

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC. MECHANICAL AND OTHER IMPROVEMENTS.

VOL. XIV.

NEW YORK, FEBRUARY 5, 1859.

LLOYD'S DRY GAS METER.

NO 22.

SCIENTIFIC AMERICAN, PUBLISHED WEEKLY

At No. 37 Park-row (Park Building), New York, BY MUNN & CO.

O. D. MUNN, S. H. WALES, A. E. BEACH.

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Single copies of the paper are on sale at the office of publication, and at all the periodical stores in this city Brooklyn and Jersey City.

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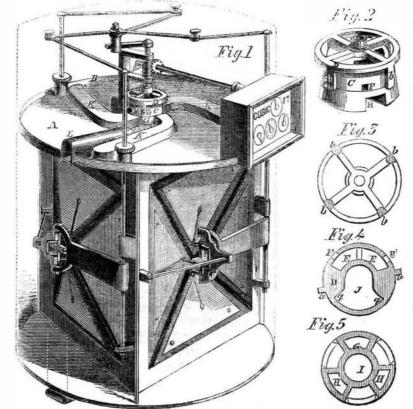
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Light-The Law of Reflection.

By the reflection of light is understood that property by which, when light falls on any smooth surface, it is thrown off from it again. There is a fixed law of optics as to the direction in which the rays are thrown off, but this law it is not necessary here to explain. The result of it is sufficiently familiar to all. How often have we beheld, with delight, the surface of the calm sea at sunrise, with a long path of light glittering on its waves between the eye and the sun! How often have we admired the golden clouds of morning reflecting the sunbeams before the luminary itself has risen above the horizon! These and innumerable other phenomena have their birth in the law of reflection. Now it is this law which makes our eyes of use to us. Every object in nature is seen by reflected light except the sun, the stars, and other luminous bodies which are visible by their own rays. Every other object is seen by the light which is thrown off from it, and which forms a picture or image of such object in the eye of the beholder. The mountains-the lakes-the clouds overhead-the ocean below -the sparkling rivers-the gloomy woodthe countenances of friends-the walls of our apartments-the perception of these and all other objects of sight we owe to light reflected or thrown off from them. But to go further: were it not for this law, not only should we perceive nothing except luminous bodies themselves, but even at the hour of noonday, the whole surface of the earth and the waters would be as dark as night; in short, nature -as far as the sense of sight has anything to do with our perception of it-would be obliterated. To prove this only a single and and simple illustration is necessary. Black substances are called black because they do not reflect the rays of light; hence the impression on the eye of what we call blackness or darkness is nothing more or less than the absence of reflected light. So if all nature, like black substances, reflected none of the rays of light, everything would be involved in common gloom.

We are aware that these simple facts regarding the law of reflection are not new, but, we doubt not, many of our younger readers will be enlightened on this subject for the first time by the plain statement here set forth.

SUPPLEMENT.—It was our intention to have issued another illustrated supplement with this week's number of the Scientific Ameri-CAN, but we have been deterred in our good design by the care and attention required in the fitting up and removal into our new office. We shall not disappoint our readers in this respect.



On one or two occasions we have given | from which it passes into this centre tube, our opinion of the gas companies, and we have no need to reiterate it here, but for some reason or another, they pretend to have a great objection to the dry gas meter, and will not supply the consumers with them if they possibly can avoid it. As the dry meter is more correct and less trouble than the wet one, the consumers should insist upon having them placed in their houses.

The subject of our engravings is an improvement in the dry gas meter, which renders it more perfect, and much less liable to accident than it has hitherto been.

Fig. 1 shows the interior of the meter, the dotted lines showing the outer case, which is removed. Fig, 2 is a perspective view of the rotary valve that is placed on the top, and which constitutes the improvement. The other figures are detached views of the valve.

A is the top of the chambers and lower surface of the gallery of the meter, provided with a rim, B, and C is the circular valve by which the gas passes in and out of the six compartments of the meter in which it is measured. C is provided with openings, E E (seen in Fig. 4), through which the gas escapes into the gallery of the meter to supply the burners, and there are two notches, FF, in C, to break the continuity of the lower surface. C rests upon a seat, G (Fig. 5), provided with passages, H, that communicate with the interior of the cells. When the valve, C, is placed on G the lower surface of C fits accurately to and slides upon the seat, except at the notch, F, the edge of which being sharp scrapes off any resinous or other deposit that might remain from the gas, and thus interfere with the working of the valve, and the surface of H is also kept clean the same way, by their sharp edges, around the central aperture, I; connected with I is a central tube running down through the center of the meter, and terminating in a horizontal table closed by a screw cap. The gas enters the meter through L, sopher to comprehend two of the greatest

and thence up through I in the valve seat into the central depression, J, in the valve, C (seen in Fig. 4), and thence alternately through one or other of the passages, H, into the compartments of the meter. As the gas passes into the central tube vapors will be condensed, and they can at any time be removed by unscrewing the cap in the table before mentioned. The retary motion is given the valve by means of a carriage, D, provided with arms, b, that catch against projections, a, on C. This is moved by a crank connected by levers with the expanding sides of the meter. The passages, K, communicate between the valve and the inner chambers. This meter cannot get clogged by deposits or moisture, and it is a great improvement on the common

It was patented June 22, 1588, by the inventor, C. C. Floyd, of Philadelphia, Pa., who assigned it to Hopper & Gratz, of the same place. Any information may be obtained by addressing Code, Hopper & Co., Philadelphia, Pa.

Greatness of Little Things.

Scientific research iterates and reiterates one moral—the greatness of little things, and the importance not only of the minute study of facts, but of the study of minute facts. One can imagine the contempt with which the "practical men" of the last century listened to the news that a bitter controversy was raging between two Italian philosophers as to the reason why a frog's leg twitches under certain circumstances; and yet therein lay the bud of the electric telegraph and electro-plating, and numerous other undertakings in which the practical man of the present day, though as averse as his ancestors to every investigation whose fruits are not immediately visible, is very happy to invest his money. The study of snow-balls, piecrust, and squeezed wax has led the physical philo-

natural phenomena-the cleavage of rocks and the structure of glaciers. A century ago, the collecting of fossils was regarded as an occupation of about the same dignity as the accumulation of old china. Now, the coal miner risks his capital upon the strength of the evidence they afford, and the landed proprietors of some of our eastern counties pocket many thousand pounds every year by selling the phosphatic fossils whose nature was first pointed out to them by a country clergyman who happened to be a man of science. And not only does the gradual widening and perfecting of our view of nature bring with it a respect for the influence of the study of minute facts on the advancement of knowledge and the bettering of man's estate, but it tells us that, apart from all consideration of man and his wants, minute and seemingly most insignificant agents have played a mighty part in the history of our globe.—Engineer.

Merits of Gutta Percha.

