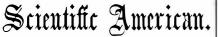
# Scientific American.



NEW YORK, APRIL 21, 1855.

The Effects of Wind and Water on Climates In a short article a few weeks since, we described the peculiar influence of the "Gulf Stream" upon the climates of Western Europe, and presented the opinion entertained by some, that the waters of the Amazon river were the cause of this wonderful ocean current. In Lieut. Maury's new volume, "The Physical Geography of the Sea," we find this question discussed with rare ability. and with a profound knowledge of the subject. He compares the Gulf Stream to a water heating apparatus for buildings. "The warm waters," he says, "which are confined in the Gulf of Mexico, is such a heating apparatus for Great Britain, the North Atlantic, and Western Europe." Instead of attributing this stream to the waters of the Amazon, he says, "the furnace is the torrid zone, the Mexican Gulf and Carribean Sea are the cauldrons; the Gulf Stream is the conducting pipe, and its heat is taken up by the genial west winds, and dispersed throughout Britain and the west of Europe." In another place he says, "It is the influence of this stream upon climate that makes Erin the Emerald Isle, and clothes the shores of Albion in ever-green robes; while in the same latitude on this side, the coasts of Labrador are fast bound in fetters of ice." In an article in the American Journal of Science, Vol. 45, Mr. Redfield says, "in June 1831, the harbor of St. John's, Newfoundland, was closed with ice; yet, whoever heard of the port of Liverpool, 20° further north, being closed with ice, even in the dead of winter."

It is, indeed, a peculiar arrangement of Him who rules the winds and the waves, that the temperate climates of different countries in Europe are dependent on a hot water sea basin, situated near the American continent, and that this hot water should pass by large tracks of countries on this side of the Atlantic, leaving them bound in icy fetters, and dispense its favors to nations on the other side of the ocean. But so it is, and it requires the winds as well as the waters to distribute those genial favors to western Europe. During the past winter this was displayed in a remarkablemanner. For about four weeks easterly winds had prevailed in Great Britain and Ireland, during which period the warmth of the Gulf Stream was prevented from being wafted to those coasts. The result was, that the most intense cold within the memory of man was experienced there ; ice formed in large quantities on the sea coast, and, as a world's wonder, the navigation of the rivers Thames and Mersey was greatly obstructed, and the port of Liverpool almost ice bound for some days. In Ireland the effects of this severe cold was such, that thousands upon thousands of small birds-larks thrushes, &c., &c.,-which do not migrate, were found dead in the fields and on the highways. In Scotland, the effects of this severe cold were more wonderful still. Hugh Miller-that eminent geologist and keen observer-in the Edinburgh Witness says, "the present intense frost-coincident at new moon with a stream tide-has killed many of the littoral shell-fish around our shores, and they now lie by thousands and tens of thousands along the beach. On the

and their wholesale destruction by a frost a our climate, strikingly shows how simply, by slight changes of climate, induced by physical causes, whole races of animals may become extinct. It exemplifies, too, how destruction may fall upon insulated species, while from some peculiarity of habit, or some hardiness of constitution, their congeners escape."

Had the genial west instead of the dry east winds, constantly prevailed in England during the last winter, the atmosphere of that country would have been moist and warm as usual, and no such severe frosts as that described, would have been experienced. From these new facts, we can form some new and more correct ideas of the effects of winds and waters upon climates; and how they affect the destiny and welfare of nations, and living creatures, on the land and in the sea.

#### Discovery in Painting with Light.

On another page will be found a most interesting article from J. F. Mascher, Esq., of Philadelphia, on new and important discoveries made by him in prosecuting some optical experiments.

Photography has now become one of the most attractive and extensively practiced arts. It is but a few years since the discovery of the Daguerreotype was made in France-we all remember it well, and the wonder that was excited among us when it was first chronicled to the world that a Frenchman had succeeded in taking portraits by the sun. Since that period, the art has flown on the wings of the wind over all nations. There are now hundreds of artists in our principal cities; almost every village has its sunlight limner, and there are quite a number who travel from place to place with movable galleries, to rescue the charms of our village beauties from oblivion, by placing them upon enduring tablets. We look upon the art of photography as one of most delightful and humanizing. It has placed within the reach of the poorest, the means of conveying to one another, or to remote years, the likenesses of those they have loved and esteemed. This was a priviledge which but recently belonged only to the more opulent, who possessed the means to employ the portrait painter. Great improvements have been made in the art within a few years; photographic portraits are now taken, surpassing in correctness the skill of the most practiced portrait painters. And it is not to be supposed that we are at the end of improvement yet; indeed the article referred to on another page, shows us that a new and expansive field for improvement has just been broken.

