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THE

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Wood Bearings for Journals and Shafts.

MESSRS. EDITORS-In No. 42, of the present volume of your paper, I saw a notice and drawing of a journal box, for a propeller shaft, which is claimed as an English invention; so far as the application of that particular kind of joint box, to propeller shafts, it may be an English application; but for almost every kind of journals, for ordinary machinery, both in the water and out of water, and for journals of very high velocity, and for heavy over-shot water wheel journals, with a slow velocity, and where the journals have been lubricated with oil, tallow, and water-I claim it to be an American invention of at least twenty years application.

I have had much experience, and perhaps have experimented as much in the application of wood for journal boxes as any other person in this country, for the past twenty years, and I am fully satisfied that there is nothing now known that is as good for that purpose, as wood, properly prepared.

For the benefit of your readers, I will give the result of my experience, and the conclusions I have arrived at on this important subject. The best wood in our forests for journal boxes, is the Soft or Silver Maple, which grows in wet or swampy land, -either the root, or the body of the tree as near the ground as it can be cut,-taken direct from the tree or root full of sap, and worked out in blocks or strips to suit, and then boil it in tallow that is simmering hot, but no hotter, (for if it is made too hot, there is great danger of charring the wood,) until the heated tallow drives the sap all out of the pores of the wood; then sink the blocks or strips in the tallow, and let them remain there until all are cold.-Now take the blocks or strips, and fit them into the iron pedestal box or into the grooves, as represented in engravings in No. 42, Vol. 10, with the end of the wood to the journal, and not to the side, as there represented.

This mode of preparing wood in tallow, I

O. H. P. PARKE the receiving chamber, D. In the descent of striking the implement into the ground, like Philadelphia. July 20, 1855. [Mr. Parker's information is very useful. the plunger, C, when planting, the delivery a cane, causing the short front plate, H, to slide, is drawn back to take in a fresh sup-The figures referred to by him as published enter the soil, the stop plate, I, to bear on by us, showing the application of wood bearply of grain from the hopper, and hold it the earth, and the plunger, C, to eject the ready for another delivery, at the same time ings for propelling shafts of large steamers corn or seed through the bottom of the rethe plunger, in its descent, ejects the charge ceiving chamber, D, and force it to its requirin England, is not represented to be a new invention. We published them to show a of corn previously fed down into D, and emed depth obliquely into the ground, after new application, and also for the purpose beds it at the proper depth in the soil. The which, by raising the handle, the plunger, C, of showing that they were held to be supeplunger, C, opens the receiving chamber, D, is elevated in the same oblique direction, the by pressing against the back plate of it, rior to the more common metallic bearings. stop plate, I, answering for a fulcrum during Wood bearings for water wheel shafts were which is acted upon by spring E', to allow the lateral strain upon the plunger, in drawing it used two centuries ago. About two years grain to pass out, and also to close said chamout, whereby the earth is shaken over the since a correspondent informed us that, after ber again when the plunger is drawn back. seed and covers it; the scrapers and side many experiments, he discovered that molten so as to retain the seed fedinto it for the next flanges also scrape back all soil from the lead, run into the pores of wooden boxes, hill. G is a flange projecting from the plun- plunger, making it fall on the seed, so that formed the most perfect of all shaft bearings. ger, C, at its bottom, on the rear side, for the perfect covering of it is thus fully in-

WAKEFIELD'S HAND SEED PLANTER. Eig. 2

patent was granted to Charles A. Wakefield, tice before.

er with the plunger out, and figure 2 is a perspective view, showing a farmer awake in the field, planting his seed with ease, rapidity, and correctness.

A is the hopper or box containing the corn -it is filled through the lid, a. A' is a zuide device may be used for gauging the stroke of claim as original with myself; it changes frame in front of the seed box, to direct the the plunger, to vary its depth of hole for the the nature and quality of the wood, and up-and-down movement of the embedding seed. E is the handle of the plunger, C, makes a journal box that will be more duraplunger, C, which, in its double movement, which is used as shown in fig. 2; it is placed ble than any other known substance, but in obliquely to the plunger, and is used by the by the groove, g, and pin, f, alternately opens all cases the journal should revolve on the and closes a delivery slide, which works in operator to give the plunger an oblique diend of the wood, instead of the side, as many rection into the soil. The implement is cara groove, e, in the seed box at its bottom. are in the practice of using it. Where it is This slide has an aperture in it. As plunger ried and used as shown, like a walking cane, practicable, the best lubricator for a journal Crises, a suitable number of grains of corn for requiring no delay, and is easily operated. arranged as above, is clear pure water. a hill, is conveyed through the passage, c, into The person using it steps from hill to hill,

The annexed engravings are views of an | guiding and holding the grain, when being improved Hand Seed Planter, for which a embedded between it and the short front plate, H, which enters the ground and proof Plainfield, Mass., on the 25th of July, last jects from the broad stop plate, I; this latter year, but not brought thus publicly into no- plate stops the further entrance of the implement into the soil. The side flanges Figure 1 is a vertical section of the plant- project from the front plate, I, and serve, in conjunction with the elastic back plate of the chamber, D, and bottom plate, H, to scrape off the dirt adhering to the sides and edges of the plunger, C, when it is drawn out of the ground into the chamber, D. Any suitable

sured. It is thus more certain in its operation than if it made the hole for the seed perpendicular, and carried the soil up instead of covering each hill with the implement, as it is rising out of the opening in the soil. The two simple motions of this implement or machine-only pressing down and lifting it up, like a walking stick,-by which the hole is made; the seed fed down and deposited; the seed box closed and the seed covered by the soil, makes it superior to those hand planters which require a number of motions to accomplish the same objects.

Hand seed planters are but of recent date, but their convenience and superiority to hand planting and covering with the hoe, have given them an extensive circulation in a very few years. One man, with a hand planter like this, especially in well plowed land, will plant four times as much corn, rice, beans, peas, &c., as four men, depositing the seed by the hand and covering with hoes. The economy of such an implement for every farmer, is self-evident. It is positively necessary that every machine, tool, and implement for a farm should be simple and easily repaired; without such qualities they will not find favor with our farmers. The inventor of this implement had his mind directed to these points when he invented it. It weighs about seven pounds, and the price is five dollars.

We were witnesses to the planting of one quarter of an acre of corn in twelve minutes, by one of these machines, and the work was cleverly done. This was on the farm of George Archer, Esq., Mount Vernon, N. Y. At this rate a man could easily plant 10 acres in a day.

More information may be obtained by leter addressed to Jerome, Wakefield, and Vining, New Haven, Ct.

Cementing the Soles of Boots and Shoes.

MESSRS. EDITORS-You are not quite correct in your answer to "J. H.," of this city, in your paper of June 30. Gutta percha and india rubber, in solution, will not unite firmly the soles of boots to the upper leather, if there is any oil or grease of any kind in the uppers; soles of well-tanned oak leather may be well united with gutta percha or india rubber cement, but hemlock tanned soles will hold together but a short time. I have tried most of these experiments. A E. Boston, July, 1855.

[We have seen soles cemented to uppers, said to be done by a mixture of gutta percha and india rubber dissolved in turpentine. We have united heels and soles of gutta percha to leather soles and heels, with gutta percha cement (gutta percha dissolved in turpentine,) for experimental purposes, but took no trouble to ascertain whether the leather was oak or hemlock tanned. The cement must be highly heated, and considerable pressure applied to the upper and sole, to make them adhere strongly.

MESSRS. EDITORS-The round sea snail the size of a man's fist in their circumvolutions, eject a kind of glutinous slime with their eggs, which, being combined in a small measure with the sand, forms an article resembling a piece of pottery, which no doubt first conveyed the idea to some of our ancestors of a jar or pitcher. They are frequently picked up on the ocean shore on Fire Island by the curious researchers in the hidden mysteries of the ocean. The manufacturing of pottery is coeval with history, and the idea very likely was conceived by the first inventor from those deposits.

F.D.

Fire Island, July 21st, 1855.

HEFULL MAREE

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[Reported Officially for the Scientific American.] LIST OF PATENT CLAIMS

Issued from the United States Patent Office, FOR THE WEEK ENDING JULY 24, 1855.

MACHINES FOR CUTTING SHEET METAL-Cephas Apple se, of Lyndon, Vt. : I do no' claim the movable bar, A bee, of Lyndon, vt. : 1 do not claim the movable bar, A. its clamps, and one or two sets of rolary cutters, arranged and operating togeth, r as described, but I claim the com-bination there with of the index limb or arc, the movable ra-dial supporting arms, and their two end shears, the whole being applied togeth-r, and used to operate on a piece of metal or other material, and reduce it to the shape of an an-nular section, suitable for being bent into the shape of a coulc frustum, in manner and for the purpose specified.

nular section, siniable for being bent into the shape of a conic frustum, in manner and for the purpose specified. CUTTING ROOT AND SHOE UPPERS, SOLES, &C. FROM SHERTS OF INDIA RUBBEK-John Arthur and * van Arthur, of New Brunswick, N.J.: We claim, first, the cutting or separation of india rubber by placing it on a wet cloth, or other suitable moletened surface, and submitting it to the pressure of a neated die, having an edge of the form of the article to be cat, substantially as set for it. Becond, the combination of one or more reciprocating die frames, each carrying ayet of dies with a stove, and with carrying and pressing apparatus to carry the sheet or piece of rubber, substantially as here in described, so that the dies by their reciprocating movement may be carried into the silve to be heated, and then returned, to cut or stamp out the pattern or article from the piece, as set forth. Third, the method of raising the die frames to axis be-low them by extending the ends, v v, of the side pieces, d , of the said frames owned battanee beyond the pivots, g g, which connect them with the chain and providing plus, w w, for the ends, v v, of the die frames to trike against, to throw up the opposite ends carrying the dies substantial y as described. Fourth, the swingung frame, r, with its fingers, 20, arranged and operating sub-tant¹¹ y as described. To conduct the point or ends of the pivoters, b, my on which the entiting is performed, and another roller, l, by which there at one separated between the roner, D, up on which the entiting is performed, and dnother roller, l, by which there at one separated between the roner, l, up which there at one separated between the roner, l, wy which there at one separated between the roner, l, wy which the entiting is performed, and another roller, l, by which they are at once prevented carling is an addie the mate which they are at once prevented calling is, and are con-veyed along towards where they are delivered from the ma-chines.

[Although punching knives are used in this apparatus, the separation of the rubber is, in reality, accomplished by melt ing ; for the knives, being heated. melt their way through the caoutchouc. The cutters are placed on the surface of an endless belt, and arranged to rotate, in succession, through an adjoining furnace, in such a manner that while one knile is in the act of cutting, another is being heated by the fire. The wet surface on which the rubber is laid, in order to be cut, serves to prevent burning by the hot knives ; it also causes the formation of steam along the seam at the moment of separation; thus a free and smooth edge is left upon the rubber, and the parts are prevented from adhering after the removal of the knives. This is a very ingenious and valuable invention. Rubber cutting has heretofore been a difficult operation. Ordinary knives will not act upon it as easily as many people suppose.]

WHIFFLE TREES-Archivald Bailey, of Blue Rock, Ohio, aud Daniel L. Allard, of Rokebay, Ohio: We are aware that hooks or catches have been placed in the ends of the levers them elves, but such an arrangement we do not claim.

claim. But we claim, in combination with the compound levers, But we claim, in combination with the compound levers be, arranged and operated as herein described, the pivoted cam shaped catches or hooks, a s, for holding or instantly releasing the cock eyes of the traces, by which arrangenen we secure the parts against imperfect action, and are ena-bled to embed all the parts within the single tree, as de-scribed.

FEEDING WATER TO STRAM, BOILERS BY AUXILIARY EN-HES-William Ball, of Chicopee, Mass. : I claim causing he pipe, F, which conveys the steam from the boller to the sed engine, to enter the boiler at the exact level at which be water is required to stand, for the purpose substantially a set forth. as set forth.

PREPARING POTASH AND SODA-G. Thompson, of East Tarentum, Pa. : I claim the use of a tray and sector, con-structed as described, for the purpose of dividing caustic so-da, or potash, into parcels of convenient size and shape and of uniform weight.

of uniform weight. SEED PLANTERS—Pierpont Seymour, of East Bloomfield, N.Y.: I claim, first, the combination of the movable side of the seed box, with angular hangings, c, spring, b² dg, 3, and inclined planes or wedges, e, or their equivalent, for the purpose of ope ing and closing said box, and thus to regu-late the quantity of seed or substance to be delivered. Second, I claim the slide plate, f, to prevent the seeds from clogging, as described. Third, the combination of the angular levers, o, having their fulcrun on inclined standards, or its equivalent, with the rods, p, linking them to the drill tubes, m, in the man-ner and for the purposes set forth. W seques non $1 \le m \le 1$ be Smith of Inconvrille N V.

WASHERS YOL AXLES-A.E. Smith, of Bronxville, N.Y. I claim inserting blocks of metal, or other equivalent has substance, nu packing washers made of leather or other equivalent flexible and yielding substance, substantially as and for the purpose specified.

equivalent flexible and yielding substance, substantially as and for the purpose specified. Oscillaring Valves & GEARING FOR PUMPING ENGINES C.A. Wilson, of Newpolt Ky. I do not claim producing an equilibrium of presences on the interiors arrace of the os-cillaring valve. That has been more or less perfectly ac complished by many before me, and probably by that of Mr. Wright, of Rome, N. Y, and by Bloomfield's patents of A D. 1851. But I have, as I believe, effec ed what has never before been accomplished, in balancing all pressures, b th interior, and exterior, on the oscillating valve, anising from steam at the boiler tension expanding or exhausting, while at the same time f have relieved if from all weight of work-fing gear, so that if has nothing to impedents motion, or cause wear in its chamber, except the friction developed by the pressure requited on N, fig. 4, to produce a sceam tight joint and its own weight. Second, balancing theend pressure in the interior, cussed by steam in conical valves, by the annular receases, b, b, equal and opposite to a a, and the balance, piscon, or steam valve on a boveled seat, as described. Thria, supporting, the tripping apparatus, consisting of the angle, tipp lever, togglejoint, and upper lever, or their equi-valuent, boas to releve the valve from all weight ad con-sequent friction and wear, as described. Torn, using the statigt arm to insure and regulate the cut of, and the cam jogs, I 12, of depth regulated by cut ing est sciews, or other equivalent devices for operating the sume, as set forth. This, using the independent riod attached to the piston of the steam cylinder for working the valve gear, where dy bringing the steam cylinder and pump cleves to each other, apare is economl ed, while power is gamed, as has been de-scribed. REFRIGERATORS-William Mootry, of New York city; I

Scientific American.

