# scientific

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#### Improved Marine Governor.

It was a comparatively simple matter to conceive the propulsion of vessels by the power of a steam engine. The steam engine having been previously invented and put in practice for turning mill-work, it only remained to attach paddles to a shaft thus impelled and extending across the vessel, and the solution of the problem, the great solution which has done so much for human progress was at once in its crudest form achieved.

But Fulton was a skillful mechanic, and like his countrymen of later days, labored to adapt the heated monster, the breathing, living mass of metal, to its new situation on shipboard. Much has been done, and undoubted ly much yet remains to be accomplished before the steam engine, especially in those forms intended to impel vessels on the stormy ocean can, be pronounced absolutely perfect; and one of the greatest and most obvious wants in such situations at the present moment is a good and efficient governor.

The steam engine itself is an importation but many of the best adaptations of engines and boilers to marine purposes have been the fruit of American brains and of American exparience. That the problem of regulation is capable of solution is proved by the success of Silver's governor-a purely American device-now in use on the Collins' steamer Atlantic, and we believe, on several other large ships, with the effect of checking the engines with perfect certainty and very rapidly whenever they incline to "race," or to turn too rapidly. When, in a rough sea, the wheels are left nearly or entirely out of water, if only for a second, the engines, if uncehcked, generate a very high velocity in the ponderous masses termed "racing," and when, under such circumstances, one wheel only is plunged suddenly under and stopped, the other acts like a fly-wheel, and aided by the still laboring engines at the cranks, is extremely liable to twist off the shaft. With all the care that is taken to control the throttle by hand in bad weather, the failure of a shaft or some other important portion of a marine engine, due to this cause alone, is by no means uncommon. The disabling of the Atlantic a few years ago, causing her to be almost given up for lost, is still fresh in the minds of our readers. The more recent failure of the Tennessee, causing a serious delay in the communication with the disturbed regions in Central America; the accident to the British steamer America, the French steamer Vigo, and many others which might be adduced, both American and foreign, can, like that of the Atlantic, be traced almost directly to the "racing" of the engines; and any device which proposes to obviate this difficulty without retarding the engines in the least at other times, is deserving of the very highest degree of attention. The device under notice promises this, and, as would appear from theory, with a degree of perfection as admirable as beautiful. It is not, in any case, bulky or noisy, requires little, or almost no attention, to keep it in perfect order, and in



no case offers any sensible resistance, except | taching a small cylinder at the side of the when the speed of the engine exceeds a certain steam pipe, and supporting therein a piston to speed, for which the regulator may be set. be acted on by the steam, which piston is so For example, if, as is common on most of our connected to a spring and to the lever of the large ocean steamers, the enginesshould make from twelve to sixteen revolutions per min- up to a certain standard, or beyond it, the ute, the regulator properly adjusted is of no spring will be compressed, and the throteffect, until the engine starts forward at a tle valve held open, but whenever the engine speed equal to twenty or more revolutions in that time, when immediately, and before they can complete a half revolution, the admission of the steam is shut off almost tightly, and the engines, thus strangled, are fain very rapidly to moderate their behavior, and assume again such speed as etiquette requires.

This simple governor is the invention of Marshall Wheeler, of Honesdale, Pa., and was patented June 11, 1856. Its action is based on the diminution of pressure which unavoidably takes place in the steam pipe, whenever, by an extra speed of the engine, the steam is drawn from it faster than usual. It is well known that in every possible case the pressure at the extremity of a steam pipe nearest but if properly proportioned, the difference in pressure is very slight, not more tran onefourth of a pound per square inch, at full ordinary speeds, and still less when working slowly. But if, by any chance, the engines are allowed to work faster than usual, drinksteam, as before, the pressure is still more reduced, and the steam rushes through with still greater violence. The motion of the steam has no influence directly in affecting the movement of this mechanism, but the diminution of pressure is in such cases so considerable as to be very sensible.

throttle valve that so long as the pressure is "races," and lowers the pressure, the tension of the spring shuts the throttle.

In the drawings, fig. 1 is a side elevation, and fig. 2 a section through both the steam pipe, A, and the side cylinder, C. The elevation is represented as supported on stands. The ordinary throttle valve is denoted by R, the additional or sutomatic throttle valve by S, and a side throttle, which allows the fluid to pass around-extremely important in starting or working very moderately-is denoted by T, in the corresponding pipe, B.

D is the piston referred to, working freely in the cylinder, C. The piston rod, E, is supported and guided by the frame, I, and carries on its top a cross-head, F, from each end the engine is less than in the boiler, or, of of which depend rods, G, which connect it to course, the steam would not move through it; the extremities of short levers, provided for the purpose on the shaft of the throttle valve S. The coiled spring, H, tends to hold the piston, D, continually down, which would keep the valve, S, nearly shut, but the pressure of the steam on the under side of D tends, to raise it, and hold the valve, S, wide open. ing at each revolution the full volume of Starting the engine by opening the side valve T, the pressure in the pipe raises the piston, D, and after closing T, holds it continuously open, allowing the steam to pass freely and supply the engine, until, on attempting to "race," or go faster than prescribed, the pressure lowers, and the valve, S, nearly shuts. The engines then incline to drag too slowly The invention consists substantially in at- | until the flow of steam through the small re-

maining opening at S fills up the pipe again to nearly its original tension, when D again rises, and all moves on as before. To avoid this too slow motion of the engines after each action of the governor, it may be well to leave the side throttle, T, part way open, or provide for a quite liberal flow through S when as fully closed as it may be, either of which would probably have the effect desired. To aid in this matter the cross-piece, J, is made adjustable on the frame I, so as to check and stop the descent of D, and conse-quently the closing of S, point at any limit preferred.

The invention has not yet been put in use, but seems in the highest degree promising, and one which should be applied by a skillful designer on some of our ocean steamers, and fairly tested.

Any further information desired may be obtained by addressing Mr. W., as above.

One Hundred Tuns of Grass to the Acre.

Three weeks ago, on page 249, a statement was published taken from an English paper, of a farmer on Lord Derby's estate who had raised 100 tuns of grass on an acre of land by liquid manuring. We gave the statement in such a manner that any person might understand it was not upon our own authority. We have, however, received three or four letters expressing great surprise at it being published in our columns. It was stated, in the article referred to, that the crop raised was "Italian grass;" it was not hay, but green crop, and probably four or five cuttings were made during the year, as three cuttings of clover are not uncommon in England.