On page 170 of the present volume of the SCIENTIFIC AMERICAN, there is published a letter from I. H. Norris, in which it is stated that its author had seen gutta percha which had become quite brittle when used as a covering for submerged wires. It is stated that it is liable to crack open as if cut across with a knife, when bent or made to take a short turn. In reference to this statement, Mr. S. C. Bishop, No. 181 Broadway, this city, asserts that pure gutta percha will not crack as represented; and he has shown us some telegraph wires which were covered with it five years ago, the coating of which sppears to be as perfect as when first put on. The wire which Mr. Norris saw, he thinks, must have been coated with an adulterated article, not pure gutta,

Mr. Bishop manufactured the cable covered with hemp to which we alluded on the page referred to above.

Curious Experiment.

M. Groux, the man with the thoracic cavity which admits of an inspection of the internal mechanism, has had an electro-magnetic machine made which, applied through the orifice, tinkles a bell with every pulsation of the heart. The machine was made by Mr. Farmer, of the Alarm Telegraph office. Recent experiments were made in connection with the exact and delicate apparatus in the Observatory at Cambridge, The operating forces were divided, one portion taking their post at the Observatory, the other in Boston. The principle agent, M. Groux, himself, being here, the heart's impulses were transmitted over the electric wires, and instantaneously recorded at the Observatory. -New York Journal of Commerce.

Removal of the Scientific American Office.

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Scientifie American.



Issued from the United States Patent Office FOR THE WEEK ENDING JANUARY 25, 1859.

Reported officially for the Scientific American.]

"Circulars giving full particulars of the mode of applying for patents, size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the Scientific American, New York.

TREATMENT OF FATTY ACIDS—J. C. Appenzeller, of Cincinnati, Ohio: I do not claim subjecting the fatty matters mixed with lime to the direct action of steam. But I claim as my invention, after subjecting the mixture for a time to the direct action of steam, shutting off the steam from it, and raising its temperature by the application of heat to the exterior of the vessel, substantially as described.

This tank is for the purpose of first treating the fatty matters with steam, and afterwards by the application of heat to the exterior of the tank. which contains a rotary stirrer, keeping the fatty matters and alkalies constantly agitated during the process of saponification. By the use of this tank, both time and labor are saved.]

VALVES FOR STEAM ENGINES—Robert Bailey, of Troy, N. Y.: I claim the arrangement and combination of the tubular valve, I, seat. C, induction pige, D, eduction valve, E, levers, H M, and cams, JJ N, substantially as and for the purpose shown and described.

[The puppet valves of a steam engine are, in this invention, constructed with hollow tubular stems fitting with stuffing boxes directly to the induction and eduction pipes of the engine, and making communication directly through their interiors and around the exteriors of their seats between the pipes and the cylinder, thus very simply making them balanced valves.]

CAR SEATS AND COUCHES—W. M. Baker, of Walpole, Ind.: I claim, first, The arrangement and combination of the boards, G.F., arms, i, curved bar, e, legs, K, fenders, I, slide, E, seat, B, and rods, C, as shown and described.

described. Second, The arrangement and combination of the curtain, H, the seat backs, D, drums, Z, weights, v, curtains, u, and rod, I, as shown and described, so that when the rod, I, descends, the curtains, u, will fall, and the curtain H, rise, and when the rod, I, is relaxed, all the curtains will be simultaneously rolled

[This invention consists in having an upright rod placed at each end or side of an ordinary reversible car scat, and having a supplemental seat and couch fitted between the rods, and allowed to slide up and down on them, these parts being used in connection with the curtains and a sliding couch, the whole being so arranged that some of the parts may be folded out of the way by day, and so disposed at night as to form couches to accommodate all the occupants of the day

BRIOK MACHINES—Gerard Bancker, of New York City: I claim, first, The combination of the adjustable plunger, K, with the side rods, L, and rode, J land J2, of the rotating mold box, for operating the compressors in the manner described, for the purposes specified. Second, I also claim the use of the cleat, Q, in combination with the rotating molding box, G, and semicircular stationary cap plate, N, substantially as described and for the purposes set forth.

Third, I also claim the use of an elevator plunger, R, operating as set forth, in combination with the recangular rotating mold box, G, adjustable compressors, Hl and H2, and cap plate, N, as a device for molding and compressing clay into bricks, and discharging the same therefrom.

APPARATUS FOR DISPLAYING STEREOSCOPIC PICTURES
—Joseph Beckel, of New York City: I claim, first, In
combination with an endless chain of pictures constructed and arranged as described, the revolving
prism, a a a, arranged and operating as described.
Second, The rest or stop, C, arranged and operating
as specified.
Third, The concave, D d D, arranged and operating
in the manner described.

in the manner described.

Fourth, The pads or cushions, 1 2 3 4, &c., arranged and operating as specified.

WIND WHEELS—W. H. Benson, of Wetumpka, Ala.: I claim constructing a wind wheel of a series of strips or slate, a, placed centrally on a shaft, A, spread and overhapped, and secured together and to the shaft, A, substantially as shown and described.

[This wheel is constructed of a series of thin strips of wood, or other suitable material, placed on a common axis, which passes through their centers, and the strips are so dispersed one above the other as to form some thing like a screw propeller. The object of the invention is to obtain a wheel extremely simple in construc tion, and one that may be readily repaired when neces-

Soda WATER APPARATUS—Edmund Bigelow, of Springfield, Mass.: I claim the arrangement of a set of sirup cans, ice chamber, and draft pipe, substantially as described.

as described.

I also claim the combination of a measuring faucet with the described and claimed arrangement of devices for drawing sirups and soda water.

MACHINERY FOR FORMING HAT BODIES—Seth Boyden, of Newark, N. J.: I do not claim the endless apron, C, picker, B, and rotating perforated cone, E, for these have been long known and used in machines for forming hat bodies.

But I claim conveying the fur from the picker, B, to the perforated cone, E, by means of jets of steam issuing from the tubes, d, arranged relatively with the picker, B, and cone, E, substantially as described, to effect the deirbed purpose.

The fur is conveyed by a novel means from the pickto the cone on which the hat body is formed, and the thickness of the fur is, by this machine, placed entirely under the control of the operator. The invention con sists in having steam pipes provided with adjustable tubes placed in such relation with the picker and cone that the steam will convey the fur from the picker to the cone, and deposit the fur on the same in a proper state favorable to the expeditious forming of a hat

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Lounge.—John G. Broemser, of St. Louis, Mo.: I claim the described arrangement of the spring catch, G, and the setrated arc, F, in combination with the pawl, f, which gears into ratchet teeth, e, at the lower edge of the hinges, D, and which is attached to a rocking cross bar, E, and connected to the catch, G, substantially as and for the purpose set forth.

And I also claim the valve, K, in the seat. A, which is operated by an arbor, L, and by means of a cam, I, and a hook, m, in combination with the sliding frame, N, constructed substantially as and for the purpose specified.

This is a novel and convenient lounge, suitable for every house, as it is especially comfortable for the sick.]

Boot JACK—Wm. W. Cansler, of Baltimore, Md.: I claim the metal folding boot jack described, with pointed prongs and pointed end, as a new article of manufacture.