GRAIN AND GRASS HARVESTERS—Jesse Urmy, of Wil-mington, Del. : I claim, first, in combination with the driv-ing wheel placed inside the gearing, as described. I claim the angular tongue, i for preventing side draft, and at the same time allowing the horses to walk on the side of the stauding grass or graft. Second, I claim the described use of the balanced dogs, b h, under the driver's feet, for throwing the cutting appara-tus in and out of gear. Third, I claim making the parting and gathering board, f, hinged and adjustable, as set forth. Fourth, I claim regulating the size of the sheaves by means of the several ranges of gearing, p p within the dri-ving wheel in combination with the adjustable pinion, as set forth.

UNION PLATFORM SCALES—Augustus Sanborn (assignor to E. & T. Farbanks & Co...) of St. Johnsbury, Vt.; I do not claim connecting the platform with the beam and steel-yard by means of a rod depending from the latter, and ap-plied both to the lever and steelyard by kuife edge bearings or leops, as this is a common method of connecting such parts in ordinary platform scales, but as my invention has reference only to, or is an improvement on what is termed the "Union Scale," or that having a pan or platform, as specified

the "Union Scale," or instimaving a pain or pistion, as specified What I claim consists in the manner in which the platform lever, B, and the vertical suspension rod, b, of the pan and steelyard are connected and supported, the rod, b, being jointed at its lower end to an arm, I, independent of the lev-er, B, and said lever connected to the rod, u, by means of a pendulous rod, b, and a pointed or knife edge bearing, g, ar-rawaged near the upper part of the rod, b, as specified, the sume, while securing a vertical movement to the rod, b, the only one which it should have, effecting the advantage of allowing the lateral vibrations of the lever, B, to take place without disturbance of the steelyard or rod, b, as set forth.

FURNACES FOR TREATING ZINC ORES-S. T. Jones, of New York City : I claim the double use of the chimney, New York City: I claim the double use of the chimney, substantially as specified, by combining the said chimney governed by a damper or register, with the furnace and col-fecting apparatus, and mete posed between the two, substan-tially as specified, whereby the iron contained in the ore can be worked, after the zinc has been worked and collected as set forth.

thatly as specified, wherein the tron contained in the ore can be worked, atter the size has been worked and collected as set forth. FEEDING PAPER TO PRINTING PRESSES—Andrew Camp-bell, of Newark, N. J. 1 do not wish to be understood as making claum to the method of lifting sheets of paper from a pile by means of an exhaust bar or surface acting on the principle of suction, as I am aware that this was first done many yeers ago by M. Remod, in Europe, in a machinefor making civelopes. But I claim, first, the mode of operation, substantially as described, by which the pile or piles of sheets is or are mov-ed up of down and kept in position to be acted upon by the mechanism which removes it or which deposits it, which mode of operation consists in lifting or depressing the table or tables on which its pile is piaced by the mechanism de-scribed, or the equivalent thereof. In combination with the gauge and holding bar, or any equivalent therefore, which rest on the top sheer to kold it down, and which, by its po-sition on the pile and its connection, governs and controls the movements of the lifting or depressing the tables or tables on which the position to be acted hour by the movements of the lifting or depressing the stated and receiving tables, or either, as set forth. Second the mode of operation for holding the upper sheet of the pile on the receiving table on which the siles as a relaxing tables, or either, as set forth. Second the mode of operation consisting in the use of a wingor pile which resk on the upper eige of the pile at that end of invoer which the sheets move as the yield as a wingor pile which resk on the upper eige of the pile at that end of invoer which the headers move as they are dramm over the pile in which the news the sheet are dram over the pile in which the news the sheet previously deposited shift or each original expect the said and of invoer which the prevent of a wingor pile which is to be lifted, to the purpose of horiging the upper sheet of the pile, and which expect the sa

pile, the more effectually to insure the separation, as set forth. Fifth, placing the concave surface of the exhaust bar, so that it shall overlap or extend beyond the edge of the pile, substantially as described, that the whole of that portion of the sheet which is to be acted upon by the exhaust, may be within the concavity of the exhaust bar, thus canning the inward current to pass upwards under the projecting con-cave surface of the exhaust bar, and across the edges of the pile to insure the separation of the edges of the sheets, as described.

described. Sixth, blowing in a current of air at one or both ends of the concavity of the exhaust bar substantially as described, to insure the separation of the top sheet from the rest of the bile preparatory to removing it from the pile, as set forth.

the bile preparatory to removing it from the pire, as not forth. Seventh, the employment of the transferring or holding bur, connected with the exhaust and blowing bellows, or equivalents therefor, substantially as described, by means of which the end of the top sheet, which has been separated from the pile, is transferred from the exhaust bar to, and held by the said transfer bar until it is taken by the gripers, or any equivalent therefore, that the exhaust bar may be removed preparatory to currying off the top sheet, as set forth.

as set forth. Eighth, the methods of thumbing the edge of the pile, to insure the separation of the edges of the sheets where they are linble to adhere, by means of the rotaring spring filp, pers, substantially as described, or any equivalents there

The induct of the leaves of the formation of the second state of the second second state of the second second state of the second state of the second second second state of the second secon

shall hold and leave it in place on the rile, substantially as described, wherely the accurate deposit of the successive sheets is marke to depend solely on the period of opening the jaws, as set forth. Twelfth, making pressure on and packing the pile of sheets on the receiving table, as each sheet in succession is deposited, by means of a perforated plate, substantially as specified, the perforations in the plate giving free access to air, that the plate may be litted without drawing up the sheets of a pile in the order of the succession is deposited, by means of a perforated plate, substantially as specified, the performance in the deposited plate, substantially as specified. It is an aware that pressure has been made on the top sheet of a pile in the oneration of depositing the sheets by means of a presente on the receiver plate the plate and therefore 1 ao not claim broadly making pressure on the pile, except by means of a performing the sheets of a performing it d, whils they do not prevent the packing down of the pile. And manify, the employment of pointed punches to punch holes in the sheets are piled on the receiving table, substantially as described, or that the pile may be transferret and moved without shifting the position of the sheets relatively to each other in the pile, see set forth.

to start the candles from the molds, substantially as set forth. I also claim, in contradistinction from clamping the wicks.

I also chain, in contradistinction from champing the wicks, or from a tip bur or supporter, the clamping of the candles themselves, in the rossion in which they are forced from the molds, and thus holding them until ready to be removed, by which means I retain greater facilities for pouring into or filling the molds, and avoid the danger of breaking the candles or their tips, substantially as described.

Candles or their tips, substantially as described. PRINTING PRESS—Merwin Davis, of New York City: I claim, first. the oscillating bed, having a plane surface, and operating substantially as described, and contradistinguish-ed from a rotating bed, orsliding bed, by oscillatingbetween two given points. I also claim the construction and operation of the platen, in combination with said bed, as specified. I also claim the adaption and combination of the well-known fly, n, for laying the sheets, the slide. h, for there ception and the delivery of the paper, and the inking ap-paratus, 53, ee, and f, to thenew construction and arrange-ment of the bed, 52, and platen, d, substantially as describ-ed.

PROPELLERS—Augustin Duboce, of Brooklyn, N.Y.: I claim giving the blades the motions specified, in connecting them with the sides of the vessel by means of a ball and socket joint, or any equivalent therefor. in crubination with an arm projecting from the arbor of the blade, the end of which arm is counceted by a sliding and ball and socket joint, or any equivalent therefor, with a wheel or crank arm on the crank or driving shalt, substantially as and for the purpose specified.

purpose specified. DOBLE RECIPROCATING SPLIT-PISTON RODS FOR PUMPS. ETC — JOHN A. Burnap, of Albany, N. Y. I claim in re-ciprocating to grar of valves or pistons, operating essen-tially as and for the purposes set forth, the double recipro-cating split rod gear, ss', when arranged and operating lon gritudinally slde by side, as described, with the inner faces of the tools bearing against and acting as long moving guides and supports to each other, to strengthen them and prevent lateral shake or play, while their exterior is bound and tightened by the one pucking box, and the two rods or split portions, s', with their respective valves or pistons, are free to move separately, or in opposite directions to esch other. for the admission, discharge, or cutting off of the gas or fluid, or for operation by the gas or fluid, as spec-lifed.

WINDOW BLINDS-Frank Chase, of South Sutton, N. H. I claim constructing blinds by nailing or securing oblique or disgonal slats to both sldes of a fixme, the slats on one side of the frame being opposite to, or covering the spaces between the slats on the opposite side, as shown and de-scribed.

[This patent illustrates or rather corroborates a remark that we have often had occasion to make, to wit :-- the sim

plicity of an invention is no bar to its patentability. Window blinds made on this plan will be strong, cheap, and

effective. The nature of the improvement is fully set forth in the claim.

TURNING CYLINDERS OF WOOD, &C.—Matthew F Connet, of Plainheld N J. : I do not claim the revolving of the cutters at argpid and the block at aslow motion, as this has been done before. But I claim so combining a swing frame, which carries the block to be cut, with a cutter or cutters revolving around a fixed center, as that the block may be swung up to the cutters and first cut to the required depth or gauge without revolving, and then be revolved slowly on its cen-ter against the action of the cutters, to complete the turn-ing or cutting at a single revolution of the block, substan-tially as described. [The rapidity with which this machine operates, and the

excellent finish it gives to its work is surprising. A rough block of wood is centered, and makes only one revolution when it is transformed into a perfect, beautifully turned carriage hub. The various parts of the machine are simple. convenient, and substantial. The expense of construction is small. The operation of the improvement is set forth in the claims as clearly as it can be without drawings. This

is a very valuable and useful invention.]

is a very valuable and useful invention.] PAGING MACHINES-F. O. Derener, of New York City: I pay no claim to producing combinations by means of mova-ble figures. In whitever position they may be placed. But, erst, 1 claim the paule flange or guide flanges, in combination with the pawls, stopfinger, or stop fingers, and ratchet, for the purpose as described. Second, I claim the casm or cam shaped piece, E, in com-bination with a rotating, reciprocating, or vibrating arm, Q, and p-wis, for othe purpose of operating morable series of figures, so as to produce different combinations, and giving to them by means of the cam, K, the requisite motion and time of rest when the auchine is in operation. Third, I claim the combination of the inking table being surrounded by the figures or characters to be printed. Fourth, I claim the combination of the inking table and apping for the purpose described. Fith, I claim the combination of the pring hloge or joint with the roller arm for the purpose described. Sixth, I claim the mode of adjusinent by raising or low-eribed. EXHAUSTING AND SEALING VESSELS-W. H. Elliott, of

EXHAUSTING AND SEALING VESSELS—W. H. Elliott, of Plattsburgh, N. Y. : I claim the yielding liming, of mouth, b, the cnamber, a, with its elastic movable portion, ee, and the lever, d, with or without the liquid used tor expelling the air from the chamber, a, or their equivalents, when used in combination, operating in any nanunce essentially the same as herein described, and for the purposes set forth.

Sizing Hat Boniss-Phiness tamons, of New York City: I cloim the water box having the pactition or gradu-ated presure hoard therein, in combination with the vertical olsk wheel having a fibed or corrugated ince and self ad-justing weighted levers, the same being made and com-bined substantially as set forth.

Insting weighted levers, the same being made and combined substantially as set forth.
SAWING MACHINES—Bei-famin Fulgham, of Richmond, Ind.: I do not claim the arrangement of swinging frames shown for giving a horizon: al reciprocating motion to the saw frame, G, for that has been previously lavented, and was for merily patented by me.
But I claim, first, Placing the reciprocating saw frame, G, provided with a vertical circular saw, H, and a horizontal circular saw, J, within a frame, G', and placing or centering the log, Y, to be sawed between shares, XX. The frame, G', being lowered at every stroke or vibration of the saw frame, G, and the log, Y, turning simultaneously therewith, a gradually increasing distance at every stroke or vibration of the saw frame, G, for the purpose of cutting the stuff sum qual thickness direct from the log, and in a spiral manner, substantially as shown and described.
Second, I claim operating the log, Y, and frame, G', as shown, as dibar being attached to the when, K', as shown, and bar being attached to the same, I', which is secured to fer gradually increasing the log, and a slotted plate, N', to the frame, G', attached for the puppes of gradually increasing the log and the log, same of gradually increasing the log and the log, same discussion of the same shown and described.

The above invention consists of an ingenious arrange ment of circular saws, whereby the rough log, after having once been placed between the centers, is entirely cut up into beams and joist, at one operation. Such improvements are of great value, particularly in the West, and other timbered sections of the country. Mr. Fulghuin's machine is one of the best for the purpose with which we are acquainted. It is not very expensive in construction. It is easily managed, and its work is done in the best manner. Address the patentee for further information]

I also claim arranging the rack bars, a c, the supporting and guiding bars, H H, and the regulating screw, e, with reachother. in such a numer that the chiefs g h. may te marieto act in corresponding vertical or oblique directions in forming morthes substantially in the manuer and for the purpose set forth.

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HAND STAMP-Joseph Harris, Jr., and Elbridge Harris, of Boston, Mass.: We claim the peculiar oscillating motion of the stamp, also the same in combination with the inking roll and its adjusters, for the purpose described.

