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LIST OF PATENT CLAIMS
Issued from the United States Patent Office.
FOR THE WEEK ENDING APRIL 22, 1851.

To Jonathan Ball, of New York, N. Y., for improvement in means of Renovating and Converting Sight.

I claim the cups and caps, to produce a pressure upon the periphery, in case of old age, or front of the eye, in case of near sight, which will increase or diminish its convexity, as the nature of the case may require, with their application as set forth, using for that purpose any of the materials named in the above specification.

To C. W. Grannis, of Gowanda, N. Y., for improvement in Cooking Stoves.

I claim first, the arrangement of the flues which conduct the heated air to the space under the oven bottom, from which it is discharged into the oven at the corners thereof, and without any enlargement to permit the expansion of the air before it reaches the oven, as described, when this is combined with the arrangement of fire flues on each side thereof, as described, whereby the air, passing to the oven is heated along the whole distance of its passage, by the products of combustion from the fire place, as described.

I also claim the heating of the air in its passage through the back hot-air chambers, by combining with such air chambers and the main fire flues, the branch fire flues which pass back of the said air chamber, substantially as described.

To James Reynolds, of New York, N. Y., for improvement in machines for Gutta Serena Tubing and covering wire.

I claim the use, for the purposes specified, of feed rollers, in combination with the stomach, having a lip or mouth arranged and operating substantially as described.

To Bradford Rowe, of Albany, N. Y., for improvement in machines for Stretching Leather.

I claim the method or device of stretching leather, especially for belting, by the use of apparatus so arranged that after a piece of leather has received, by an equable strain applied to its ends for their whole width, the proper stretch that the material can bear on or along one edge thereof, if it be found that the other edge and parts intermediate between it and the first edge (from the difference in quality of fibre), has not received proper tension, the further stretching of the first side shall be stopped, whilst, by the application of the mechanical stress, at the other edge of the leather, it, and the parts between it and the first side shall be duly stretched, substantially in the manner set forth.

I claim the holding board as essential, in all leather stretching apparatus, where it can be applied in keeping the material, whilst being stretched, from contracting in width and becoming defective thereby.

I claim the holding board, with its clamps and wedges, in combination with the apparatus for stretching, for the uses and purposes substantially as set forth.

To C. W. Stearns, of Springfield, Mass., for improvement in Clogs or Pattens.

I claim the application of an elastic loop or strap attached to the sole piece, and going around the heel, substantially as described.

To Wm. Strevell & Daniel Brown, of Albany, N. Y., for improvement in machines for Stretching Leather.

We claim the construction of the stretching apparatus, by connecting the free rod to the clamp, by entering the end or tenon of the rod into a mortise with angular sides, and secu-

ring them together by a pivot pin, substantially as set forth.

To Wm. Clay, of Clifton Lodge, England, for improved apparatus for rolling tapered Metallic Rods. Patented in England Dec. 16, 1848.

I claim permitting the rollers to recede from each other, by means of the hydraulic apparatus, constructed and arranged substantially as described.

And secondly, the adjustable screw in conjunction with the apparatus claimed above, whereby bars of metal are enabled to be rolled taper for a portion of their length, and parallel for the remaining part thereof.

To Lemuel Hedge, (assignor to G. W. Hedge), of Brooklyn, N. Y., for improvement in Saw Mills.

I claim the method, substantially as described, of driving belt saws by the friction surface of two cylindrical pulleys, or drums, which gripe the saw plate below the wood which is being cut, but at some part of its tangent line, so that the strain to which it must be subjected in cutting, to keep it in the line of the tangent, shall not be at any part of its curved path; but this I only claim, in combination with straining rollers, which gripe the saw above the lumber on which it acts, the said rollers being controlled by a brake or the equivalent thereof, substantially as described, whereby the saw, during its action, is kept in a strained condition along its entire line of action, that it may cut in a straight line, and to avoid its being under tension when the flexions take place along the curved portions of its track, as specified.

I also claim, in combination with the mode herein specified, of driving a belt saw by means of cylindrical rollers or pulleys, the employment of a belt passing around the outer one of the said driving rollers, and applied to the outer surface of the saw, where it passes around the lower deflecting or guide pulley, substantially as herein described, by means of which the saw is bent by the pressure of the belt applied to its outer surface, instead of being communicated through the metal itself, thus avoiding, in a great measure, the tendency to break the metal.

