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LIST OF PATENT CLAIMS
Issued from the United States Patent Office.
FOR THE WEEK ENDING APRIL 1, 1851.

To Henry Boot, of New Bedford, Mass., for improvement in Machines for Folding and Measuring Cloth.

I claim, first, folding the cloth as it passes through or between the calender rollers during the process of calendaring, or by passing it through or between a pair of revolving rollers similar to calender rollers, the said calender or other rollers being hung in a carriage which receives a reciprocating motion above or across a table, and a tilting motion at each end of its stroke, so as to bring each roller alternately, to bear on the table as it (the carriage) moves in different directions across it, thereby laying the cloth under the rollers on the table, in folds or layers, in the manner substantially as herein described.

Second, I claim making the reciprocating motion of the calender rollers of a certain fixed length, such length determining the length of the fold, and thereby measuring the cloth, substantially in the manner herein described. At the same time I wish it to be understood that I do not claim the measurement of cloth by folding it in layers or folds of a certain length, unless such layers or folds are laid by calender or other similar rollers. [See an engraving on page 84, Vol. 6, Sci. Am.]

To Marshall Burnett, of Boston, Mass., for improved Horse-shoe Nail Machine.

I claim making a horse-shoe nail by means of a stationary former, and a series of traveling and rotating cams, arranged and operating substantially as herein described and fully shown.

To C. O. Crosby, of New Haven, Ct., for improved machine for sticking pins on paper.

In the machine which I have now fully and exactly described, for sticking pins crosswise of narrow fillets of paper, to prepare it when so stuck for winding, and winding the same into coils, there are several parts which are common, or such as have been used by others, which I do not claim separately nor in other combinations.

I do not claim the upper feeding channel or inclined conductors, when made of straight bars, nor cylinders with parallel sides, which have been used for conducting wood screws and similar headed articles; nor the downward curved conductors, nor any other feeding channels, unless they are combined with the conical form of rollers or the separator.

I do not claim or use any kind of crimping bars, jaws, or clamps, as they have been heretofore used.

I do not limit myself to the precise form or arrangement of parts, nor the particular devices for moving them, for these may be much varied, without changing the principle of my invention, as set forth; nor do I limit myself to the single process of inserting only one pin at once, on only one edge of the fillet, for on the same principle, with only circumstantial variation of the machinery, I can insert several pins at once, on the same edge of the fillet, or on both edges of it, and other similar variations can be made by any competent machinist without any essential or substantial variation from the character of my invention, as described.

First, I claim the conical form of rollers to constitute my feeding channel for arranging the pins and moving them forward in the channel with the most suitably decreasing rates of descending velocity, as described.

Second, I claim the combination of the parts and the adaptation of my machine for feeding the pins, separating, and delivering them, crimping the fillet, and sticking the pins crosswise of such fillet, and finally rolling the fillet into a coil, substantially in the manner described.

I also claim the screw separator, as described, placed in the feeding channel, to restrain the natural descent of the column of pins, so that they may be delivered as fast, and no faster, than they are required for sticking, substantially as herein described.

To Jehu Hollingsworth, of Zanesville, O., for improvement in Wheat Fans.

I claim two or more chambers and areas in combination with a fan, for the purpose of clearing and separating grain, by using one and the same blast (to clean it) over and over again, any number of times, as herein fully described.

To G. D. Jones, of Jersey City, N. J., for improvement in Mills for grinding paints and drugs.

I claim the construction of a mill in which the grinding surfaces shall consist of a plane or planes, operating upon a cone as herein described.

I claim also the lever in combination with the muller for the purpose of regulating the feed, the whole being constructed substantially in the manner as set forth herein.

To Peter McKinlay, of Charleston, S. C., for improvement in Rice Hullers.

I claim operating the pestle by having it attached to a rod passing through the bottom of the mortar and receiving motion through a crank, or its equivalent placed below it, substantially as set forth.

[This is a very excellent Rice Huller.]

To Chas. Menson, of New Haven, Ct., for improvement in blasting rocks, etc.

First, I claim the use of an artificial binder, by means of which to restrain the action of the blast in opposite directions, by offsetting said action against itself, substantially as herein explained.

Second, I claim the use of the little packing wedge, or wedges, within the charge or blast chamber, substantially as described.