MACHINERY FOR MARING RORE-John Harris, of North Hoosick, N. Y., I claim, first, the described method of dri-ving the fiyers by means of the cone pulleys, h h, and the band or ring, F, either, the said band or ring or the bear-ings, b, b, of the fiyers having springs applied to keep the pulleys and band properly in contact with each other at all times, and the band or ring being movable in the direction of the axees of the flyers, to come in contact with alarger or smaller part of the cone pulleys, and thus yary the speed of the fiyers, and the twist of the strands, while the machine is in operation. Second, makin the cans, H H, of polygonal form to fit

in operation. Second, makin the cans, H H, of polygonal form to fit snugly between the pillars or side pieces, e.e., of the flyers, in combination with the springing collar, I, applied to fit over the top of the can, whereby the cans are enabled to be quickly taken from the flyers and replaced.

[This invention successfully accomplishes what has ong been needed in all kinds of rope and cord machinery, ery, viz: : a convenient and effective means of changing and regulating the degree of tightness in the twist of the strands. The ingenious devices by which this important operation is executed, are clearly set forth in the first claim. The othr claims relate to further improvements, whereby the cans which hold the yarn or thicad, may be very rapidly changed. There is also a new method of stretching the rope as fast as it is made. This patent is one of the most important issued under the present date. We regard it as a very valuable invention. Mr. Harris, we believe, is the patentee of other highly profitable improvements in this class of discovery.]

Classof discovery.] CUTTING FILES—Horace Hoichkiss, of Waterbury, Conn. I claims uporting the file hlank upon a compound carrisge, having both a rotary and lateral adjustment horizontally, while the cutter is adjusted only in a plane passing through the same time perpendicular to the edge of the cutter, and to the plane of the file carriage. I also claim placing the cutter in line with the hammer, and in the same adjustable frame therewith, so that when the nosition of the cutter is changed by an adjustment of this trane, the hammer shall also be adjusted by the same oper-ation to conform to the position of the cutters.

CARRIAGES-M. G. Hubbard, of New York City: I claim the cross bur for attaching the forward axle to the other parts of the running grav, and barfor the king bolt, com-bined and arranged substantially in the manner and for the purpose set forth.

STALLS FOR HORSES, &c.—John Jenne, of Bethany, N. Y.: I claim in stables or stallefor horses or other animals, the swinging partitions, SS, constructed and arranged sub-stantially as described, for the purposes set forth. Second, I claim the doors, DD, in combination with the planks, A A, so constructed and arranged as to operate sub-siminially as described. Third, I claim the sleeves, R R, in combination with the chains, CC, to prevent the animal from injuring himself by rubing against the chains.

MAKING RAILWAY CHAIRS-James Kelren, of Canton, Mass. (assignor to bimself and George Bauks, of East Bos-ton, Mass.): I do not claim the combination of bending dies, a bed and former. But I claim combining with each of the punches and its driver, a lifter and mechanism for operating such lifter, as s neethed, such punch being applied to the bending die, and supported on a spring, as explained.

PARLOR STOVES—Francis Kenuey, of Springfield, Mass. : I claim the arrangement of the pipes, M, tubes, N, chamber, H, and pipe, I, when provided with the dampers, u u q r, specially as shown a.d set forth.

The nature of this invention consists, first, in a peculiar rrangement of the fire grate, whereby the same may be agitated so as either to sift the ashes from the fire chamber, rempty down its contents-both in a convenient manner econd, in the employment of an ash drawer or sifter placed above the ash pit, and so arranged that it may be moved back and forth to sift the ashes from the cinders without the escape of dust into the apartment. Third, in an arrangement of flues and air heating chambers, so that by means of metallic pipes the heated air may be conveyed to several apartments simultane usly. Stoves made under this patent are as good or better than many of the hot air furnaces now in use, while their original cost and consumption of fuel is far less than the furnaces.]

Tar less than the furnaces.] MAKING GUTTA PERCHA BOATS-E. B. Larchar, of Bal-tinnore, Md. : I disclaim any particular form of boat air chamber or builkhead, or any cylindrical or other support-ers on gunwales; or to the mere making of gutta percha-vessels. I claim the method of making a safety boat or other vessel of gutta percha mixed with glue, so that the air chambers or other parts, if separately formed, may, together with the boat bi dy, be united and completed at one pressure; or, that if the biaces, knees. thwards, supporters, or other accessor-ises to the boat proper, are solid, the whole with the inner and out forms may be all made or completed forgether at one time, and at one pressure, substantially in the manner de-scribed

PROCESSES FOR SMELTING IRON-Samuel Macferran, of Philadelphia, Pa.: 1 claim the use of gas carbon as a fuel in the process of smelting iron, as set forth.

The process of smelting iron, as set forth. PROCESSES FOR HULLING COTTON SEED-D. W. Messer, of histon, Mass : I do not claim submitting cotton to pres-sure by passing it between rollers or otherwise, for the pur-pose of extracting the oll thereform. Neither do I claum subjecting the seed to the action of Meam to facilitate the expression of the oil. Nor do I claim any method of ex-tracting or expressing oil itom cotton or other seeds. But I claim separating the kennel it rom its shell and fiber, previous to expressing the oil, by the method described, or by any other method substantially equivalent, the seed bu-ing macerated to soften the shell, and then submitted to pressue, for the purpose substantially as set forth.

ADMINISTERING PULVERFLENT MEDICINES-JONES MOOFE and D. P. Adams, of Marietta, Ohio: We claim the combiand D. F. Adams, of Marietta, Ohio: We claim the combi-hadon of the machinery described for turning the emery wheel with a discharge pipe. I, for the purpose of admin-istering pulveulent substances, in cases of inflammation of themouth and throat.

BALANCE WATER GATE-E. N. Moore, of Lenox, I. B. Hanyan, of Chester, N. Y.: We claim constru-water gate by having two diks or plates, C. Q. of form, attached to opposite ends of a shaft, B, which transversely through a box, A, said disks bearing; the prejections, a, a, on the sides of the box, and ove proper h passes

cecond, 1 also claim the mode of ventilation described, by compelling the outer atmosphere are in before entering the in-terior, to come into mediate contact with the fee or other fugorite tools, operating in the macher substantially und for the uses and purposes mentioned. Third, takes chaim the mode describ d of ventilating, in comb nation with the cooler and refrigerating chambers, as described.

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CANDLE MOLD APPARATUS—Willis Humiston, of Troy, N. Y.: I am fully aware that pistons have been used in con-nection with candle molds, for the purpses of forcing out the molded candles. This I do not claim. But I claim making the op of the piston in which the tip of the candle rests, movable on the piston, so that it may remain in contact with the candle, which the piston is slight. Iy depressed or lowered, to bring it up with a sudden blow.

BRIDLE REINS--Kington Goddard, of Philadelpha, Pa.: I claun the arrangment of the reins, substantially as de-scribed, by making the suafflerein tubular in part to receive the curb rein, substantially as, and for the purpose set forth.

BORIN, BORING AND MORTHING HUBS-C, H. Guard, of Browns-ville, N. Y. (assignor to himself and John A. scrogss, of New Castie, Pa): I claim the arrangement of the levers, pp, and the segments, co., and n. with the right and left scrws, g?, and h', on the periphery of the bit holders, m m, in such a manuer that a proper position of the said levers and segments will cause the rorary motion of the said hold era to move themiongluidinally either inwards or outwards, and which position may be instantiy reversed at the pleas-ure of the person operating the machine, substantially as set forth.

and which person operating the machine, substantiany as set forth. I also claim arranging the rack bars, a c, and the u per and lower chisels, g h, m such a manner that the sold chis-els can be made to simultaneously strike upon opposite rises of the bub placed between them, substantially in the manner and for the purpose set forth.

ings, D, in the sides of said box, substantially as sh.wa and described.

[The egress of the water from the mill is through a suita ble box, furnished on two of its sides with round disk valves. Both valves are attached to and operated by a con nonshaft, which passes through and across the box. If only one valve were used, the pressure of water against it would render its opening or closing more or less difficult. By employing two valves on the same shaft, the pressure against one disk is counterbalanced by an equal weight against the other, so that both are opened and closed with the utmost ease. Millers will at once perceive that gates thus arranged will be very sensitive to the action of a governor, and will enable them to control the volume of water consumed on the wheel with the utmost nicety and regularity. This is a good invention.]

WATER METER-H. R. Worthington, of Brooklyn, N.Y.: I claim the employment of two cylinders, which may be di-tinguished as cylinders Nos. I and 2, with pistons working in the same, so arranged and combined with regard to eas in other, as that the motion of the piston in cylinder No. is an arcmate the supply and delivery valves of cylinder No. 2, while in like manner the motion of the piston in cylinder 12

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Scientific American.

No. 2. actuates the supply and delivery valve of cylinder No 1, thus producidg a positive and direct motion, as set forth.

HINGES-Joseph Plegar, of Birmingham, Pa.: I claim makings tolt on the pin part of the binge, and a cup or socket on the upper section of the hinge to receive the bolt, as set forth.

SHUTTLE GUIDES FOR LOOMS-H. T. Robbins, of Lowell, fass ; I do not now claim the shuttle guide. A, as that was stass; 1 do not now claim the shuttle guide. A, as that was secured to me by patent granted Sept. 14, 1852. But I now claim an improvement on said former inven-tion, which consists in furnishing the shuttle guides with pulleys, B g, or equivalents, substantially in the manner and for the purpose described.

WAGONS-J. T. Russel, of Tyler Co., Va.: I claim the construction of the standard receiver described, and the sp-plication thereof to wagon bolsters.

HYDRODYNAMIC FRICTION JOINTS-T. E Sandgren, of Wilmington, 1941.: I claim forming a hydraulic bearing for a rotating shaft by means of the water ducis passing through the cyllinder or case, in which the shaft . otates, for the pur-pose of supplying water as a lubricator to therubbing sur-faces, in the manner and for the purpose set forth.

CREESE PRESSES—G. R. Comstock, of Manheim, N. Y. : I am aware that rollers, to aid the outward movement of the platform have been used, but requiring separate as quasiments to tring them into action. Such therefore I do not claim. But I claim the roller, R, in the lower portion of the pres-sing gate, and brought into action by the rising of said gate in the removal of the pressure, substantially as and for the purposes specified.

BOTTLE FASTENINGS—John Allender, of New London, Ct : I claim the strap, E_c constructed with hinge and hook for holding-in, sud releasing the corks or stopples of bottles, jugs, etc., substantially as set forth.

JUES, etc., substantianty as controls. WROUGHT IRON SHAFTS—James Montgomery, of Balti-more, Md : I claim the construction of a hollow compound shaft, by means of the bars and wedges, arranged and weld-ed together only at the journals or bearings, as described, while the bars are separated by sufficient spaces at all other parts, in the manuer and for the purposes substantially as described. described.

STARCH MARING-Henry Colgate. of Jersey City. N. J. : I claim the process of manufacturing starch by adding to it in the process of making, a cervain amount of sugar, in the manner and for the purpose set forth.

CALENDAR CLOCKS-John Williams, of Hartford, Ct. : I claim com, leting the revolution of the wheel, B, at the end of the shorter months by means of sliding teeth which are suitably attached to the said wheel, and severally or col-lectively, as required, brought into such positions as to en-able them to be acted upon by the teeth on the daily levol-ving wheel, A, by means of the "four year wheel," D, which is on the same arboras, but independent of the wheel, b, the said wheel, D, acting upon the said sliding teeth by means of its forty-eight prijecing and receding divisions, and by pins est-teeth arranged upon it, as described, and be ing in the said wheel, B, substantially as forth. But I do not claim the method as stored. But I do not claim the method of giving motion to the wheel, D, as that has been before employed for a similar purpose. CALENDAR CLOCKS-John Williams, of Hartford, Ct. : I

[Calender clocks exhibit the days of the week, and the date of the month, as well as hours and minutes; they are by no means as much in use as we should think they would be. Mr. Williams is certainly doing his share towards their simplification, and consequent introduction to popular favor. We believe this is his second patent. The present invention relates chieffy to the motion of the four year wheel, and tends to simplify and cheapen the whole mechanism. In this species of time piece some of the wheels require to have curious movements. One of them occupies four years in making a single rotation, a portion of its duty being to look out for leap yeur. The inventor of these im-provements has no superior in this country in his profession. The above patent is one of value.]

sion. The above patent is one of value.] DRESSING LUMBER FROM THE LOG—Albert Walcott, of Detroit, Mich.: In the process and combinations which I have described, and fully set forth, there are several parts which arescommon and used by others, which I do not claim separately or in other combinations. I do not claim sawing lumber into cants or planks, the carriage, or any particular construction of cut-ters or planes for aurface. The cylindrical cutters, or any particular construction of cut-ters or planes if or aurface, or for tongueing, grooving, matching, rabbeting, beading, or molding. Neither do I claim the circular saw, as they have all been used before in other various m diffications. I do not limit myself to any precise form or arrangement of parts, nor to any particular device for moving or operat-ing them, for these may be varied to an almost unlimit edex-tent, without changle gibe principles of my invention, as set o th. I uo not limit myself to the rotary evaluate leauters for

tent, without thangi. g the principles of my invention, as aset oth. I uo not limit myself to the rotary cylindrical cutters for even stationary knife stocks used for surfacing. Neither do I limit myseli to the use of the circular saw for sawing off stuff, as a reciprocating way may be used, and many other similar variations may be made by any compe-tent or skillful machinist, without essential or substantial variation from the character of my invention, as set forth. I claim the particular arrangement and dressing out lumber from the log, cant, or plank, as the case may be, by successive operations, and in any manner substantial the say the same, as set forth and described, not confining myself, however, to any particular arrangement of mere mechanism call details or devices to effect the desired result, that is, a piece of lumber finished or partially so, as the case may be, for building and other purposes.