MOLE PLOW—Jarvis Case, of Bloomington, Ill.: I claim, first, So suspending the mole to the beam or coulter as that it cannot go vertically beyond a given depth whilst it may move laterally, substantially as described.

described.

Second, I also claim extending the nose of the mole into the rear of the coulter, so that it cannot at any time run out of the line of cut of said coulter at its point, substantially as described.

FIMIN FENCE—Seth Cheney, of Riantone, N. Y.: I claim the particular construction of panels and its combination with the rails, in the manner and for the purposes set forth.

LAMPS—Samuel Cheney, of Cleveland, Ohio: I claim the gas tube, G, and openings, E E, in combination with the wick tube, C, and cap, H, when these several parts are constructed and arranged as described, and operating substantially in the manner and for the pur-pose set forth.

AMAIGAMATOR—Augustus M. Church, of Augusta, Ga.: I do not claim to have invented any of the separate parts of this machine, as they have been long used for various purposes, and are well known.

I claim the arrangement described of the vitrating rifles of the inclined trough, constructed and operated as set forth, by which it is proposed to save the finest particles of the gold by amalgamation.

METROD OF HANGING RECIPEOCATING SAWS—John C. Cline, of Philadelphia, Pa.: I claim the employment of a spring either straight or spiral to suspend the ful-crum of pitman bars, or other reciprocating levers, in the manner substantially set forth in the foregoing spe-sification.

PORTABLE BEDSTRAD—Francis Cotton, of Brooklyn, N. Y.: I do not claim a jointed bedstead, so that when not in use it may be folded.

Nor do I desire to claim constructing an invalid bedstead in which the head or feet of the invalid may be raised or lowered by elevating or depressing either of the conductors.

raised or lowered by elevating or depressing either of the end supports.

Nor am Idesirous of claiming the use of eide ralls hinged at a given point, to enable them to be folded. But I claim the arrangement of the stand ralls, straps and end supports, the whole forming a new and im-proved article of manufacture, namely, an improved portable bedstead.

PAPER RAG ENGINES—Isaac N. Crehore, of Boston, Mass., and Francis Stiles, Jr., of Leicester, Mass.: We are aware that a solid cast metal bed-plate for paper-mill engines has been made, having a series of diamond-shape knives upon its surface; but such bed-plate is objectionable from its liability to breakage, and the difficulty of repairing it when once injured or broken at any point.

We do not, therefore, claim such device, or any improvement upon solid cast metal bed-plates.

But we claim a bed-plate composed of sheet metal knives, corrugated, or formed with a series of angles or curved lines through their entire length, in the manner described, for the purpose specified.

RAILROAD CHAIRS—D. W. Crocker, of Deposit, N. Y.: I do not claim the longitudinal division of the chair, nor the use of a key passing through the chair.

But I claim the arrangement and combination, substantially as shown and described, of the inclined grooves, c., key, c., jaws, B, and rail, A, so that the weight of the cars will depress the base parts, a a, of the chair, and thereby cause the jaw parts, b, to gripe the rail, A, more firmly.

[This invention consists in a novel method of apply ing a key in combination with a railroad chair, which is divided centrally into two parts, whereby the weight of the engines and cars passing over the track is made to draw the jaws of the chair towards each other, and make them clamp the sides, bases, and lower portions of the heads of the rails at their joints very closely and thus prevent any displacement of the ends.]

FIRED FENCE—Daniel S. Curties, of Madison, Wis: I claim the mode of notching the ends of the rails, and keying together the ends of the panels in the manner and for the purpose described and set forth.

CORN HUSKERS—Abbot R. Davis, of East Cambridge, Mass.: I claim the combination of the rolls, B and C, spring board, D, slotted projection, K, and conical projection, J, when these several parts are constructed and arranged for operation in the manner described, and for the purpose specified.

SUGAR CANE MILLS—William T. Dennis, of Rich mond, Ind.: I claim the plating or covering of the iror roller of sugar cane mills with tin, or other anti-corre sive metal or substance, for the uses and purposes de scribed.

Construction of Posts for Fig.n Fences—John Drown, of Huron, N. Y.: I claim the arrangement of the braces, C.C. one fixed and the other hinged or pivoted thereto, in combination with the rails, A.A., and chair, B, substantially as specified.

HYDRAULIO PRESS—Richard Dudgeon, of New York City: I claim the described hydraulic press, consisting of the injection piston, A, chambers, B and C, and ram, D, the whole constructed and operating substantially as and for the purposes set forth.

s and for the purposes set forth.

Shoe Horns—Daniel E. Eaton, of Boston, Mass.: I am aware of the invention set forth in No. 11,445 of United States Patents, whereby a spring clamp, with a concave holding jaw, is claimed in combination with a shoe slip or shoe horn: I make no use of any such spring clamp, or one which, when the shoe slip, or horn, is applied to the heel of a shoe and the shee is being drawn on the foot by a pull on the instrument, maintains its hold on the shoe by the action of a spring. In myl improved instrument, the hold of the nipper jaw on the shoe is obtained by the grasp of a person's hand during the act of drawing the shoe on his foot. The greater the resistance of the shoe the stronger will be the grasp of the nipper jaw, the spring serving to open the jaws; or in other words, to force the nipper jaw away from the shoe horn. This results from the peculiar application of the jaws to crossed levers. An upward pull on a Spring clamp, such as is represented in the said patent, tends to lessen its hold on the shoe. So an upward pull on the spring clamp shoe slip, when the upper parts of the slip and its spring clamp are grasped by the hand a person, operates to loosen the hold of the clamp on the shoe. In view, therefore, of the invention as described in the said patent, I do not claim a shoe slip, or horn, having a holding jaw forced against the slip, or horn, by a spring.

What I claim, therefore, is the improved shoe horn, as made with a heel guide and nipper jaw, applied to two crossed levers, and so as to operate together substantially as specified.

IRON BRIDGES—Lewis Eikenberry, of Easton, Pa.: I claim, first, Having the uprights and diagonals of the side formings of the bridge so united together that they shall be capable of turning on their points of connection, and thus, whenever expansion or contraction in the metal occurs, they may be able to compensate therefor without ceasing to brace the bridge at top and bottom substantially as and for the purposes set forth.

Second, The combination of lattice side frames of bridges, formed of diagonal braces and angle iron uprights, which are united together, so as to turn on their points of connection, as above stated, with tubular, semi-tubular, or angle iron arches, substantially as and for the purposes set forth.

COFFEE POTS-W. H. Elliot, of Plattsburgh, N. Y. I do not claim condensing the vapor of coffee so as to prevent the aroma from passing off, independent of the peculiar devices, and the method of employing them as set forth.

peculiar devices, and the method of employing them as set forth.

But I claim, first, The combination of boiler, a, stillworm condenser, b, conducting or discharge tube, g, the external opening of the stillworm at g, when these devices are so arranged in relation to each other that an open ng to the external air shall be provided for the non-condensable gases, while the condensable vapors are reduced to a liquid without coming in contact with the condenser water, and then turned by conductors into the boiler, as and for the purpose specified.