found essential; **b** are two stirrups made of | be proud. We have been informed that this tute for wood fuel in locomotives, is a queswire bent up somewhat in the form of a buckle tion of great importance Many locomotives frame, and the two ends of wire thus bent up on various railroads, use no other fuel now, are sprung apart and inserted, one on each and the time is not very far distant when side or edge of the button near its center, in every railroad in our country must stop suitable holes therein, so that the spring of using wood. It is believed that many imthe stirrup itself holds it to the button, but provements have yet to be made in coal may swing thereon. It will be perceived burning locomotives, hence every new one that a button thus provided with the stirrups, deserves attention. In the list of claims as in figure 1, has no tendency to leave the this week, it will be observed that a patent bottle, whilst if desired to open the bottle it has been granted to Josiah J. Dutcher, of is readily removed by slipping one of the stir-New Haven, Conn., for improvement in coal burning locomotives, embracing three separups out from under the projection. Any inward pressure against the cork forces it rate claims. One covers an inverted conical ater chamber in the fire box, which commugainst the button, but as the stirrups p ed by a purchaser. We believe that only beach below Portobello, and for at least a from a central position in the button to the nicates by pipes at its bottom with the side 2000 lbs. of coal have been given for a tun water spaces, and at its top with the usual sides of the neck of the bottle, the tendency is mile on the western side of the town, they weight, in this city, for some years past, are chiefly of two species, Solen Siliqua, or to draw the stirrups closer up to the projection, water chamber of the boiler, thus keeping thus making the customs of coal dealers the edible spout fish or razor-fish, and Macor in other words to hold the harder. c is a up a continual circulation, as this cone is here conform with the laws and customs of tra stultorum, or the fool's cockle, both of imbedded in the fire, and subject to the most strip of tin or other metal, hinged by a dead Pennsylvania. These State customs and them molluscs, which burrow in the sands eye to one of the stirrups. This being for the intense heat. It is also believed, that as this laws, being at variance with the Federal above the low-water line of stream tides. cone is inverted, it will prevent the fuel from double purpose of making the button a fixture laws, must be abandoned, as the Constitu-The spout-fishes, when first thrown ashore. packing close, and thus allow free draught on the bottle, viz., to prevent it from being tion of the United States gives to Congress were carried away by pail and basketsfull by through the fire at all times. The patent lost or wasted, and so that the cork may be the power to fix the standard of weights and the poorer people; and yet of their shells embraces other features, which could not be allowed to fly whilst the button remains atmeasures. Let each coal purchaser hereafter enough remain in the space of half a mile to clearly described without engravings. At a tached to the bottle. It is only necessary to see to it, that he gets 2240 lbs. for a tun, as load several carts; but the fishes themselves, meeting of the "General Railroad Associaslip one of the stirrups from the projection on his just due according to law. devoured by myriads of birds, chiefly gulls, tion," held in the Astor House, this city, on the bottle to remove it from the cork, and have already disappeared. It is probable the evening of the 10th inst., the subject of either of the plans as shown in figures 2 and that both species will be less common on our using coal in locomotives was partially dis- 3 may be adopted. Many devices have been coasts than heretofore, for years to come; cussed, and a resolution adopted appointing essayed for securing corks in bottles, but al town (Mass.) Navy Yard.

a committee, to report at the next meeting of them involve expense, intricacy, or diffifew degrees more intense than is common in respecting the introduction of coal and coke, and the construction of engines capable of using such fuel. This exhibits a proper spirit on the part of the Association, and as D. C. McCallum, Esq., Superintendent of the New York and Erie, is chairman of this Committee, we have confidence that the business will not be suffered to sleep, as is too often the case with members of associations, that provide no means for paying the expenses of those who perform extra



The annexed engravings represent an improvement for securing corks in bottles, for which a patent was granted to T. A. Ashburner, of the city of Philadelphia, Pa., on the 13th of last month.

Figure 1 is a view of a bottle corked on the patent plan; figure 2 is a view of one of the buttons provided with a strip of tin to prevent it from flying with the cork when the bottle is opened; figure 3 is a similar button without the tin strip. Similar letters refer to like parts.

The nature of this invention consists in the peculiar device hereafter to be described, to be applied over the top of a cork in a bottle to prevent it from flying out under inward pressure, the same consisting of a button provided with two stirrup straps which are hold under the projection on the neck of the bottle to hold in the cork, and may be swung out to release the cork, to let it escape, as may be desired.

a is a round button of about the size of the cork in the bottle, and made, for convenience, Coal Burning Locomotives. of wood, though it may be made of metal if The subject of employing coal as a substi-

culties in placing or removing them from the bottle.

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More information may be obtained by letter addressed to Mr. Ashburner.

#### Steam Carriages for Common Roads.

J. K. Fisher proposes, through the Westchester Journal, to build a steam carriage to run between certain villages in Westchester County and this city, on the common roads. He offers to pledge a gallery of paintings for the success of the undertaking, and he wishes the residents of those villages to form a joint stock company for the purpose of providing funds to construct as many of those carriages as may be found necessary to try the scheme. We really hope the people of the Westchester County villages will form such a company, and if they can be secured (as they should be) against loss, by the proposer, they should embrace his proposition. We have saidand are positive-that steam carriages cannot pay on our common roads; also that the accounts which have been printed of the performances of steam carriages in England were more highly colored than were those of the hot-air engines among ourselves, but if those who think they know better than we do about such things are willing to guarantee their success and provide some means to secure the stockholders in case of failure, who can find fault with the proposition? It is a fair one, and we above all other persons, hope it may be put in practice, in order to test the question by the only method of convincing without controversy.

### Shawk's Steam Fire Engine.

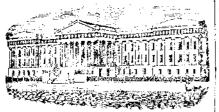
The Cincinnati Commercial of the 31st ult., contains the report of a committee of citizens to witness the performances of a new steam fire engine, named "Young America," and built in the machine shop of Abel Shawk, and according to his patent. In this report it is stated, that in twelve minutes exactly, from applying the match, the engine commenced its work, and the pumping of water began. The first experiment was made by using a nozzle one and one eighth inches in diameter, playing horizontally, the water being thrown 210 feet. The next experiment was with a nozzle one and a quarter inches in diameter, in the same direction. Upon actual measurement, it was found that the water had been fairly thrown a distance of two hundred and twenty-nine feet and four inches. It also forced a stream of wahinged to said button, so that they catch and | ter through the 1 1.4 inch nozzle ten feet over the tower of the Mechanics Institute. 150 feet high, and had the wind not been so strong, it would have thrown the stream higher still. The Committee, after a number of experiments, unhesitatingly declared, they were perfectly satisfied, and considered the engine a triumph of which Cincinnati might engine is intended for this city.

#### What is a Tun Weight of Coal?

The Philadelphia Ledger of the 10thinst., informs us that the U.S District Court in that city, decided on the day previous, that the legal weight of a tun of coal is 2,240 lbs., and that coal dealers have no more right to give less weight than grocers to give less than 16 ounces for a pound.

The Supreme Court of Pennsylvania decided, a short time since, that according to the laws of that State, 2000 lbs, were a legal tun weight, and no more could be exact-

A breech-loading cannon was recently tried with considerable success at the Charles-



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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 APRIL 11, 1855.