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of a cylinder having two or more patterns interchangeable at pleasure, in the manner, and for the purpose substantial-ly as set forth. Second, the employment of two or more patterns simul-

ly as set forth. Second, the employment of two or more patterns simul-taneously in the same loom interchangeable at pleasure, operating in the manner and for the purpose described. I also claim the apparatus for turning the cylinder, sub stantially as specified, whereby it can be moved through a greater or less space as may be required.

Scientific Notes and Queries.

ROTARY ENGINE BOATS-The London Artizan describes a small iron steamer fitted by Messrs. Rennie with disk or rotary engines, for the present Pacha of Egypt, which has been tried on the Nile, and has done remarkably well. The length of the boat is 60 feet, width 6 feet, draft 22 inches. She has two disk engines, 13 inches in diameter, two screw propellers (one on each stern quarter) of two feet diameter. With a pressure of 60 lbs. steam on the square inch, the Pacha had run this boat on the Nile at the rate of 12 knots per hour, and had beaten the best paddle boats between Alexandria and Cairo, a dis tance of 200 miles. Messrs. Rennie have built another boat of the same character for a passage boat on the canal near Madras, which has been tried and found to exceed all expectations. From the accounts of such boats, as given by the Artizan, we are of opinion that Barrow's rotary engine has performed as well, if not better. So far as we can recollect, we think that the plan of Messrs. Rennie, in fitting a screw to each engine, is new, and may be a more advantageous application of the screw than the common mode of having one large propeller directly in the center of the stern.

MONSTER GUNS-Wrought-iron guns of monster size and caliber are in course of manufacture at the iron works of Messrs. Nasmyth, near Manchester. They will be upwards of three feet in diameter, and about twelve feet long, weighing upwards of twenty tuns each, and will discharge a shell of 1,000 lbs. weight a distance of five miles. The Artizan states that it does not expect very brilliant results from these guns, on account of a detective mode of mounting them, no allowance being made for horizontal recoil in the manner they are slung.

DIAMOND REEF-This sunken reef, so detrimental to the navigation of New York harbor, is about to be removed. The city has made a contract with Messrs. Husted and Kroel to remove it for \$35,600. The general government ought to have done this long ago.

MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE-This Association will hold its ninth meeting at Providence, R. I., on the 15th of this month. The Local Committee have made arrangements by which members of the Association will recsive return tickets free, on the following lines of conveyance, viz.: Boston and Providence Railroad; Providence and Worcester Railroad; Hartford, Providence, and Fishkill Railroad; route from New York to Providence via Stonington; Philadelphia, Wil mington, and Baltimore Railroad.

PAPIER-MACHE HUTS-A papier-mache manufacturer in England has submitted to the authorities a model hut of that material, intended for campuse. The papier mache pulp is mixed with rags, the result of which is a paper plank much stronger than wood, all but inflammable, a non-conductor of heat or cold, and impenetrable by wet.

VULCANIZED GUTTA PERCHA-The following statement of experiments made upon phere. gutta percha vestments at the United States naval laboratory, will give additional value to preparations of that gum :- "Six pea jackets, made of gutta percha fabric, were baled in the same manner as the cloth clothing for the navy, under a pressure of thirty tuns.-They were then placed over a steam boiler of the most varied and wonderful character. in the yard, and remained for sixteen days sub-

three days. On examination this also was found uninjured.

MORE ABOUT CHARCOAL AS A DEODORIZER; USEFUL NEWS FOR FARMERS-The lecture of Dr. Stenhouse, F. R. S., on the uses of charcoal for sanitary purposes, has just been published in London. It has for centuries been known that charcoal had the power of absorbing noxious gases; but Saussure was the first who made any important experiments on the absorption of gases by charcoal, and he confined himself to the use of that made from box-wood. The following table exhibits the number of volumes of gas absorbed by a single volume of charcoal:-

Ammonia	90
Hydrochloric acid • •	85
Sulphurous acid	65
Sulphuretted hydrogen •	55
Nitrous oxyd · · ·	40
Carbonic acid	35
Bicarburetted hydrogen	35
Carbonic oxyd · · ·	94
Oxygen	92
Nitrogen	75
Carburetted hydrogen	5
Hydrogen	17

This absorption, which is camplete in twentyfour hours, has nothing chemical in its action, but is bas d on capillary attraction, just as liquids rise in very small tubes by the attraction of their sides.

Dr. Stenhouse was led to extend these researches by operating on ordinary wood charcoal, peat charcoal, and animal charcoal.

Animal charcoal is decidedly inferior to both wood and peatcharcoalas an absorbent, but as a decolorizer it is immensely superior to both. The putrefaction of animal and vegetable substances is in general a process of imperfect oxydation, forming and giving out a variety of complex secondary products possessing disagreeable odors, and acting injuriously on the animal economy. In all the modern systems of chemistry, charcoal is described as possessing antiseptic properties, and retarding putrefaction, while the reverse is the case, and that it hastens the decay of putrefying substances with which it comes in contact. This error has arisen from the fact that charcoal masks or conceals its operations, by absorbing and oxydizing the gaseous products evolved. This property of charcoal arises from its extreme porosity. Liebig estimates the pores in a cubic inch to be equal to at least 100 square feet of surface; and many have computed it at more than double that amount.

As charcoal is a powerful oxydizer, it is manifestly wrong to incorporate it with manure until it is immediately to be put in the ground, for no sooner is the charcoal and maoure in contact than a species of low combustion ensues, and the manure becomes greatly deteriorated. It may be applied in numerous instances to sanitary purposes; respirators for ordinary wear, and for workmen in deleterious manufactures; ventilators for crowded buildings, which have already been applied with complete success at the justicerooms in the Mansion House and Guildhall; for ships: screens for the gully holes of sewers; dissecting rooms and wards of hospitals; and in a variety of other situations, where a screen made of two sheets of perforated metal, filled in between with pieces of charcoal, from the size of a pea to that of a bean, would form a most efficient air filterer, and supply a pure and health-breathing atmos-

tense and brilliant of artificial lights and in its blaze the diamond and the hardest of metals become as wax. Possessing such varied powers, it has often been attempted to substitute it for steam and other motive agents, but hitherto without success. Not that it cannot move machinery-for it is a mechanic as well as a chemist-but because it has not been able to compete with steam in an economical point of view. That it ever will be able to do so, we dare not say no, in this age of invention, but it has many difficulties to overcome before it can. The account, however, published in the last number of the Sci-ENTIFIC AMERICAN, of Faraday's lecture, and the opinion he gave respecting the field for electrical investigations still spread out before the student and inventor, leads us to conclude that some new and great discoveries will soon be made in electrical science.

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Government Steamers.

The steam frigates Mississippi and San Jacinto, are now undergoing repairs at the Brooklyn Navy Yard. The new steam frigate Niagara is being built by George Steers (by contract) at the same Yard. The wellknown reputation of the constructor has raised the highest expectations respecting this, the greatest work he has yet undertaken. Her length will be 345 feet, and breadth of beam 55. When fluished she will be one of the largest war steamers-the longest at leastafloat. It is reported-but perhaps without authority-that Mr. Steers has asserted that she will be able to make 17 knots per hour with sails alone.

She will be built in a very superior manner, no doubt, and be a great improvement over government work. It is creditable to the Secretary of the Navy, that this contract was given to a nautical architect of the merchantile marine, just to test the difference between naval science and that practiced by the nautical architects in the civil service.

Street Sweeping Mechines.

The Street Sweeping Machines, which have been employed for some months so successfully in this city, we are afraid, will be laid upon the shelf on account of opposition to them by some of those in authority. We regret this, because we really desire to see these machines fully and fairly tested, in order to contrast their economy with that of hand labor. The streets of New York have always been distinguished for their filthiness, and we had hoped that the sweeping of them by machinery would be the means of rendering them more cleanly. We hope that contracts will yet be made with the owners of them.

Revolution in the Whaling Business

There are indications that the seat of the whaling interest is about to be transferred from the Atlantic to the Pacific coast. Arrangements are already in progress with several houses to transfer their business from New Bedford and other places, to some point on the Pacific coast. San Francisco, Benicia, Oakland, and Monterey are spoken of. Orders have been given to captains of vessels now employed in the whale fisheries in the North Pacific to recruit at the ports of California.

New Mode of Vaccination.

The Dublin Medical Press says, "without punctures, three regular vaccine postules appeared on the fourth day, and were produced

So that have been as the second of the second, so the purpose is as specified. Second, we claim the method described, of fitting a horizontal or inclined roasing cutter, so that it can be kept ratially with any curved mola or cut, it may be forming, viz., by the use of the yoke, 3, and parts attached, substantially as specified.

RE-ISSUE.

BE-ISSUE. LOOMS FOR WEAVING FIGURED FARRICS-Richard Gar-sed, of Frankford, PA. Patented originally Nov. 6, 1849: It will be obvious to any practical weaver, that I can modify this device in various modes without altering the nature of the invention; for example, by moving the zay-zag, s, end-wise upon the shaft, I can make the desired changes of the pattern, instead of turning it upon its axis by means of the pattern, instead of turning it upon its axis by means of the pattern, is a great variety of patterns is wanted, but I prefer not to employ them generally, they are however a well-known device, and I to not claim them. I claim, first, operating the heddle irames by the action

. .

By it the telegraph operator can, with his ject to an average temperature of 190°, at iron pen, write a letter three thousand miles times as high as 212°. On examination, the distant. By it the electrotypist coats the garments were found in the same state as most common metals with silver and gold; when packed. There was no adhesion of the by it metals are extracted from aqueous solufolds, nor any decomposition of the gutta tions, and even from the human system. It percha. One jacket was dipped in water, is employed to plate medallions, busts, jewelrolled up and sewed in the corners (but not ry, and even the very type which prints the pressed,) and subjected to the same heat for words we write. It can produce the most in caps for steam.



Electricity.

It appears to us that we must be on the verge of some new and great discoveries in electricity. The applications of galvanic electricity, since it was first discovered, are

the arms of two children, and rubbing the spot with the sharp end of an ivory knife. The fact that young girls take the cow pox on their fingers when milking, suggested this method of vaccination."

by merely placing some vaccine matter on

The Steam Fire Engine.

At a fire which took place in New Orleans, on the 19th ult., the Steam Fire Engine Young America did wonders. It forced four powerful streams of water against the building (∇e randah Hotel) and kept them up with great steadiness for 10 hours. The firemen of the hand machines stood by and threw up their

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Inbentions. Hew

Improvement in Water Wheels. The accompanying figures represent the water wheel of Dean S. Howard, of Lyonsdale, Lewis County, N. Y., for which a patent was granted on the 29th of May last.

Fig. 1 is a side elevation of the wheel scroll and flume, and fig. 2 is a central horizontal section through the wheel and scroll. The same letters on both figures indicate similar parts. The invention relates to central discharge wheels, and consists in an arrangement of the buckets and plates between which they are secured, in such form as to receive the direct action of the water at the periphery of the wheel, whence they verge from a vertical towards a horizontal course along the shaft, forming a double conical screw, which is affected by the re-action equal to the excess of motion of the water over that of the wheel.

A represents the flume for conducting the water to the wheel, it is so arranged that about one-third (more or less, according to circumstances) of the area of its cross section, overlaps the periphery of the wheel, so that that portion (one-third) of the water strikes on the first buket, the balance being conducted onward in the gradually tapering scroll, B, each bucket around the wheel will be acted on by the direct force of a portion of the water in its passage through the scroll until the whole of it enters the wheel; the buckets, C, are set in between two annular plates around the shaft, these plates, d d', are curved from the periphery to the axis, as shown in fig. 2, the one, d', being secured to the shaft whilst the other, d, is attached to it by bolts passing through both near their peripheries, and clamping the buckets edgewise between them, the buckets are cut straight, their edges are parallel, and in conforming to the curved plates, they are twisted about one fourth round, so that the end near the axis of the wheel is nearly at right angles to that at the periphery (and may be continued with the same varying curve and twist as represented in dotted lines) forming a spiral or screw partially around the shaft, which gradually straightening, terminates parallel with the shaft, the end being radial, and its edge at right angles to the longitudinal center line of the shaft. This form of wheel on a horizontal shaft should be constructed double, so as to discharge the water to the right and left equally (as represented) to obviate any lateral pressure on the jour. nals which would result from the re-action of the water on the screw part of the buckets, it is discharged on one side only, but if on a vertical or inclined shaft, the single wheel should be used, discharging the water downward, in which case the buckets may be continued in a spiral form indefinitely down the shaft; the flume, A, may be arranged either vertically or on an incline, as most convenient. The water, in passing through the wheel, is made to change its course after striking the buckets at the periphery of the wheel, converging towards the center, and escapes laterally at nearly right angles with its course in the scroll, or may be continued until perfectly at right angles thereto, or spirally down the shaft, as described; it travels through the scroll, B, at a velocity due to the hight of its column in the flume, and in its centripetal direction, each revolution of the water in a smaller circle than the preceding one would be performed in a proportionately less amount of time, provided it met with no resistance; then supposing the orifice of discharge at the center of the wheel to be half the diameter of the wheel, the water, if unobstructed, would, at that point, make two revolutions in the same time that it would occupy in performing one in the scroll at the periphery of the wheel; again, supposing that the periphery of the wheel to travel at the same velocity as the water in the scroll, the orifice of discharge being half the diameter, would travel through half the space, consequently, the motion of the water

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double that of the wheel at that point, and so | the water over that of the wheel at the va- | ing in the same direction that the water passin proportion at different parts of the wheel rious parts thereof. The water entering the es through the scroll, the water, in being between said orifice and the periphery, and scroll and passing round the periphery of the crowded towards the axis of the wheel, mainwill therefore re-act upon the wheel's buck- wheel, strikes with a direct pressure on the tains a continuous bearing on the bucket, ets in proportion to such excess of motion of convex side of the bucket, the wheel revolv- equivalent to the excess of motion of the wa-



ter over that of the wheel, as described, and | bucket, it must impinge to another point in |ursteadiness of motion in the wheel would the direction in which it strikes the bucket its surface, so that the space between these be the result, whilst in this, the combined diis such that it does not infringe thereon, but two points of deflection on the bucket would follows smoothly round, until it arrives at be but slightly, if at all, affected by the presthe discharge orifice; whereas, if the water sure or re-action of the water, and considerawere to strike on the concave side of the ble fluttering of the water, and consequent | ter addressed to Mr. Howard, at Lyonsdale.

rect action and re-action of the water is secured, and steadiness of the wheel obtained. More information may be obtained by let-

not of the arms, is, or can be diminished by such plan.

