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ANOTHER NEW AND REMARKABLE TEXTILE.

It will be pleasant indeed to find the enthusiastic anticipations of M. Benito Roezl, of the eminent French naturalists, Blume, Decaisne, and others, and of Mr. A. B. Bacon, chairman of the Section of Agriculture, New Orleans Academy of Science, realized in respect to the *Ramie* or Boehmeria tenacissima, of Java. From the nature of the case, anticipations so high must seem extravagant, and be held subject to extra hazards of disappointment, until their actual accomplishment leaves no place for conjecture. From a communication by the last-named gentleman to the Academy of which he is a member, we learn that at present the exotic is introduced and flourishing in a large plantation in Mexico, and that the conviction of the naturalists who have nursed it and experimented upon it for the last twenty-three years, that its fibre is stronger than hemp, as fine and white and twice as durable as linen, and more productive than cotton, is so far confirmed that in 1865 M. Roezl exported and sold in England over 5000 lbs. of the staple at double the price of the best quality of cotton. Its beautiful fabrics will be displayed in the Paris Exposition, but we have as yet received no account of them.

The Ramié belongs, like the hemp and the nettle, to the *urticaceæ*, and was transplanted from the island of Java to the Paris Jardin des Plantes, by Blume, in 1844, where it was reared in the hot-house until its introduction into the more congenial climate of Mexico by M. Roezl, former head of the Horticultural Institute of Belgium, within eleven years past. It is considered that only the middle and southern portions of our Gulf States will afford it a suitable climate, and that in that latitude it will make three or four crops a year, each equal in quantity to the most prolific of hemp.

The perseverance of Mr. Roezl in domesticating the staple in the western world has been almost romantic—perhaps we should say heroic—and richly deserves the high reward his friends anticipate for it. Having first gone to Java and spent a year in familiarizing himself with the character and growth of the plant, he emigrated to Mexico with a store of its roots. On his way to the capital he was robbed of his treasure by the Mexican banditti, who took little benefit from their crime, and was obliged to write to his friends in Europe for a new supply, which was at length procured through the good offices of the British navy: but this perished on the voyage to England. Again it was attempted, and again the plants were killed. A third attempt succeeded, but the plants had to be placed under hot-house cultivation in England, to give them strength for another great voyage. At last, in 1859, after six years of waiting and endeavor of this kind, his plants arrived half dead, and with the skill of an accomplished and scientific horticulturist he nursed them successfully into life, and within two years found himself the owner of a thriving plantation.

This was but raw material, and the least part of the difficulties had been overcome. He imported from England the most approved machinery for cleaning flax and hemp, but it proved unsuited to the requirements of so fine a fibre. Two years of effort in this direction were spent in vain, when he fell back upon his own tireless resources, and in two years more produced two inplements of his own invention by which the stalks were converted within twenty-four hours after cutting, into long skeins of pure, white and silk-like fiber, ready for spinning. In February last, Mr Roezl visited Cuba with specimens of the results of his eleven years labor, which after careful examination were pronounced of the first importance by the naturalists and agriculturists of the island, who predict that it will supplant tobacco and coffee as a preferable staple for Cuba. Mr. Roezl takes five crops per annum from his plantation, the matured plant, which is perennial, attaining when well rooted the hight of twenty feet.

CONDITION OF THE PATENT OFFICE.

Nearly two months ago, in announcing the passage by Congress of a bill to increase the examining force of the Patent Office, we commented as follows:—"The Commissioner is now clothed with ample authority. We understand that he intends to fill all new positions by promotions, which is certainly very commendable. We earnestly hope that the Commissioner will act promptly and energetically in carrying the new measure into effect. The business of the office is suffering very much from the delay which attends the examination of cases, and now that the Commissioner has the power, we hope that he will employ it to infuse new life and vigor into the Department."

We have yet to learn that the Commissioner has made a single new appointment or taken any active measures towards bringing up the back work of the Office. Hundreds of applications are awaiting action, some made six months and more ago. Inventors are getting discouraged, and everybody who has business transactions with the Office is disappointed that the Commissioner does not avail himself of the authority vested in him by Congress to increase his force. In some classes the examinations are closely up, but in others they are several months behind. This condition of things should not exist, and with the power ceded to the Commissioner by our last Congress, there is no occasion for it. Wake up! Mr. Commissioner: inventors are busy, applications for patents never were greater, the treasury of the Office is plethoric, and now all that is wanted to make the Patent Office the most prosperous department under Government is a vigorous administration.

