Foreign Correspondence.
Progress of Science, Invention, and Discovery.

London, March 4th, 1854.

American Paper.—The editor of the "London Atlas" speaks in glowing terms of some American wrapping paper which he has received from Col. Colt, of revolving fire arm fame. The English wrapping paper is in general half rotten, and tears with great ease. This is the reason why it is all made so thick—something like English *ben leather*, but instead of being as tough as good old English ben, it is as the Irish say of their old clothes—"tender as a chicken." The American wrapping paper is not half as thick as the British, but it is tougher and will stand more fatigue.

Gold in England.—There is much excitement at present among the dealers in mining stocks, and this feeling seems to be growing stronger and stronger. It relates to the general diffusion, or rather suffusion of gold among the lead and copper ores of Great Britain. A Mr. Calvert, who had lived some years in Australia, in making a geological survey of England, after his return, came to the conclusion that gold was much more abundant in Wales and some other parts of this Island than had been supposed. This opinion he formed from the geological characteristics of the country as compared with those of Australia. On a visit to some of the mineral districts, he actually was fortunate enough to pick up some pieces of gold, and this at once confirmed the truth of his previous speculations. Since the arrival of Mr. Berdan in this country, with his American grinding and amalgamating machine, the English gold fields have become still more important, for although it was generally admitted that Mr. Calvert had established the fact that gold was suffused through English copper and lead ores, still it was thought that it never could be extracted with profit. This question has apparently been settled as a public matter by Berdan's machine, still there is some controversy on the subject, and although such a man as Dr. Ansted has reported very favorably on the large yield of gold from some of the English ores, it is possible that he may have overlooked some important considerations in the experiments which were performed under his charge. My own opinion is, that some of the English ores reported to contain about two ounces of gold to the tun, will turn out to be far less rich in the genuine metal, and the end of all will be a fall in the *mining stocks*.

Geology and Coal.—A number of practical miners, some of them possessing great experience, and a considerable amount of geological knowledge, assert that there is coal to be found at a workable depth near London. Geological savans are skeptical of this, for if true, the science, as it relates to Britain must be revised; and that it will come to this there can be no doubt in my opinion, for facts have already come to light which must lead to new and very important results in the geology of the coal deposits. It has heretofore been asserted that there was no coal below the new red sandstone, hence when any shafts were sunk in search of coal, if they struck upon such a sandstone formation, then the affair was considered settled—no coal could be found below that, and the work of sinking deeper was given up in despair. A few years ago, however, coal was found in the south of England, by boring through the new red sandstone, and the discovery has enriched the person who had the temerity to amuse those who considered themselves good judges of such folly. If it turns out that there are coal beds beneath the London chalk deposits, France will have more reason to rejoice at the discovery than England, for the same formation extends to that country.

Condensing Chemical Gases in Chimneys.—A very great improvement has been effected in many of the chemical works here by condensing gases which used to escape out of their chimneys, and which destroyed vegetation for miles around their neighborhoods. The gases are now drawn into a horizontal flue which runs behind the furnaces and carries the gases to a square tower about 45 feet high, which has a partition running down through its middle filled with pieces of coke. Water is discharged with a force pump worked by a steam engine down one partition of the tower, and the gases being drawn up through the other partition to the top (which is covered) are there condensed, and trickle down with the water through the coke, and pass into a receiver, from which they are taken and treated in such a manner as to render them valuable chemical products. One chemical work after building a chimney 441 feet high to carry off the deleterious gases, just then discovered they did not require the chimney; that the refuse gases which it was built to carry away, could be condensed in a dwarf tower, and made into marketable products. Thus it is, improvements of the most simple character are the means of effecting wonderful reforms in every department of art and manufacture. Some of the English engineers have proposed horizontal chimneys for war vessels; the idea is a good one.