Second, The arrangement of the joint, c, below the spout, so that no vapor can pass through the spout without first passing the joint as set forth.

Third, The employment of conductors in combination with the condenser for the purpose of filling the water-joint or keeping it full, as and for the purpose specified.

Tanning—Lewis C. England, of Owego, N. Y.: I claim, first, applying the liquor to the bark while said bark is being discharged from the mill for the two-fold purpose of making it a conveyor of the same, and a preserver of the dust thereof, as set forth.

I claim, second, The method of applying the lieated liquor to the bark, for the purposes and in the manner substantially as set forth.

THEESHING MACHINES—Jno. B. Ford, Addison Sullivan, and Albert Gregg, of New Albany, Ind.: We claim the combination of the cutting cylinders, A., provided with knives, the cylinder, C, and concave, B, provided with teeth, the screens, D, and the fan, E, cubstantially in the manner specified and for the purpose set forth.

pose set forth.

SEWING MACHINES—Wm. A. Fosket and Elliot Savage, of Meriden, Conn.: We claim the feeding device, constructed and arranged, substantially as set forth, and so operating as to cause the cloth to progress by grasping the same with a positive force, in contradistinction to the employment of spring pressure, between two surfaces moving in unison while feeding.

We also claim setting the shark of the revolving and reciprocating looping hook at an angle to the bedplate, substantially as specified, when said looping hook is constructed in the manner hercin described or referred to, for the purpose of avoiding motion of the said hook in the direction of the axis of revolution.

We also claim operating the slide-plate, 0, from above the sewing table by means of a feed-foot having two motions—one vibratory in the line of feed, the other reciprocatory and perpendicular to the table or thereabouts.

SMUT MILIS—Carl Frank, of Cleveland, Ohio: I claim arranging between the trough, C, containing the grain to be scoured and the scouring cylinder, K, a slotted hollow cylindar, d. revolving within another hollow cylinder, e., as described.

Horse Powers—John Frezer, of Newberry, Pa.: leaim the combination of the fiange, A, upon the end of the sweep-shaft, with the groove in the collar, R, of its equivalent, for securing the shaft, J, against the longitudinal motion, as set forth, in connection with the wheel, H, and pinion, M, attached to the sweep-shaft and the stationary wheel and pinion. L and M, which keep the shaft, J, in a directly radial position

COMBINED CHAIR AND LOUNGE—F. J. Gardner, of Washington, N. C.: I do not claim, broadly, irrespective of construction and arrangement, an adjustable chair, or a combined rocking-chair and lounge, for such devices are in common use and arranged in various

ways.

But I elaim the scat, A, back, B, and supplemental back, C, connected together by joints, and provided, respectively, with the legs, d d, arms, E E, and rockers, D D, the whole being arranged substantially as and for the purpose set forth.

[This invention consists in a novel man structing and arranging the several parts of the device so that they may be readily adjusted, so as to form either a rocking-chair or recumbent stationary chair, or lounge, as may be desired. The object of the invention is to obtain the desired end by a very simple and economical means, so as to lead to a very general adoption of them.1

LANYERNS—Conrad Gersten, of Brooklyn, N. Y.: I claim the mode of controlling the currents of air which feed the flame, by taking the air from the top of the lantern and causing it to pass down in a narrow annular passage to the apertures leading to the burner, substantially as described, in combination with the deflector which encloses the burner chamber, substantially as described.

nector which encoses the burner chamber, substantially as described.

I also claim, in combination with a lantern in which the flame is protected against disturbing causes outside, substantially as described, the arrangement, substantially as described, for controlling the wick from outside the lantern, as described.

I also claim, combining with the burner and the oil reservoir, and interposed between the two. an air chamber for preventing the oil from being overheated, as described.

BORING MACHINE—E. A. Goodes, of Philadelphia, Pa.: I claim, first, The adjustable worm, H, attached to its shaft, D, and arranged substantially as and for the purpose set forth.

Second, The gauge plate, E, attached to the bow, F, in connection with the index, q, on the mandrel c, for the purpose specified.

Third, The arrangement of the tube, j, on the shaft, k, pinion, I', on said shaft, the pulley, I, on the tube, j.

and also the pinion, i, and the rack h, on the mandrel, c, substantially as and for the purpose set forth.

The feed of this drill may be changed to modify the motion of the drill either quicker or slower, and the tool can be prevented from entering the work beyond a certain depth, and the tool can also be "gigged" back rapidly after it has bored the hole. 1

HEMP BRAKES—John Hindman, of Haynesville, Mo.: I am aware that reciprocating beaters have long been used for breaking hemp, and I therefore do not claim, broadly, such device.

But I claim the reciprocating beater, D, stationary bar, E, and reel, F, combined and arranged to operate substantially as and for the purpose set forth.

[This is a superior hemp dresser, in which the woody ore of the stems is taken and separated from the ex ternal fibrous sheath, and the latter is discharged from the machine in a perfectly smooth, and even, or disentangled state.]

Sciew Properlies—Augustus Jouan, of San Francisco, Cal.: I claim combining with the rigid blades of a propeller, an elastic blade, substantially as described.

MACHINE FOR SAWING WINDING FORMS—John C. Hitz, of Cincinnati, O.: I claim, first, In the described combination with one or more shifting supports or rests, the rocking bench, J, suspended at or near its windwith, by journals, J, and provided with suitable feeding and canting mechanism, substantially as set forth.

feeding and canting mechanism, substantially as set forth.

Second, In the described connection with a carriage, E, and crane, D, and with a rocking bench, J, having the described or equivalent feeding or canting mechanism, I claim the vibratory and arched rest, F, armed with spikes, f, the whole being arranged and operating substantially as set forth.

Third, In the described combination with a rocking rest, J, and speroidal feed roller, B, I claim the pointer, S, adjustable in height, and having the described automatic retrograde motion, so as to indicate on the top of the slab the relative position of the bottom of the kerf, as set forth.

Fourth, In the described combination with the rocking bench, J, I claim the prying lever, D, constructed and operating substantially as set forth.

METHOD OF EXTRACTING OIL FROM COAL—E. N. Horner, of New Brighton, Pa.: I claim the use of a mixture of cream of tartar, common salt and slaked lime, for the purpose or condensing the oleagineus vapor produced by the dry distillation of coal, shale, or other bituminous minerals, extracting the oil from the gas and depriving the gas of its inflammable quality, and throwing off the sulphurous vapor, in the manner described.

WASHING MACHINE—Benj. Illingsworth. of Freeport, Ill.: I claim, as an improved article of manufacture, a washing machine, having a tilting box, B, cylinder, D, spring tollers, f j, and otherwise constructed as shown and described,

[A rotating cylinder is encompassed by a series o smaller pressure cylinders which are fitted within a suitable case, the upper part of which is connected to the lower part by hinges or joints; the cylinder case being placed in a box which is fitted in a frame, and the box rendered adjustable by means of a lever or an equivalent device; the whole being so arranged that clothes may be washed by it a very perfect manner.]