MODES OF WORKING WOOD.

So much of the public attention has of late years been directed to the new preparations and applications of the metals, particularly iron and steel, that the merits of that old time friend of man civilized as well as savage, wood, are likely to be overlooked. Volume after volume is issued from the press, and our periodicals are filled with articles devoted to the properties, qualities, uses, and manipulations of the metals, while those which treat on wood are few and far between. Still, it would be difficult to imagine, in our present state of advancement, where to look for a substitute which should combine so many qualifications of usefulness and such adaptability to diverse manipulation.

Besides the hundred applications of cutting, splitting, and sawing, wood can be worked in many more ways. It is doubtful if any substance with which we are acquainted is suceptible of so many radical changes—changes which alter the very structure of the material and adapt it to the most opposite uses. It can be torn into fibrous shreds which make elastic cushions or beds; made into a spongy, porous mass; hardened by chemicals which change its texture and make it semi-mineral in nature; compressed by mechanical means, closing its pores, until it is nearly as compact as the metals. It may be molded into various forms; bent to keep its enforced position; dissolved into pulp and made into paper; separated into *laminæ* by percussion, and, in short, treated in any conceivable manner except melted and cast.

Perhaps one of the most interesting of the methods of working wood is that of separating one layer from another by percussion, or by compression joined to bending. Those woods only can be treated in this way which grow by external concentric accretions, as many of our hard wood trees. The wood for this treatment should be tough, elastic, and straight-grained.

The Indians of this country, and the basket makers in others, separate the layers of the wood by beating upon the surface of a log with heavy mallets, when the wood comes off in thin *laminæ*. This method of disintegrating wood is one of the oldest of human arts; probably no mode of working wood is older. What was formerly done by hand is now, however, performed by machinery. We saw the other day, in Jersey City, machinery which performed this work in a remarkably rapid and effective manner. It was run by the Wilder Hoop Machine Company, and was designed for making (rolling) hoops of wood from a "bolt" split from a log. The wood used was black ash, although any tough, straight-grained wood would answer. The bolt was a longitudinal cleft the cross section of which might approach either a parallelogram or a triangle. One end was presented to a space between two swiftly-revolving heads armed with cutters which almost instantly formed a wedge-shaped point, then to another disk with thin cutters which splits the V-shaped end at intervals corresponding with the thickness of the hoops to be made. These splits do not extend more than one or two inches from the end. The bolt is then run between circular saws and trimmed to nearly a square form, or to a parallelogram, one side of which corresponds with the width of the hoops.

Then the bolt is passed between upright corrugated feed rollers held in contact by powerful springs. Directly behind these were a set of smooth rollers, placed horizontally, between which the bolt passed, being compressed powerfully, and by means of a curved guide compelled to take a short curve. The result was a splitting from end to end of the bolt, forming perfect hoops, or rather slips of equal thickness throughout. The philosophy was not difficult to understand. The slits cut in the end of the bolt were starters for the thickness of the splits. The wood, being wet, yielded to the compression of the rollers, and the direction given the bolt by the curved shoe compelled one piece to slide upon another sufficiently to divide the cross fibers and insure a separation. The whole process is a very brief one, occupying no more time probably than would be spent in reading this description. It is very interesting and gives the observant man new ideas concerning the capabilities of wood. That its fibers can be cleanly separated, simply by compression and bending, to make as smooth a job as if sawed, and preserve the longitudinal grain and consequent strength as perfectly as if split by ordinary means, is at least surprising.

THE GULF STREAM AND THE CUBA TELEGRAPH.

A special survey has been made under the direction of the Acting Superintendent of the U. S. Coast Survey, Mr. J. E. Hilgard, at the instance of the International Ocean Telegraph Company, with a view to determine the conditions to be encountered in locating the cable between Florida and Cuba, through the Gulf Stream. The examination reveals a very irregular and precipitous descent from the Cuban coast, reaching the maximum depth of the channel, 843 fathoms (say 5,000 feet) 37 miles from the Moro. From the northward, the bottom falls away in terraces without abrupt slopes. It is in the deep canons or gorges of the southern portion that the Gulf Stream and its counter currents find their channels; while the sea lies almost motionless above the terraces of the northern coast. About 21 miles from the coast of Cuba, a submarine mountain rises in the midst of the southern channel, with the extreme depths of 748 and 843 fathoms on either side of it. The summit of this mountain is 2,400 feet above the bed of the straits and reaches to within 2,400 feet of the surface; the current running over it so strongly that soundings were made with great difficulty. It appears to be triangular in its general form, with precipitous sides, presenting at its west angle a bold prow to the stream.