The Crystal Palace at Sydenham.—It is well known to the readers of the "Scientific American," that after the Crystal Palace was ordered to be removed from Hyde Park, in London, a joint stock company was formed, which bought the whole materials with the intention of removing them to Sydenham, a few miles from London, and re-erecting them there. The company is very wealthy, and the new will far surpass the old Crystal Palace in every particular; it will certainly be a wonder equal to some of those in fairy tales. The building is situated on the brow of a hill, from which on the one side London and the Thames are distinctly visible, and far in the distance, the ocean. The majestic proportions of the building rise from the sky line of a steep hill side, and far surpass in magnificence the structure of Hyde Park. The building, too, has gained two wings. Towers rise from the ends of the wings to a height of 230 feet. The nave is now 44 feet higher than the old one, and upwards of 120 feet wide. The pillars which support the galleries will be clothed with creeping plants, and it will be painted in such a way as to produce the effect of a vast tunnel of rainbows. An immense collection of rare works of art have been made by Owen Jones, and Digby Wyatt, who were employed to traverse Europe in search of articles of beauty and rarity, with authority to purchase to the amount of $200,000. They returned laden with the richest spoils of European art. All the richest and most beautiful gems of statuary, sculpture, architecture, and painting, are represented.

The nave is to be a splendid conservatory. Flower beds, green banks, trees and shrubs will entwine their green leaves and lovely crests amid iron pillars and flowing fountains, the water of which is raised from an artesian well 500 feet in depth, and is then forced by means of an engine into the great reservoir on the Sydenham side of the Palace, which is 150 feet square, and 20 feet deep. Here another engine drives it into the reservoirs on the summits of the towers, 230 feet in hight. Such will be the circulating system of the garden that 2,000 tons of water may be forced through its entire frame every minute.

This new Crystal Palace will cost ten times as much as the one in New York, namely, £1,000,000, about $5,000,000, before it is finished, thus showing the vast amount of capital in this country. The enterprise is one of the most original and noble ever conceived.

Perhaps the grandest idea connected with it, apart from the building itself, is the construction of a huge organ, of such power that its volume of sound will fill the immense pile. The Directors of the Palace have consulted a committee of gentlemen well skilled in the theory of music and sound, who have reported on the subject. The dimensions of an organ capable of sending its thrilling tones through the whole structure, will be 180 feet wide, 140 feet high, and 50 feet long. The internal construction will be like that of a house in stories, for the convenient support of sound-boards and pipes. The feeder of the bellows will be worked by steam, and this will certainly be a new branch of business for that useful friend of man—the steam engine. Two of the pipes of the organ will be 64 feet long, and will resemble huge chimneys, but they will be of beautiful construction, and form an ornamental frontage to the instrument. This magnificent organ will cost £25,000 pounds, (about $125,000,) I do not know whether such an organ will be built because proposed, but as the Directors have done so much on such a grand scale, it is possible they will not be behind in the music line.

Inventions.—Day & Newell's Lock, known as "Hobb's Lock" in this place, has been picked, so I am creditably informed; well, it took a long time for those here to learn to do it.

The American Reaping machines are the favorites here; they are more simple and less liable to break and wear out than Bell's Reaper. A number of American agricultural machines brought over here have met with much favor owing to their neat and compact make; they are superior to the English in this respect, but it must be acknowledged that the latter have greatly improved since the World's Fair in 1851. England gained a great advantage by that Exhibition.

Remembering the character of the "Scientific American," (*nultum in parvo*) I add no more at present. Yours, R. B.

On a Chemical Cause of Change in the Composition of Rocks.