That 100 tuns of grass should be raised on an acre of land appears to be rather a tough or large story to credit; but if 76 tuns of turnips have been raised on an acre, why might not 100 tuns of grass be raised on the same area? In Johnston's Agricultural Chemistry, page 487, it is there stated that this quantity of turnips had been raised on an acre of land. From farms which thriftless cultivators had to leave because they had "worn them out," and from which they could not raise three bushels of wheat to the acre, other farmers have come after them and raised thirty bushels of wheat to the acre. We have known of such cases ourselves having occurred in the State of New York. But tell the former class of farmers of such results, and they look perfectly incredulous.

Lord Derby's farmer may have raised 100 tuns of green crop to the acre, by liquid manuring, as has been stated, and he may not. The quantity appears to us to be too great to credit, but not deny, because it is no more fabulous like than the 76 tuns of turnips mentioned by Prof. Johnston.

#### The Half Launch Finished.

The Queen of the Pacific, noticed last week as stuck when partially in the water, was finally set afloat during the night of Saturday the 11th ult., by jacking up the hull into a more inclined position, and reconstructing the ways. Thus repaired she slid off on the final trial without any assistance from tugs or derricks. The extra cost, in consequence of the mishap, is judged to have been about

The Boston papers state that in a field near that city five men have been digging for a week for hidden treasure, being led to believe they could find it there by a divining rod. No treasure has yet been discovered.

--M. Garvini lately made an ascent in Paris in the largest balloon ever constructed. It was propelled by a screw. and had a rudder like a ship, but was not very successful.

A submarine cable has been laid across the Misaissippi at St. Louis.

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## Scientific American.



[Reported officially for the Scientific American.] LIST OF PATENT CLAIMS lasued from the United States Patent Office

#### FOR THE WEEK ENDING APRIL 21, 1857.

CLOSING GAS RETORTS-N. Aubin, of Albany, N. Y.: do not claim the box for introducing the materials for energy of the second seco generating gas. But 1 claim the cover, B, with the compound rim, a', fitting into the groove, a, for the purposes set forth.

litting into the groove, a, for the purposes set forth. TRAPS FOR RELIEVING STEAM PIPES OF WATER John Avery, Jr., of Lowell, Nass: A pipe coupling has been made so that the expansion of a long pipe may be made to close, or partially lose, the opening between it ad its fellow. But it is not convenient, except for ceriain purposes, to have this long pipe, and a short one will nt, on account of its limited expansibility, serve the purpose. Besides, this only regulates the flow of Water or steam, and does not admit of allowing the water of condensation to pass off whilst the steam is retained, and is not a steam trap in the sense in which I claim one. I make no claim to guch an arrangement. I claim, in combination with the outer case, A, the in-closed mercury holder, B, and diaphragm, and openings, m K', for the purpose set forth.

Door Spring-Gilbert L. Bailey, of Portland, Me. : I do not claim any of the described parts separately. Neither do I claim in a door spring making the pres-sure greatest when the door is closed. But I claim the use of the volute, coniform spring D, in connection with post, A, lever, L, and guide, X, the whole arranged and operating substantially in the man-ner and for the purpose set forth.

Ox YOKES-Isaac K Bennett, of Narrows. Pa. : I claim the pinions, a a, on the pivots of the low blocks in combination with the racks into which they gear, opera-ting substantially in the manner and for the purpose spe-cified.

CUTTING VENEERS.-Gilbert Bishop, of New York City : I claim constructing the knife in sections. each having alternate smooth and toothed cutting edges at-tached together and arranged and supported as de-scribed.

EXCLUDING AIR FROM LIQUORS ON TAP-Absolam F. Hoyd.of Muskingum co. O: I claim the application the bag. B. to a cask or barrel, as hown and described for the purpose of preserving the flavor of liquors by ex-cluding the atmosphere from them when the cask is on 'tap.'' as described.

WASTE WAY IN FAUCETS-James E. Boyle, of Rich-mond, Va.: I claim the recess, v, and orifice, o, in com-bination with the channels m. c, when constructed and arranged in relation to the ordinary component parts of stop cock, in the manner specified.

BUTTONS FOR PANELS OF FENCES-WM. B. Bur-ett, of Lyons, N. Y.: I claim the turn button clamp, r its equivalent, for connecting the trays of a portable once, constructed, arranged and operating substantially set forth as set forth.

CASE HEATERS-Simeon Burgess, of Wayne, Pa.: I claim combining with the fire pot, B, the encompassing hearth, A, with the adjustable pins for securing cashs of different sizes in a concentric position, as set forth

CHIMNEY DAMPERS-Augustine Campbell, of Phila-delphia, Pa.: 1 claim the angular frame provided with a series of valves or vanes, d d, arranged, constructed, and operated substantially in the mannerset forth and for the purpose specified.

Awi. HAFT-Nathan S. Clement, of Worcester, Mass. I claim an awi haft constructed as set forth, having the chamber for spare awis on the same end with the grip ing jaws, and when closed in the manner specified.

ing jaws, and when closed in the manner specified. GAS REGULATORS-Robert Cornelius, of Philadelphia, Pa i I claim. first, the employment of a spring box or box s composed of two plates of corrugated metal, as shown, and placed intermediately, so as to "communicate o tone hand with the statin the main chamber, I, and on the other hand with the branch chamber, U, being sep-arated by throuled openings, s' and V V', in the man-ner and for the purpose set forth. Second, the employment of the valve, R R' in combi-nation with the spring box for regulating the flow of gas, these being constructed and operating as and for the pur-poses substantially as described.

poses substantially as described. If AND SEED PLANTERS-Thomas Crane, of Fort At-kinson, Wis. I claim the combination of the pivoled and spring-actuated block, a, with the grooved and perforated diding slat, b, substan tally in the manner and for the purpose set forth. I claim also the combination of spring, d, with the grooved and terforst: d sliding slat, b, in such a manner that the inclined aperture, n, in the tack of the planter will operate said spring, substantially in the manner and for the purpose set forth.

for the purpose set form. If  $x_{ND} = \sum P_{LANYERS}$  John Decker, of Sparta, N. J. 1 am aware that reciprocating perforated slides for planing or dirivibuting seed have been used, and 1 do not claim such separately or in themselves considered. But I claim the slides, b, fitted in the box, B, and placed relatively with the hoppers, A A, as shown, and the plate or clearer, f, attached to the block, d, when the above parts are combined and arranged so as to operate conjointly, as shown, for the purpose specified.