FOR THE WEEK ENDING APRIL 11, 1855. LATHE-Warren Aldrich, of Lowell, Mass : I do not claim a combination of a tool rest or carriage, a rotary car riage, and a sliding carriage together, and with a mechan ism of such character or construction as will impart to such tool post carriage an automatic traver-emoion in whatever position its supporting or turning carriage may be disposed and fixed on the carriage by which it is sustained. Nor do I claim the peculiar mechanism connected with the three carriages and described in the specification of my letters patent dated March 15tb 1853, such combination be-ing composed of what are therein exhibited as the splined what, U, the movable bevel gear, V, the vertical shaft, and its bevel gears, W Y, the horizontal shaft X, gears, e.g., andscrew, I, and its female screw affixed to the tool rest carriage. H. Having invented a simpler combination of mechanical patts for such purpose, and which a them.

An accrete H, and its tendes streve market to the tool right Having invested a simpler combination of mechanical Pattis for such purpose, and which, although an tright fort to an element or device, in the combination wherein it is employed, is by no means analogous to such device or ele-ment, and is much superior in may respects. I claim such combination when used in connection with the three car-riages, as described, the same consisting of a long screw, b, a vertical shart, D, two worm gears, H212, and a screw, n, arranged, applied, and made to operate together, substan-tially as specified.

DRILLS FOR ARTESIAN WELLS-John Andrews, of Whe chester, Mass : I claim the use of a stiff chain for the pur pose of operating a rock drill, or other artesian hower, in the maximer set forth. Second the device for rotating the drill, consisting essen tially of the cog wheel, F, and pinion, L, with the parts which set them in motion, constructed and operating in the manner substantially as set forth.

SAW TEETH-Nelson Barlow, of Newark, N. J.: I claim the described improvements consisting of the recessed Space D, and comtined cutters, upon the sides of saw teeth, and also the rounded form given to the outer points of the teeth, when arranged, formed, and operating substantially as de scribed.

Scribed. STEAM BOILERS-Horace Boardman, of Plattsburgh, N. H. I claim, first, the graduating of the openings in the flues or tubes, in the manner and for the purpose set forth. I also claim in connection with the flues or tubes, the semi-livision fine pla es, H in the chamber, G, for regula-ting and equalizing the egress of the heatedproduct through said tubes as set to th. I also claim the inclination of the tubes and tube cheets, for the double purpose of preserving a space between the tube for the sediment to collect in, and from which it can be readily removed, and for preserving a square sur-face between the tops of the tubes and said sheets, so that they can be fairly riveted, as set forth. MACHINE FOR FAISING AND TRANSPORTING STONE-S.

MACHINE FOR RAISING AND TRANSPORTING STONE-S. E. Bolles, of Rochester, Mass : I claim the construction of an axletere for stone digger, in combination with the i ed frame and detrick, substantially and for the purposes asset forth.

ROTARY HARROWS-Lyman Brainard and Levi Newton, of Attica, N. Y.: We are aware that wheel shaped harrow frames have been used both without rotation and with a compuls yr rotation in one di ection. But we claim the employment of the wheel shaped har row, when fastened upon a central point, so as to turn in either direction, for the purpose and in the manner set forth.

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animate density with the two in the formation of the grady means substantially as described, for the purpose of laging the line or fub-rice evenly on the hooks, and preventing its being laid in the po-ter of the standard state of the proper state of the state of

[This noted and valuable machine is described as well as

it can be, without engravings, on another page.]

it can be, without engravings, on another page.] ARRANGEMENT OF DIES AND STOCKS FOR ©RNAMENTING MATAL TUBES-S. M. Cate and Edmund Jordon, of Water bury Conn.: We are aware that a series of stationary dies have been long used to ornament tubes; and that revolving dies have been used for ornamenting articles while in a lathe; and that revolving dies have also been used where the a tiele has been drawn through by a process like that of wire through a draw plate, or for welding iron tubes, &c., and that adjustable holders are not new. We therefore do not claim any of the parkass such, asour invention : what we claim is the combinution of the dijust. able die stocks, EF G H, with the revolving dies, ee e, e, m a self leeding machine, for ornamenting tubes, &c., when the whole is constructed, arranged, combined, and made to opparte substability as described.

BOOT FORMS-John Chilcott and Robert Snell, of Brook-BOOT FORMS—John Chilcott and Robert Snell, of Brook-lyn, N. Y. 'We claim, first, the inner clamp, E, fittel to a recess in the front piece, A, sub-tauti dy as described, so that its exterior presents the desired surface for a part of the front sense in the leg seam to the front piece, A, till the whole piece of miterial is lapped to the proper form, it may be drawn out lengthwise and re inserted in the front piece, insta the edge it previously held, and thus the swo ut tengthwise and re inserted in the front piece, insta the edge it previously held, and thus the swo ut tengthwise and re inserted in the front piece, insta the edge it previously held, and thus the swo ut the said edge and part of the material immediately behind it, into contact with that part of the material which overlaps and is to be united to it to make the seem. Second, the existing clamps, i. I. stracted to acrews, K K, werking in an pricipi, i., which is a starbile position is (the clamps to hold the two parts of the front seam to gether, and to allow the said front piece to be taken from the upper. uppei

## Scientific American.

LOCOMOTIVE BOILERS-J. J. Dutcher, of New Haven, Ct.

LOCOMOTIVE BOILERS-J. J. Dutcher, of New Haven, Ct. I claim, first, the described arrangement of water spaces within and contiguous to the furnace, and leading thereform to the body of the boiler, consisting of the horizontal tube, p, inverted of the boiler, consisting of the horizontal tube, I, all connected substantially as described. Second, in combination with a hinged fit grate or grates, to the boiler furnace, I claim providing hinged traps in the sah pan to be lowered and rai-ed or opened and closed is multianeously, with the fire grate or opened and closed is multianeously, with the fire grate or areas, of an uprightrod, K. passing through the boiler and suspended from a lever, L. within the control of the engineer or fire-man, while at bit substantially as described. Their equivalents, all substantially as described. The state substantially as described at d, or their equivalents, all substantially as described. The manner, to make the said ashes, coal, & c., take a circuitour direction. [A brief description of this invention may be found on

[A brief description of this invention may be found on nother page.]