The hub, A, and the stationary hollow arms, B, may be cast in one solid piece, or the arms, B, may be secured in any permanent manner to the hub, A, or the hub and arms. B, may be cast in two sections, divided centrally at right angles to the shaft or axis of the wheel. This will admit of the interior of the hollow arms being plaued out, so that the sliding arms may fit snugly therein. An enlargement, C, is left at or near the end of the arms, B, in which is arranged a spur wheel or pinion, D, the axis of each of which may pass through the arms to receive a crank, F by which they may be turned. These spur wheels being enclosed within the arms, are beyond the reach of injury. E are arms fitting within the hollow arms, B, and are provided with a rack into which the pinion, D, takes, and by means of the winch, F, the arms, E, may be run in and out at pleasuse. The extreme outer ends of the arms, E. may terminate in two, three, or more branches, G, on each one of which is a bucket, H. By arranging the buckets in sections on the arms, it expedites their adjustmen as several may be thus moved at one time. When the arms, E, are run in or out to a suitable or desirable distance, they are held in adjustment by a set screw, pin, or bolt, or any other well known contrivance.





The annexed figure is a side view with the | wheel, and the movable arms with a rack, so interior parts in dotted lines, of an adjustathat the latter arms with their buckets may ble paddle wheel, for which a patent was be drawn into or run out of the hollow arms, granted to Levi M. Dehart, on the 3rd of | for the purpose of diminishing or increasing the diameter of the wheel at pleasure. last April. The nature of the invention con-Several plans of making reefing buckets sists in providing hollow arms, which are permanently fixed to, or a part of, the hub, have been essayed, but this differs from them into which other arms are passed which car. | inasmuch as by drawing in the buckets towards the center, the same still project, and ry sections of two or more floats or buckets at the discharge, if unchecked, would be The fixed arms being provided with a spur the circumference of the buckets only, and with Mr. Dehart.

Each of the series of buckets may be united by a metallic segmental brace, J.-The arms, buckets, &c., indeed the entire wheel may be increased or diminished, as experience or the special purpose to which they are to be applied may require.

More information may be obtained by letter addressed to T. O. Yarington, of Reading, Pa., who is joint owner of the patent



Scientific American.

Scientific American.

NEW YORK, AUGUST 4, 1855.

Freedom from Danger in Descending Wells. those advantages as to push them into the Quite a number have lost their lives regions of fable. The initial velocity of a from gas by descending into wells, for the one pound cannon ball, with a charge of purpose of cleaning them out, and the Cleve-12 ounces of powder, is 1680 feet per second, land (Ohio) Herald gives an account of a or 1145 miles per hour. If the removal of case which recently occurred in Columbus, atmospheric resistance can make railroad in that State, where four persons, after being trains travel at this velocity, according to nearly deprived of life in a well, were only the Tribune, it is time that something was rescued from their perious situation at their done to obviate that resistance which, at the last gasp. The cause of death in such cases common rate of our express trains-45 miles is carbonic acid gas, or as it is familiarly -shows a loss of speed amounting to 1102 called, "choke damp." It prevents respimiles per hour. That our railroad trains ration; it extinguishes flame, and is genermeet with such a resistance, no man in his ally found at the bottom of wells, it being senses will credit. of greater specific gravity than air. It is But what is the atmospheric resistance generated by vegetable decomposition, and to locomotive trains? It is a mere trialso by combustion, and commonly finds its fle; this we can easily demonstrate. The way into wells from seams in the strata of resisting pressure, upon the square foot of the earth, from adjacent places where chema body passing through the atmosphere at 50 ical action is going on. Any well may be miles per hour, is $12\frac{1}{2}$ lbs. If we consider descended with perfect safety by the use of the front end of a car moving at this rate to quick or fresh burned lime, recently slacked, contain 50 superficial feet (nearly 7×7) in or without being slacked. When there is round numbers, we have atmospheric resistchoke damp in a well it can easily be ance to the train passing through it, amountknown by letting down a lamp or candle by ing to $50 \times 12\frac{1}{2}$ =625 lbs. Now a locomotive a cord. If the light burns freely, it is a with two 12-inch cylinders, carrying steam at sign that no choke damp is there, and the 120 lbs. on the square inch. exerts a pressure well may be entered with safety ; but if the in round numbers of 27142 lbs. Thuscandle burns dimly, or is extinguished, it is area of cylinders $12^2 \times .7854 \times 2 = 226.1952 \times$ a sign of danger. To remove this gas so as 120 lbs.=27143.4240+625=43.42, only a to render it innoxious to the person entering forty-third part of the pressure exerted by the well, all that has to be done is simply to the two small cylinders, The pressure upon throw down some pieces of fresh burned each square inch of the car only amounts to lime into the water, and agitate it with the a little over 1.37 ounces $(12\frac{1}{4}\times 16 \div 144)$ not bucket on the rope, or with a pole. Another two ounces. Two and a half pounds extra plan is to slack the lime in a small heap, pressure of steam will balance the entire remix it with water in a tub, and throw down sistance. After the removal of this small presthree or four pailsful into the well. Or if sure from railroad trains, by what rule of it is desired to enter the well and not disturb science can the Tribune make them surpass the water in it, take about half a pailful of in velocity the flight of a cannon ball? slacked lime, mix it quickly with cold water The amount of resistance of water to a vessel in a small tub, and lower it down into the or body passing through it, and the best methwell by cords attached to its lugs, so as to ods of diminishing that resistance, are quesrest on the surface of the water. The contions of some importance to the scientific tents of this tub must be stirred up for ten world. Great improvements have been made minutes with a pole in the well and then left within the past twenty years in forming the suspended for an hour. When drawn up, hulls of vessels, by which their speed has any person may descend the well with safety. been greatly increased, and yet we find in The philosophy of this is, that moist lime has the very last number of the Nautical Maga great affinity for carbonic acid gas, and it azine, published in this city, that the best therefore absorbs it rapidly from the atmosshape of vessels is still a problem. Sir phere. If we take some fresh slacked lime, Isaac Newton, in his Principia, has pointed and stir it up in a vessel containing cold out the solid of least resistance, and Scott water, and allow it to remain so for five or Russell has claimed the discovery of the six hours, a hard scale, like that of thin ice, "Wave Line" as being the best for ships, will be found on the top of the water. This and yet we are told that the best form for scale is carbonate of lime, formed by the ab ships is still a problem, and one too of vast sorption of carbonic acid gas from the atconsequence to shipbuilders. It is one, howmosphere (a very small quantity of carbonever, to which our railroad engineers do not ic acid is mixed with all the air we breathe) seem to devote much attention, because it is and the scale is a thin pellicle of stonenot as important to them as to nautical armarble. The lime of good mortar becomes chitects. hard by returning to its former condition of limestone, by the absorption of carbonic Post Office Management. acid gas from the atmosphere, and the for-Although we are far in advance of all other nations in a free government by the neomation of a thin scale of carbonate of ple, and in the general economy of its adlime on a lime vat, affords evidence of the ministration, still we must confess that in manner in which some of the sedimentary rocks were formed. No person need be afraid some things, we are be hind some other countries. In Post Office management, for exof descending into a well if he pursues the directions given. By letting down a candle ample,-respecting which we should stand, like Saul, above all other governments,into the well, after the lime has been allowed are, on the contrary, behind Britain and even to play its part, its light will indicate when despotic Prussia. In England and Prusit is safe to descend. For the safety of life, we hope this information will be circulated sia, the safest and most convenient way of transmitting money is through the Post far and near. Office. In the last-named country, so safe Locomotion; Resistance of the Atmosphere. and convenient is the postal system, that The Tribune of the 16th ult. contains a it is customary for persons going to distant long editorial article on locomotion, in which cities, to deposit the money they intend to are some very good and some erroneous ideas. use at the end of their journey, in the Post It has however suggested a subject often mis-Office, before they start, and get an order for understood, viz.: the resistance of the atmosthe same, the government becoming responphere to railroad trains. In speaking of the sible for it. This is also the case in England, resistance of the atmosphere to railroad and has been found to operate well. In Bertrains, it says, "were it not for this they lin, Prussia, a plan is in operation, which could be very economically moved (at the we should like to see introduced into all our rate of several hundred miles per hour. The cities; it consists in having light Post Office wagons, with letter deposit boxes, pass resistance would be less for the fast than the slow trip, and with the engineering requisite through the streets at regular intervals evfor the circumstances, the swiftest cannon ery day, to carry letters to the General bal might be easily outstripped." The ob- Post Office. The people have but to drop ers.

that would be obtained by the vacuum or wagon, and away they go safe to different atmospheric tube railway of Ithiel S. Richardson, of Boston, which has been illustrated in our columns, but like Barnum with the Fire Annihilator, it has so far exaggerated

ject of the Tribune was to show the benefits | their letters at their own doors, into the this could be easily carried out in all our large cities, and would be a most convenient arrangement.

> By a recent law, the Province of Canada has started out in advance of us in Post Office improvements.

All Canadian newspapers are allowed to pass free in the Province, and no charge is made upon those from England. The expenses to carry out this system must be paid from the general fund, but such an appropriation is a wise one? It facilitates the circulation of useful information, and thus it tends to educate the people. To this system, the aphorism of Lord Brougham, " the schoolmaster is abroad," may well be applied. The spirit of democracy is to adopt every system which will benefit the people, let it originate where it may. We therefore hope that our people will give these remarks a careful consideration prior to the meeting of Congress, in order that our Post Office system may be reformed to meet the wants of the age and the people. We must yet engraft the "money order," ocean penny postage, free newspapers and periodicals, and the cheap carriage of light packages upon our postal system. Until we do this, we will be behind Britain and Prussia, and this we should not be in anything.

Iron Shipbuilding.

We suppose that a number of years must pass away before iron ship-building will be carried on to any extent in our country. Timber versus iron ships is simply a question of economy: we can build timber ships for less than iron ones, therefore while we can do this, such ships will take the lead. In some other countries, where plate iron is cheaper and timber dearer than with us, iron ship-building has become a great business. Glasgow, in Scotland, stands pre-eminent for steamship-building. The new steamship Persia, for the Cunard Line, has recently been launched there; it is built of iron, and is the largest iron steamship afloat, being 360 feet long on the keel, 45 feet in breadth, 32 feet deep, and of 3600 tuns burden. The length of it is eight times that of the breadth -showing how different the proportions of vessels are now from what they were thirty years ago, when three times the length of the breadth was considered the best ratio of proportions. The breath across the paddle boxes, however, is 71 feet : still, it appears to us, that a little more breadth of hull would not have been amiss to give her greater stability in the water. Robert Napier & Sons are the builders of both hull and engines; the latter will work up to 4,000 horse power-so it is stated-but the horse power of marine engines is a very indefinite matter. Three years ago the British Government would not allow an iron steamer to carry the mails ; this decree is now reversed.

This monster of a vessel is built in seven water-tight compartments, and will have accommodations for 300 passengers. She will be ready for sea in October, and unless the British Government take her up for the Crimean service, we may expect to see her here about the month of December next.

There are thirty-six iron ship-building establishments in the neighborhood of Glasgow, on the river Clyde. The capital employed is \$10,000,000, and 50,000 skilled workmen are engaged; and at the present awarding of prizes, and honorable time they have 32 new iron ships on the do "the genteel thing." stocks. The arrangements for their construction and alteration are very perfect. A short time since an iron steamer was lengthened 30 feet, and her capacity for carrying increased 200 tuns, in 14 days. Another steamer was cut open in two places to avoid removing the engines and boilers, and 35 ft. added to her length, in 21 days. A few of the small steamers for carrying coal between this port and Philadelphia, are built of iron, and so way the steamer John Stevens (recently burned,) but, as we said Oregon. before, while timber vessels can be built cheaper than iron ones, we do not expect to see many of the latter running on our wat-

The Collins' Steamship Co. are about to build a fine new steamer to replace the Arcparts of the world. With our stamp system, tic. She is to be much larger than any of their present vessels, and will no doubt be a credit to her builders.

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Gas Carbon.

In the list of claims this week, it will be observed that a patent has been granted for the use of gas carbon in the manufacture of iron. This substance is not a gas, as many may be led to suppose, for carbon cannot be obtained in that state, but is merely the name for the quality of carbon, as it is a substance found in various conditions. It is found nearly pure as the most brilliant of all gems -the diamond; also as graphite, of which our common pencils are made; as the anthracite coal which is used for cooking our food, warming our dwellings, and raising our steam; as lamp black for painting, and as charcoal for manufacturing purposes. The uses and combinations of carbon are moreover beyond description. Gas carbon is the product of a slow deposition of carbon from coal gas at a high temperature, and is frequently found lining gas retorts, and filling up accidental fissures in them. It has a considerable resemblance to black lead, but is too hard to give a streak upon paper. It has a metallic luster, generally compact, but sometimes found in fine fibers. It appears to us that it must be excellent for manufacturing iron, but it cannot be obtained easily, nor at a low price.

Complimentary Token.

We beg to acknowledge the receipt of a very complimentary letter from the Members of the Mechanics' Institute, of this city, through their able Corresponding Secretary, Chas. H. Delavan, Esq.

The honor of being elected to an Honorary Membership of so useful and distinguished a Society as the Mechanics' Institute has become, is one that will be ever appreciated by us, so long as its present standing for usefulness is sustained.

Fiendish Railroad Outrages.