[This hand seed planter has two hoppers, a seed elevator with two slides, and a clearer fitted within a box which has three passages It can plant two different kind, of seed at once, such as corn and pumpkins, &c., in one hill, or seed and some fertilizer. The clearer also prevents choking. It is a good improvement.]

Buyrt, Eng. Alex, Douglas, (assignor to Messrs, Douglas & Sherwood) of New York City Ante-dated Jan. 3th 1357: I claim the combination of the elastic strips, A the steadying cloth, Bior its equivalent, provided with straps or fastenings. D, and the adjusting cord. U, sub-stantially as described and for the purpose specified.

[This invention makes this indispensable portion of feminine wearing apparel adjustable in dimensions to wit the convenience of the wearer. The dress is supported to an extent controlled by the cord, so as to give any amount of swell desired while all th lightness, coolness, and other desirable qualities belong. ing to modern improved skirts.]

BLOCKING HAT BODIES-WM. A. Fenn, of New Mil ford, Conn: I claim the cylinder, g. placed hoosiy on the spindle or arbor, II, and ressing on the spring, h, in combination with the rods or jaws, K. K. the above parts being arranged substantially as described, whereby the hat body may be stretched and adjusted snugly around the hat block.

[This is a use ul improvement in blocking felted hat dies. The combination and arrangement of the devices described allow of the hat bodies being put on very expeditiously, and blocked-put into proper shape-in superior manner ]

LINE KILN-Aaron Jeffries, of Alleghany co., Pa. : 1 a not claim the form of the stack above the arches in

š 

Jacob B

ROPE MACHINES-Harvey W. Fowler, of Hoosick Falls, N. Y.: I claim, first, the stationary disk, F. ar-ranged in relation to the layer shaft, C. and the spider, B, in the manner described, for the purpose of commu-nicating motion to the filters, h, through the filter pul-leys, f, as set forth. Second, arranging the series of flyer shafts, g, radially to the layer shaft (C, and revolving them when the layer shaft is revolved, so as to give the proper degree of twist to the threads or strands as they leave the spools or bob-bins in the fl. ers by the peripheries of the stationary disk, F, the said pulleys being adjustable nearer to or further from the center of the layer shaft, to decrease of increase the speed of the flyers, and through that to give a le sor greater degree of twist to the thread or strand, as described and setforth.

as described and seiforth. MESERGER SHACKLE BLOCKS-George Gilmour, of Chelsea, Mass.: I claim the said messenger shackle block, or combination and arrangement of the sheaves or pulleys, the forked pawl, the roller, and the chain space or passage, substantially as specified. I also claim hinging or joining the parts, C C, and the pawl to the remainder of the from, in order that the pulley, as specified. I also claim combining with the pawl and the pulley frame a mechanism substantially as described, or its equivalent, by which, by presure of the chain against the pawl, such pawl may be caused to lift the parts, C C, and the roller, in maner and to facilitate the movement of the shackle block on the chain, as specified.

BURNERS OF RUGNING FLUID LAMPS\_Charles A. Greene, of Philadelphia. Pa.: I donot desire to lay any claim to the employment of a supplementary wick, in connection with the lamps, or to the employment of plaster of Paris, or other non conducting substance for uncounding the scenario.

plaster of ratis, or other non-conducting substance for surrounding the reservoir. Neither do I desire to claim the exclusive use of a tapering spur for penetrating the wick. iful claim the hollow burner, G, with its rounded or hemi-spherical cap, and its projection, g, when the whole is rendered adjustable to the main tube, in the manner and for the purpose set forth.

manner and for the purpose set forth. TEA KETTLES, &c-Jas. Greenhalgh. Sen., of Water-ford, Mass. I do not claim having a wire pass from the top o the cover through the handle of the cultary ves-sel, so that by pulling the wire the cever may be raie d without burning the hand. Neither do i claim a silding stop arranged on the bail, and acting in combination with a peculiar construction of eye for keeping the bail of a cultary vessel slevated, as in the patent of Thomas H. Dodge, 1853 I claim connecting the cover C, with the bail or han-dle, B, by means of the bar, D, passing through a slot, b, in the ball or handle, substantially as shown, for the pur-poses specified.

[The cover or lid of this kettle is connected with the

handle or bail. By moving the bail to the one side, the lid is lifted; by raising the bail to a vertical position the lid is put on, and the handle held upright-a very venient and safe arrangement for operating the lids of kettles.]

kettles.] AUTOMATIC RAKES FOR HARVESTERS—Jonathan P. Green and Israel Dodenhoff, of Rioomington, Ill. We claim the mode described of attaching rakes to endless belts or chains, and of properly guiding the same, whereby lateral and vertical deflection of the band is prevented in operating the rake, that is to say, hinging the rakes to the belt, C, by means of jaws, c, and pro-jecting lips, d, when combined with guide pins, f, work-ing rooves, to prevent lateral deflection. while a guide bar, h, keeps the rake down to the platform in raking off the grain, all as set forth.

HAND SEED PLANTERS-Plymour B. Green, of Chi-cago, III.: I caim the combina ion of slide, B, catch, C, and stop. E, constructed and arranged to hold the plun-ger stationary until the point, K, enters the earth to a certain depth, substantially as described.

Portation Apparatus for Gas-James O. Halsey, of Essex co. N.Y., I claim the air chamber, B, con-structed and operating as described, to allow both the retort to be charged while the fire is in operation, and to carry of the gas that escapes from the retort, and pre-vent its entering the room.

COTTON CULTIVATOR—John M. Hall, of Warrenton, Ga. I claim the combination with the wheel, P, of the adjustable hoes, i, constructed, arranged, and operating in the manner and for the purpose set forth.

HEMP BRAKES-Wade W. Hampton, of Winchester, Va.: I claim the clamping and feeding the clamped material through between the breakers, when accom-plished by an arrangement of parts substantially such as set jorth.

Set jorn. HV DR ANT — Abraham Hoagland, of Jerrey City, N. J : I claim. first the emptying the pipe, A, by a self.acting valved piston. C, with holl w rod, B, in the manner de-scribed. Second, I claim the construction and use of the valve, made of an ordinary bevel winged valve, with the flexible valve, E, added at the bottom and the cushion, r, added at the top, for the purposes described. 'Third, the combination of the catch, N, upon the large friction pulley. H, with the collar. O, to enable the oper-abr to force down, by the crank. the piston upon the valve, D, and open it against pressure, æ described. CABDING MACHURGE — Hourshop of Somers

CARDING MACHINES-Biram Houghton, of Somers, Conn: I claim the combination of the thirdroll.c. with the feed rolls and lickerin, arranged substantially as de-scribed for the purpose specified.