LAMPS—Richard Jenkins. of Covington, Ky.: I am aware that lamp caps have been so constructed that currents of air are kept circulating about and through the base of the flame, therefore I do not claim this ar-rangement.

But I claim the combination of the inner and outer cones when arranged in relation to the wick tube and each other, substantially as specified, and supplied with air or oxygen, for the purpose of maintaining a perfect combustion of the heavier gases or matter arising, by capillary attraction, in the space or chamber existing between the cones, and thus producing, with coal oil, a brilliant fiame, with very little, if any, blue appearance at its base above the outer cone, substantially as set forth.

MACHINES FOR MAKING CLAY PIPES—John Jones, of Baltimore, Md.: I do not claim the manufacture of pipe of two sizes, as various devices of molds have been used for that purpose.

But I claim a two-sized permanent core or mandrel, in combination with the fixed die, A, and adjustable jaws, CD, constructed, arranged and operating in the manner described for the purpose specified.

APPARATUS FOR EVAPORATING SUGAR JUICE—Augustus Jouan, of San Francisco, Cal: I claim the floating cover, applied to the evaporation of saccharine liquids or for concentrating heat for other purposes, constructed, arranged and operated substantially as set forth.

METHOD OF BLOWING-OFF STEAM BOILERS—James H. Washington, of Baltimore, Md.: I claim connecting the pipe, C, by an elastic or yielding joint, to the stationary pipe, B, and fornishing its opposite end with a float, D, that will keep the interints said pipe, C, at or a little below the surface of the water in the boiler, so as to blow off sediment, &c., at the surface, however much it may rise or fall, or vary, substantially as described.

much it may rise or fall, or vary, substantially as described.

FURNACES FOR DISTILLING ZING—Samuel Wetherill, of Bethlehem, Pa.: I claim the employment of vertical retorts with movable caps at top and movable cups at bottom, substantially as described, incombination with the fire chamher of a furnace, and suitable chambers for the circulation of heat, substantially as described, when applied to the reduction of ores of zinc to the metallic state, as set forth.

I also claim, in combination with retorts for the reduction of the ores of zinc to the metallic state, the mode of mounting the vertical retorts, by having them sustained by their lower ends resting in suitable sockets, substantially as described, and unconfined at their upper ends, whereby they are free to yield to unequal expansion, as set forth.

I also claim, in combination with retorts for the reduction of the ores of zinc to the metallic state, the employment of two fires with separated ash pits, substantially as described, whereby the fires can be separately cleansed and stocked, to admit of applying a continuous heat to the retorts, as set forth.

I also claim, in combination with vertical retorts for the reduction of the ores of zinc to the metallic state, the employment of perforated central tubes, substantially as described, for the discharge of the metallic vapors from the charge, and the condensation thereof to the metallic state, as described.

And I also claim the combination of the vertical retorts, the perforated central tubes, and the movable caps at the top, substantially as described, all concurring in the more ready changing of the retorts, the working of the charge, the escape and condensation of the metallic vapor to the metallic state, and the delivery thereof, and the discharge of the residuum from the retorts, and the re-charging of them, as set forth.

BOAT FOR TRANSPORTING RAILROAD CARS—Jesse Wheelock, of Lancaster, N. Y.: First, I claim the arrangement of the ropes or chains, Y, pulleys, Z, and timbers, C, when applied to each end of the boat, for the purpose of holding the boat steady at the bow and stern while the cars are being transferred to or from the boat, the whole constructed and operated substantially as set forth.

Se ond, I claim the arrangement of the bumper dock, A', relatively to the dock, A, and slip, F, for the pur-

A', relatively to the dock, A and slip, F, for the purpose of arresting the headway of the boat, and allowing it to be drawn sidewise into the slip, F, so that the track which runs lengthwise of the boat may be brought into line with the suspended track, as described.

Third, I claim the combination of the suspended track with or without the short portion, N, with the track on the boat, for the purpose of conveniently transferring the cars to or from the boat, at whatever hight the boat may stand in the water, substantially as described.

HEATING APPARATUS—George W. Williamson, of Scranton, Pa.: I do not claim dampers or their equivalent in my invention.

Neither do I claim a stationary flat plate, or a series of them, with an opening around the outer edge for a draft passage.

Neither do I claim to be the inventor of a combustion chamber.

Nature do I claim to be the inventor of a combustion chamber.

But I claim the application to fire chambers or smoke flues of a double series of plates, when the same are constructed, combined, and arranged in the manner and for the purpose set forth.

ROTARY PUMP—George Wingate, of Philadelphia, Pa.: I claim the revolving bucket wheel with any suitable number of pietons, operated by the cam, R, in combination with the exterior casing, B, its chambers and partitions, the whole being arranged for joint action substantially as and for the purpose set forth.



Scientific American.

Washing Machine—George W. Wilson and Andrew Johnson, of Walnut Grove. Ill.: We claim as an im-Johnson, of Wainit Grove. In: we claim as an improved article of manufacture a washing machine, having upon the central cylinder, C. a plate, g, arms, h, curved slate, j, androd, i, for securing the clothea, and in the upper part of the cover, B, a rubbing device, D, consisting of a slat, m, with slate or corrugations, o, at its sides, and rollers, p, and otherwise constructed as shown and described.

[This invention consists in the employment of a rotating cylinder, stationary rubber, and a cleaner placed within a suitable case or box, and combined and arranged so as to act in a very efficient manner on the clothes, for the purpose of cleansing them without in-

VALVE GEAE OF OSCILLATING STEAM ENGINES—Herman Winter, of New York City: I claim, first, The method substantially as specified of causing a shatt by means of which the valves of an engine are moved to revolve through the agency of a cam, a lever and a crank, and the oscillation of the cylinder to which the shaft is attached, all the parts beingsubstantially such as specified, and acting in combination, substantially in the manner specified.

Second, I claim the combination of a toe keyed to some rod, which actuates a valve or valves, with an adjustable swinging toe and a revolving cam, the combination being substantially such as set forth, to serve the purpose described.

WABHING MACHINE—George L. Witsil, of Wilmington, Del.: I do not claim the shape of the tub.

Nor do I claim the corrugated surfaces.
Neither do I claim the passing the clothes between the two surfaces, one being a cylinder, and the other the surface of the tub, for I am aware that the ribbed surfaces have been used long since, and that V. R. Stewart has already (June 28, 1856) patented a machine having a ribbed cylinder revolving in proximity to a concave board, between which the articles in washing pass.

But I claim the combination of the corrugated or fluted conical cylinder, placed vertically with the corrugated or fluted sides of the conical tube. arranged and operated as shown and described, for the purpose specified.

PROORS FOR DECOMPOSING FATS—Robert A. Wright and Louis J. Fouche, of Paris, France: We do not claim the application of superheated water for decomposing fatty bodies, nor the form of the apparatus divided, which may vary somewhat according to conditions and circumstances.