Assistant Henry Mitchell, from whom these data are derived, states that the observations indicate the depth of the Gulf Stream to be scarcely more than one-third the maximum depth of the channel. He concludes that the Gulf Stream is not a profound movement, but an overflow of water from the Gulf, having for its office the restoration of surface level, while the office of the counter stream, or "polar current," beneath, is the restoration of equilibrium thus disturbed between waters of different specific weights or densities. This view of compensating currents is illustrated by observations in the Hudson river. In the dry season (July) the surface outflow of the river through the Narrows has been found to occupy three-fourths instead of half the twelve tidal hours; while in the under stratum the case is more than reversed, and the inflow predominates to such an extent that as a general thing it is constant along the bottom, although not in velocity; and the same conditions with variable proportions, obtain for some distance up the river. On running a line of levels from New York to Albany, it was found that the bed of the Hudson river lies below the mean level of the sea for over a hundred miles, while the surface of the fresh water, or river proper, in the dry season, is above this level, yet not so much above as to counterbalance the excess of specific gravity in the sea water, which consequently during the summer months flows in along the bed of the stream, while the fresh water overflows into the ocean. In other words, the Hudson, for one hundred miles, is in the summer but an arm of the sea analogous to the Gulf of Mexico, deriving much of its elevation as a stream, from a like cause with that of the Gulf stream, viz: its lightness, lifted above the sea level by the bottom pressure and inflow of the heavy sea water in the opposite direction.

The striking variations in the velocities of the Gulf Stream, which were particularly remarked by navigators during the late survey, the weather being exceedingly calm, are accounted for on the hypothesis that they follow the changes in mean sea level which depend upon the declinations of the sun and moon—more especially the latter. Prof. Bache has shown that the mean level at Key West is one foot higher when the moon is in the equator than when she is at her greatest declination; while, on the contrary, in the North Atlantic the mean level is about three inches higher at her *maximum* declination: giving a variation of fifteen inches in level to account for the variations in the velocity of the stream.

THE PRICE AND PROSPECT OF BREAD.

We have remarked the extraordinary phenomenon of breadstuffs going from east to west instead of west to east, and even from Europe to America in a few exceptional instances. The fact is that there is more flour and wheat at the east than at the west, and although the stocks on hand in New York are much larger than last year at this time, while large shipments are made from California, those in the west are much more than proportionally smaller, and prices equally high; so that the aggregate of breadstuffs in the country is evidently reduced enough to fully account for the present enormous prices. Among the causes of scarcity are the short western crops of last year (resulting partly from a scarcity of labor which the war has left as a melancholy memorial of its carnage) the half extinct agriculture of the South, and its heavy drain upon the northern markets. The anticipated crops, rich as their promise is, cannot therefore exert their natural effect upon prices, and will not begin to replenish the market at all under two months. But before that time, if no new calamity or portent intervenes, the coming harvests will cast their shadows before, and discourage the extortion of speculators materially. When they are fairly in the field, it may be rationally hoped, the prices of food will come down to a more reasonable scale than has been known for years. The most cheering accounts of the wheat prospect pour in from every section of the country. The South has devoted an unprecedented proportion of land to food, and the crops promise unusually well, while in the West, the mighty tide of immigrating labor has filled up the ghastly chasm left by the war, the high prices have

produced a great increase in the breadth of land sown,—in some regions nearly double—and Providence has smiled upon the buried seed and the tender blade. The deep snows of the winter have protected the wheat, and from every section comes the report that it is growing magnificently and promises a glorious yield, far surpassing in the aggregate any crop ever before raised in thiscountry. The Puritans of New England, taught by hunger to feel their dependence on the God of nature, used to fast and pray one day in every spring, fora blessing on their hard fields, and their descendants keep up at least the form in the New England states to this day. Our crops have yet to run the gauntlet of many foes, and may the Providence whose bounty we have seen so marvellously enlarged in modern years, still regard mercifully the wants of our toiling millions, and "God save the wheat!"