INHALING MEDICINAL AGENTS-Alonzo G. Hull, of New York City: I claim the means of inhaling gases, yapors, and medicines treated in the manner substantial-ly as set forth, or in any other equivalent manner.

VAULT COVERS-George R. Jackson, of Rve, N.Y., I claim combining glasses of an inverted pyramidal or poly-gonal form with the sach or metallic portion of an illu. minaing waith toyer, or its equivalent, for the purpose of producing a wider and more perfect diffusion of the light which may pass through said cover into the apart-ment beneath, substantially as set forth.

VENTILATING VAULTS-George R. Jackson, of Rye, N.Y.: I claim connecting the aforesaid elevated re-cesses in the ce lings of subterranean apartments with ventilating lamp posts, or with the flues of a building, substantially in the manner and for the purpose set forth.

SAW SET-Oliver B. Judd, of Little Falls, N. Y.: I claim the gaze, E, having the jaws, F F, constructed as described, and when used in connection with the revolv-ing plate, G, operated in the manner specified.

REFING SAILS—Francis C. La Croix and Chauncey Barnes, o: New York Uity : We claim reducing sails by means of "tackles" arranged as describ d, both ends of the "falls" of which are secured to the yard, and which are operated in the manner set forth.

are operated in the manner set forth. BATHING APPARATUS-LOUIS H. Lefebvre, of New Orleans, La. I claim, first, providing a portable frame and casing used to be placed over persons to administer baths without removing them from their positions, and attaching to said portable frame a graduating stop cock provided with a reservoir, a. to receive the condensed vapors, with the handle of said cock extending into the frame and beneath the casing, to enable the person taking the bath to operate the graduating cock. Second, perforating the pipe or reservoir from which he vapors issue into the bath on its upper side, and plac-ing beneath it a pipe or reservoir to receive the conden-sai on, uniting said pipes or reservoir to grade vapors may escape asset forth. Third, distributing pipe. B, provided with double fun-nels and stop cocks, for the introduction of medicated or other substances into the bath on the conden the connecting pipe, S F, substantially as set forth. CURLING HAR\_MARK M. Lewis, of Albany, N. Y.: I

CURLING HAIR\_MARK M. Lewis, of Albany, N. Y.: I claim the construction of a hair curling instrument by the combination of a taper-formed tube with a comb, which can, by a spring or equivalent apparatus, be made to project from the surface of the tube, or withdrawn in-to the interior, substantially as set forth and described.

SHINGLE MACHINE\_G. H. Mallary, of New York City : I do not claim any of these parate parts composing this machine when employed by themselves But I claim the arrangement of the several devices de-scribed, by which the boit is sawed into shingles and planed, as set forth, the whole being combined and con-structed substantially as described.

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SMOOTHING IRONS-Galen B. McClain, of Bath, Me. I claim the described sad iron, constructed in the man. ner substantially as specified, with its doors or flaps, d e, arranged and operating as described.

Cooking Stores Thomas King, of West Farms, N, Y.: I do not claim broadly the surrounding of the oven in stoves with hot air flues. Nor do I claim the regulation of the draft of sloves by the admission of cold air into the escape flue, although I consider that my improvement is more perfect in these respects than other sloves. I claim the arrangement and combination of the box, Q, register or pot hole, S, and flues, O P K and L L, all constructed and operating as set forth.

[The draft of this stove can be accurately regulated at

all times by a register, and rapidor slow combustion pro waced, as desired. It has two dampers for throwing the heated current in different directions, either to concen trate the heat on one side of the chambers, (which is of ten required,) or to diffuse it equally all around]

COMMENTED SQUARE, MITER SQUARE, AND BEVEL-Alexander McKenzie, of Boston, Mass.: I claim the described arrangement of the try square, the miter, and the bevel biade, the latter being hung so at to project up on the opposite side of the stock from the blade, and so as to form, when set at an angle of 15 deg., a continuation of the miter head, as set forth.

DENTAL FORCEPS-J. A. McClelland, of Louisville, Ky.: 1 claim connecting the handles to the head pieces, c. of the instrument, by means of suitable joints and ap-pendages, arranged in such a manner that the shape of the instrument can be so changed as to adapt it to the drawing of upper or lower teeth, substantially as set

drawing of upper of above the set of different sizes have been fit-forth. I am aware that beaks of different sizes have been fit-ted to a dental forcep in such a mannor that one beak can readily take the place of another, and therefore I do not claim this. But I claim combining the beaks with a dental forcep, in such a manner that their length can be increased to any desirable extent, substantially in the manner set forth. any forth

SECURING THE DOORS OF HAY PRESERS. &c.-Cor-nelius Martratt, of New Baltimore, N. Y. : I claim the form of crack or loop, E. the elliptic or eccentric form of the ends of baltens, C. O. and the combination of the one with the other, for the purpose of securing a door or hatch, and for the purpose of preventing a sudden and dangerous start of the door in opening, by means of the gradual movement of the baltens outward, as the loop is turned off from them, substantially as described.

MOLDS FOR CASTING-Mortimer Nelson, of New York City: I claim the described method of forming molds for casing brittania and other metals, by backing up a thin metallic face with plaster. In the manner substan-tially asset forth.

tially as set forth. GRINDING SAWS-Albert S. Nippes, of Lower Merion, Pa: Iclaim, first, placing the roller, R, within a frame S, which is pivoted to a bar, T. which has its journals, f', fitted in oblong slows or bearings, J', substantially as shown, so that said roller may be elevated or raised up free from the saw, and also be adjusted more or less an-gularly with the tace of the grindstone, H, for the pur-pose set forth. Necond, I claim operating or moving the stone, H, and roller, R, towards and from the saw by connecting the bearings, d, of the shaft of the sione, and the journals, f', of the bar, T, to the disk, D, and ratchet, C, by means of the arms, h', and the rods, E, substantially as described.

(The saw is placed in a peculiar sash in this machine

where it can be turned over, perfectly strained, and ground accurately to any thickness or bevel. There is also a compensating adjustment for adapting saws to be ground accurately, according to the wear of the stone. Means are also provided for giving the stone a lateral movement from one side of the saw to the other. It is a very ingenious machine for the purpose.]

very ingenious machine for the purpose.] FORMING CLAY PIPES-C. P. S. Wardwell, of Lake Village, N. H.: I claim the arrangement and combina-tion of the respective devices described, by which the necessary and successive stoppings and startings of the piston G are effected, by which the dies, I I, are opened and again closed at the proper movements, and by which the knives. U U, are brought into action when required, all by simply moving the lever. n, up and back again in connection with the pressure of the clay against the piston, M. substantially as set forth.