But we claim producing a continuous automatic circulation of highly heated water in a very finely described state through the bodies under treatment by means of an apparatus constructed and employed substantially as shown and described.

BOOT JACK—WilliamD. Young, of Baltimore, Md.: I claim the construction of a boot jack substantially as set forth, when used in combination with a chair, as described.

CLOTHES FRAME—Daniel C. Colby, of Keene, N. H., assignor to himself and Daniel W. Ransom, of Croydon, N. H.: I claim the arrangement of the levers, D E and F, as above described, in combination with the pawl, K, and the shaft, G, operating substantially as set forth.

set forth,

Deawing Frames for Fibrous Materials Silas
C. Durgin, of Holyoke, Mass., assignor to himself and
Ammon R. Durgin, of Nashua, N. H.: I claim the arrangement of the conical draft rollers between the
gage trumpet and the other reducing rollers, and supporting such trumpet by a mechanism essentially as
described, or the equivalents therefor, which will
enable the said trumpet to operate both as a gage to the
sliver and to guide it to the rollers, and to be vibrated
with regard to the conical rollers, in manner and for
the purpose as explained.

I also claim the combination of mechanism for supporting and vibrating the trumpet, the same consisting
of the bent lever, F. the overbalance carrying lever,
F, and the stationary stud, and when such combination
of mechanism is employed in manner and for the purpose described.

pose described.

I claim the arrangement of the supporting arm, g, of the weight, h, above the fulcrum of the lever, F, in manner as and to operate with reference to the lateral dreg of the sliver on the trumpet as specified.

KNITTING MACHINES—Jonathan Filler and Joseph Bullock, of Cohoes, N. Y., assignors to Wm. Smith, of Albany, N. Y.: Ve do not claim a slide operating by a bent arm at one end to enter breaches in the fabric, and at the other by moving a ring which is attached to and operates it to shift a coupling apparatus. But we claim the apparatus attached to the stop carriage—viz. the combination of the slides, H and G, parol, E, gage, i, and arm, m, operating together upon the breaking of the fabric to uncouple the driving owers by and in combination with the ring, R, pin, J, and spring, d, which release the detent, V, substantially in the manner and for the purposes set forth in the specification.

TELEGRAPHIO MACHINES—David E. Hughes, (assignor to the American Telegraph Company.) of New York City. I claim, first, giving to the key, while still pressed by the operator, a second motion at the instant that the circuit is closed or broken, as the case may be, so that an indication of said closing or breaking will be given to the operator, for the purposes set forth.

ing will be given to the operator, for the purposes set forth.

Second, The method described for governing the position of the letters upon the type-wheel with respect to that of the platen or roller over which the paper travels, in order to insure an exact position of my particular letter at the moment of printing the same—viz. by so advancing or retarding the said type-wheel upon its shaft, whenever it has lost or gained in time in regard to the travel of the circuit breaker at the distant station, that the letter indicated will be certain to stand directly over the said platen at the movement the latter brings the platening of each etter without arresting the function of the type-wheel, by causing the platen to revolve in the same direction and with the same speed as the type-wheel, while said platen is bringing up and holding the paper in contact, whereby the paper is advanced along with the type or letter from which its receiving an impression.

Fourth, The devices by which the type-wheel is started from its zero, by an operator at a distant station, consisting of the shaft, g, set in motion by the

started from its zero, by an operator at a distant station, consisting of the shaft, g, set in motion by the electric current, and acting in combination with the clutch lever, n, and the wheel, E, whereby the type-wheel will be advanced up to the time that it becomes engaged with its driving shaft, substantially as set forth.

ELECTRO-BATHING APPARATUS—Wm. W. Karshner, of Cincinnati, O.: I do not wish to be understood as broadly claiming the insulating of a patient for the purpose of electro-medical treatment.

But I claim first, the suspending non-conductor bands, if if, the conducting foot-plate, h, insulated from the bath-tub by the non-conducting substance, g, all sub-tantially as set forth.

Second, I claim the combined use of the above described non-conducting bands, if if, the conducting foot-piece, h, and the non-conducting substance, g, or their equivalents, for the purpose of administering an electric bath for therapeutic purposes, as described.

REVIVIFICATION OF BONE BLACK—HenryKattenhorn, of New York City: I claim the method of washingbone black, or animal charcoal, in the purifying of sugar, substantially as described.

KNITTING MACHINES—Chauncey G. Keeny, of Manchester, Conn.: I claim the employment of a card attachment to knitting machines, substantially in the manner and for the purpose as described.

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MARINE STRAM ENGINE—Wm. Kennish, Jr., of New York City: I claim the application of an auxiliary pipe to the present discharge pipe of a marine steam engine, in the manner and for the purpose described in the specification.

MACHINE FOR CUTTING AND SETTING SAW TEETH—Columbia G. Loynes, of Lenox, Mass.: I claim the devices for punching and shearing metals, as described, arranged in connection with the saw-gummer and saw-set, the whole constructed and operating in the manner set forth.

MACHINERY FOR SOUTCHING FLAX—Wm. C. McBride, of Raritan, N. J. Patented in England May 30. 1856: I do not claim either set of feeders, strately, as making part of my present invention, having described a similar arrangement in Letters Patent granted to me by the government of Great Britainin the year 1882. What I claim is, the mode of operation of the combined rotating blades or beaters, with the interposed stocks, substantially as described.

I also claim combining two scutching machines, substantially such as described, or requivalents thereof, by means of the two feeding wheels, with their bands, avranged substantially as described, fortransferring the fibers which have been scutched at one end, that the other end may be properly presented to the second scutcher, as set forth.

I also claim, in combination with the two sets of feeding bands and wheels, or their equivalents, the sust aims and guiding table, substantially as described, by which the upper unscutched ends of the fiber are held up, guided, and properly presented to the second scutcher, as set forth.

MANUFACTURE OF CANDLES—Antonio Meucci (as-

MANUFACTURE OF CANDLES—Antonio Meucci (assignor to D. B. Loraine), of Clifton, N. Y.: I am aware that molds of plaster of Paris, or other porous materials, partially or wholly saturated with grease, have been used in the manufacture of articles of plaster of Paris, and other ornamental objects, and therefore do not claim the invention of such molds, or their employment in other arts.

But I claim the method of forming mold candles in saturated porous candle molds, substantially as set forth, in contra-distinction to the method in general use of forming them in candle molds of imper ious metal.

HEATING APPARATUS—U. D. Mihills, of Hartford, Wis.: I claim a heat controlling cylinder, in which the regulating disks, shaped as described, are connected with a detachable frame, the same being arranged and operated as specified.

Washing Machine—Wm. H. Milhouse, of Sugar Town, Pa.: I claim, first, Securing strips of indiarubber edgewise in slots in the concave, D, and rubber, E, by means of the slots which are botted in between the successive strips, as fully set forth.