CARD EXHIBITOR-Wright Duryen, of New York City : I claim the described improvement in card exhibitors and dis tilourors, consisting in the application of the roller, D, printed strip, J, and guide, d, and self closing spring hold er, G, substautially as sund for the purposes described. [See notice of this contrivance for exhibiting and distrib-

uting business cards in hotels and other public places, in another column.]

PORTABLE DOOR FASTENERS-B. R. Eames, of South Newry, Me. : I expressly disclaim booked bars with separ ate and vertically moving stops and braces, as such form no

part of my invention. But I claim the described combination of bifurcatedhask but a train the described combination of outrow context ed bac, B, splink, compensator, C, and horizontally moving bace, G, the compensator, and brace, movable about the vertical connection of said bar, whereby the self flowement of the brace is prevented, while it performs the double func-tion of gauge and brace.

FRAMING FOR BUILDING CONCRETE WALLS.—Salathiel Ellis, of New York City: I claim the construction of the clamps, substantially as described, so that they can be moved or turned up, as necessity requires, and the combi-ration of these clamps with the rods and boyeds to form a self-sup porting frame for the uses and purposes described

Tool FOR BORING HUBS-HL C, Garvinand J, H. King, of Hagerstown, Md.: We claim the apparatus for boring wagon and carriage hubs, for reception of boxes (narrow and through boxes) as described, using for that purpose the aforesaid apparatus, or any other substantially the same.

aforesid apparatus, or any other substantially the same. FURNACES FOR BURNING WET FUEL-MOSES Thompson, of Henrico Co., Va.: I do not claim the described arrange ment of a series of fire chambers to communicate with one common flue, irrespective of the purpose for which and the manner in which I employ the said arrangement. But I claim the combustion for the purposes of a high degree of heat of bagas-e, refuse tan, saw dust, and other reflue substances, crevy we tand green wood by the em-ployment of a series of fire chambers arrawing dia may man er substances, the second of the computation of the purpose does in the flue, and to the amission of air, when first chambers is in face chamated, and has a free supply of air admitted, and each chamber in its tran-is tearly closed, and then opened, and has a ir ad-aitted, whereby the heat required is furnaised by the combustion of heating as set in the chambers are addited.

[On page 84, present Vol., a short description of this inven ion may be found, which is believed to be a valuableone.)

MODE OF GUIDING RECIPROCATING SAWS-C, B, Hutch-fuson, of Auburn, N, Y: I claim the use of a thin guide plate for holding and guidling the saw placed formel.  $\mu$  such behind and in the same plane wich it, and following it through the log, whether the same be used by itself, or connection with any other means of holding and guiding the

Suw, RAILROAD CAR COUPLING—J H Jones of Scio, N. Y. : I an awarethat a patent was granted to Joseph D. Alvord, on the 18th Sert. 1849 for a cur shackle in which two be-izontally placed hooks, one at each end of the car attached to the bunter, so formed and so attached that on brunging the cars together, the hooks will fall into sockets into the respective opposite curs. This I do not claim, as my invention is an improvement upon Alvord's. Not do I claim a car coupling wherein a link or its substituties used at all. Meither do I claim a car coupling wherein a male and fe male catch are used, because they require to be changed at times, as two male or formale catches will not form the coup-ing.

times, as two male or records over a link, which may b But I claim a car coupling without a link, which may b near fix use on the car, and each hall so formed a match the on

But 1 chaim a case coupling interaction of the car, and each half so formed as that the  $j_x w_y$  or hooks will always couple or each, the one with the other, when bought together, regardless of the particular ends of the cars, which may be brought together, substantially as described.

FIRE ARMS—Ferdinand Klein, of Newark, N. J. : I claim an improvement in the manner of opening and closing the valve or coverof the chamber which receives the charge in the manner and for the purpose as set forth. I also claim the use of a cap for the purpose of protecting the chamber and the spring that moves it, as set forth.

the chambler and the spring that moves it, as settloith, STEAM GENERATORS—A. B. Latta, of Cincinnati, this i Claim, first, combining a siean generator or boiler, co sit-ing of a coil of tube with a furnace, in such a manner that the flame or products of combustion shall come in immediate contact with sand coil, when, this coil is non-ment with a feed appartues and gauges, which will enable the engineer to inspect consumity the supply of water, see that it is not interrupted, test its sufficiency and regulate it at pleasure, according to the warping demands of the boiler or clone the dampers if 'Le feed should be interrup ed, substantially as described.

dampers if the feed should be intervented as a set of the set of t Table table the set of the start of the star

I also claim the arrangement of types, stereotype or rlates in galley, by a system of levers, coris, wires, &c extending from each desk or sent to said galley, or that any number of impressions of the exact record of the vote ta-ken may be instantly printed or struck off. I also claim the soarranging in a galley, of a series of types, stereotype or plates as that they may be readily move therein to the lett or right and instantly locked into: a form from which printed impressions may be taken by ary of the well known means. SEED PLANTERS-J. W. Corey, of Crawfordsville, Ind: I claim the arrangement of an adjustable slide, K, adjust. I claim the arrangement of an adjustable slide,

[This invention has been secured by patents in foreign countries, and has been bignly commended by railroad en-gineers and scientific men. See notice on another page.]