The following is an abstract of a paper read before the British Association, by Prof. Johnston. The first example of a chemically altered rock adduced by the Professor, was the rotten-stone of Derbyshire,—a light and porous substance used chiefly for polishing metals, and stated in Philips' "Mineralogy" to be composed of silica, alumina, and carbon. It is obtained from a ridge covered with "drift" 10 or 20 feet thick, consisting of brown clay, with manes of black marble, chert and rotten-stone. The rotten-stone is so soft whilst in the soil that the spade goes through it readily, but it hardens on exposure; the holes from which it is dug are sometimes only 2 feet deep, at others from 6 to 8 feet. On examining a series of specimens, Prof. Johnston found that whilst some were homogeneous, others had a nucleus of black marble; he then treated specimens of the black marble with weak acid, and found that on the removal of the carbonate of lime, there remained from 15 to 20 per cent. of a silicious substance perfectly like the natural rotten-stone.—He concluded that there existed in the soil some acid which penetrated it and dissolved out the calcareous matter of the rocks below. The agent in this case might be the carbonic acid of the air, brought down by rain; but there were instances not capable of explanation by this agency alone, and attributable to other acids, which are produced under certain conditions and exercise a much wider influence. The bottoms of peat bogs present very strong evidence of the action of acids, the stone and clay are bleached and corroded, only silicious and colorless materials being left, The source of the acid is here the same as in the former instance; the vegetable matter growing on the surface produces in its decay acid substances which exert a chemical action on the subsoil, and escape by subteranean outlets, carrying away the materials dissolved in their progress. Another instance was afforded by the mineral pigotite, formed in the caves of Cornwall by water dripping from the roof: this water contains a peculiar organic acid, derived from the soil of the moors, which dissolves the alumina of the granite and combines with it. The organic acids are very numerous and different in composition, but, agree in producing chemical action upon rocks. They are produced over the entire surface of the earth, especially over uncultivated tracts, and are the means provided by nature to dissolve the mineral food of plants; they are also amongst the chief causes of the exhaustion of soils. The author then alluded to Prof. Way's examination of some of the green-sand strata of Surrey, known as fire-stone,—a light and porous rock, containing silica in a soluble state. It was well known that common sandstone, quartz, or rock crystal were not acted upon by potash or soda at ordinary temperatures; but of the firestone 30 per cent, and sometimes 50 or 70 per cent., may be dissolved. In all such cases the silica must have been originally in a state of chemical combination with lime, alumina, or something else, which has been subsequently removed. The silica in the rotten-stone was soluble, but he had never met with instances of black marble in a bedded state converted into rotten-stone. He believed, however, that a similar cause, operating over a wide area, and during a long period, had produced the altered condition of the firestone.—Prof. Johnston then alluded to the nodules of phosphate of lime in the green-sand and crag, and suggested that the phosphorus had been derived from animal remains in higher strata, dissolved out by acids and re-deposited at a lower level. The last example was the fire-clay of the coal measures, a stratum almost universally found beneath beds of coal. It differs from the other clays both in color and composition, being whiter and containing less of those substances which acid bodies could dissolve, viz., the earthly basis, which would render the clay fusible in fire; the condition of the fire-clay might be accounted for by the action of acids developed during the production of the vegetable matter now forming coal.

Reaping Machines---Original American Inventor.

In your paper of the 25th inst., I notice the claims of priority in the invention of grain reapers, by the Rev. P. Bell, of England. Having noticed such claims repeatedly, I have concluded to speak for myself, and briefly tell my own experiments and the results in horse power grain reapers. For with me the thing was original, I neither copied from Englishmen or Americans. I was born and reared on a farm near Union Village, Washington Co., N. Y. While yet a boy in 1824, I tried my first experiments with shears, the blades of which were so curved as to present nearly the same angles of edge from heel to point while cutting. But still the shears pressed the grain forward in cutting. In 1825 I tried further experiments with a reel and sickle edge, but returned to the vibrating edges. In 1826 I completed my experiments with the reel and vibrating cutters. And I also tried experiments with vibrating bearded rods in order to gather the grain on the platform for binding and dumping the bundles. I hoped to be able to bind on the machine, and I still believe it will be done to advantage. My machine extended into the grain to the right, and it was mounted on the hind wheels of my father's lumber wagon. The wheels being large and the gearing so simple, that in 1826 a single horse drew my brother and self on the machine and cut rye at the rate of one acre per hour. The wise ones of the east viewed it as original with me, and derided me alone by calling it Harvey's Folly, but when they become astonished at its operation, they gave it the new name of Harvey's Great Amazement.

I have antique drawings before me of the said machine, which I preserved, hoping to secure some profit by taking out letters patent and by manufacturing, if I ever became able to do so. My father refused to help me in this, for he said the Patent Laws were only calculated to draw men into ruinous law suits. I tried to get help from others, but all refused to help me when they learned my father's views of the Patent Laws. In support of the main facts above, I presume twenty living witnesses can still be found. Yours, &c.,

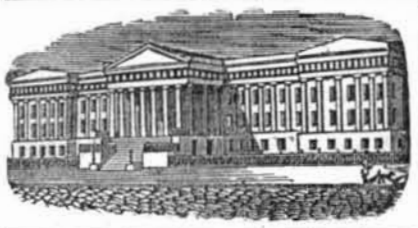
Harvey H. May,

Galesburg, Ill., Feb. 27, 1854.