SPORESHAVES-Manley Packard, of North Bridge-water, Mass. I do not claim applying either a wedge or clamp screw to each start, in order to keep it in place n the stock.

in the stock. But I claim the described new arrangement of the clamp screw and how spring with respect to handle and starts of the knife or cutter, and so as to operate there-with, substantially as described.

with, substantially as described. SAWING MACHINE-H. F. Purmort, of Saginaw City. Mich.: I an aware that the blocks of saw mills have been operated simultaneously both by hand and auto-matically, and also reciprocal motion has been reversed, in the same, or in a way equivalent to that described. I do not claim therefore separately the parts for effect-ing the purposestated But I claim the sliding heads, F F, placed on the blocks, E E, and operated by the pinions. d, racks, c, awle, and raichet H, and the carriage B, operated by the wheels, V X. placed on the shafts, U W, when the above parts are arranged as shown and described for the purposes torth.

[This improvement relates to the feed motion of saw nills, and the adjusting of the head and tail blocks in feeding the log to the saw. By a single lever the feed carriage is made to receive a direct feed motion and a everse motion-gigged back. The arrangement of the devices is very simple for effecting the objects specified.]

Washing Machings-J.F. hong in Soldispland. Ohio, and C. L. Pond, of Buffalo, N. Y.: We make no claim to the rollers and apron. But we claim the combination of the vibrating stop piece and its rod, p. with the screwing plate, q. and the spring bearings of the rollers, when said parts are used in connection with fluted rollers, arranged and operating as described.

 connection with initial roles, arranged and operating as described.
 DUMPING RALEADE CARS-Wm. Pearce and John Lowrie, of Piedmont, Va.: We claim, first, the method of discharging cargo from cars by means of a rocking track, substantially as specified.
 Second, We claim the mine car, as described, constructed withoutany openings in its sides, ends or bottom for discharging tracgo, and with its ends raised higher than its sides, for the purposes setforth.
 Third, The ribs or fanges, J. in combination with the rocking track, for the purposes and in the manner substantially as specified.
 Fourth, We claim the shoes, g, in combination with the projections, h. for steadying the rocking track whilst the cars are ran on and off, substantially as set forth.
 Fifth, The method of braking the rocking car, (as it is capsized to discharge the coal and alterwards raised) by means of the brake, u and wheel, s, the latter being mounted on the shaft of a pinion, v, operated by means of rack, p, and pinan, o, or their equivalents, substantially as specified.
 Sixthy, We claim the arrangement of the cam stud, u, in combination with the latch bar, K, by which the doors, w, of the rocking car are released when it is brought into proper position to discharge its cargo into the chut, as set forth.
 GRINDUNG MULE-Ezia Ripley, of Troy, N. Y, i J BRICH MACHINES-G.J. Washburn and E. J. Fellows (assignors to themselves and C. Washburn), of Worcester, Mass.: We claim, first, the methoddescrited of applying pressure to the plunger by means of the radial arms R, and levers X, operains in the manner substantially as set forth for the purpose specified. Second, We claim the combination of the radial arms, H, with the sliding molds, 1, and moving block or plunger P, when said parts are constructed and arranged combined in radiation each other authorities to the

The chule, as set form. GRINDING MILLS-EZTA Ripley, of Troy, N. Y. I claim giving to the grinding plate, F. when it is applied to a constantly revolving grinding plate, D, the positive two fold eccentric and swinging movement described, substantially in the manner and for the purposes set forth, in contra-distinction from giving to the grinding plate, F, when used with a rotary grinder, D, a simple eccentric swinging or reciprocating motion, or any other simple or compound movement heretofore positively communicated thereto in grinding mills.

HARNESS SADDLES-Palmer Shaw, of Syracuse, N.Y.: I claim making the tree of harness saddles to con sist essentialy of the leather cantle piece, C, fig. 3, shaped as described, connected to the raised portion of the leather fig. 1, from which the skirts D are formed, and the whole attached to the beains plate B, substan-tially in the manner and for the purpose set forth.

FELTING HAT BODIES-H. L. Randall, of Rexbury Conn. Having thus fully described my improved ma-chine for felting or sizing hat bodies. I claim, first, the felting board, by a system of levers arranged as de-scribed, or their equivalent. Second, Rotating the bat or roll of material being felt-ed round its own axis, in the manner subskniially as described. Third, In combination with the felting board, when operated as described, the adjustable stationary stocks as est forth.

IMPROVED LUBRICATOR—Hiram Strait, of Coving-ton, Ky.: I claim the oil cup, X, with its sliding bottom B, thumb screw T, guides G G. in combination with porous oil bags or pieces of spenge. S, or any other porous and clastic material saturated with oil, and the spring Y, substantially as specified.

CURRENT WATER WHEEL-Thos. Stamp, of Wetump-ka, Ala. : I claim so constructing a current water wheel that it may be raised and lowered, as set iorth, in com-bination with the method described for regulating the force of current acting thereon, all arranged and com-bined as set forth.

force of current acting thereon, all arranged and combined as set torth.
WINDING CÓRTCAL BOBBINS-Clark Tompkins, of Troy, N. Y., and John Johnson, of loxuury, Mass.: We claim, first, the manner described, in which the speed of the winding bobbins is changed, so as to constantly draw the yarn from the fixed totbins with unitoral or nearly uniform swiftness, and thus secure more even tension on the winding yarn, and thereby pake the new bobbins of more uniform density than if they were rovolved with uniform swiftness. And thereby pake the new bobbins of some vent density than if they were rovolved with uniform swiftness, and thus secure more even the soil of such bobbins, giving each tothin split, die of the series the proper independent terreating movement from the yarn arran distinction from giving each bobbin the separate retreating movement, by means of a fixed guide acting against the conical part of the wound yarn, and instead of making all the bobbin shown, connecting each thread of yarn as it runs to a bobbin of the series with the parts which give that tobbin in a retreating movement. by means of a device arranged and operated upon by the terms of a device arranged and operated upon by the tension of the which yet as or une sout, the bobbin upon which it was winding at once stop moving endwise, and consequently to the purpose of the series are series are the bobbin without any re-adjustment of the bobbin by more end by a series which he part of a device arranged and operated upon by threas or runs out, the bobbin upon which it was winding at once stop moving endwise.