The report of the Agricultural Department for April says: "Never has there been so general an expression of encouragement in view of the fine condition of winter wheat since the establishment of the present system for the collection of crop statistics. In more than nine tenths of the returns received, the condition of the crop is reported favorable and promising. From the South the returns are as cheering as from the West. The report states, however, that the loss of cattle from starvation and exposure the past winter has been extraordinary. Beef is not likely to be any cheaper.

GLEANINGS FROM THE POLYTECHNIC ASSOCIATION.

Dr. Feuchtwanger showed a specimen of tellurium, an exceedingly rare substance commonly classed among the metals but which has much analogy in its properties to sulphur and selenium. The French call this substance one of the metalloids. In its native state the ore is found combined with iron, gold, or silver. Its color is silvery white and brilliant, and in appearance it closely resembles antimony. It is found in the Altai mountains and in Transylvania. The specimen shown was found in a gold mine of California.

Mr. Fisher exhibited drawings for a steam-plowing machine or more properly a pulverizer. The machine resembles a locomotive with a short boiler, and mounted on wide tired wheels. The power is applied to drive a drum having circular saws thereon set three inches apart. By suitable gearing the engine advances slowly while the drums rotate with great rapidity, pulverizing the soil to the proper depth. The subject of steam plowing being thus introduced, its importance was acknowledged by all, but an animated discussion sprung up respecting the relative advantages of employing traction engines working the plows directly, or stationary engines working the plows by means of chains, as is the common custom in England. Both methods had their advocates who warmly argued their respective merits. It was claimed on one side that the traction engine beats down the field in front of the spaders which it afterward is made to plow up, as the wheels must be made wide enough to prevent the machine from sinking into the ground.

Mr. Parmelee read a paper on gypsum, describing its nature, and referring more especially to its use as a fertilizer. Its value in this respect he asserted was owing to its absorptive power in taking in ammonia from the atmosphere and storing it up to be disseminated by the rains through the fields.

President Tillman gave the club the results of some experiments he had witnessed at the works of the lead encased block tin pipe company, showing that this pipe possessed the same strength as that of lead pipe of twice its weight. He also referred to the dangerous effects from using water drawn through common lead pipe, and advocated the passage of a law which would prevent its employment in this capacity. He was followed by several members speaking on the same subject, describing minutely the action of the poison and its different effects. Some persons are more susceptible to its injurious consequences than others, as is well known to be the case in regard to painter's colic and kindred complaints.

Mr. Walling repeated the beautiful experiment lately performed by Prof. Thompson of Edinburg before the Royal Society of Scotland, and described in the article on "wirbel bewegung" on page 212, current volume. These air vortexes are very frequently produced in nature and are made visible when smoke or steam is mixed with the whirling air. They may be seen when cannon are fired, particularly if the muzzle is "slushed" with grease, also as issuing from the smoke stack of a locomotive just starting: human smokers constitute perhaps the largest number of experimenters in this line. Mr. Walling remarked that the molecular theory based upon this phenomenon by Prof. Thompson, was an indication of the tendency of scientific opinion towards some such purely dynamical theory as had been previously proposed by himself.

Tin Lined Pipe for Water.

On Thursday the 23d of May an exhibition of the method of the new manufacture of lead pipe lined with block tin was given at the manufactory of the inventors and manufacturers, foot of west 27th street, New York. The visitors invited had an opportunity to witness the processes from the first casting of the core of tin to the production of the pipe in its finished state, and the sentiment was general that it was a complete success. We have no time nor space in this issue to describe the processes, norto state the facts established by the experiments. In our next we shall endeavor to show the immense advantages of this over the ordinary water pipe.

THE hardware manufactory of Sargent & Co., New Haven, Conn., gives employment, at its full capacity, to 800 hands, and turns out 4,000 different articles of hardware to the amount of $4,000,000 to $7,000,000 per year.

ISSUED FROM THE U. S. PATENT OFFICE

FOR THE WEEK ENDING MAY 21, 1867.