Second the back of the same part of the same set of the sam

[Thisivention is by the same party to whom the Rail

oad Car Brake above mentioned is granted. See notice of this also on another page ]

this also on another page ] MACHINERY FOR BORING WELLS—John F. Manaban, of Iowell, Mass. : I do o clam an endless leathern band, carving leathern buckets around two stationary revolving pulleys, as used in fluing mills, as such are well known. I clam the boringcylinder, B. having a culteratifs l werend and an adjus able cut er in its per placy for enlarg ing theholes ot last the surg reamont bind when huve, and so that the tube designed to line the well can foll-w the au-ger or cylinder, B, downwards and allow this auger to be away up through the linking tube. by the shutting o mov-ung of the enlarging cutter, all being arranged and operated in the manner and for the purpose set irrth. I al o claim the metallic chann of bluckets, B, in combina-tion with the eath cut et, B, operating or moving m such from the ground and clevate it to the deside highl, essen-tially in the man mer and for the purpose set fr.h. MACHINE FOR PARING APPLES -S. N. MAXAM, of Shel-

tially in the manner and for the pu poses' set fit.h. **MACHINE FOR PARING** APPLES -S. N. MARAM, of Shel-burne Falls, Mass. : I do not confine myself to the precise form and exact arrangement of the several parts described. as I may chose to vary the same while I at an the same re-sult by means substantially the sevens. Mordo I clarn any particular  $\beta_{10}$  mor construction of the kuffeto be used upon the machine set forth, it u may use any of the known forms of straight, cauved, circular, or cy-hodrical knives, which have long been in common use. I claim the include plane scroll, Q. combined with the movers. D E F, or their mechanical equivalents combined, arranged and operating 'ubstantially in the manuer and for the purposes set forth.

the purposes set forth. CULTIVATORS—A. H. Morrel, of Marlen, Texas: I am aware that lotary cutters and lateral y adjust the shires have been separately used in cultiv Acts, a d therefore I clasm, first, the combination of the adjustable thinning point or points, m, at the forward end of the call ivstow with the adjustable cultivaturg point, or points, r, at the rescend of the cultivation substantially as set forth. I also claim combining the rotating cutter, d, with the laterally adjustable thiuning point, or points, m, and the cultivating point, or points, r, substantially in the manner and for the purpose set forth.

MORTISING BLINDS-Benj. T. Noris, of Lynn, Mass. : I claim the manner of constructing and op rating the parts carrying the same, v z: the hollow pulley and squadl-within the same v z: the hollow pulley and squadl-within the same arranged as described, trightee with the levers attuched, operated by the means described or atthe suitable divice. I also elaim the manner of operating and guiding the stock by the c monation of the lever with the racks and the mov-able extents, as easy-thed. But I do not claim the index constructed of bars, as de-scribed that having been in use Lef re.

GAS RESOLATOR -Sun P. Patham, of Trenton, N. J.: claim a conic.) value on its equivalent operered by a jet o arr, gas, or water, appled fund havely under i.or a garnet cup or valve connected to it. In combination with an ellipti-cal seat or itsequivalent, so constructed as to lettle requis-ities apply of air, gas, or water escape when the valve i forced nito the seat, the whole beings so crustructed as d an ranged as to resulate and equalize the flow of air, gas, o water, and furnish a multicrutor netry puil fur supply to der different degrees of pressure, substantially as desc.ibed [A description of this Pare letter with a multiched net [A description of this Regulator will be published next

BEDSTRAD FASTENINGS—Joseph Rodefer, of Cincinnati, bhio: I clasm, as formed and applied, the erreutar spiit ring it into a segmential annulir morise in the tail, from witch its upper ead project is in the form of a hook, and it. lower end in form substantially as described, permitting the passage of the catch pin in the actor insertion, allo ding an additional interval bearing and a means of adjustmint, as de scribed.

STRAW CUTTERS-Ita Rose, of Akron, Chio; I do not laim the feed rollers; neither do I claim the knife, for these

claim the feed rollers: neither do I claim the knife, for these are well known, and in common use. But I claim the combination of the cam, H, yoke, I, and lever, J, with the rock h f. K, and pawis, M M, the above parts being constructed, airranged, and operating in the mannerand for the puppole, as hown and described. [See a description of this invention on another page.]

[See a description of this investmentation.] VENETLAN WINDOW HERVIS -- Class. Rose, of All-endown Part [filth in a conversion with the lower hard and blue observes the network of the books made only in the second second second second second second second blue books and under books made only in the second seco the other of the second aput e Tugada a taya biyunk iy Ul haca tay wun sore of plating or emovine in the all h anotherny as wearloch and represented.

Straw Correspondence de vit donait, et Dowersburgh, Judai I chum, first, knives, y active conditionant vient data catales erank, it, and lever, ", honeau gazar et to the fut was so of plikeurs residence. The method is which means laborations are

(2)

PLATE HOLDER FOR CAMERAS - Albert S. Southworth, of Boston. Mass. I claim the de-cribed plate holder, in com-bination with the frame in which it moves constructed and opera ing in the manner and for the purpose substantially as set forth.

ADJUSTABLE FRICTION ROLLERS-Johnand Thos Sween-ADDSTABLE FRICTION KOLLERS—Johnmand Thos Sween-ey, of Birmingham, Pa. : We claim the use of sliding box-es to carry the j wrnals of the friction reilers, in icon bina-tion with the spit is, but it purpose of pressing them all continually against the surface of the journal or guidgeon of the shaft, which works in therollers, so as to make themall revolve as the journal revolves 1 ot only on their own axes but around the journal in the manner described.

FEEDING PAPER TO PRINTING PRESSES-J. B. Hall, of New York City I video dist. Lifesour risking on the

bit would the journal in the manner westriced.
Fregures Parger to Parkyring (FRESSES-J. B. Hall, of New Yark Gity: I claim, first, lifting or pleading up the sheets of paper from the teed boards or plead progen to be printed by some form an even when way, an oper to be printed by some first an an even when way, and paper in the source of the start of the sheets of the sheet of the sheet

[A limited description of this machine will be published ext week.]

next week.] CARIN ("RATES--William Thomas, of Hingham, Mass.: I claum placing the seat. F. within a frame. E. which is at-tashed by pivots, e.e. to the body of the chair, the seat hav-ing friction rollers or wheels, it, attached to its under side, which work upon the lower curved portion of the frame, B, as shown, whereau the trame and body of the chair. The al-howed to run or be inclined in accordance with the motions of the vessel and the weat attrace state time, always to man-ing in a hor zontal position, as described. [This mercution is not add to the vessel.]

[Thismvention is noticed on another page.]