To Jabez Walker, of East Bloomfield, N. Y., for improved machine for forming a lock on sheet metal.

I claim the employment of a cam or cams on the tumbler, operating on two levers connected with the under side of a movable jaw, in combination with a spring or springs, substantially in the manner described, for the purpose of closing the lip and securing the plate, while folding and raising the lip and releasing the plate after the folding is completed.

[We have seen this machine operate, and can confidently say, it is a good one.]

To Jesse White, of Barnesville, Ohio, for improvement in Wheat Fans.

I claim the combination of the fan, air-trunk, and head, constructed and operating substantially in the manner and for the purpose herein described.

To J. M. Carr & J. Hughes, of Cambridge City, Ind., for improvement in Bran Dusters.

I claim the combination of two openings, both provided with valves or registers, with the runner and fan revolving within an upright cylindrical casing, the upper part of which acts as a beater, and the lower part as a bolting apparatus, substantially as described, for the purpose of separating the flour, which adheres to the bran after undergoing the ordinary bolting, the said process being regulated and adjusted to suit the circumstances of weather, &c., by admitting more or less air either above or below, by means of the registers, as set forth.

To Simeon Heywood, of Claremont, N. H., for improvement in connecting and disconnecting wheels and axles.

I claim the dog and the spring, combined and operating as set forth.

To David McCurdy, of Newark, N. J., for improvement in the manufacture of India Rubber.

I claim the combination of potash with rubber and sulphur, and submitting the same to a high degree of heat, whereby to produce the change upon rubber, known as vulcanizing.

To Henry Mellish, of Walpole, N. H., for improvement in Splint Machines.

I claim the combination of the cylinders with their cutters attached (for the purpose of

giving a rounded form to the splints), and the cylinder with its spurs (for the purpose of dividing the splints in one direction,) with the circular cutter or saw, for the purpose of separating the splints from the timber, and a guide to guide the splints in the channel, the whole being arranged substantially in the manner and for the purposes set forth.

To Archibald Wieting, of Middletown, Pa., for improvement in Seed Planters.

I claim placing two or more hollow drill teeth in a direct line, one behind the other, managed and drawn by the same drag bar, the front tooth being made the largest, and so placed as to run somewhat deeper in the soil than its successor or follower, for the purpose of depositing fine manure or chemical agents, beneath the grain, when planted in rows, or otherwise as herein fully set forth.

To H. Gross & W. Campbell, of Tiffin City, O., for improvement in machines for cutting screws on bedstead rails.

We claim the peculiar form and manner of securing the V cutter to the cylindrical head, as described, that is to say, making the cutter as represented and letting the tapered end of the shank, into the recess, bringing the angular shoulder against the cylinder, and sustaining the bevelled points against the interior bevelled surface of the cylinder head, by which arrangement the instrument, during the operation of cutting is forced firmly against the head, the strain upon the confining screw being thereby greatly reduced, and the cutting tool itself strengthened.

To G. H. Knight, of Cincinnati, O., for Stone and Metal Conglomerate for paving, etc.

I claim forming a block suitable for paving, masonry work, or analogous purposes, of a conglomerate of iron and stone, by running the molten metal among broken stone, within a mould, either with or without the devices, substantially as herein described, for jointing and locking together, the contiguous blocks.

To J. J. Riddle, of Covington, Ky., for improvement in Brick Presses.

I claim the lip, hugging closely the rim of a wheel containing moulds, the said lip being a prolongation of a gradually narrowing feed trough, formed and operated, after the manner and for the purposes substantially as described, namely, the formation (by pressure of untempered clay) of a uniform and coherent brick.

DESIGNS.

To N. P. Richardson, of Portland, Me., for design for Air-tight Stoves.

To Frederick Schultz, of Philadelphia, Pa., for design for Air-tight Stoves.

(For the Scientific American.)

Practical Remarks on Illuminating Gas.

[Continued from page 230.]