bobbin without any re-aujustation. The poperative. And, finally, we claim the combination of pa ts de-scribed, whereby the rotary motion of each bobbin is stopped where wer it is slid by the mechanism described to that place in respect to the yarn carriers where the winding should end.

winding should end. HARROWS-G. W. Tolhurst, of Cleveland, O. I am aware that harrows have been made to rotate by diag-ging them across the field, but they always rotate in case the there will be the second state of the second state the there will be the second state of the second state or more auxiliary wheels are used for the rotation, which is then only in one continuous direction. I claim the adjustable shield pieces. G. G', in combina-it on with the rotary harrow, substantially in the man-ner and for the rourpose described. CABLE SPERSG-WM Wilcox, of East Hartford, Ct. I claim the adjustable shield pieces and the puennaic spring springs of India rubber dises and the puennaic spring springs of the rote of the springs, c, and the spring s, within the cy linder, operating as and for the puepose set torth. HARVESTERS-J. C. and T. G. Wilson, of Cedar Hill.

HARVESTERS-J. C. and T. G. Wilson. of Cedar Hill, Texas: We claim operating the reel by means of the rigid pin m. and spring arm n. attached to pulley l. in combination with ratchet h. arms 0, and holding spil. i, when said parts are arranged to operate in relation to each other, as and for the purpose set forth.

OIL CANS-Hiram Wells, of Florence, Mass. I claim the conical cup and ball so arranged as to close the valve substantially as described, when the can is turned down to deliver the oil contained in it.

and firmly secured to the reel, also readily attached and det ched, and they can be stretched with a greater or less degree of tension as may be required. And if one section of the cloth be injured, it can easily be replaced without removing any of the others, thus embracing considerable economy. The improvement is applicable to both silk and wire bolts.]

BLACKSMITH'S BUTTER: S-Robert Killmer and J. W. Williams (assignor to Robert Killmer), of Newton, Pa. We claim the construction of butterises with temovable two-edged bits or blades secured to aplate, A, having rectangular sides by half flanges, B B, and a thumb-screw. C. or when said sides are tapering by double flanges only, the whole being arranged and operating as set forth. nanges of set forth.

POTATO DIGGERS-John Taggart, of Roxbury, Mass. ssignor to himselfand Wm W. Messer, of Boston, Mass

assignor to himself and wm w. messer, or nosion, mass l claim the combination and arrangement of the plow the gird or grate, the revolving tooth lifter wheel or wheels, and the means of discharging the potatoes from

STATE MACHINE-Henry L. McNish (assignor to him-self and D. C. Butler, of Lowell, Nass.: I claim the angu-lar guides e', upon the lever N, in combination with the connections, P P, and concomitant parts for adjust-ing the side cutters, K', R,' to dress staves of different widths, and at the same time preserving the propuriton between the bilge and the width of the stave as set forth.

forth. I also claim the V, guide e', on the bed plate for the purpose of guiding the staves in a direct line through the machine as set forth.

to operate in relation to each other, substantially in the manner and for the purpose set forth.

ARGAND GAS BURNERS-C. II. Johnson (assignor to himself and J. G. Hamblin) of Boston, Mass. I do not claim applying an air regulator or scries of valves to the orifices for admitting air into the inner tube of an argand

or ifices for admitting air into the inner two or an assum-burner. Nor do I claim separately therefrom, supporting the globe and chimney brackets by a tube encompassing the burner or outside tube thereof. But I claim the improvement of constructing the sup-porting tubes of the brackets, so that it may not only sustain such brackets or have them extended from it as described, but at the same time admit the register to be operated by simply laying hold of and turning either the globe or chimney, when the friction thereof on the brackets may be sufficient for the purpose.

brackets may be sunctent for the purpose. FLUID METRE\_S. J. Burr (assignor to himself and HI F. Resd) of Brooklyn N. Y : 1 claim, first, the combi-nation of the flexible partition with shifter, o, for the. purpose of opening and cloving the valves or a pertures, to admit and discharge the fluid, so that the apariments shall be alternately filled and emptied in the particular manner described and shown. Second, I claim the combination of the valves, tube,

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the same.

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and flexible partition, substantially as described, so as to mke the entering fluiddischarge the fluid, alternately, in each apartment, by its pressure upon the opposite sideso(the flexible partition. Third, I claim the shifter, O, whether asset forth, or in any other form producing the same result, and placed between the two portions of the flexible partition and the packing of the tube by the outer edges of the two por-tions of the flexible partition, protecting shaft c, and shifter O from contact with the packing, and allowing the said shaft to work fi cely at the same time. Fourth, I claim the combination of the shaft, c, en-closed in the tube f with the valve throw, substantially as described and for the purpose set forth. RE-155VES,

a described and for the purpose set forth. RE-153026. Looms-W. W. Dutcher, of Milford, Mass. Patented June 27, 1846: I do not claim guiding a wagstaff by means of a rocker and stand, my invention not employing any rocker or rocking motion for each staff. I claim supporting the wagstaff at its lower end so that it may silde longitudinally in connection with sup-porting it in other respects by a joint link, or its equiva-lent, applied so as to cause that part of the staff which strikes the shuttle to move in a line parallel or about parallel to the rice beam as specified. And I also claim connecting them back, in combina-tion with the application of a positive motion above for driving the shuttle, where by the returning staff aids in arresing the momentum of the shuttle, substantially as described. REFAIGERATORS-D. W. C. Senford - S.

arresting the momentum of the shuttle, substantially as described. REFRIGERATORS-D. W. C. Fanford, of St. Louis, Mo. Patented Nov. 13, 1853: I claim the employment of an open bottom ice boxor equivalent thereof, in combi-nation with a dividing partition open above and below; is oplaced that by means of self operating, internal circu-lation, the whole of the contained air shall be kept in motion, and cused to revolve around this partition in currents moving downwards only on one side of this partition, and cused to revolve around this partition, and cused to revolve around this partition, and cused to revolve around this partition, food or provisions placed directly under said ice.box, as set forth. I do not claim by itself a partitlon dividing vertically one comparimentor arefrigerator from another. Nor do claim placing articles to be refrigerated in a descending current of air. But I do claim placing shelves or fixtures for holding articles to be refrigerated or the articles themselves in the descendit g current directly under san open bottom ice-box, in combination with a dividing partition open above and below asset forth. I al oc aim in combination with said shelves or fixtures op placed constructing the open bottom of the ice box in such manner that the air may pass freely down through the same, and taid freety from the ice upon the articles to be refrigerated, while at the same time the drip of the water is prevented, as set forth. HINDE FOR PictURE CASES-A. P. Critchiow & Co., assignees of A. P. Critchiow, of Florence, Mass. Pa-