[The father of our correspondent labored under a very mistaken idea of our patent laws. Had he encouraged his son and secured a patent, it would have made both him and his family wealthy. Those who patented their reapers afterwards, have become rich. We are sorry to say that there are many men who have now the same erroneous opinions respecting our Patent Laws; hence they dig and sow, while others come after them and reap the fruit of their labors. No man who invents any useful improvement should neglect to secure it by patent. Not a week passes over our heads but some inventor expresses his regret for neglecting to patent some invention for which another secured a patent afterwards and made a fortune by so doing.—[Ed.

Gold Coinage of England.

There were coined at the English Mint, in 1853, 10,597,993 sovereigns, 2,708,796 half sovereigns—nearly $60,000,000.



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING MARCH 14, 1854.

ROTARY CULTIVATORS—G. B. Field, of St. Louis, Mo.: I claim the construction of the rotary cultivating cylinder, made of cutting plates or spades, and interposed pushing or clearing boards for removing the earth, as described.

I claim the arrangement of the shield plates on the shaft, for the purposes set forth.

I claim the arrangement of the rotary barrow, sustained above the ground and in the rear of the cultivating cylinder for breaking and pulverizing the falling earth.

SAW SET—Oliver Lesley, of Attica, Ind.: I claim the arrangement of the triangular gauge with the swage, upon the stock, for the purpose of adjusting the gauge relatively to the nick or recess in the swage, as set forth.

EXCLUDING DUST FROM RAILROAD CARS—Orrin Newton & J. A. Crever, of Pittsburgh, Pa.: We claim the combination of the bellows and water cistern connected with each other and with the cars by pipes, for the purpose of ventilating railroad cars, constructed and operating as described.

DAMPING PRINTING PAPER—Andrew Overend, of Philadelphia, Pa.: I claim, first, the self-acting feed board arranged and operating as described.

Second, the arrangement and combination of the upper and lower felted rollers, for the purpose of saturating the upper roller in the intervals between the passage of the paper, as described.

Third, the projections for the purpose of breaking the bead as the paper enters, as described.

Fourth, the combination of the wetting cylinders and fly, as described.

FORM OF SCYTHES—J. W. Robinson, of Kirkland, N. Y. I claim the form which is given to the back and web of the scythe, as described, whether the web starts from the center of the back, or elsewhere except from the edge.

MOLD BOARDS OF PLOWS—E. M. Bard, of Philadelphia, Pa.: I do not claim to be the inventor of the combination of cutters or rakes with cultivators or plows, for enabling the latter to perform two functions at the same time.

I claim securing the cutters in openings formed in the mold board at the points, and in the inclined positions outward and backward, represented so as to enable the lower forward cutters to cut and loosen the soil preparatory to its being overturned, and the other cutters to more thoroughly pulverize it as the body of earth is thrown over, and the cutters from their peculiar inclined position, to disengage themselves from weeds and other obstacles, as they pass the same, the several parts being as described.

MOLDS FOR MAKING PRINTING BLOCKS—James Berry, of Roxbury, Mass.: It is proposed to extend this invention to the production of cylinders as well as blocks, and also to set the types for the molds by machinery, from which a great saving of labor will result, but this forms no part of my invention. Neither do I claim making blocks for printing by casting them into suitably prepared molds. Nor do I claim making blocks for printing woolen or other fabrics, by setting up movable types, and thus producing the requisite figures to be subsequently printed from.

But I claim forming the molds in which to cast printing blocks of types or prisms, as described, and for the purpose, set forth, by which I am enabled to produce a great variety of patterns at a very small cost, and in a short space of time.

MACHINES FOR MAKING SHOVEL HANDLES—R. D. Bartlett, of Bangor, Me.: I claim the combination and arrangement of the bed, the rotary holder, one or more vertical movable cutters, and one or more stationary cutters, as made to operate together and form the D or head part of the shovel handle, as specified.

And I claim the combination of the curved knife and the arc knife, so applied together as not only to allow them to be separated for the purpose of being ground, but to enable them to cut out the opening of the shovel handle, as specified.

I claim also the combination applied to the shaft of the rotary holder and gear wheel, for the purpose of operating the holder, as specified, the said combination consisting of the cam blocks, the arm, the spring bolt, its cam, and the two studs, the whole constructed and operated together, as specified.

SEED PLANTERS—Chas. W. Billings, of South Deerfield, Mass.: I claim linking or otherwise equivalently attaching the pulverizing gauges to the draught bar, in such a manner that the gauges are raised or lowered to regulate the depth of furrow to be cut, by elevating or depressing the draught bar to its proper pitch or hight for the draught at a given depth of furrow, and whereby the draught bar and gauges are simultaneously raised or lowered, as set forth.