The introduction of gas as an illuminating agent could not be confined to the narrow limits of Europe alone; American enterprise entered boldly into the work, and it was successfully introduced into the United States, in the city of Baltimore, in the year 1820, and shortly after the example was followed in Boston, New York, and Philadelphia; and within the past few years works for the manufacture of coal gas have been erected in many of our smaller cities, both seaport and inland, commercial and manufacturing, and are now in successful operation, dispensing not only the beautiful light to the gratification of their citizens, but remunerating the manufacturers in a manner wholly meeting their most sanguine expectations. It is not improbable that within a few years all the inhabitants of cities and towns, and even private manufactories and residences will be enjoying the dispensing and fascinating light; and the beautiful thought of Murdoch, in 1664, after having slumbered for nearly two centuries, will become a blessing widely diffused throughout the whole civilized world.

Illuminating gas occurs in nature, but the quality is much inferior, generally, as compared to that of the artificial product. It has always been observed, where matter of organic origin is undergoing gradual decomposition, that more or less carburetted hydrogen is evolved; this is noticed more particularly when the decomposition takes place under water, as we observe in ponds, marshes, and rivers. If a pole be thrust into the mud of a pond, bubbles

of air will rise to the surface of the water, which may be collected in a jar; this air, (as it appears to be), is light carburetted hydrogen gas; it will ignite and burn with a yellowish blue flame; it consists of carbon and hydrogen, like the artificially produced illuminating gas, but it contains a smaller quantity of carbon, and therefore burns without giving a bright light.

The celebrated fires at Baku, on the Caspian Sea, are due to the ignition of a gas which issues from the earth, and which Herz has shown to be light carburetted hydrogen and some naphtha vapor. In New York they have gone still farther, the practical tact of the Americans having already made use, for industrial purposes, of similar sources of gas at Fredonia, on Lake Erie, where the gas is collected in holders and used for illumination.

It appears from a paper of Mr. Richard Cowling Taylor, published in the Philosophical Magazine, for March, 1846, that the Chinese, although perhaps not gas manufacturers, have been acquainted with the use of coal gas both for illuminating and heating purposes, long before the knowledge of its application was acquired by Europeans. Beds of coal are frequently pierced in China, by the borers for salt water, and the inflammable gas is conveyed in pipes to the salt works, where it is used for boiling and evaporating the salt; other tubes convey the gas intended for lighting the streets and the larger apartments and kitchens. When there is still more gas than is required, the excess is conducted beyond the limits of the salt works, and there form separate chimneys or columns of flame. The burning fountain of Dauphine is of like origin; phenomena of a similar nature occur in the Cordilleras, in Hungary, Greece, England, and many other countries.

COAL GAS.—Bituminous coals are alone used in the generation of this description of illuminating gas; and it is owing to its bituminous qualities that coal is employed for this purpose. Bitumen, the quintessence of all gas coals, is a black, carbonaceous substance, found in the earth, generally combined with coal, but sometimes is found disintegrated upon the surface, and often constitutes considerable beds, as in the isle of Trinidad, where it occurs over an extensive district in scattered masses. It has not been observed among the primitive or older strata, but only in the secondary and alluvial formations. The origin of bitumen is as little known as that of most of the productions of nature; but that found upon the surface is supposed to emanate from some highly bituminous bed of coal in a distinctive state of distillation in the earth. The quantity of carburetted hydrogen gas obtained from coal is almost entirely due to the amount of bitumen contained therein, therefore coal, rich in bitumen, yields a large per centage of illuminating gas, while that poor in bitumen the contrary. Bituminous coal, when heated to a certain degree, swells and kindles, and frequently emits remarkably bright streams of flame; this flame is illuminating gas. We perceive the evolution of this elastic fluid during the combustion of coal in a common fire place; the only difference between the stream of gas in the fire place and that at the burner, is, that the former is ignited and consumed as soon as it is evolved, while the latter is conveyed into gas-holders, stored and distributed as the wants of the community may require.

Having described the substance from which coal gas is derived, we will now attempt to delineate, in as lucid a manner as possible the apparatus in which illuminating gas is generated from coal, and the different processes through which it passes, from the crude lump of coal to the beautiful fluid in its perfect state; and also the new combinations formed while undergoing decomposition. The apparatus for the manufacture of coal gas, which I shall endeavor to describe, is considered as perfect as any now in use, and has been adopted by nearly all the large coal gas manufactories in this country.

J. B. B.

(To be Continued.)

We request the attention of our readers in a particular manner to the above subject.