Second, The arrangement of the adjustable frame, F, levers, a and h, swinging rubber, E, pitman, D, and shaft, e, with the concave, when the whole are combined, constructed and operated in the manner and for the purpose set forth.

BED BOTTOM—B. F. S. Monroe, of Utica, N. Y.: I claim the two frames, A. C. with the spring, B, secured between them, the frames being connected by the cross bands, F, covered or enclosed by any suitable fabric, E, and the upper frame supporting the seat or mattress, the whole being arranged substantially as and for the purpose set forth.

nost rows of springs ina bed bottom, chairseat or other movement with the innermost springs without lateral play, so that each spring will be permitted to bear its proportion of weight, and while being kept in proper position allowed to yield or give to the full extent of its movement, thereby rendering the article in which they are placed far more elastic, durable, and altogether more desirable in ever respect than those hitherto

PUMPS—Walter Peck, of Rockford, Ill.: I am aware that hollow plungers have been made and do not wish to be understood as laying any claim thereto.

But what I claim is the combined arrangement of the stationary standard, c, vibrating lever, a, and lifting spring, b, with the plunger, A, as specified, for the purposes set forth.

I also claim the combined arrangement of the hollow plunger, A, having a cylinder, C, and spout, f, and atached directly to the handle, with the stationary chamber, D, and steadying springs, B, as specified.

COMBINED PUNOR AND AWL—F. P. Pfleghar, of Whitneyville, Conn.: I do not claim a plurality of cutter tubes, d., of different sizes attached to a rotating head, b, for the purpose of punching holes of different sizes, for such device, or its equivalent, has been previously used.

But I claim the rotating hollow head, b, provided with a series of cutter tubes, d, of different sizes, in combination with the awl, h, attached to or forming a part of the bent bar or rod, E, which, as well as the head, b, is attached to the jaw, c, and provided with a spring plate or stop, m, the whole being arranged substantially as and for the purpose set forth.

[Where belts are used, as in mills, machine shops &c., it is often necessary to sew togetheir their ends when they become broken or separated while driving the machinery. This invention facilitates this, and is also applicable for other purposes where leather or any fabric is punched, and laces passed through for the purpose of holding the ends together. The invention consists in combining a rotating punch stock with an awl in such a manner as to perform the desired work.]

Twisting Fibrois Substances—George W. Pittman, of Bushwick, N. Y.: I claim the application of the fiver. B, or its equivalent, substantially as described, in combination with the rollers, D.D', and spool, F, or other equivalent means of holding the sliver, and taking up the twist produced by the flyer, whereby the same operation is made to spin the sliver into yarn, and twist the same with one or more other yarns, simultaneously as set forth.

[This invention consists in a certain mode of apply ing a fiyer, or its equivalent, in combination with other nanism, whereby it is made to spin a sliver or roving, and by the same operation to twist the yarn thus produced a ong with one or more yarns or threads which have been previously spun, and by that means saving half the mechanism commonly employed and half the time usually occupied in the spinning operation for the manufacture of twist. The invention is applicable either in the production of strands for rope or for cotton, woolen or silk twist for all purposes.]

RAZOR STROPS—Michael Posz, of Shelbyville, Ind.: I claim, as a new article of manufacture, the self-lubricating razor strop, when constructed in the manner described.

BELT TRUSSEE—H. H. Reynolds, of Buffalo, N. Y.: I claim the combination of the T-spring, E, with the conical spring, H, pad, B, belt, A, and perineal strap, C, the whole being arranged substantialy as shown.

STOYMS.—Philip Shreiner, of Columbia, Pa.: I claim the air-supplying takes and air-heating cylinders, when combined with a steve, the heat of which is un-obstructed by suitside casings.

PHOTOGRAPHIO PLATE VICES—M. M. Rison, of Paris, Tenn.: I do not claim the use of an adjustable jaw and a clamping jaw, the former stopped by a pawl working in a ratchet in the bed-piece, and the latter operated by an eccentric attached to the bed-piece. But I claim, as an improved article of manufacture, a photograph vise, having its eccentric lever, E. previded with a groove, g, a clamping jaw, D, previded with a catch, f, to engage g, a jaw, C, previded with a spring paul, which engages a rack, e, and otherwise constructed as shown and described.

[This invention consists in the application of a grooved or hooked eccentric lever to operate upon one jaw of a photographic plate vise, in combination with a spring pawl attached to the other jaw to operate in a toothed ratchet on the bed-piece, for the purpose of permitting the adjustment of the vise to the plates of different sizes, and the speedy clamping and release of the plates.

WAGON BRAKE—Daniel Robinson, of Lenox, Pa.: I claim the combination and arrangement of the sliding frame, F, curved bars, C, stached to the rock-shafts, D.D. and passing through the traverse bars, d, of the frame, F, and the shoes, E, attached to the ends of the rock-shafts, the several parts being fitted in the truck, or bed, A, substantially as and for the purpose set forth.

Shoes are attached to rock-shafts which are fitted in the bed or track of the vehicle, and having curved bars attached to these rock-shafts, the bars passing through a sliding frame fitted in the bed or truck, and having the draft pole attached to it. The brake is operated by the momentum of the vehicle when the speed of the same is checked, or by gravity alone when descending a hill. It is applicable to all wheel vehicles.]

MACHINE FOR SPLITTING WOOD—P. P. Ruger, of New York City: I claim the spring or yielding guide for relieving the cross bars, e, in the manner specified and for the purposes set forth. I also claim the guide plate, x, with the uprights, y, constructed and arranged in combination with the wood splitters, as specified.

BALL FURNITURE CASTERS—B. A. Russell, of River, Conn.; I claim a new article of manufact River, Conn.: I claim a new article of manufacture, in my improved furniture caster, when composed of cylin-der or casing, A, either with or without the radial set screws, G, or ribs, G', in combination with the plate, D, and bail, F, when constructed, arranged and oper-ated in the manner and for the purposes set forth.

BREECH-LOADING FIREARMS—Christian Sharps, of Philadelphia: I claim, first, Forming on the outer end of the aliding bush, G, as the sole bearing point against the breech, an annular inclined projection with a sharp annular edge, b, coinciding with the smallest portion of the bore of the said bush, as and for the pur-

portion of the bore of the said bush, as and for the purpose set forth.

Sacond, The annular termination, e, of the sliding bush fitting into an annular recess, d, formed in the barrel and overlapped by the sharp-edged annular projection, substantially as set forth and for the purpose specified.

Third, The convex base, n, as fitted into a concave socket in the breech, so as to form a self-adjusting base for the end of the barrel.

for the end of the barrel.

Breech-Loading Repeating Firearms—Christian Sharps, of Philadelphia, Pa.: I do not desire to confine myself to the use of a barrel block with four bores, or to the precise devices described, for altering the position of the projection, S. insentials as a barrel block, with more or less than four bores, may be used in connection with my improvement, and as different devices for changing the position of the said projection.