Reported Officially for the Scientific American

PATENTS ARE GRANTED FOR SEVENTEEN YEARS, the following being a schedule of fees:—

On filing each Caveat	$10
On filing each application for a Patent, except for a design	$15
On issuing each original Patent	$20
On appeal to Commissioner of Patents	$20
On application for Reissue	$30
On application for Extension of Patent	$50
On granting the Extension	$50
On filing a Disclaimer	$10
On filing application for Design (three and a half years)	$10
On filing application for Design (seven years)	$15
On filing application for Design (fourteen years)	$30

In addition to which there are some small revenue-stamp taxes. Residents of Canada and Nova Scotia pay $500 on application.

☞ Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying 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.

64,826.—DEVICE FOR HOLDING CIGARS.—Charles Appel, Hoboken, N. J.

I claim, as an improved article of manufacture, a cigar holder consisting of a combination of the shells, A B, with the cutter, d, the latter either being attached to one of the shells or being part of the same, all made and operating substantially as and for the purpose herein shown and described.

64,827.—LIME KILN.—George Atkins, Sharon, Pa.

I claim the arrangement of the lime kiln formed of the chambers, A B D, and heated by furnaces, C C', at different levels inside the kiln, operating substantially as and for the purpose herein described.

64,828.—HAY PRESS.—George H. Aylworth, Brighton, Ill.

I claim a hay press, consisting of the box, a, and the sliding partition, k, operated by means of the screws, c b, the whole constructed and arranged as herein shown and described.

64,829.—CARRIAGE-WINDOW FRAMES.—Francis Baker, New York City.

I claim a carriage-window frame swiveled or pivoted to uprights, F, arranged to move in and through the carriage body, and bent springs, K or L, hooks or catches, N, and studs, I, substantially as and for the purpose described.

64,830.—SEWING MACHINE.—Robert Barclay, Buffalo, N. Y.

I claim, First, The sliding rod, q, situated between the needle slide and tension device, t, in combination with the needle operating shaft, E, and cam, r, the whole arranged and operating as and for the purpose specified.

Second, The combination and arrangement of the adjustable pivoted dog, m, slide, o, and lever, G, in combination with the presser foot, D, constructed and operating substantially as and for the purpose set forth.

64,831.—LIQUID FOR CARBURETING GASES.—John A. Bassett, Salem, Mass.

I claim the hydrocarbon liquid for carbureting gases, produced by the combination and process described substantially in the foregoing specification.

64,832.—PEAT MACHINE.—Alfred Bridges, Newton, Mass.

First, I claim the arrangement of the sleeve, C, passing over stock, D, in the manner and for the purpose described herein.

Second, The adjusting plunger, E, by means of projection, d, and spring, C, or its equivalent, as above specified.

64,833.—RAILWAY SWITCH.—James S. Brothers, Duncannon, Pa.

I claim the construction of the chair, K, with the adjustable frog, G, when arranged, combined, and operated as herein described and for the purpose set forth.

64,834.—QUARTZ MILL.—Samuel C. Bruce, New York City.

First, I claim the revolving wheels, C and D, with velocities varying in some regular ratio, so that wheel, D, shall always revolve faster than, and in the same direction as, wheel, C, and for the purpose described.

Second, The arrangement of wheels, C and D, revolving in the same direction, in separate but communicating cases, A and B, and so constructing said cases and arranging them with reference to said wheels and their shafts that the external air can enter at aperture, E, only in the periphery of the case, A, substantially as and for the purpose described.

64,835.—SAW SET.—Benjamin N. Butcher, Philadelphia, Pa.

I claim the combination of the bed plate, A, with beveled edges of different angles of inclination, and the reversible and adjustable guide pieces, E and E', set screws, F and G, and sets, C D, substantially as and for the purpose set forth.

64,836.—CANE AND SORGHUM STRIPPER.—James A. Campbell, Stow, Ohio.

I claim, First, The rollers, G H, arranged substantially as shown and described, in connection with the stationary cutter or stripper, L, and the yielding or pressure cutter or stripper, M, having the lever, N, and spring, O, applied to it, substantially as and for the purpose set forth.

Second, The rotary topping cutter, Q, attached to wheel, R, in connection with the concave plate, S, all arranged to operate in connection with the stripping device, substantially as shown and described.

Third, The combination of the endless leaf and top-discharging apron, E, with the leaf-stripping and stalk-topping mechanism, substantially as and for the purpose herein set forth.

