS. EDITORS—As you have not stated the authority in your judicious article, page 165, SCIENTIFIC AMERICAN, present volume, on which the use of the "Mineral Rods" are still used in different parts of the country, will you be so kind as to allow me to do so? For more than thirty years I have had more or less experience in the occult sciences ; and have experimented on the Nervous System, in connection with Electricity and Magnetism, perhaps as extensively as any other man in this country. And I take it upon myself to say that there is, indeed, and probably will be for some time to come, some good reasons for the use of the so-called "Divining," or "Mineral Rods." This authority is founded in that well-known quality of human nature, which you will find described in Webster's Dictionary, under the term *gullibility*. In this fruitful soil we have the best of reasons for a thousand things that pass under the name of "Mineral Rods," "Clairvoyance," and "Fortune Telling."

The celebrated David Davis, author of "The Manual of Magnetism," and formerly a popular magnetic instrument maker in this city, some years ago, showed me a quantity of these Mineral Rods which he made to supply the demand of trade, and he assured me that the only authority for their use was, as I have stated—*gullibility !*

Hence, I conclude, Mr. Editor, that, as long as this quality of human nature remains, you will find people advocating the use of the mineral rods, and other practices similarly authorized.

LA ROY SUNDERLAND.

Boston, Feb. 9, 1857.

Reform in Weights and Measures.

MESSRS. EDITORS—I am glad to find that you are in favor of reforming our *system* (if it can be called a system) of weights and measures. The evils of the present confused and contradictory arrangements are apparent at a glance. It is not only to business and scientific men that they are a nuisance, but our very school-boys feel it acutely. The committing to memory of the various tables of weights and measures is a considerable tax on the time and patience of the learner, which might be more advantageously employed in other studies. And it is the case that whatever the mass of the people have been habituated to in their youth, they think that to be right when they become men ; and it does not enter their heads to inquire if this or that might not be amended.

I agree with you that it would not be well to introduce the French terms, but I think that our present terms should not be retained in case of a reformation. Making use of gill, pint, bushel, &c., when they no longer designated the same quantity as at present, would cause endless misunderstanding for a long time to come.

It seems to me that the present system might be advantageously replaced by something like the following :—Fix on some specific length as the unit of lineal measure, if it should happen to be the same as the one now in use, let it keep its name (as a foot, for instance,) let its square be the unit of surface measure, and its cube the unit of solid measure. These several units of measure might be divided into smaller, or raised into higher denominations, decimally, as often as might be deemed advisable. In the same way a unit of weight should be fixed on, and subdivided or multiplied as required by public convenience. No doubt some mistakes would at first arise from the change, especially as our books are adapted to the existing regime, but where is the reform that does not carry with it some drawback. Our posterity at least would derive the full benefit of it. The question ought to be agitated until we arrive at something better than our present methods.

E. M. RICHARDS.

Lebanon, Pa., Feb. 2, 1857.

[The French nomenclature is excessively long and disagreeable, but the quantities represented thereby may perhaps be as unobjectionable as any, and being already adopted as the universal language for abstract scientific and experimental reports all over the world, are deserving of careful consideration. They are essentially as suggested by our correspondent. The *Metre* is a measure of length, equal to one forty-millionth of the earth's circumference measured over the poles (very nearly 39·38091 U. S. inches.) A *Decimetre* is one-tenth of a *Metre*. The *Litre*, a liquid and dry measure of capacity, is equal to one cubic *Decimetre* ; and the square and solid measures are all based on equally simple relations to the original *Metre*. The *Kilogramme*, the unit of weight, is equal to the weight of one cubic *Decimeter* of distilled water at the temperature of maximum density. All these are, in turn, sub-divided, and increased in ten-fold proportions, so that division and multiplication is easy, and if designated by simple short names, not liable to be confounded with each other, the system has many features to recommend it.

Great Patent Law Case Decided.

An important opinion of the United States Supreme Court was rendered at Washington on the 13th inst., deciding the invalidity of Horace H. Day's interest in the extended patent of E. M. Chaffee. This decision also settled another question which excited considerable interest among the lawyers in this city in 1854. This was an offer by Mr. Chas. O'Conor of $1,000 to any person who would produce an authority for a certain ruling of Judge Betts, in the trial of Day vs. the New England Car Spring Company, described on page 69, vol. 10, SCI. AM. The decision of the Supreme Court, we understand, according to the information transmitted to this city, settles the question against the ruling of Judge Betts and in favor of Mr. O'Conor.

A pound of iron converted into fine spring steel will make 50,000 watch springs.