A diabolical attempt was made on the 18th ult. to throw one of the trains of the Hudson River Railroad off the track at Greenbush, by placing a large rock on the rail. The night was very dark, and the train experienced a severe shock, but was not thrown off.

On the night of the 19th, the express train on the Central (N. Y.) Railroad was thrown off the track, three miles west of Syracuse. by a rail being misplaced by some demon in human shape. None were killed, but three or four persons on the train were severely hurt. Hanging is too good for any person guilty of such crimes.

The American Institute.

The Institute is determined, we understand,

to make a considerable flourish this year, the Crystal Palace having been engaged for its Fair to be held in October. Castle Garden being converted into a grand receiving place for emigrants, the Institute has no where else to exhibit but in the Crystal Palace. It may be a little too far up town, but we hope the Fair will be a good one. The managers of the Institute have, by this time, learned considerable by dear-bought experience in conducting fairs; we think they will make amends for past errors and come boldly up to the summit of excellence in impartiality in the

Steamship Burned. The fine new steamer America was burned to the water's edge at Crescent City, Oregon, on the 27th of June last. It was the finest steamship in that Territory, and cost \$140,000, on which there was no insurance. Gold in Oregon. Rich gold diggings have been discovered up the Columbia river, near Fort Colville, in

In the notice, in last week's Sci. Am., of the engine to work Dr. Gorrie's Ice Machine, for 30 read "10 horse power."

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Foreign Editorial Correspondence .- No. 9. Paris Exhibition, &c. PARIS. July 5, 1855.

I mentioned in my last letter the discovery

of a new metal by a young chemist, M. Deville. He has made another discovery that promises well; but I just now remember that French chemists, although vigilant and often successful in their researches, are sometimes a trifle out of joint in the practical results of their published discoveries.

To sustain this point it is only necessary to consult the voluminous works of the French Academy of Sciences. They have not yet succeeded in making diamonds, nor in producing gold, but I confess they have been able to cheat the eye in each of these substances with much effect, and it now remains to be seen how far Deville's labors are to be made practically useful. He has on exhibition specimens of the metal called titanium, an infusible substance resembling oligist iron. He obtains it by extracting pure silicon from the acid of flinty pebbles, which combines with rare affinity with all metals, and gives to them, and especially to copper, a greater degree of hardness than that of steel, and is proof against the biting of the file, and can be substituted for steel or cast iron in many of their applications. The process claims cheapness and simplicity, and upon these points the discoverer rests his hopes of success.

France is comparatively poor in metals of all kinds, and it is only by dint of industry that she is enabled to produce specimens equal to England and Germany. The copper mines of France are merely found in a state of sulphurets, or pyrites, and scanty at that, and it is only by the aid of repeated smeltings (20 and 30 times) that the pure copper can be obtained. It will be readily understood that such repeated manipulations in a country where fuel is very costly, enhances very much the net cost of copper, and for this reason French copper cannot enter into competition with that of other countries. A new method of treating it, called the wet process, has recently been discovered by M. Barruel. The sulphurets are several times roasted, and the excess of sulphur contained in them supplies all the necessary fuel for their combustion.

The products obtained by these repeated roastings are sulphurous acid, oxyd, and sulphate of copper. This mixture is then washed in water, and the sulphate of copper alone is dissolved. The liquids are then manipulated by means of lime or magnesia, which give out additional oxyd of copper that is joined to the former; and the sulphate of magnesia, which is also formed by this process, is employed for coloring purposes.

Thus copper is obtained by this process in the state of oxyd, without any expense of fuel; and to obtain pure copper equal in richness to the finest specimens of foreign countries, it is only necessary to melt the oxyd by heat. The process has been tried with much success, and will probably change the copper metallurgy of this country. The attention to the subject of artificial manures -and there are already in operation several extensive manufactories devoted to this

course, be inventors, but an inventor to be the subject of "Gophers," in which you deare sent to the United States in exchange for cond crushing is necessary; also a second successful and sure, must be a man of sciscribe them as "a short, thick animal, of the warming and pressing. The crushing is done guano. These artificial manures are made ence. Inventive genius is a much more commole species," &c. Since reading the above of the residuum of blood, excrements of by grooved cylinders, and the finishing by mon article than sound judicious application have asked several men, who have lived in ns of vertical mill stones rolling of carrion bones, horns, animals, means to an end. low, sandy countries, about gophers, and matters. Ammoniacal waters obtained from table warmed underneath by steam. The gas are collected and mixed with the sulstones commonly used are granite, and are they all agree in describing them as some They have a newly invented cannon in what resembling the common turtle, with phate and phosphate of lime, silex, and coal made to revolve about a dozen times per Nantucket which throws a ball ten miles! the exception of being much thicker, and in dust. The office of the latter is to preminute. The oily pulp is then placed in The Mexican Government have purchased stouter built, and the lower shell projects vent putrefaction of all azotic substances, horse hair bags, and pressed by horizontal twenty-five of the smallest, and it is expectsome inches in front, something in the form and to preserve them in its pores, in order to hydraulic presses. Some 20 or 30 ordinary ed that orders will be received for a supply of a spade, and supposed to be used for the of the larger ones for the Crimea. The prinrestore them afterwards to vegetable plants bags are pressed at one time. in such quantities as they may require in purpose of excavating the soft sandy soil, ciple involved in the construction is not The pressed cakes are then removed from in which they burrow like moles. They are stated.-[Exchange. their development. In the substances comthe bags, and are submitted to a repetition noted for their extraordinary strength, one [The principle of this cannon must be the pounded into this kind of manure, every of the same process. The oil thus produced of medium size—say ten or twelve inches same as that used in the manufacture of the is of the first quality for illumination. This vegetable finds an element of its existence, and thus without the loss of a single availais not all: the refuse of the pressed seed is across, being able to carry a moderate sized celebrated three-league boots, which enables man on his back, though their motion is very ble product for other uses, France supplies the wearer to propel nine miles at every given to cattle, and forms a very useful food for them. The oil is purified by mixing it slow and heavy. stride. Wonderful, truly, is the march of an artificial manure of great value. There is no doubt of there being such an-The reason of the exchange of this maninvention. Sebastopol cannot hold out much with sulphuric acid and hot water or steam, ure for the guano of South America, is beand shaking these substances together in a imals, and if they are not gophers, what are longer.

to supply natural nutriment to the sugar cane, while guano is found to be better for the soil of France.

A process for the better preservation of alimentary substances, has very recently been put into practice here. It is the invention of M. Masson, who has some specimens on exhibition. The system commonly practiced here has been to preserve vegetables in alcoholic liquids, which imparts to them an offensive taste. The immediate element of fermentation in vegetable, fruits, and meats, is water. By the process of Masson this element is abstracted by the heat of graduated ovens, and are thus rendered free from putrefying causes; and to give back the flavor of the substances thus treated, it is only necessary to dip them into water, which is said to restore them almost entirely to their original condition. For army and navy purposes, this process, if correctly based, will be useful, and it has already received the attention of a well known house here, who are engaged in working it, it is said, with complete success.

Owing to the failure for the past two years of the vinewards of France, to supply the people with wine,-an article that enters into the daily consumption of almost every family in the country-the government rescinded the duty upon Spanish and Italian wines, which have a peculiarly sweet flavor. Advantage has been taken of these wines for the fabrication of an artificial wine that has shammed the genuine to such an extent that the best critics find it difficult to distinguish between them. By a mixture of the juices of the apple, pear, and grape, a very palatable beverage is produced, and in considerable quantities, but the greater trade is carried on by the aid of the imported wines, mixed with sugar, and a cheap alcoholic substance imported from the United States.

The system of adulteration so well known in our country is beginning to come into use here, and unless the fatal disease of the last two years—that has so seriously injured the grape-is remedied, sad results will come of this nefarious mixture.

I observe in the Scientific American of the 2nd of June, a brief notice of a plant called Colza ; it grows in abundance in the north of France, and also in Belgium, and is extensively employed for the manufacture of oil. Colza, of a good quality, must have full, black, smooth grains; they require to be kept in perfectly dry granaries, and should be frequently moved and aired.

Vegetable oils, as is very generally known are of two classes; 1st. Siccative Oils, which are extracted from flax seed, heads of poppies, nuts, &c. 2nd. The non-Siccative Oils. which are extracted from the olive, colza, al monds, sun flower, &c.

The soil of France is most perfectly adapted to the growth of these productions; they are sown in October or November, and ripen in May or June, and hence occupy the ground but about six months.

In the fabrication of oils from the seeds of but the best results and the largest portion Government stands between the Company chemists of France have paid a good deal of the colza, the following processes are neceshave not been blunders : neither have they and all harm on this point. S. H. W. sary (I speak of this plant because it is the been the result of long and tedious labor, most important) :--1st. Cleaning or winnowbut a pleasant and easy application of cause Gophers, Turtles, and Salamanders. ing the seed. 2nd. Crushing. 3rd. Warmto effect, and the result equally satisfactory. MESSRS. EDITORS-In a late number of the branch of business. ing by fire or steam. 4th. Expression. Af-Men of science cannot, as a mere matter of I understand that immense cargoes of it SCIENTIFIC AMERICAN, I saw an article upon ter this process is gone through with, a se-

cause the French manure is better adapted hermetically sealed vessel. After two days this oil is completely refined and ready to be removed. Two parts of acid are only necessary for 100 parts of oil to effect its purification, providing hot water is used. If steam is used only half a part of acid is necessary. This subject, as suggested by the SCI. AM., is really worth the attention of our farmers.

> In France there is a Society of Acclimation, whose business is to undertake to acclimate any useful plant or animal not found in the country. An effort is now being made to cultivate a plant called the Sorgho, from China. It grows to the hight of indian corn, and from developements made with it, it promises to be a successful competitor of the beet in the manufacture of sugar. It has the advantage over the beet in not impoverishing the soil, as it extracts from a smaller quantity of potash and soda. The stalk is crushed like the sugar cane, and gives out a sugar superior to the beet root. The specimens on exhibition are fine. It also affords alcohol, which is obtained by the usual process of distillation.

> I notice this matter for the purpose of calling attention to the labors of this Society its objects are praiseworthy, and the result will aggregate many important benefits to France as well as to the whole world. It is a subject not unworthy the attention of American agriculturists, and I hope a similar society will be established in our country.

> Americans very generally entertain the idea that the Paris Exhibition is a small affair in comparison with the London Exhibition; and one writer in a New York daily paper even places it below the New York Exhibition. In contrast with these mistaken ideas. I copy a resolution adopted at a late meeting of the English jurors under the Presidency of Lord Ashburton. It was unanimously resolved :

> "That it is desirable to call the attention of the English public on the great merit of the Exhibition, and its superiority as regards the objects exhibited over that of 1851, and is eminently worthy of the attention of artists, manufacturers, and their workmen, and of all classes of the United Kingdom."

> It is equal to the London Exhibition in size, and only wants the immense Crystal Palace of Sydenham to make it superior to it in effect.

> The New York Exhibition is a mere ba gatelle, a fly-blow, in comparison. For the two Sundays past more than 200,000 people have visited it, and I am sure none are disappointed who take the pains to visit every department. I have occasionally come across an American who, with all his pretended shrewdness, only gets a sight of one half of the Exhibition, and when he goes away half fed he is likely to cry failure, failure,—but it is unjust ...

> I met an American the other day, just retreating from the "annex," who did not know, until I told him, that he had not seen the Grand Palace. In regard to the speculation, that is not our affair, as we have nothing to do with the money-drawer. The French

they? Perhaps some of your readers who have resided in the low countries can tell me something about them. I have been familiar all the early portion of my life with the animals which you describe, and which I have always heard called "salamanders," but whether that is their true name or not, I cannot say. When killed, the pouches in their cheeks are almost invariably found filled with small roots, in which I suppose they collect for food. I do not think they ever stir out in the day time, for although I have lived where they had thrown up the earth in almost innumerable little hills, I do not recollect ever to have seen one at work.

J. DAY BARRON.

Lowina, Ala,, July, 1855. (For the Scientific American.) Discovery and Invention

In a recent number of the SCIENTIFIC AME-RICAN, you quote from the Springfield Daily Republican, a sentiment which I think is not only incorrect, but very detrimental to the cause of improvements. That there may have been such a thing as an "accident or a fortunate blunder," by those who wander about in the field of science and art, I will not deny; yet I believe that the largest portion of those so-called accidents or blunders partake more of certain propensities than of the constructive faculties.

My fixed and settled opinion is, that the only correct basis for an inventive genius to work upon, is to see a great end or result which it is desirable to accomplish-seeing the disadvantages of the means already in use, with a full knowledge of the natural laws that God has wisely ordained—than to the mind that can reason from cause to effect (like many who have already blessed the world with the Springfield gentleman's so-called accidents,) can we look for still further improvements, which stupid gentlemen may call "blunders."

How is it that these gentlemen can journey by sea and by land from 15 to 20 miles per hour. upon the swift wings of steam, as comfortably situated as when at home in their own parlors; or should they happen to conceive an idea of any importance, it takes a lightning's leap, and distant friends are almost instantly made happy by somebody's " blunder."

I do not wish to deny the existence of straw and chaff, where there is wheat, for our Patent Office Reports show it, but was it a blun der in nature to produce the straw and chaff as well as wheat.

Messrs. Editors, I have had some experience in this line, which may apologize for my sensitiveness on this subject, (I can furnish you a list of over seventy distinct and useful improvements, now in use, made by the writer within the last thirty years, all of which sustain the truth of the old adage, "that necessity is the mother of invention." A few of these improvements the writer has had patented, and some rejected, and twelve of them have been patented by others since the writer had them in use.)

I do not deny that I have made blunders,

Scientific American.

Scientific American.

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TO CORRESPONDENTS.

Will some of our readers who have used Bates' Patent Apparatus for the cure of stammering, which was illustrated on page 370. Vol. 9. SCIENTIFIC AMERICAN, please to com icate their experience to this Office, for the benefit of many enquirers.