64,837.—PORTABLE SEAT FOR DRIVERS UPON CARS.—James F. Campbell and Cornelius Finney, Williamsburg, N. Y.

We claim the upright or staff, B, with hook at one end, and provided with a rod, E, having seat, G, and strap, H, substantially as and for the purpose described.

64,838.—BOTTLE STOPPER.—Horace S. Carley, Cambridgeport, Mass.

I claim the slide, F, carrying stopper, in combination with the swiveled loop, E, in which it moves, substantially as and for the purpose described.

I also claim, in combination with the above, the swinging clasp, I, substantially as described for the purpose set forth.

64,839.—WHEEL PLOW.—Elisha A. Chace, Rosemond, Ill.

I claim a wheel plow, having the stationary frame, A, pivoted frame, F F' F', plow beam, D, and elevating devices, G G1 G2, arranged to operate substantially as and for the purpose described.

64,840.—CLOTH-GUIDE FOR SEWING MACHINES.—George F. Clemons, Springfield, Mass.

First, I claim in a cloth guide for sewing machines the employment with a cloth gage of a rigid guide plate, adapted to bear upon the cloth in front of the sewing needle, and extend across the line of seam being sewed, and having elastic and adjustable pressure given to it, in such a manner as that it shall press more upon the cloth outside the seam than inside thereof, and thereby guide the cloth towards the gage face.

Second, The elastic plate, b, either with or without the rigid guide plate, a, combined with the pressure plate, e, screw, f, and gage, c, substantially as described and for the purposes set forth.

Third, The rigid guide plate, h, combined with the elastic plate, i, screws, j j, rigid plate, k, and gage, l, all with or without the link, n, substantially as described and for the purposes set forth.

64,841.—DEODORIZER FOR PRIVY SEATS.—Neil Clifford and A. N. Bell, Brooklyn, N. Y.

We claim the combination with the seat of a privy, water closet, or other similar place of whatever name called, of a receptacle or vessel for the reception and holding of any suitable deodorizer or disinfectant, whether in the form of a liquid or powder, when such vessel or receptacle is so constructed and connected with the seat board that by the depression or upward movement of the seat, or both, the said disinfectant or deodorizer will be discharged into the vault of the privy, etc., substantially as and for the purpose described.

64,842.—LOCOMOTIVE ENGINE.—Joseph M. Coale, Baltimore, Md.

I claim in combination with locomotives and other similar boilers, the additional sheet, d, and flues, f, for the purpose of preventing the cold air from chilling the ends of the flues proper, substantially as and for the purpose set forth.

64,843.—RAILROAD RAIL FASTENING.—John Cochran, Wall Township, N. J. Antedated May 13, 1867.

First, I claim the combination of a screw bolt or wood screw spike, with a cleat that has a bearing upon the top and at the edge of the rail flange, and also upon the cross tie, and so constructed or formed that it can be removed from the flange of the rail upon slackening up the screw bolt or wood screw spike by which it is secured to the cross tie, substantially as herein described.

Second, The heel spurs of the cleat for entering into the timber or cross tie, so as to hold against the lateral thrusts upon the rails, as caused by the action of the wheels of passing trains, in combination with the screw bolt or wood-screw spike fastening of such cleat, substantially as herein described.

Third, The peculiar construction of the cleat, by reason of which it may be made by pressure or percussion from flat iron bar, complete in all its parts, without necessarily altering the thickness of the material in any of such parts, substantially as herein described.

64,844.—STEAM GENERATOR.—S. M. Colburn (assignor to himself and Sylvester Colburn), Ansonia, Conn.

I claim the plate, B, constructed and arranged within the boiler, so as to form a chamber, C, communicating with the boiler by means of openings or perforations, a, substantially as and for the purpose set forth.

64,845.—MANUFACTURE OF GAS.—Joseph H. Connelly, Wheeling, West Va.

First, I claim the use of lime obtained from burnt limestone or oyster shells, dampened or slaked with water, salt, or saltpeter solution, introduced into the retort as described, in the proportion mentioned, for the purpose of whitening and desulphurizing the gas, as set forth.

Second, The use of lime prepared as stated, in combination with coal and residuum oils, introduced as described for the purpose specified.

Third, The combination of lime, prepared as stated, and cinders, coke, coal, or wood, with residuum oil alone, for the purposes mentioned.