And finally, I claim, in combination with the mode substantially such as herein described, of driving a belt saw, the employment of fenders or scrapers, interposed between the driving rollers and the wood to be sawed, and placed each side of the saw, as described, to catch the sawdust and conduct it away from the bight of the driving rollers or the saw, and thus avoid clogging.

To Edward Whitesley, of Boston, Mass., for improvement in Coffee Roasters.

I claim the combining or arrangement of the fire place or chamber of combustion, the roasting cylinder, and its surrounding chamber, substantially in the manner as described and represented.

Also the arrangement of the flue of the fire chamber with respect to the latter, and the enclosing chamber of the roaster, the said arrangement of the said flue consisting in carrying it over and in contact with the top of the said enclosing chamber, as specified.

I also claim the arrangement of the proving tube, within the hollow journals and central part of the roaster; not meaning to claim the device termed the proving tube, but simply the arrangement as specified.

To T. F. Wingo, of McMoresville, Tenn., for improvement in Straw Cutters.

I claim the manner herein described, of arranging one or more cutters on the periphery of a vertical wheel, at such angle with, and so extending over the face of said wheel, as will give a "drawing cut" through the straw or other material, as it falls, to the opposite side of the wheel from where it is cut; thus removing the cut material out of the way of the feeding box and uncut material, as fully set forth.

To R. Stilwell, of New York, N. Y., and E. L. Brundage, of Troy, N. Y., for improvement in Car Seats.

We claim the mode herein described, of reversing the back of car seats from one side of the seat to the other, without turning them over, by means of arms constructed and arranged as set forth, by which any desired height of back is obtained, as described.

Secondly, we claim the manner herein de-

scribed, of reversing the concave back on a movable frame, in combination with the side locking projections, as described.

To James R. Bugbee, of Boston, Mass., (assignor to J. R. Bugbee & Enoch Robinson, of Somerville, Mass.), for improved Lock and Key.

I claim the wedge or cam key and the separate bitt, or secondary wedged or cam key, in combination with the vibrating block, the key recess and the tumbler elevators; the whole being constructed, arranged and operating substantially as specified.

To Jehu Hollingsworth, of Zanesville, Ohio, for improvement in Smut machines.

I claim the manner herein described of scouring and freeing wheat of smut and other impurities, by throwing up the grain on to the inclined face of a chimney, fitted to an opening along the top of the concave, in combination with the inclined aprons, for transferring the grain from end to end of the cylinder, that it may be discharged, as set forth.

(For the Scientific American.)

Practical Remarks on Illuminating Gas.

[Continued from page 254.]

On leaving the condenser the gas still contains ingredients which are useless, and may be considered as impurities, these consist of carbonic acid and sulphuretted hydrogen, the latter of which not only burns with a slight evolution of light, and only tends to dilute the gas, but becomes very obnoxious when escaping in an apartment unconsumed; therefore it becomes necessary to remove these injurious gases before it is introduced into the premises of the consumer; for this purpose the gas, as it leaves the condenser is conducted into a purifier containing a solution of sulphate of iron, commonly called copperas; the copperas having a chemical affinity for the carbonic acid and sulphuretted hydrogen, they become partially neutralized by this operation; it is then allowed to pass into a second purifier containing slaked lime in solution, called cream of lime; this solution is obtained by the admixture of lime and water, commonly 1 bushel of the former to 24 gallons of the latter; this solution is kept in constant agitation in order to keep the lime in suspension, so that every particle of lime may be brought in contact with a particle of gas. The action of the lime upon the gas is somewhat similar to that of the copperas; the sulphuretted hydrogen and carbonic acid being absorbed by the lime and moisture, and the comparatively pure carburated hydrogen flows off deprived of its pernicious gases.

Dry Lime is often used in the place of the solution of cream of lime; the apparatus, however, being different in construction; the lime is laid upon wires, wicker work or thin iron perforated plates placed a few inches apart, the gas being introduced at the bottom and allowed to pass through this series of plates, and then conducted off from the top. This method of purification has been very generally introduced into the gas manufactories of the southern cities, but the lime solution is deemed preferable in this vicinity, both as regards cleanliness and expense.