J. D. B., of Ala .- Yours will meet with attention G. D., of Pa.-Yours has been received, and will mee

F. S., of N. Y .- The improvements which you describe might make rotary reapers superior to the reciprocating kind. You will find a rotary reaper illustrated on page 144,

Vol. 4, SCIENTIFIC AMERICAN. F. P. H., of — Friction matches are made by dipping their ends first in molten sulphur, then in a composition of phosphorous, gum, and a little chlorate of potass. The latter operation is conducted with great caution. The other matter mentioned by you will be carefully regarded.

B. J. B., of Ill.-There is no periodical published in our country especially devoted to architecture.

J. B., of Pa.-There is a loss of heated water in forming the vacuum in a steam engine, but there is no more econor

ical way to form it. J. A. A., Jr., of N. C.-Any of the turbine wheels illust trated in our columns, will answer your purpose Mr. Van Dewater's is a good one.

E. D. G., of Mo.-Send to Mr. Wiley and he will forward his catalogue. The price of the work you refer to we cannot tell, we think it is fifty cents. T. S. I., of ——It was a mistake of the writer to locat

Strasburg in the West of France.

E. H. H., of Ind .- We do not consider that any loss was sustained in Prof. Page's engine by converting the reciprocating into a rotary motion through a crank. We advise t to waste time and money on the project.

J. S. H , of Pa .- We think it doubtful whether a patent could be had on your corn sheller. The ouly way is to try. S. H., of Mass.-Placing rollers under a stone-boat, to avoid friction, is not new or patentable.

A. M. F., of Mo.-A patent could be had on a card ma-chine cleaner if the improvement was new. \$1 received.-Paper will be forwarded.

T. L. I., of-Your saw gummer strikes us as pos ing patentsble features. Whenever you desire to apply for a patent send on a model and the government fee of \$30.

T N., of Mass.-We do not remember to have seen lock like yours; and yet we think there would be great doubt about your being able to obtain a patent. So many improvements have been made in this slass of inventions, that all new applications are attended with uncertainty.

E E. C., of N. Y.-The patent for which the Messre tham are now seeking an extension, as per advertise ment in another column, is not the original Hanson patent. but is for certain improvements on Hauson's, invented by the Messrs. T. themselves. The great lead pipe inventior of the Hanson's, so long controlled by Messrs, Tatham, is now public property, the patent having expired, and an application for an extension having been denied. All persons are therefore at liberey to manufacture and sell lead pipe under the expired patent.

J. E. P., Jr., of Tenn.-The wire fence of J. B. Wickersham, this city, illustrated on page 232, Vol. 7, Sci. AM, is a good one ; it must be kept well conted with paint. Any of the churns illustrated in our columns will answer your

J. A., of C. W.-You are correct respecting the lower of the old tower wind mills. The one illustrated on page 25, this volume, manufactured by the Halliday Wind Mill Co., South Coventry, Conn., is extensively used. So is the one of Allen Judd, of Cabbotville, Mass. If you address him you may obtain some useful information on the subject. The self-regulating wind mill of A. P. Brown, illustrated in our last number, is also stated to work well. The horizontal one of J. S. Morgan, the claim of which is in our last Lumber, may answer your purpose.

O. P. S., of Cieveland, O.-We do not know what per cent of oil is obtained from a given quantity of cotton or sun flower seed. The latter is used in considerable quantities for adulterating linseed oil.

G. J., of Va.-Address Wilmer & Rodgers, New York, for the European Mining Journal. A. W. H., of Mo.-The area of your valve opening being

5.88 inches, and the weight 30 lbs., on a lever four times, in inches, longer from the fulcrum than the other fixed end, the pressure will be a little over 20 lbs., on the square inch (30x4 divided by 5.88 equals 20.)

D. F. S., of R I .- We do not know at present of such situation as you want for an analytical chemist, or we should be happy to give you the desired information.

J. N., of Md — Theoretically you could arrange a pump stock so that the descending water would draw up a small portion of the liquid, as you propose. But " action and reconsequently the descending water are equal;" would be impeded, and you would therefore lose in its speed (which is equivalent to loss of power) just as much as you gained from the water raised. Theoretically, therefore, there is no gain ; practically, we think, you would be unable to raise any water at all on the plan you describe.

Money received at the SCIENTIFIC AMERICAN Office on ac count of Patent Office business for the week ending Satur day, July 28 :-

C. B. B., of Ill., \$5; D. & S., of Va., \$30; L. C., of N. b. B. B. (1111, \$5; D. & S., 01 Va., \$50; L. O., 01 N.
H., \$25; J. W., & A. F., of Me., \$25; C. & W., of Tenn., \$10; A. E. K., of CL, \$25; J. B. E., of Miss., \$30; B. R.
E., ot Me., \$30; J. E., of Mass., \$100; W. & X., of O., \$22; E. D. C., of CL, \$25; A. W. W., of Miss., \$10; H. B.
W. of Cl. \$20; D. D. of N. \$20; F. W. W., of Miss., \$10; H. B. Important Items.

BACK NUMBERS AND VOLUMES-We have the following num bersand volumes of the SCIENTIFIC AMERICAN, which we can supply at the annexed prices :--Of Volume 5, forty numbers, bound, \$1,75. Of Volume 6, all; price in sheets, \$2; bound, \$2,75. Of Volume 7, all; price in sheets, \$2; bound, \$2,75. Of Volume 8, none complete, but about 30 numbers in sheets, which will be sold at 50 cents per set. Of Volume 9. bound. \$2,75. Of Vol. 10, all except Nos 17, 25, 26 27, and 28, at the subscription price.

PATENT CLAIMS-Persons desiring the claim of any invention which has been patented within fourteen years, can obtain a copy by addressing a letter to this office, stating the name of the patentee, and enclosing \$1 for fees for copying.

RECEIPTS—When money is paid at the office for subscription a receipt for it will always be given, but when subscribers remit their money by mail, they may consider the arrival of the first paper a bona fide acknowledgement of the re ceipt of their funds.

MODELS-We are receiving almost daily, models of inven tions which have not the names of their inventors marked upon them. This usually prevents us from taking any notice of them whatever. We shall esteem it a great favor if inventors will always attach their names to such models as they send us. It will save us much trouble, and some

times prevent the model from being mislaid. PATENT LAWS, AND GUIDE TO INVENTORS-Congress hav

ing adjourned without enacting any new laws pertaining to applications for patents, we have issued a new edition of the old laws, which may be had at our counter or sen by mail. This pamphlet contains not only the laws but all information touching the rules and regulations of the Patent Office Price 121/2 cents per copy.

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IMPORTANT TO INVEN-TORS.

THE UNDERSIGNED having had TEN years' practical experience in soliciting PATENTS in this and foreign countries beg to give notice that they con-tinue to olfer their services to all who may desire to se-cure Patents at home or abroad. Over three thousand Letters Patent have been issued, where age fifteen, or one-third of all the Patents issued each week, are on cases which are prepared at our Agency. An whele corps of Engineers. Examitters, Draughtsmen and Specification writers are in constant employment, which renders us able to prepare applications on the shortest notice, while the experience of a long practice, and facilities which few others possess, we are able to prevent the most correct counsels to inventors in regard to the patentability of inventions placed before us for ex-amination. Private consultations respecting the patentability

The patentability of inventions placed before us for ex-amination. Private consultations respecting the patentabili-ty of inventions are held free of charge, with invent-ors, at our office, from 9 A M. until 4 P. M. Parties residing at a distance are informed that it is generally unnecessary for them to incur the expense of attending in person, as all the steps necessary to secure a patent-which we will examine and give an opinion as to patent-ability, without charge. Models and fees can be sent with safety from any part of the country by express. In this respect New York is more accessible than any other city in our country. Circulars of information will be sent free of postage to any one wishing to learn the preliminary attes towards making an apolication. In addition to the advantages which the long expe-rients present to inventors, they are informed that all inventions patented through our establishment, are noticed, at the proper time, in the Scientific Amkican. This paper is read by not less than 10,000 persons every week and enjoys a very wide-spread and substantial infu nce. Most of the patents obtained by Americans in foreign

week. and enjoys a very wide-spread and substantial infu nce. Most of the patents obtained by Americans in foreign countries are secured through us; while it is well known that a very large proportion of all the patents applied for in the U.S., go through our agency. MUNN & CO., American and Foreign Patent Attornies, 12% Fulton Street, New York; 32 Essex Strand, London; 29 Boule-vard St. Martin, Paris : 6 Rue D'Or, Brussels.

SECOND-HAND STEAM ENGINES-One with 11 Dirch cylinder, 2½ feet stroke, plain slide valve.— One with 12-inch cylinder, 3 feet stroke, high finish and little used. One with 12-inch cylinder, 3 feet stroke, plain finish, and little used, with new boilers and fix-tures complete, ready for setting up. The above were taken in exchange when larger engines were required, and will be sold at a bargain. L B. HANKS, Agent W. & B. Iron Works, 312 Broadway, New York. 47 1*

STEAM ENGINES WITH WRIGHT'S PAT-ent Cut-off just finished, with heavy cast iron Bed frames, covered cylinders and every thing complete for setting u.o. including boilers and fixtures. Two with lu-inch cylinders. 21/3 fect stroke. One with 18 inch cylinder 3 fect stroke L. B. HANKS, Agent W. & B. Iron Works, 312 Broadway, New York. incl . * B. 47.1*

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Important To QUARRYMEN, Stone-Outters, Contractors and Builders-Porter's Patent Spring Hammer None-Dressing Machine - The Porter Stone-Dressing Machine Con. Porter Stone-Outters, and the above in renting are now prepared to sell sights to use the same ratio are now prepared to sell sights of the above in practical operations at the works of the Company, in the city of the work of the Company, in the city of the work of the States of the States

VERGNES' ELECTRO-CHEMICAL BATHS,-VERGNES' ELECTRO-CHEMICAL BATHS, 200 6th Avenue. Professor Vergnes discovered, some three years ago, a method for extracting metallic sub-stances from the human system, such as mercury, leve silver, arsenia. etc. by means of electro-chemical baths ; and also to cure all diseases generated by them, viz.: Dyspepsia, Rheumstism, Iofammatory or Chronic, Par-alysis, Painter's Colic. etc. This theory has created much sensation both in this country and Europe, and has, in all cases accomplished what it claims. Not being able to attend to the numerous calls he has daily from the afflicted, i'roi. Vergnes has made an arrange-met with Dr. Hinkinson, who will hercafter be in at-tendance, for the purpose of assisting in giving the baths, and also for giving medical advice. N. B. The theory will be fully explanned, and certificates given to all competent persons who desire to establish similar baths. 47 4eow *

OIL-ENGINEERS, MACHINISTS, AND OTH-Oers, will find in Weed & Co's. Transparent Oil an ar-ticle free from gum, nearly fifty per cent cheaper, and much more durable than sperm oil. Also Cumberland brothers' Patent Metallic Oil (the genuine article) man-ufactured and for sale by WEED & CO, NO. 134 Pearl street, New York. 47.2*

SMUT MACHINE-BEST IN THE U. S.-John D. Bedwell's Improved Smut and Grain Separator, patented Oct. 24 1854. This machine combines simplic-ity, economy of power, with great durability, is strictly guaranteed in materials. workmanship, and capacity, and any machine ordered is not to be paid for until after full trial and approval. (References will be expected.) In cleanliness, scouring the grain and separating it from impurities, it is warrantee to exc-l any other ma-chine in use. Circulars forwarded. Manufactured by the inventor, and for ale at Uhrichsville, Tuscarowas County, Ohio. JOHN D. BEDWELL. 47 1*

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ATHES FOR BROOM HANDLES, &c.-We continue to sell Alcott's Concentric Lathe, which continue to sell Alcott's Concentric Lathe, which dapted to turning Windsor Chair Legs, P llars, Rods Rounds, Hoe handles, Fork handles, and Broom

is adapted to turning with so to turning with so thandles, and Broom handles. This Lathe is capable of turning under two inches diameter. with only the trouble of changing the dies and pattern to the size required. It will turn smooth over sewells or depressions of 3.4 to ti e inch, and work as smoothly as on a straight line, and does excellent work. Soid without frames for the jow price of 825-boxed and shipped with directions for setting up. Address (postaid) At this Office.

UNITED STATES PATERT OFFICE, Washington, July 12, 1855. ON THE PETTION of Benl, Tatham of New York, and Geo N Tatham, of Philadelphia, praying for the extension of a patent gravited to them on the 11th day of Oct. ber, 1841, for an improvement in macine-try for making pipes or tubes of lead, tin. and other me-tallic substances, for seven years from the expiration of said patent, which takes place on the 11th day of October, 1855. This ordered that the said petition be heard at the next at 18 o'clock, M.; and all persons are notified to appear and show cause, if any they have, why said petition ought not to be granted. Persons opposing the extension are required to file in the Patent Office their objections, specially set forth in writing, at least twenty days before the day of hearing; all testimony filed by either party to be used at the said hearing must be taken and 'ransmitted in accordance with the rules of the office, which will be furnished on application. There are the said the said petition on the fath day of Sept., 1855; depositions and other papers relied with cestimony must be filed in the office on or before the days thereafter. Ordered, also, that this notice be published in the fortion. New York; Daily Baltimore Republican, Courler. Buffalo, and Post, Boston, Mass., once a week for three successive weeks previous to the 24th day of spetember next, the day of hearing; S. T. SHUGERT. Acting Commissioner of Patens. A. S. Editors of the above papers will please copy and send their bills to the Patent Office, with a paper con-taining this notice.