But I claim first, Exploding, in succession, a number of cartridges of the class described by means of a projection caused to revolve by the movements of the hammer, when the said cartridges are so arranged, in respect to the said projection, that the latter shail strike the edge only of each cartridge in succession, as sectorth.

strike the eage only of earlier range in successing set forth.

Second, The catches, t t, so arranged on the stock, in respect to the bores of the barrel block, that on moving the latter from the breech, they may be the means of withdrawing the whole of the earlier range is multaneously from their respective bores, as set forth.

Boot HEELS—Stillman Thorp, of Portland, Me., and Wesley Thorp, of Turner, Me.: We do not claim an elastic metalic spring or plate applied in the shank of a boat, nor do we claim a notary heel-piece applied separately from the metallic shank piece, as we are aware that neither is new.

But we claim the combination of the metallic plate spring or shank stiffener, and the rotary heel-piece, connected together and applied to the heel and shank of a boot or shoe, substantially as specified.

Washing Machine—Wim. B. Twiford, of Chincoteague, Va.: I claim the opposing incline planes, e.e, on the underside of the ends of the sliding roller frame E, in combination with fixed concave projections or ledges, c. c, on the sides of the tub or box, and with grooves, B, of greater width than the diameter of the journals of the roller, in the sides of the box, substantially as and for the purposes set forth.

Lambe—Hezekiah Knowles, of New London, Conn., assignor to Fellows, Hoffman & Co., of New York City: I do not claim, separately, either of the defiectors described, nor the introduction of a current of air at the base of the chimney and between it and the upper deflector.

But I claim the lower or diaphragm reflector surrounding the wick tube at or near its upper edge, substantially as and for the purpose specified, in combination with the upper deflector and the chimney, having suitable openings for the supply of a draught of air to the inside and to feed the fiame outside of the upper deflector, substantially as and for the purpose specified.

denector, substantially as and for the purpose specines.

Harvesters—Geo. W. Richardson and Robt. Glover, of Grayville, Ill., assignor to themselves, J. B. Williams and Wm. A. Horrall, of White county, Ill.: We claim, first, The jointed spring arm, a', arranged and operating in the manner and for the purposes set forth, in combination with the spring catch, i', operating so as to catch and hold the arm, a'', when it has gathered the grain, and retain it in this position until the bundle is ready to be deposited free from the Flatform, p. Second, The raker, as 'a' i' in combination with the rod, r. crank, c. rest, n'', and retracting weight, w. arreasted and control to the proposition of the control of the control of the purpose of the control of

rod, r. crank, c, rest, n'', and retracting weight, w, arranged and operating to produce the reciprocating movements for gathering and delivering the gavel in the manner described

Third, In combination wish the arm, a'', the connecting rod, m, and bent lever, l, operated through the medium of rod, n n', pin, n'', and rest, n''', by the driving wheel, C, substantially in the manner and for the purposes set for it.

RE-188UE.

RECLINING CHAINS—Augustus Eliars, of Boston, Mass. Patented May 11. 1858: I claim, first, The general arrangement of devices described for actuating and spatiating both the back and foot-rest, the same consisting of the arms, ff, attached to the back in a projection thered, and having a shaft which travels in grooves, formed in the supporting frame-work of the chair and the arms, the whole heing combined with the foot-rest and frame as set forth.

Second, I claim the combination of device described, whereby the back can be placed and held in any desired position and at same time the projet length of arms retained, the same consisting of the hinged rails, p, sliding arms, s 5, locked upon said rails in any dependent.

p p, sliding arms, s s, locked upon said rails in any de-sirable manner, and mortises to receive the said rails as set forth.

as set forth.
Thirdly, I claim the foot-rest, constructed and arranged substantially as described, when combined with a spring or weight, or its equivalent, to operate as set

forth, so that the said foot-rest may be raised or lowered at will, to adapt itself to the length of the limb of the occupant, substantially as described. Fourth, in combination with a reclining chair, constructed as described, I claim the peculiar joint between the back and arms, consisting of the arm, g', attached to the back, and turning upon a pivot in the groove or mortised sliding arm, whereby a very long arm may be obtained, as set forth.

HULLS OF STEAM VESSELS-Ross & Thos. Winans, of Baltimore, Md. Patented Oct. 26, 1858: We claim constructing the hull in the form of a spindle, substantially as described.

INVENTIONS EXAMINED at the Patent Office, and advice given as to the patentability of inventions, before the expense of an application is incurred. This service is carefully performed by Editors of this Journal. through their Branch Office at Washington, for the smallfee of \$5. A sketch and description of the invention only are wanted to enable them to make the examination. Address MUNN & COMPANY,

No. 37 Park-row, New York.

The Time to cut Timber.

MESSRS. EDITORS-In a recent number of the Scientific American, under the head of "Useful Information about Timber," I find a statement in direct opposition to the theory received among wood-cutters, in regard to the best time for felling timber. It is there stated that this is when the wood contains the least sap, in whatever part of the year this may take place. The result of my observations is that the month of August is the best period to cut timber for mechanical purposes, just when the leaf is full or has attained its growth, at which time the tree has certainly the greatest amount of sap in it. I have found that the timber cut at this period is perfectly solid, sap wood and all, and that it is also free from worms. Timber cut upon the same ground during other months of the year is quite porous, and has the sap wood entirely eaten off, when undergoing the same process in drying. I was led to believe that the abundance of sap in August closed the pores of the wood and solidified the timber. If my philosophy is wrong, there are quite a number of your patrons in this place interested in the subject, and who wish to hear more about it.

THOMAS HARPER. Alleghany City, Pa., Jan., 1859.

There seems to be a misapprehension of the idea expressed on page 154 of the present volume of the Scientific American, in regard to the best period for cutting timber. It is there stated that in New England, August is held to be the best month of the year, as at that period the sap is exhausted in forming the leaves and the new wood and the trunk are then much drier. This language is in accordance with the opinions of our correspondent. In reference to the term least sap, perhaps the matter would be rendered more clear to have said the least free sap. In the month of August, according to our correspondent, the sap becomessolid and fills up all the pores of the wood, consequently it is not free—not exactly sap at that period. In other States, further south, July is the month most favorable for cutting timber.

Winans' Steamer Again.

Life Illustrated publishes our remarks on this subject on page 137, this volume of the Scientific American, and, among other observations, says :-- "We do not think that the device proposed for propelling the steamer will answer the purpose as well as some others that might be employed; and we believe we could give graver reasons for our opinions than any of those stated in the above (our) article." Surely, in the language of the mortal poet," here is "wisdom, gravity, and profound conceit, as who should say 'I am Sir Oracle, and when I ope my mouth let no other dog bark." We respectfully call for these "graver reasons," for we hold it to be one of the common courtesies of life not to call in question the opinions of another upon a disputed point without at least showing the courage to express our own.

NEW OFFICE OF THE SCIENTIFIC AMERI-CAN.—Having removed our quarters, our friends are requested to address us as follows: MUNN & CO.,

No. 37 Park-row (Park Building),

New York City.