WOODEN SPLICE PIECE FOR RAILWAYS-Issac R. Trim ble, of Baltmore. Md. Antedated Oct. 10, 1854 : I claim the comunation of a wooden splice piece strong enough to resist the latert and vertical distinguished to which the ad-jucct ends of rails are liable, in combination with an y form of rail competent, to its pup is e. without other support throughout than its own sufface s, the sud -Lice piece and rail in this commutation now claimed being raiseized togeth-er, and las eacd down in the manner described.

et, and has enced down in the mainler described. ALLOWING CIRCULAR SAW SPINDLES TO YIELD—Hiram Weits, of Florence, Mass.: I cla matratifug within the box or bearing, and combining with it and the saw spindle, substantially as specifica, the guide, its spin-teg, and the com pound fius; conteal groove provided with shoulders as de-scribed, the whole constituting a device of great; simplicity of construction, and of much advantage in not only allow ing a circular saw, whole in ol-era ion, to move laterally, but to litat, such novement of it, and subsequently to re-storer to its normal or original position.

BORING THE EARTH-C. N. White, of Concord, N. C.: I clum the combination of the frame, C, and weight, B, with the movable inclined roles.  $c_{i}$  attached, the above parts being constructed, an anged and operating in the manner and for the purpose shown and described.

[A notice of this apparatus will appear in our columns next week.]

next week.] PAINT MILL—David E. Paynter, of Philadelphia, Pa, (assignor to Jarnel M. Bissell, of satue place): I am aware that m lis with councal granding surfaces are commonly used. I am also aware that many of the features described alove, have been used in councetions with other mills. I therefore to not wish to claim such placts mills. Aloved by the arrangement and combination of the whole of the parts contained in the specification, that is to say, I claim the double come. D. constructed as shown at a stand v, in combination with the barrel, A, substanially as described, for the purpose specifical. Largers for filewing Locomorty E Durgens-J. M.

for the purpose specified. INTREES FOR TURNING LOCOMOTIVE DURIVERS—J. M. Stone, of Martenster N. H., (assignor to the Marchester Locomotive Works): I claum the drills, D D', in combination with the turning lathe, the one being contised through the face that, the there this ugh the toot speck, in the manner and for the purpose substantially as set forth.

#### RE ISSUES.

GRAIN HARPASTERS—Anoth Palmer, of Brackport, New York, and Sceptor G. Wirnawsk or dynasofflet, travensite, Original pattern dated only for 1891. We can a discussion fracear scales and head or graven total the model platform, D, on which they have been and one combination of the rade, G with the over hang were, norsel by geneting large ensuring the platform edge of concern of said platform, and were switchin the inner edge of concil of said platform, and Li, di wi Encrated v Located v Sectoriti.

[An engraving of this harvesting machine was heautifully illustrated in our columns last week.

WINNOWING MACHINES-Benj. D. Sauders, of Holliday's 

[A description of this machine may be found on page 116, Vol. 9, Sci. Am.]

MACHINES FOR RECORDING VOTES IN LEGISLATIVE BO-DIES-T. C. Connolly, of Washington, D. U.: I would state that the recording of votes by a system of knobs, bellpuils, cranks, and wives, has been used, and is well known. These I do not claim, nor do I claim the working of slides on which the names of the members are printed ure engraved. But I claim the moving of the slides containing the mem-bers' names into columns of yeas and nays; this arrange ment being one that is well calculated for the convenient display of the vote to all the members of the body voting, sub-tranhally in the manner described. 3.a

2

lewer part thereof, substantially as described I also claim causing the disclarating end of a colled tube generator to communicate with, and due hange itself four he water jacket while all other communication of said coil with said jacket is avoided, as described.

said jacket isavoided, as desembed. STRLAW CUTTERS-WalterLackey, of Worcester, Mass. ; I do not claim the self feeding flanges working agains a sta-tionary knife, as described by A. S. Macomber, us his pitcut granted Nov. 5, 1856. Nordo I claim the particutar Joim or arrangements of the paris. But I claim the use of the heads, B B, when innade to cor-respond withthe flange or flanges to facility is the setting of them, and prevent their striking over the station.ry knife or bed. I claim the combination of the flanges, he ds, stationary knife, and feed rolls, as described, or any other substantially the same.

the same

SFIRAL WHEEL FOR REPLACING RAILROAD CARS UPON THE TRACK-R. F. R. Lewis, of Annapole, Md. : I claim the application of one or more cast or wrought-iron hollow cylinders, wormed, flanged, or screw threaded on their ex-terior surfaces, in the maineer of a plain screw, to rai trucks or carriages, in place of or in combination with the common or ordinary flange wheel, as described, and thereby pr. vent the same to an raining of, or being thrown from the track, whilst in forward motion.

GRADUATING THE TENSION OF CAR BEAKES-William

Consider the control of the knicks at more revolution of the double crafts, B, as described and efficient. K, and crafts, B, in com-bination with fixed, d, and pracks, n/n, are been B and rollers, G. (a) for the purpose of fixaling the straw or other material to the knicks,  $\mu$  soft both.

STRAW CUTTERS-S T Sharp, of Danville. Mo.: I claim the arranging a circu ar knile, and a circular gu id upon a common pivol. So that they will evolve a ne towards the other nutil they meet, each traveling the same distance; or the arrang ig two knives (circula ) upon a circumon pivot, so that they will revolve towards each other airti they meet.

meet, PLATFORM BALANCES-D. M. Smyth, of New York (iy): Iam aware that an platform balances the two rocks is that sustain the platform have teen connected togethe. so that the articles to be weighed may be placed on any part of the platform, and excit an equal forceon the balance, but this has he atofore been confined either with the steelyard or common balance, and therefore 1 do not wish 'o be under stand as claimbing to be the first inventor of such an arrange-ment in respective of the comination specified. And I am also aware that scales have been made to oper-tee on the principle of the best lever to weigh atticles of "barying with: who new weight, the arm carrying the a signt grading in the avert been com oned with a 1 to m balance, and therefore I do not claim it as a separate do vice.

vice.

[ in engraving of this machine may be found on page 324, Vol. 4, SCIENTIFIC AMERICAN. With such claims as Mr. S, has now secured to hun, he has one of the most important patents in the agricultural department with which we are acquainted.]