I also claim the combination and arrangement of the vibrating seed segment slides geared together by cogs or teeth on their peripheries and operating in unison, as set forth.

I also claim the manner of pivoting or jointing the vibrating segments at their centers of motion, by constructing the jointing pin with projecting ears or lips, and forming the joint hole of a key-hole shape, as described.

I further claim, in combination with seed distributing slides, the employment of the double-acting spring clearing slides, arranged so as to be capable of lateral movement in either direction, and made self-adjusting to their original position, as specified.

[See notice of this invention on page 348, Vol. 7.]

FAUCETS FOR MEASURING LIQUIDS—Joshua Cross, of New London, Ohio: I claim the construction and arrangement of a measuring vessel and the valve of a faucet, as described,

TAPERING NOZZLES TO THE EXHAUST PIPES OF LOCOMOTIVES—Frederick Espenschade, of Mifflintown, Pa.: I am aware that various contrivances have been combined with the usual immovable conical nozzle of the waste steam pipe of locomotives, for the purpose of enabling the engineer to vary the draught in the furnace; and therefore I wish it to be understood that I limit my claim to the employment of movable tapering nozzles of various sizes orifices, so arranged that either of the said nozzles may, at will, be brought over the mouth of the waste steam pipes to vary the draught in the furnace of the locomotive, as set forth.

SPRING CLAMPS FOR CLOTHES LINES—E. S. Haskins, of Boston, Mass.: I do not claim uniting the two parts of a clothes pin by a hinge, and closing the jaws by introducing a spiral or other spring between the opposite ends of the levers.

But I claim the combination of the barrel, the groove, and the elastic band of india rubber or other suitable substance, by which means the different parts of the clothes pin are held together securely by the same spring which closes the jaws, instead of requiring a separate device for the purpose, as has heretofore been the case.

MACHINES FOR DRESSING STONE—E. G. Hastings, of Brooklyn, N. Y.: I claim making the cross-head of cylindrical form, and the tool stock with a corresponding concavity, as shown, so that the ways or guides which carry and give direction to the motion of the said tool stock, turn freely on the said cross head, and the said cross head serves as a rest or stop, at whatever angle the said ways or guides may be adjusted, and thus always determines the depth of the cut, and causes a perfectly true surface to be produced on the stone.

[See brief description of this invention on page 188, Vol. 8, Sci. Am. A patent has been secured through our agency, in England.]

GILDING OR PLATING FIBROUS SUBSTANCES.—Albert Hock, of St. Germain, France. Patented in France Dec. 15, 1852: I claim the process, as described, of coating silk (whether organzine, train, or twist), and thread or yarn (of silk waste and thread), or yarn of cotton or other fibers or mixtures thereof with gold, silver, or other metal leaf.

FAUCETS FOR MEASURING LIQUIDS—J. B. Larwill and J. Cross of Bucyrus, Ohio: We claim the manner described, of constructing faucets, whereby they are rendered capable of measuring any given quantity, and of shutting off the supply from the cask when it is desired to discharge the contents of the faucet, and of closing the discharge of the faucet, when it is desired to measure a fresh quantity, and susceptible of being converted into a constant runner when desirable, as described.

[For illustrations and full description of this novel invention, see page 97, Vol. 9, Sci. AM. 1

METALLIC GRUMMETS FOR SAILS—E. H. Penfield, of Middletown, Conn.: I claim the making of the metallic grummet of three or more pieces of metal (raised to the proper shape), when the several parts are constructed as described.

STOP COCK—O. C. Phelps, of Boston, Mass.: I claim the flange, in combination with the conical plug, constructed and operating, as described, for the purpose set forth.

Second, I claim the air cushion within the plug, constructed as described.

FAUCETS—Ezra Ripley, of Troy, N. Y.: I claim the adjustable clamps or jaws, in combination with the faucet tube, for the purpose of closing and opening the discharge orifice, when draughting or drawing fluids, constructed and operating as described.

ROTARY ENGINES—Gerard Sickels, of Brooklyn, N. Y.: I claim the method described of making and maintaining a perfectly tight fit between the ends of the cylinder and the revolving head, which carries the sliders or pistons, by admitting a pressure of steam outside of the flange of the revolving head, as set forth

[A notice of this engine may be found on page 180 present Vol.]