Fourth, The use of residuum oil alone, in combination with lime, for the production of inflammable gas, desulphurized and whitened in the manner set forth.

64,846.—MEANS FOR STEERING VESSELS.—Robert Creuzbauer, New York City.

First, I claim, in combination with a steering screw, or its equivalent, arranged within a pipe or water way extending transversely through the hull of a vessel, a means which will enable the pilot to give a right or left motion to said screw or to stop or start it at pleasure without stopping or reversing the motion of the driving power, substantially as described.

Second, The combination of a steering screw or its equivalent, arranged within a water way extending transversely across the hull of a vessel, with a means which will enable the pilot from the pilot house to stop, start, or reverse the motion of an engine, which is used for rotating said screw, substantially as described.

Third, In combination with a steering screw, arranged to operate substantially as described, I claim the employment of an engine for rotating the screw, and a means for rotating the screw when the engine is in operation substantially as described.

Fourth, Providing for disconnecting the capstan shaft, F, from the screw shaft, d1, when this latter shaft is connected to and driven by the engine shaft, d2, substantially as described.

Fifth, The combination of the capstan or capstans upon shaft, F, with the gearing, E f f', clutch, g, lever, G', shaft, d', and with an extension, d2, of shaft, d', clutch, W W', and a driving engine, substantially as described.

64,847.—KEEPER FOR DOOR LOCKS.—George W. DaCunha, of New York city.

I claim an improved catch or nosing for door locks formed with a flange, d1, to project along or be led into the jamb, and with a flange, d2, to project along the casing, said flanges being cast solid, with and forming an integral part of the side catch, substantially as herein shown and described, and for the purpose set forth.

64,848.—HAY LOADERS.—Leopold De Lacee, Springfield, Ill.

First, I claim the revolving platform and raking device, D, composed of the frame, a, fitted in the main frame, A, and provided with the bars, E, having teeth, F, attached, all arranged substantially as and for the purpose specified.

Second, The raking and pitching fork, S, attached to a carriage, P, operated by an endless chain, Q, and arranged with ways or guides, j j, on a suitable framing or support, substantially as and for the purpose set forth.

Third, The swinging or pendant frame, T, in combination with the lever, I, bar, H, and clutch pulley, G, arranged to operate in connection with the revolving platform and raking device substantially as and for the purpose specified.

Fourth, The two pulleys, G G', connected by a clutch, and arranged as shown to operate respectively the revolving platform and raking device, and the raking and pitching fork substantially as shown and described.

64,849.—PLANING MACHINES.—William H. Doane, Gerritt V. Orton, and William E. Loudon, of Cincinnati, Ohio, assignor to J. A. Fay & Co.

First, We claim the combination of the adjustable break irons, k' k', with the cutters, k k, and the removable collars, h h, all constructed and arranged in the manner and for the purpose described.

Second, The application of the shield, G, to a post, m, which is allowed to revolve around the cutter head substantially as described.

Third, Sustaining the safety shield, G, upon the table top, A, by means which will admit of said shield being moved around the axis of the cutter-head, and also adjusted vertically substantially as described.

64,850.—WHEEL VEHICLES.—James W. Drew, Stockbridge, Mich., assignor to J. N. Townson and James W. Drew, Antedated May 16, 1867.

I claim the crooked sway bar, H, and the cross bars, I and J, in combination with the axle, C C, and the axle guides, G G, the whole constructed and operating in the manner and for the purpose herein described.

64,851.—COCKS.—Charles M. Alburger, (assignor to George R. Kirk), Philadelphia, Pa.

I claim the follower, A, having its metallic packing, E, and elastic packing, e, and elastic packing, e', in combination with the spring, D, flanged thimble, F, packing, E, and spigot, C, substantially as described for the purpose specified.

64,852.—CONVERTING RECTILINEAR INTO ROTARY MOTION.—James A. Ehle, Green Bush, Wisconsin.

First, I claim converting rectilinear motion into rotary motion by the use of polygons, substantially as described.

Second, The balanced lever, B, the connecting rods, C C, the carriages, D, and the guides, E, substantially as described and for the purposes herein set forth.

Third, The pins, f, forming hooks upon the triangles, E, and the bar, b, in combination substantially as shown and described.

Fourth, The cam wheel, L, in combination with the triangle, E, and the gear wheels, H and k, substantially as herein shown and described.