#### ADDITIONAL IMPROVEMENTS.

ADDITIONAL IMPROVEMENTS-PEN HOLDERS-EMencer W. Hansen, of Philadelphia, Pa.  $\Phi_{ightal}$  patent dated Dec. 6, 1532; Having thus fully and accentately described the construction and operation of my inventor, and pointed out peculiar facts resulting there-from, showing its utility and advantages. I proceed to state, that what I clauntherein as my invention and desire to secure by letters pa ent, is, constructing the thum b and finger rests, a b, or either of them so that they shall extend 6

## Scientific American.

#### DESIGN. SPOONS-John Gorham, of Providence, R. I.

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Note to the READER-Another small army of our friends and patrons will be gratified this week by the reception of letters patent for their new inventions. One third the entire number of the new issues above recorded were obtained through our exertions, while an equally large list was granted to our clients last week. Some of epatents are of great importance and value.

Our success in carrying patent cases through is thought by some persons to be remarkable, and with many it beomes proverbial. As for ourselves, we feel sure that those who desire to secure patents, either in this country or in Europe, will promote their own interests by having their business pass through the SCIENTIFIC AMERICAN Patent Agency. Our charges are always moderate, and our facili ties the very best. Every patent case is prepared with the utmost care under our direct personal supervision. If we meet with unusual success, it is due to unusual labor in be halt of our clients. In all cases we endeavor to serve them honestly and faithfully. In this connection we would repeat what we have often

before said, viz :- That we are always happy to advise with individuals respecting the novelty and patentability of their inventions, free of charge. Those who consult with us may expect an honest opinion. If their discovery has, to our knowledge, been before known, we shall tell them so, and advise them not to apply for a patent. If it is new, and in our opision probably patentable, we shall inform them accordingly. Those whoreside at a distance may consult us by letter. Our replies will be either by mail, or through the columns of our paper devoted "To Correspondents."

#### TO CORRESPONDENTS,

W. H. Naracon, of Sterling, of Martville, of Oswego, and sundry other places, wishes to know why we have not an-swered three letters from him, one dated March 20th, and one of April 3rd, and the last April 9th. In reply we would state that all of his letters have been answered, and addressed to him at the several post offices from which his letters purported to be mailed, viz :- First, Oswego, second Sterling, and third Martville, all in the State of New York. Now if Mr. N. resides at neither of these places, will he please to write and specify at what post office a letter will reach him, and we will address him once more, for our patience is not exhausted yet. It is perplexing, however, receive letter after letter from the same individual, mailed from a different post office each time, without any hint from the writer as to where a reply should be addressed—it reminds us of an effort we once made to catch a flea. This hint to Mr. N. may apply to others who are waiting for answers to letters which have been mailed under similar cir cumstances, for it is very often that we have letters dated at one place at the head of the sheet, and bearing a post-mark on the envelope from a different place entirely. Corresondents when they write their letters at one place and mail them at another, will oblige us, and at the same time put themselves in a position to receive a prompt reply, if they will particularly state at what office they desire an answer addressed.

P. W., & O. M., of N. J.-In our opinion your governo cut-offs are both patentable.

S. W., of N. Y .- We are not acquainted with any single work that gives an account of the construction of sounding boards.

H. R. G., of Wis.-Mr. W. H. Archer, No. 9, Lewis Place, Brooklyn, N. Y., says he can furnish you with the work on cog wheels which you desire.

R. B., of N. Y .- Arranging car wheels so that or both will run loose upon the axle when turning a curve, is not new. Your invention is not patentable.

J. T., of Va.-We cannot determine from your descrip tion whether the improvement is patented or not. Why do you not ask the gentleman to show proof of the patent if one exists, by giving names and dates.

W. C. G., of Phila -It appears to us that you could have made a better answer to Mr. E. than you have done; one of your sentences surrenders the question to him.

F.S., of Troy-We have endeavored to find out the e tubes which you wrote about, but have not been able. We never heard of them before; but will pay more attention to the subject.

J. S. D., of Tenn.-We have made inquiries respecting the use of the cotton stalk and bear grass for the purposes mentioned by you, but have not been able to learn that they have ever been so applied. The question will be the ex pense of preparing them. Many substances now unused can be applied to useful purposes, but the processes of man ufacturing them are too expensive.

O. A., of Ia.-Perseverance in practice is the key to suc cess in the art of drawing, as it is in about every other branch of human acquirement. If you desire to learn me-chanical drawing, the "Practical Mechanic's Drawing Book," published by Stringer & Townsend, 222 Broadway, N. Y., will assist you. Price \$5. The same publishers will, on application, give you names of the best works on perspectivedrawing

J. H. W., of Mass.-If we understand your plan it issimplyan arrangement offan wheels for introducing fresh air nto a railroad car, dust and all. No new plan for this purpose is needed, as the ventilators now in use accomplish the same too perfectly : what is wanted is a means of admitting the air but excluding the dust : we cannot advise you

Vergennes Scale Co., of VL-Your power of attorney bas come to hand, and will be sent out by the next steamer .-Your Governor evidently does not appreciate the importance of expediating matters pertaining to foreign patents, and we hope you will give him the hint next time we send you papers which require legalizing. No damage done time by the delay, but under some circumstances there

might have been. E. T., of Ohio-We specified the running of the steam pipes through the apartments to be heated, to save room, for you must lose the use of the apartment which you em ploy for a special heater. There can be no difference in the power of heating the whole building, if you employ the same amount of heating surface in both cases ; that is all. J. W. J., of O.-We do not know the price of any of the

machines to which you have referred; but certainly you can find such a machine on page 12 9, this Vol. Sci. Ax .-Write to the patentee. E. N. S., of Texas-We are not acquainted with any pub

lished work on brick making; work your clay more before molding, and put in a greater quantity of sand into the composition of the bricks ; this should remedy the evil of crack

J. H., of N. B.-Fill the letters of the rules with black wax dissolved in alcohol, or with printer's ink.

J. S. W., of Ala.-Give the full calculations-results well as data to calculate them ; this will save us time.

R., of New York-We are not able to give you the infor mation desired respecting gold alloys, excepting to say that silver makes its color pale, and copper makes it red. By combining these two you will get the proper color. J. C., of Ohio-We cannot find the description of a single

patent, for purifying oil in the manner described by you. There are some very old patents for purifying oils; your discovery appears to be a very valuable one.