MACHINES FOR GRINDING COTTON CARDS—Nathaniel Smith & Asa Crandall, of North Kingston, R. I.: We claim a narrow emery card grinder, carrying a weighted forked lever or shifter, and keyed loosely on an endless or right and left screw, which, in combination with the forked lever or shifter, gives a continuous back and forward traverse to said grinder, and serves also as a shaft for it to hang and move upon while grinding the cards, the whole being as described.

[This is believed to be an excellent invention.]

SEED PLANTERS—Welcome Sprague, of Ellicottsville, N. Y.: I claim the combination of the hollow hub or grain reservoir with the tubes, piston, and rods, operated by the cam grooves, or its equivalent on the diaphram, the whole arranged as set forth, for the purpose of insuring the deposit of the seed in the soil,

HANGING OF THE GRIPING JAW OF SPIKE MACHINES IN WEIGHTED LEVERS—J. H. Swett, of Pittsburgh, Pa.: I claim so hanging the griping jaw in weighted levers or their equivalent, as that when two spikes or a spike and a blank comes in between the griping jaws at one time, the said jaw may rise and yield to the excess of metal between the dies, and prevent the breaking of any of the parts, as described.

ROTARY CULTIVATORS—Philander Shaw, of Abington, Mass.: I claim the described method of hanging and operating the spades, &c., they being applied in one or more vibrating sets to a rotary frame, each spade being hinged to the frame and made to turn through the sector of a circle and provided with stops, and a stud to act against a stationary cam, as described, the whole being applied together and to a carriage or frame, and made to operate so as not only to dip into and raise earth, but to perform the office of impelling along on the ground the whole machine, as specified.

STEAM ENGINE FAUCET VALVES—Abijah Taylor, of Pekin, Ill.: I claim my peculiar valve, constructed, adapted, and arranged in such a manner as to perform the functions of a safety and pressure valve, as described.

FOLDING BLINDS—Mansel Blake, (assignor to Mansel Blake, James B. McAlestee, and Erastus Blake) of Sutton, N. H.: I claim the arranging a series of slats, on one set of the parallel bars of a folding frame of parallel and crossed bars, so that the slats shall not only extend from end to end of their several bars, but be made to overlap one another and thereby in connection with the folding frame, from a folding blind or shutter made to operate as specified.

OBSTETRICAL SUPPORTERS—Westel S. Daniels, of Panama, N. Y.: I claim in the described obsterical supporters, extending the thigh straps across the top of the knees and arranging them to run through rings or their equivalents where they are connected with the knee and feet straps, so that they may be seized by the hands of the user and drawn up to increase, or slackened to graduate the pressure of the back pad against the back as desired without changing the position of the body, legs or feetas described.

SMUT MACHINES—Lewis Fagin, Cincinnati Ohio,: I claim my method, or its substantial equivalent, of arranging a blowing apparatus where the upper or suction fan takes the air at the center and discharges on the periphery, to precede (on the same shaft) a scouring mill, for the purpose of taking from grain the smut, chaff, &c., before the scouring process is commenced and afterwards thoroughly scour the same; thus constituting the cleansing and scouring processes the duty of a single machine as described.

I also claim the cylinder hopper and feed pipe as arranged, or their equivalents, and for the purpose described.

I also claim the collar as arranged and for the purpose described,

I also claim the guide as arranged and for the purpose described.

I also claim the scouring cones severally and collectively with their circular and horizontal grooves and perforated terraces, or their equivalent, and in combination with the conical fan and beater, as described.

SECURING WINDOW SASHES—Alpheus Kimball of Fitchburg, Mass.: I do not claim confining window strips or beads by letting them into mortices in the top and bottom of the frame, as this has been done before. but I claim confining window sashes by means of strips, which are raised into deep mortices in the top of the frame a sufficient distance to enable them to be dropped into shallow mortices at the bottom of the frame, the strips being held against the sashes by the pressure of a screw or other analogous device in the manner described.

Also the method of securing and tightening the sashes by means of pressure upon the exterior of the sash strip whether it be produced by screw. in the manner described.

GRAIN HARVESTERS—Daniel S. Middlekauff, of Hagerstown, Md.: first, I claim the rotary knives or cutters, the edges of which pass by each other for the purpose of forming a continuous edge for the purpose of cutting the grain.