PORTABLE STEAM ENGINES.-.8. C. HILLS, No. 13 Platt st., N. Y., offers for sale these Engines, with Boilers, Pumps, Heaters, etc., all complete, and very compact, from 2 to 10 horse power, suitable for printers, carpenters, farmers, planters, &c. A 2½ horse can be seen in store. it occupies a space 5 by 3 feet, weighs 1500 lbs. price \$240; other sizes in proportion. 29 e3w

THE DAILY SUN-Mail Subscribers.-The morn-ing edition is forwarded by the early mails to coun-try subscribers, at \$i per annum, or \$i per quarter. pay-able in advance. The postage under the present law is as follows:-To any PostOffice in the State of New York, 78 cents per year. payable quarterly. 19% cents in ad-vance. To any PostOffice out of New York State, but within the United States, \$1.56 per year, payable quar-terly, 38 cents in advance. Sole Proprietor of the Sun Establishment, 39 Corner of Fulton and Nassau sts.

NORCHOSS ROTARY PLANING MACHINE-The Supreme Court of the U.S., at the Term of 1858 and 1854, having decided that the patent granted to Nicholas G. Norcross, of date Feb. 13, 1850, for a Rotary Planing Machine for Planing Boards and Planks, is not an infringemet of the Woodworth Patent. Rights to use N. G. Norcrois's patented machine can be purchased on application to N. G. NORCROSS, 208 Broadway, New York. Office for sale of rights at 206 Broadway, New York Boston, 27 State street, and Lowell, Mass. 42 6m⁴

Patentad April 1st 1955 - Samaan's hows THE CHEAPEST HORSE FOWER KNOWN. Patented April Ist, 1855. Sampson's horse power has not a gear wheel about it, and it can be constructed and kept in repair by an ordinary mechanic. It costs less and furnishes a larger percentage of power than any horse power known. For the purchase of rights lor the District of Columbia, Maryland, Delaware, New Jer-sey, Pennsylvania, New York. Ohio, and the New Eng-tand States, apply to Prof. CHAS. G. PAGE, Washing-ton, D. C. 35tf

THE EUROPEAN MINING JOURNAL, BAIL-way and Commercial Gazette. A weekly newspa-per, forming a complete history of the Commercial and Scientific Progress of Mines and Railways. and a care-fully coilated Bynopeis, with numerous linesirations. of all New Inventions and Improvements in Mechanics and Civil Engineering. Office 26 Fleet st., London. Price \$6.50 per annum. 26tf

THE ANT INVENTION-Patented 7th June, 1853 - Falconaria Counciliant for the State 1853.—Relconer's Coupling for hose, hydrants, force pumps, etc., is the only coupling likely to supersede the screw coupling, It can be made cheaper than the screw coupling, and excels it in every respect, and after a pub-lictrial under the severest tests, it has been adopted under an Act of the Corporation of the City of Washing-ton, for the Fire Department, in place of the screw coup-ling. For the purchase of rights under the patent, ap-ply to Prof. CHAS. G, PAGE, Washington, D. C. 35tf

POWER PLANERS—Persons wanting Iron Plan, ers of superior workmanchip, and that always give satisfaction, are recommended to the New Haven Man-ufacturing Co., New Haven, Ct. 40tr

THE NEW YORK WEFKLY FUN is now sent to subscribers at the following very low rates, pay-able in advance :- One copy. 3 months, 25 cents : 6 mos, 50 cta: 1 year, 75 cts : 16 months, 41 : 3 copies, 1 year, 43 : 50 copies 45 : 13 copies, 45 : 25 copies, 415. The pose age within the State is only 13 cents a year-out of the State 26 cents a year. EB⁻ No travellog agents are employed. Specimen copies sent gratis. All letters should be post paid and directed to 39 Sun Office, New York.

ATHES, PLANERS, and all kinds of MACHIN ISTS'TOOLS of tre best description on hand and made to order by SHRIVER & BROS., Cumberland Md, (on Baltimore and Ohio R.R., midway between Batt-more and the Ohio River.) 43tf

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NEW HAVEN MFG CO -- Maci inists' Tools. Iron Planers, Engine and Hand Lathes. Drills, Bolt Cut-ters, Gear Cutters, Chucks, &c., on hand and finishing. These Tools are of superior quality. and are for sale low for cash or approved paper. For cuts giving full de-

375



376

Science and Art.

The Art of Dyeing.-No. 32.

BLACK ON COTTON .- The common way to dye black on cotton, is to steep the goodsin umac for about twelve hours-three pounds of boiled sumac to ten of goods-then run them through a liquor of lime water, and expose than to the air until they acquire a deep bluish green color. After this they are run through a solution of copperas,-one pound to the ten of goods-and aired again. when they acquire gradually a black color. A common plan is to place about a pailfull of old sumac liquor among the copperas liquor, which it is supposed makes the color work more level. If the goods were dried in this state they would be merely a dark slate, hence they receive logwood on the top of the copperas. But before they get the logwood they are run through another lime water, when they become a deep brown ; then they are washed and are fit to receive the logwood. About five pounds of logwood well boiled are sufficient for ten pounds of goods. The goods gef eight turns in the logwood liquor, are lifted, then get a little saddening (dissolved copperas,) are entered again, and get three more turns, when they are lifted, washed and dried. It is a common practice to soften cotton black colors by running them through a tub of milk-warm water, containing some unresolved soap-oil and soda mixed together. Blue-blacks receive one or two dips in the blue vat before they are put through the process described. It has been found that by running the goods through a tub of cold water into which a little dissolved bichromate of potash is stirred (this being the last course before drying) makes the color more permanent.

The acetate of iron-black iron liquor-is almost exclusively used instead of copperas in our dye-houses, especially for dyeing black warps. It is placed in long tanks, at a strength of about from 2° to 3°, and used in place of the copperas, in the manner described in the foregoing. Some dyers do not strip the iron liquor with lime water, before the goods get the logwood; they simply wash their goods well after saddening, but the best plan is to give them a weak liquor of lime water. Scme dyers also keep an open tub of dissolved copperas standing, and use this for saddening, but it is not a good plan, for copperas is a protoxyd sulphate, and imbibes oxygen from the atmosphere when thus exposed, becoming a peroxyd sulphate, which is far inferior, as a re-agent for dyeing black, to the protoxyd.

It has also been found that hard spring water, containing some salts, such as carbonate of lime, is much better for dyeing black than pure rain water.

If, instead of saddening goods, (running orifices are of rectangular form, as in fig. 2. ing clay for pottery purposes, and consists ANDA : Proceedings of Scientific Bodies; Accounts of them through the acetate of iron,) as descriin the employment of an invented conical To the lower part of one of the uprights, Exhibitions,-together with news and information upon THOUSANDS OF OTHER SUBJECTS. bed, with one dip, they get two dips in the A, there is attached a cam, L, against the press chamber, having a plunger within it, iron-airing them well after each dip-the Reports of U.S. PATENTS granted are also published and a peculiar screen and a device in the edge of which the shank, a, of a fork, M, every week, including OFFICIAL COPIEs of all the PA-TENT OLAIMS; these Olaims are published in the Scicolor will be more permanent. And if inbears said plank, being underneath the chamchamber for cutting the discharged clay. stead of receiving logwood alone, as the col-Figure 1 is a front view of the improved ber, G, and working on guide rods, b b, entific American IN ADVANCE OF ALL OTHER PAPERS. the ends of which are attached to the lower oring dyewood, they receive four pounds of machine, the inverted conical press cham-The CONTRIBUTORS to the Scientific American are among the MOST EMINENT scientific and practical logwood, one of madder, and one of alder edge of the chamber, G, and one of the upber being bisected vertically through the men of the times. The Editorial Departm men of the times. The Editorial Department is univer-sally acknowledged to be conducted with GREAT ABILbark in a boiler heated to 180°, the oolor center. Figure 2 is an inverted plan of the rights, A. ITY, and to be distinguished, not only for the excellence will be much faster. Cotton dyed black is press chamber, and the device for cutting off The inner end of the cam, L, has teeth or and truthfulness of its discussions, but for the fearless rendered harsh and hard by the lime and the discharged clay. Similar letters refer to projections upon it which fit in the links of a ness with which error is combated and false theories are exploded. Mechanics, Inventors, Engineers, Chemists, Manuiron, hence the necessity for softening it with chain, N, which passes around the cam and like parts. some oil before drying. Some dyers use pure also around a toothed wheel, O, on the shaft, A A represent two uprights constructed of facturers, Agriculturists, and PEOPLE IN EVERY PRO-FESSION IN LIFE, will find the SOLENTIFIC AMERICAN olive oil without breaking it with an alkali, wood or metal, and secured to a proper base, C. P is a spiral spring which is attached to by simply pouring the oil into a tub of hot B. On the upper ends of the uprights, a hothe back end of the fork, M, and to the frame, to be of great value in their respective callings. Its water, stirring it well, then entering and rizontal shaft C is fitted in suitable hear The propos of the fork have a wire, c. OF DOLLARS annually, b ffording handling the goods rapidly, and finish. This ings, said shaft having a crank, D, upon it attached to them, as in fig. 2. tinual source of knowledge, the experience of which is is the best plan for yarn; catechu is some-The clay properly moistened is placed in beyond pecuniary estimate. to which the upper end of a connecting rod, The SCIENTIFIC AMERICAN is published once a times used as a partial substitute for logthe upper part of the chamber, and power E, is secured, the lower end of the rod being veek : every number contains eight large quarto pages wood in dveing black, but it is not so good being applied to the shaft, C. the plunger. I. attached to a guide, F, the ends of which are forming annually a complete and spler lustrated with SEVERAL HUNDRED ORIGINAL EN. for this purpose. grooved and fit over the inner edges of the forces the clay through the screen or per-GRAVINGS. Fast black can be dyed with madder inuprights, A A, which serve as ways. forated plate, K, which, on account of its ta-TERMS! TERMS!! TERMS To the lower parts of the uprights, A A, stead of logwood, by the Turkey-red process per orifices, compresses the clay as it is forced One Copy, for One Year of preparation, and using acetate of iron for \$2 through them. Upon the succeeding stroke an inverted conical press chamber, G, is at-Six Months \$1 the mordant, after sumac, but this is such an tached by arms or braces, H H. The lower of the plunger, the clay is again compressed Five copies, for Six Months \$4 expensive process that it is very seldom pracend of said chamber is a short distance above by being forced through the lower end of the Ten Copies for Six Months, chamber, G, owing to the inverted conical Ten Copies, for Twelve Months **\$**15 ticed. The best quality of blacks for gingthe surface of base B. The upper end of the Fifteen Copies for Twelve Months \$22 hams are dyed with an indigo bottom, as has chamber, G, is of a true cylindrical form form of said chamber. As the plunger, I, Twenty Copies for Twelve Months \$28 rises, the fork, M, is forced forward underbeen described; two dips in the saddening, for a short distance, in order to allow a plun-Southern, Western, and Canada Money taken at par for Subscriptions, or Post Office Stamps taken at their par value. Letters should be directed (post-paid) to and then topped with logwood. Great care neath the chamber, G, by the cam, L, which ger, I, to work therein, said plunger being must be exercised to air the goods well after connected to the guide, F, by a rod, J. is rotated by the chain, N, and the wire, c_{i} MUNN & CO. each liming and saddening, and the iron li-At the lower part of the cylindrical porcuts off the clay discharged from the press 128 Fulton street, New York

Scientific American.

quor should be given rather weak, about 1° in the hydrometer is strong enough.

The processes for dyeing black on cotton are all different from those for dyeing the same color on silk and wool, and far more troublesome. Cotton treated like wool or silk, in dyeing black, will be no better than a dirty slate color. Dyeing is therefore a practical art, and embraces more than the coarser kinds of goods. The method of domere chemistry of the substances used to ing this will be given in our next.

produce a color. As many fabrics are now manufactured, (such as muslin de laines,) of a mixture of cotton and wool, and as much cotton is carded with wool in other fabrics, the method of dyeing them both black is a matter of some importance and value to many of our manufacturers, especially those who have small factories and make only the



The accompanying figures represent a ma- | tion of the press chamber, and between the chine for kneading clay, for which a patent was granted to Harlow H. Thayer, of Sandwich, Mass., on the 5th of June last. The invention relates to a new machine for knead-

cylindrical portion and the conical there is a screen or perforated plate, K, the apertures of which are of taper form. The lower orifices being smaller than the upper one, the

chamber, the fork being forced back to its original position, when the prominent portion of the cam has passed the shank, a, of the fork, by means of the spiral spring, P.

The clay is worked over till it is properly kneaded. The machine may be driven by any kind of power, and it works effectively and rapidly.

This machine is designed to have a stroke of 24 inches; cylinder 15 inches bore, and making 15 revolutions perminute. The cylinder is only 6 inches deep, therefore while the piston passes up and down above it, the attendant can put in the clay. A quantity of clay is moistened in the usual manner in a bin, and then thrown with shovels into the cylinder. The piston forces it down through the holes in the perforated plate, where it is drawn, as it were, into small strips threeeighths of an inch thick, that being the size of the conical perforations below, while they are one inch above. After the clay has thus passed through the plate, every succeeding stroke forces a new quantity through, passing it into the inverted conical chamber in a solid mass again, thus mixing it in a more perfect manner by passing it once through, than by working it four times over in the common way. The clay may be passed through the machine, as often as may be desired. The cutting device at the bottom is for cutting it off to drop on the floor, to allow of it being easily put into the proper bin. It is a machine well adapted for kneading clay for the finer kinds of pottery, stone ware, fire bricks, &c.

More information may be obtained respecting it, by letter addressed to Mr. Thayer, at Sandwich, Mass.



Inventors, and Manufacturers THE SCIENTIFIC AMERICAN.

ELEVENTH YEAR.

The Eleventh Volume of the Scinutry O AMBRICAN commences September 16th next. It is an ILLUS1'RAT-ED PERIODICAL, devoted chiefly to the promulgation of information relating to the various Mechanic and Chemic Arts, Industrial Manufactures, Agriculture, Patents, Inventions, Engineering, Millwork, and all interests which the light of PRACTICAL SCIENCE is calculated to advance.

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counsels and suggestions will save them HUNDREDS