W. H., of N. Y .- There is no doubt but that such a society as you express the need of aid from, would be beneficial, but inventors, as a general thing, are too jealous of their separate interests to admit of such ends being accomplished as your proposed society would aim at. Your idea is not practicable. A. G., of Mass.-Ratchet hand wrenches are in pretty

ommonuse, and a good many kinds have been patented still you may have something new ; we would suggest that you send us one of your implements, when we will advise you further.

J. F. B., of Mo.-For the purpose which you desire to adapt a Sewing Machine, we should think Singer's would answer your purpose admirably : address I. M. Singer & Co., 323 Broadway,

W. R., of 0.-We think it would be impossible for you to get a patent on your stove, and therefore would not ad vise you to apply.

Money received at the SCIENTIFIC AMERICAN on account of Patent Office business for the week ending Saturday, April 14 :--

H. C., of Ill., \$40; J. D. H., of Ill., \$30; D. F. S., of Ill. \$30; W. D., of N. Y., \$30; M. B. H., of Miss , \$30; J. E. F. L., of Ct., \$55; T. W., of Ill., \$25; G. R., of Mass., \$25; I. T. R., of Mass., \$25; S. M., of N.H., \$30; J. B. D., of Mass. \$25; S. G., of Mo., \$10; E. D. W., of Del, \$60; P. G. G. of N. Y., \$55; T. A., of N. Y., \$25; J. H., of Wis., \$10; S. S., of Pa., \$20; J. S., of Pa., \$30; C. & G., of Ct., \$30; H. H. T., of Mass., \$30; A. G., of Ill., \$115; P. J. C., of S. C., \$55; J. C. A., of M. D., \$5; E. D., of N. Y., \$32; S. C., of Va., \$25; C. L., of Pa., \$25; C. H. W., of C. W., \$250; G. W. M., of Mich., \$39; T. P., of N. Y. \$20; W. A., of Ct. W. M., of Mich., \$59; T. F., o' N. I. \$20; W. A., of U.,
\$25; M. D. D., of N. Y., \$20; A. W. F., of Pa., \$25; J. C.
R., of N. Y. \$55; T. S. M., of N. Y., \$30; J. H., of Wis, \$10;
W. D. W., of Ind., \$30; W. L. B., of \_\_\_\_\_, \$20; L. Y., of
N. Y., \$56; M. F. C., of N. J., \$25; G. A. M., of N. Y., \$30; J. K., ot Ls., \$70; L. B. B., of Ct., \$30; A. H., of N. Y., \$20; S. H., of N. Y., \$25: C. J., of R. I., \$67; W. Mt. S., of N. Y., \$10; C. R. R., of N. Y., \$25; B. G. W., of N. Y., \$55. s. H Specifications and drawings belonging to parties with the

following initials have been forwarded to the Patent Office during the week ending Saturday, April 14 :--S. I. R., of Ill.; J. S. M., of N. Y.; L. C., of Miss.; A

W. S., of Ct. ; T. A., of N. Y. ; C. L., of Pa. ; S. H., of N. Y.; P. G. G., of N. Y.; A. W. F., of Pa.; A. G., of Ill.; T. W., of Ill.; G. R., of Mass. : S. C., of Va.; J. B. D., of Mass.; T. & C. C., of R. I.; B. G. W., of N. Y. : C. R. R., of N. Y.; E. F., of Ct.; J. H., of Wis.; E. D., of N. Y.; M F. C., of N. J.; W. D. D., of N. Y.; W. A., of Ct. ----

#### Important Items.

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 sent by mail. This pamphlet contains not only the laws bu all information touching the rules and regulations of the Patent Office Price 121/2 cents per copy.

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PATENT CLAIMS—Persons desiring the claim of any inven tion 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.

#### American and Foreign Patent Agency.

ALIGOTICALL ALLU FOREIGN PATCHAL Agency. THPORTANT TO INVEXTORS-MESSRS.MUNN & CO., 128 PULOB street. New York. Fublishers and Proprietors of the Scusstier American, having for many years been extensively engaged in procuring Letters Patents for new mechanical and chemical in-ventions, offer their services upon the most reasonable terms. Patents promptly scured in the United States, Great Britain, France, Belgium, Holland, Austria, Rus-sia, Spain, and in all countries where they are granted. All businessentrusted to their charge is strictly confi-dential. Private consultations respecting the patents bility of inventions are heldfree of charge, with invent-ors, at their office, from 9 A. M., until 4 P. M. Parties reading at a distance are informed that it is generally mnecessary for them to incur the expense of attending in person, as all the steps necessary to secure a patent can be arranged by letter. Arough sketch and descrip-tion of the improyment, should be first forwarded, which we will examine and give an opinion as to patent will be sent free of postage to any one wishing to learn the preliminary steps towards making an application. The addition to the advantages which the long expe-rience ant great successof our firm in obtaining pat-sent present to inventors, they are informed that all inventions patented through our establishment, are noticed. et the proper time, in the Scurstrik that all inventions patented through our establishment, are noticed. et they proper time, in the Scurstrik O AKRICAN. This paper is read by not less than 100.000 persons every week and enjoys a very wide spread and subtatnitial infuence. Parties intrusting their businces in our hoads of the patents obtained by Americans in foreign work and enjoys a very wide spread and subtatnitian infuence. Tarties intrusting their businces in our hoads of the patents obtained by Americans in foreign work and enjoys a very wide spread and subtatention.-Most of the patents obtained by Americans in f

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Fay's Sash Machines. Steam Gauges, .... Fay's Sash Machines. Steam Gauges, .... KNITTING MACHINES—The subscriber having purchased of John Pepper the right to make and sel, his new and improved knitting machines ione of which wason exhibition at the late Fair in Philadel-phila) now offers them for sale. These machines are cheaper and are warranted to produce more work and of a better quality than any other machines in use. WALTER AIKEN. WALTER AIKEN. 312\*

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