Second: I claim the reels and the spring ketch and projection on the wheel in combination with the apron, for the pupose of supporting the grain in an inclined position as described.

MACHINES FOR DRILLING STONES—Simon Pettes, of New York City.: I claim so placing on the sliding frame the windlass with ratchet, whose paul is acted on by the drill head at each desent thereof, and these feeds the entire mechanism as the work proceeds, as set forth.

PROCESSES FOR MAKING VARNISHES—Jonathan Burrage, of Roxbury, Mass.: (assignor to J. Burrage, and F. W. Newton, of Newton Mass): I am aware that the exudations from the Pinus Canadensis and Pinus picea (which exudations are respectively known in commerce by the names of Canada Balsam, and Venice Turpentine,) have been mixed with essential oil or spirits of turpentine in the manufacture of varnishes. I therefore do not claim such mixtures as forming any part of my invention. Nor do I claim the employment of sulphate of zinc, litharge or magnesia in oil for the purpose of imparting drying qualities thereto. Nor do I claim in making a varnish the employment of a virgin turpentine, or that which is in the natural and liquid state it has when it exudes from the tree, but as by exposure of the crude or natural liquid turpentine of the pinus abies or pinus silvestris to the action of air and light for several weeks or months, it becomes hard and brittle and decolorized and otherwise changed, or has its essential oil evaporated and is otherwise purified of much that is objectionable in varnish and in fact becomes another, or highly improved article for the manufacture of varnish, and as such, has never to my knowledge been used in making varnish, but only in the composition of plaster or for other purposes in medicine, and in calico printing, and some other arts, it being known in commerce by the names of Gum Thust or Gum Sass,

I claim the described process or mode of making varnish, viz., by combining Gum Thust or Gum Sass, with the essential oil of turpentine, and treating the mixture as specified.

SEED PLANTERS—J. G. Macfarlane, of Perry County, Pa.: I claim the combination of the action of the levers, cams, spring, and the weight of the scraper, to clean the wheel.

DESIGN.

PANNEL ORNAMENT FOR STOVES—Isaac De Zouche (assignor to Louis Potter), of Troy, N. Y.

NOTE.—In the above list of patents, seven of the specifications and drawings were prepared at the Scientific American Patent Agency.

Tin Foils---Crooke's Patent.

My invention consists in such improvement in the manufacture of tin foils and sheets, that by it I accomplish the reduction of the cost, though retaining those qualities which are essential to the purposes for which such foil or metal is required. This I effect by combining the baser and cheaper metal, lead with tin, not, however, in the form of an alloy or mixture, but so that each metal will be kept perfectly distinct, the tin or superior metal being only exposed, while the lead or inferior metal is encased within. In order to make such sheets or foils, a peculiar ingot or slab must be first made, by which the whole amount of metals to be contained in the intended sheet or foil must be joined at their surfaces, and retained in such position that the subsequent action of the rolls shall not be able to displace or extend one metal more rapidly than the other, for it is evident that the lead by reason of its being the softer and more yielding metal would be squeezed out in an undue proportion to the tin, were it not confined on all sides by the tin. I therefore make the ingot or slab for rolling, in the following manner :—First, a metallic mold is made which shall determine the size of the slab to be cast, the cavity in such mold may be, say six inches wide, one inch thick, and ten inches long; then prepare a slab of lead as much less in size than the cavity in the mold as is designed for the different proportions of the metals, say of the following dimensions, five and one-half inches wide, nine and one-half inches long, and half of one inch thick. This, when suspended in the center of the mold, will leave a clear space all round, and the tin can then be poured in. To accomplish this suspension properly I prepare small blocks or posts of tin, of a length equal to the space left between the lead and the sides of the mold, and by placing these around on all sides, I sustain the slab of lead exactly in the center. The surface of the lead being properly clean, or properly fluxed or coated with an alloy of lead and tin, the mold is ready to receive the tin which is poured in until the whole of the space is filled, the lead being then completely encased within it. The posts of tin of course combine with the fluid tin poured in and form part of the solid mass. The slab is now ready for the rolls, and may be extended into sheets and foils of any degree of thinness, from this construction of the slab or ingot, it is evident that the lead cannot escape from the tin, but must extend and be pressed out with it, in exactly the same manner and at the same rate, thus ensuring perfect equality in regard to the given proportions first adopted, as to every part of the sheets, no one part having more lead in combination with it than another. Thus foils or sheets are produced, which for many of the purposes to which those of pure tin are applied, such as for wrappers of tobacco, caps for bottles, &c., are fully equal in the qualities required to those of pure tin, while they are furnished at a greatly reduced cost.