Caustic Soda is sometimes substituted for lime, and is well adapted as a re-agent; in small works it has become very generally introduced, giving great satisfaction, and will in all probability eventually supersede the lime.

Acetate of Lead has also been employed as a re-agent for the purification of gas, but it is not sufficiently cheap to warrant its introduction on a large scale. A weak solution of sulphuric acid has also been introduced as a re-agent but never has come into general use.

The most important impurity is sulphuretted hydrogen, it blackens metals and oil paintings when it is evolved with the gas and not ignited; when burnt it forms sulphurous acid and water. The presence of this feculence may be ascertained by wetting a piece of white paper with a solution of the acetate of lead, and allowing a jet of the gas to come in contact with it; a black precipitate of the sulphuret of lead is formed; if no sulphuretted hydrogen is present the paper will only be slightly dissolved. This test should be frequently applied, and the purifiers should be replenished with

fresh material, whenever the black precipitate is formed. The ammonia, which is brought over with the gas in a greater or less quantity, burns to nitric acid and water. According to Mallet, coal affords 1-5000 of its weight of ammonia, and the gas, before entering the purifiers, contains 1-300 of its volume; ammonia is deposited in the form of salts in great quantities in the condenser pipes, and may be collected with advantage and used as a manure or applied to the arts.

After the gas has gone through the process of purification, it is conveyed to the station meter, which is an instrument constructed for measuring the quantity of gas made; and where all the gas generated by the retorts is correctly registered. The principle of the meter, and the means by which these beautiful results are attained, can easily be seen by each consumer of gas upon examining his own small meter; the principles of both being the same.

From the meter the gas passes into the gas holder sometimes termed gasometer. It is of course understood that the gas is not consumed at the same time, nor in the same quantity as it is evolved from the retorts; the primary pressure in the latter would be too strong and also too variable for the production of gas flames; to avoid these evils, large cylindrical inverted vessels are employed, open at the bottom and dipping into water, as repositories for the gas, and also are intended, at the same time, and this is of great importance, to force the gas onward to its proper destination, with just the requisite amount of pressure for burning properly at the most distant point. If more pressure is required than the simple weight of the gas-holder itself will give, it must be evident that, by adding weight, any amount of pressure required can be obtained; and if there is an over-pressure it can very easily be obviated by attaching counter weights. The pipes which convey the gas into and from the gas-holder are conducted under the reservoir of water, and are brought above the surface of the water far enough to prevent its running into and filling them; to these pipes are attached the requisite valves for shutting off and letting on the gas. When the gas-holder is in the water, it is said to be scaled—that is, rendered tight; no gas escaping through the water, its density being so much greater that it will not allow it to pass. Gas-holders are generally constructed of iron, by sheets being rivetted together, and afterwards coated with red lead or coal tar, to render them air-tight, and to prevent the oxidation of the metal.

Until within a few years, it was considered not only expedient, but absolutely necessary to confine the gas-holder, and protect it by a building; but that is mostly abandoned by the engineers of the present day, and nearly all which have been erected within the past few years are built without any covering whatsoever; and the experiment has proved eminently successful, and the necessarily great expenditure of the building is thereby saved.

From the gas-holder the gas is conveyed through a "governor" (an instrument calculated to regulate and equalize the pressure between the holder and mains) into cast-iron pipes, called street mains; these mains branch out into small ramifications, of capacity sufficient to supply the maximum consumption, wherever it is deemed expedient by the manufacturers, and the wants of the public may require. From the mains the gas is conducted through supply pipes into the premises of the consumer, where it is attached to a meter of sufficient capacity to meet the wants of the consumer, where all the gas consumed is correctly registered; and from thence it is conveyed through service pipes, at the option of the consumer, until it appears at the burner in readiness to afford its cheerful and disseminating light whenever the will shall dictate.

(To be Continued.)

Sponge is becoming quite an article of commerce at Key West, Florida.

The Duke of Brunswick and Mr. Green lately went over from England to France, across the channel, in a balloon.