Hinds For Picture Cases—A. P. Critchlow & Co., (assignee.of A. P. Critchlow). of Florence, Mass. Pa-tented Oct 11, 1855. I no: claim a hing: of coursmon con-struction, or one having each of its leaves either bent at a right angle or provided with a tenon or projecting part, so that it may be incerted in a mortise made in the side of a case or box.

so that it may be intertent in a morise made in the state of a case or box. But I do claim the application of a hinge of a daguerre-otype or picture case, molded of a plastic material, or made ot a frangible substance er substances, such being made vitheach of its leaves bent twice, as set forth, and so applied to the haives of the box, that it may not only embrace two contiguous sides of such haives and be inde-pendent thereof, on thave any tenon or projection to enter the same, but may extend or lap over and be fas-tened to the top and bo tom plates of said box, substan-tially a idescribed. enter the same, but tened to the top and tially as described.

SEED DRILLS-James Selby, of Lancaster, O. Pa-tented June 19, 1855: 1 c'aim the regulating at pleasure the quantity of seed discharg d by means of the trans-verse sildes. F. or their equivalent in combination with the reciprocating F, as shown and described.

#### California Bituminous Springs.

MESSRS. EDITORS-In this vicinity, and in many other places in California, "tar springs" abcund, which the natives use to cover houses, lubricate axles, &c., and when mixed with sand it congeals and answers for flooring and pavements; and I think it will soon be manufactured into a burning fluid that will answer for lights, cooking, and warming our houses in cool (we cannot say cold) weather. A friend of mine is now engaged in the chemical preparation of the fluid, and has succeeded admirably, with one single exception, and that is, he has not learned to destroy the odor. He has produced a fine bleached gas, but the odor makes it objectionable.

As to the origin of the tar we are of cpinion that it comes from beds of coal, and can account for them upon no other principle. Indeed, coal has been found at San Diago, and there has been some prospecting here, but it was not done on what is considered scientific principles. They dug for it on the level of, or below, the "tar springs," while I c. tend that the coal is in the adjacent hills or mountains; that the tar cannot violate a law of nature by running upwards. What н. think you, Editors?

Los Angelos, Cal., March, 1857.

[The "tar springs" of California, we suppose, are similar to the petroleum springs which are found in various other parts of our country, and in every quarter of the globe. There are such springs in Kenawha, Va.; at Scottsville, Ky.; Oil Ceeek, Pa.; Liverpool, Ohio., and Hinsdale, N.Y. We believe that no particular use is made of the fluid petroleum in this part of the con linent, except as a lotion for bruises and rheum tic affections. It 1.95 a pungent odor, and although it can be made to burn with a pretty good light, its smell is offensive. This, perhaps, may be obviated by distilling it with some acid; we believe that this is not impossible in this age ot advanced chemistry. Coal oil and kersosene possess just as offensive odors when first distilled as native liquid petroleum, and yet very beautiful oil is made from coal by the processes through which it passes for purification.

In the Burman Empire, East Indies, petro-

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banks of the Irawaddy river, and is used by large as it may seem, is but the result of well of Genoa, in Italy, is illuminated by gas May this not serve as a stimulant in many are of opinion that they are sometimes found on higher and sometimes in lower situations than coal beds. The petroleum wells of New York are far removed from coal formations, and yet it appears to us that our correspondent may be correct in his surmises respecting the origin of such wells. The source of these wells may be in coal beds in the mountains at a considerable distance. The heat and pressure may distil and force the petroleum out of the coal beds, and naturally enough it will seek a lower level to escape. The artesian wells of Paris are supplied with water from a lake about two hundred miles distant in a mountainous region, and the " tar springs" of California, as well as the petroleum springs of New York may in a like formations.

If the offensive odor could be removed from the petroleum obtained from native wells, we believe, that a valuable and profitable business might be carried on in manufacturing burning fluid from it, not only in California, but every other place where such wells exist.

#### Mechanics' Halls.

MESSRS. EDITORS-As anything pertaining to the welfare of mechanics, whether as individuals or as a class, either in moral or physical progress, is of interest to the readers of the SCIENTIFIC AMERICAN, allow me to present an instance of the power and effective energy to which they can devote themselves, when rightly directed, as combined in associations for their moral and intellectual improvement The instance I will refer to, is that of an association existing in Worcester, Mass., which, two years ago, numbered less than five hundred members, but containing men of noble parts. Feeling that the moral and intellectual demands of such an association were commensurate with the undertaking, after mature and deliberate consultation, they came to the conclusion that some kind of edifice should be erected for the use of the association, so as to contain halls for exhibition, reading and library rooms, &c., for the use of members and apprentices belonging to One of the whole-souled fathers of the institution whose head and hands had long been devoted to mechanics and improvementswho from a blacksmith's apprentice has risen to an honored position-generously started the "ball" with a subscription roll of \$10,000 and it soon increased to more than twice that sum, thus producing a fund upon which to make a beginning. Bonds were then issued, and were soon taken up almost entirely within the association. A building was afterwards commenced, which from the furnishing of the plans to the finishing of its beautiful ornaments, were all executed by its own members, each in his own department, vieing the best to advertise his skill with the permanency of its adamantine walls. This structure now rears its noble form from the center of the city, far above all surrounding buildings-the first to attract the attention of the stranger-the pride of the city and county-and it stands dedicated to the arts and sciences, and to moral and intellectual improvement.

It was erected within two short years by a small association, then numbering less than five hundred members; it now numbers seven hundred, and is in a fair way to pay interest, besides laying up a surplus as a sinking fund with which to pay the bonds when they become due. The edifice presents an elaborately ornamented Corinthian front of 100 feet, rising from pave to apex, 86 feet, running back 145 feet in length. On the ground, besides a spacious entrance hall, there are four stores; on the first floor, a lecture room, 50 × 80 feet, library room, reading room, cabinet room, and some four or five office rooms.

leum is obtained from numerous wells on the ground, was about \$115,000. This sum, directed energy, backed by a firm purpose. circles where true energy is now latent? Worcester, Mass., April, 1857. A. C.