64,853.—PORTABLE ROOFING BOILER AND FURNACE.—Perry Fenlason, Cincinnati, Ohio.

I claim the boiler, B, in combination with the spring dray, A, or its equivalent, constructed substantially as above described and for the purpose set forth.

64,854.—ATTACHMENT TO STOVES FOR GENERATING GAS.—B. L. Fetherolf, (assignor to himself and J. N. Hea desty), Tamaqua, Penn.

I claim the hollow metallic block, A, fitted within the fire chamber of stove so as to constitute both a gas generator and a lining or fire back, substantially as described.

64,855.—PUTTING UP OILS IN CASKS, &c.—P. G. Finn, Erie, Penn.

I claim the barreling and hermetically sealing of coal oil in a heated and expanded state, substantially as and for the purpose set forth.

64,856.—EDIBLE COMPOSITION.—Daniel Fobes, (assignor to Fobes, Hayward, & Co.), Boston, Mass.

I claim the edible composition as made of the materials in the manner and for the purpose substantially as described.

64,857.—EXTENSION TABLE.—George F. Folsom, (assignor to himself and Charles F. Pease), Roxbury, Mass.

I claim the combination as well as the arrangement of an auxiliary leaf, E, and mechanism (viz.: its rods, k, elevators, H, and their counter cams, or the equivalents thereof,) for operating it as described with two leg frames, and their main leaves, D D, one of such leg frames being constructed with a space or recess arranged below the main leaf, and for the reception of the auxiliary leaf when the table is closed as described.

I also claim the combination as well as the arrangement of two auxiliary leaves, E E, and mechanism for operating them as described, with the three frames, A B C, and their main leaves, D D, arranged together as specified.

I also claim the combination as well as the arrangement of two turning leaves, F F, two main leaves, D D, three of the frames, A B C, as described, two auxiliary leaves, E E, and mechanism, viz.: its rods, k, elevators, H, and their counter cams or the equivalent thereof), for operating such leaf or leaves, E, as described.

I also claim the peculiar mechanism in combination applied to each turning leaf, and for operating each of the auxiliary leaves, such being the slide rods, k k, and the elevators and their counter cams, or their equivalents as set forth.

I also claim the combination as well as the arrangement of one turning leaf, F, two main leaves, D D, two leg frames, one auxiliary leaf, E, and mechanism, (viz.: its rods, k, elevators, H, and their counter cams, or the equivalents thereof, for operating such leaf as described.

64,858.—MECHANICAL MOVEMENT.—William Galladay, Sheboygan Falls, Wis.

I claim the combination of the arms, C D, and pawls, E F, with the ratchet wheel, A, as and for the purpose set forth.

Connecting the arms, C and D, at their inner ends, so as to be operated by one connecting rod, substantially as shown and described.

64,859.—GIG MILLS.—Ernst Gessner, Aue, Saxony.

First, I claim the construction and arrangement of the revolving disks, D, in the adjustable frame, C, substantially as described for the purpose specified.

Second, The arms, O O', with toothed segments, in combination with the rollers, N', and disks, D, constructed and operating substantially as and for the purpose set forth.

64,860.—GATES.—Robert D. Green, Columbia, Mo.

I claim the solid bed-sill or track laid in the ground, and detached from the gate post, and on which the gate rests, plain on upper surface with groove or rail as denoted by letters, H, also pin fastener top of posts, as shown by letter, G; also the track cleaners, marked, D D, fastened to underpart of bottom rail of the gate in front of each wheel, and designed, as the gate moves, to remove from track all obstructions to the wheels, C C; also guide posts, E E, used to prevent the gate from running off the track when open.

I also claim in combination with the posts of the main gate, represented by letters, H D D C C E E, letters patent for extended top and bottom rails or slats, to be used at pleasure in forming a gap moving the gate forward on the wheels, C C, so that the gap thus formed will admit the passage of small stock, and at the same time exclude large stock.

64,861.—MANURE DRAG.—Christian H. and Joseph H. Harnly, Pennsylvania Township, Pa.

We claim the arrangement of the fork drag, A A' A" A"', with its spring and lever, F E, clamp rod, D, and armed fork head, C B, runners, G, all combined and operating substantially in the manner specified.

In combination with the, fork-drag, figure, 1, and its ring, O, and hook, K;