[The above patent was issued Feb. 7, 1854, and the claim may be found on page 179, present volume "Scientific American."

Icebergs at Sea.

The captain of the packet Middlesex, from Liverpool, arrived at this port last week, reports that his vessel was locked in the ice for five days and had a very narrow escape from destruction. A large quantity of ice was passed through, he says, and must have been nearly 300 miles in length. Thirty icebergs were counted at one time from lat. 47 to lon. 46 51.

Recent Foreign Inventions.

RAILWAY CONSTRUCTION.—G. K. Douglas, of Chester, England, has patented some improvements in the permanent way of railways. In this invention, the chair is made with two pair of jaws, which are cast together in the usual manner, and are sufficiently wide apart at the top to admit the rail. Between the jaws and the body of the rail is a plate, enlarged between the jaws, in order to strengthen it, and another plate is held in contact with the other side of the rails by vertical wedges. These plates and wedges the inventor prefers to make of cast-iron, but they may be made of wood. When the wedge is of wood, it is requisite to have a hole in the chair, through which the wedge can be forced when the rail has to be removed.

STEAM-ENGINES.—J. E. McConnell, C. E., of Wolverton, England, has patented some improvements in steam-engines and boilers for marine purposes. In this invention, a set of cross partitions are introduced in the water space above the fire-box, for the purpose of preventing the rolling of the ship from sending all the water into any part of the boilers, so that it is constantly kept well spread over the available heating surface. For the prevention of deposit and incrustation, vessels which can be detached at pleasure, of suitable form, are placed under the barrels of the boilers to receive the deposited or precipitated matter from the water, or the deposit can be withdrawn by a blow-off cock, or by other suitable means.—Separate or additional fire-doors are also introduced into the boilers beneath the fire boxes through the water spaces for the admission of atmosphereic air, to render the combustion more complete.

ROTARY ENGINES.—M. de Beaujeu, of Paris, has obtained a patent, by which he claims :—1. The construction of apparatus for producing in a close vessel a continuous current of liquid in the direction, by the pressure of the steam of water or other liquids, or compressed air, or other elastic gasses, in a cold or heated state, acting upon the water indirectly, by means of a fatty non-evaporating body, such as rectified sperm oil, for the working of water-wheels, of turbines, re-action wheels, pumps, and other similar machines.—2. Mechanical arrangements for working the distributing steam-valves of the said apparatus, by the action of the turbine, or other hydraulic machine to which its motion is applied.—3. The construction of a turbine with inverted paddles, for the application of said current to forward and backward propulsion.

ELECTRIC CURRENTS.—M. Fontaine-moreau (for a correspondent) has patented an improved mode of producing an electric current. This electric battery is composed of 28 elements, each being formed of a trough, an amalgamated zinc cylinder, and a porous vessel containing one or more charcoal elements, disposed within each other in the usual manner. The charcoal may have the form of a cylinder, and a set of three of them, or a system of plates, united at the top, may be employed, in order to multiply the surface, and increase electric action. The troughs may be of a flat or square shape in place of the round. The 28 troughs are placed in a long outer casing, divided into two principal compartments, which are sub-divided into 14 cells, to receive the several elements. These cells are open at top and bottom, and have two small cross-pieces set at the bottom part for receiving the troughs. The casing is supported by a tresle at each end, being set at half their height from the ground. Set screws on the feet of the trestle serve to put them on a level, and on the top of the trestle two wooden axes are set, extending from one end to the other, and turning on pivots.

HAY MEAL.—C. J. Daniel, of Bath, England, patentee.—Some time since we spoke of grinding hay and making it into meal for feeding cattle; the above named gentleman has secured a patent in England for this product. What the value of the patent may be we do not know.

BRIDGES AND VIADUCTS.—J. Macintosh, of London, patentee.—This invention consists in combining a series of bow and string arches into one girder beam, in such a manner that each bow or arch springs from the crowns of the two bows or arches to which it is connected.