Managing Boilers. MESSRS. EDITORS-As many engineers are giving their experience in the management of steam boilers, I will give mine. I have never been troubled with priming, although frequently using muddy water. I always keep the water high, the fire even, and the steam at one point, as near as possible. Muddy water will certainly cause boilers to prime, and opening a safety valve suddenly, will also make a boiler to prime when the water is high. Steamers entering rivers from the sea are more addicted to priming than if river or sea water had alone been used in the boilers, probably from the boiling point of salt water being higher than that of fresh, thereby the salt water acts like so much molten metal in manner have their source in distant coal raising the fresh water into steam. Filling a furnace full of light fuel, and closing the doors quick will cause the boilers to prime. My plan of keeping boilers clean where muddy water is used, is by blowing off from the bottom, immediately after the fire is started, or two or three times before steam is raised; when steam is up, and I wish to blow off, (if the water is muddy,) I shut off the feed water five or ten minutes. By following up this practice, boilers can be kept free of mud easily, thereby preventing safety valves becoming cemented with dirt. All water sbould be filtered before it goes into a boiler. There is not the attention paid to this subject that its importance requires.

#### J. M. HARTNETT. Waukegan, Ill., April, 1857.

Millatones-Their Speed and Setting.

From the numerous brief and clear letters which we have published on the above subject, reliable data have been obtained regard ing the general velocity at which millstones are run, but the following letter seems to be complete on several points of milling, such as speed of stones, the amount of work they accomplish, and the horse power required to drive them :-

MESSRS. EDITORS-I notice by the SCIEN-TIFIC AMERICAN that you wish information respecting the best velocity to run 4 1-2 foot millstones. The Suffolk county mills in Boston have six runs of 4 1-2 feet stones, which make two hundred revolutions per minute; they have done complete work when grinding from eighteen to twenty bushels of wheat per hour. This mill has run successfully for the last eight years. The Pioneer Mills, Alexandria, Va., has twelve runs of 4 1-2 feet stones that make two hundred revolutions per minute, and do most perfect work when grinding eighteen or twenty bushels per hour. The balancing of the running stones. and the arrangement of machinery must be very perfect to work with satisfaction at this rate. I would recommend from 150 to 200 revolutions, according to the amount of work to be done and power employed. The result will be in the ratio of one bushel ground per hour for each horse power employed.

J. R. HOWELL Alexandria, Va., April, 1857.

#### Speed of Millstones.

A correspondent in Richmond, Ind., who

has had great experience in milling and millwrighting, informs us that in running four feet of great hardness and malleability, and capamillstones he proportions their velocity to the ble of taking a polish like that of steel. Five power he has to drive them. If his power is only sufficient to grind 10 or 12 bushels per ver give an alloy almost as hard as silver hour he runs the burr stones 180 revolutions coin containing one-tenth of copper, and thus per minute; and if his power is sufficient to permits us to harden silver without introducgrind 20 bushels per hour, he runs them from | ing a poisonous metal. 200 to 220 revolutions per minute.

#### How to use the Divining Rod.

facts with regard to the divining rod and its | immense tract of country known as the Ever-

Over these is the grand exhibition hall, ex- tree-it must be natural, not grafted-or tending the length of the building by 80 feet whalebone, both of which must be crotched. | lions of acres of dry land capable of cultivawide, with a ceiling over 40 feet from the | It must be held in the hands firmly, with the tion, and well adapted to the growth of the floor. The cost of the edifice, including the elbows resting on the hips, the palms of the sugar cane.

hands turned up; the thumbs turned to the right and left, and held tight on the end of the stick. I think it will operate better when a person is in health, than when not. It will operate only over running water. Only a few persons can use it. It will not operate in everybody's hands, but why, I cannot tell. If any one disbelieves this, send him to me, and I think I can convince them that I am correct in my assertions. ELIAS BARRY. Saccarappa, Me., April, 1857.

[From the number of communications which we have received on the "divining rod," we cannot question the honest belief of a number of our readers in its virtues. There are many phenomena in nature which are yet sealed up to us, and the divining rod may be one of these; still, we must say that we are skep tics in the powers or virtues which are attributed to it. We believe that any man of a reflecting and observing mind can guess where water may be obtained by boring, without a divining rod, as well as another person with one. Our opinion may be wrong, but we cannot come to any other conclusion by reasoning on the subject from scientific data. If, however, we are at any period of time after this convinced by ocular demonstration that there is scientific virtue in the divining rod, we will frankly make the change of our views known.

#### County Patent Rights.

MESSRS. EDITORS-I have lately purchased a county right and machine of the patentee; now I wish to know if I have a legal right to solicit orders from other counties for the article manufactured. If you will give the desired information through your paper, or otherwise, you will much oblige,

RUFUS PORTER.

Peoria, Ill., April, 1857. [We have frequently answered questions like the above through our correspondents column, and now publish this letter, so that our answer may be considered general " to all whom it may concern." Mr. Porter has no legal right to sell his machines out of his own county. A county patent right is the exclusive power to "make, sell, and use " in that county. He may take an order from another county, but he must not sell there; and the person whom he supplies cannot use the machine without the consent of the licencee of his own county.

### Alloys of Aluminu P.

MM. C. and A. Tissier, says Comptes Rendus (Paris), have communicated a short note on this subject which is of importance at the present time when the interest in aluminum which had somewhat fallen off i- beginning to revive. The authors find that the valuable properties of aluminum are injured by the presence even of small quantities of other metals. One-twentieth of iron or copper make it almost impossible to work the alloy, while one-tenth of copper renders aluminum as brittle as glass. An alloy of 5 parts of silver with 100 of aluminum works like silver, but is harder and takes a finer polish. The one-thousandth of bismuth renders aluminum so brittle that it cracks under the hammer even after being repeatedly annealed. The presence of aluminum in other metals often communicates valuable properties when the quantity is not too large. Thus one-twentieth part of aluminum gives copper a beautiful gold color and hardness enough to scratch the standard allow of gold employed for coins. without at the same time injuring the malleability of the copper. One-tenth of aluminum gives with copper a pale gold colored alloy parts of aluminum with 100 parts of pure sil-

#### Draining the Everglades.

It is stated by some of our cotemporaries MESSES. EDITORS-I will give you some that the water so long lying stagnant in that glades of Florida, bas recently found an outlet The stick I use is the twig of asweet apple through which it is discharging itself into the Gulf of Mexico. This will leave many mil-