

ENGINEERING INVENTIONS.

An elevator has been patented by Mr. Geo. A. Saxer, of New Brighton, N. Y. By various combinations of devices in connection with the hoisting rope, including pawls, brakes, and safety wedges, the stopping appliances being moved independently of the car, a great degree of safety is obtained, and every facility afforded for managing the car.

A safety shell for blasting has been patented by Mr. George Freund, of Durango, Colo. This invention covers certain novel forms of construction, as improvements on invention patented by same inventor last year, the object being to obtain greater safety, not only in handling material, but in tamping the charge and connecting the fuse to the stick, candle, or other form of explosive material.

A bell ringing attachment for locomotives has been patented by Mr. Penneck M. Way, of Thurlow, Pa. The bell is suspended in the usual manner from a journaled yoke or shaft, and by suitable belt or gearing is connected with the running part of the locomotive, but so that this gearing may be thrown in and out very easily, thus enabling the bell to be rung automatically as desired.

A steam boiler or novel means of combustion of gases in the fire box before they pass to the boiler tubes, has been patented by Mr. John Alves, of Dunedin, New Zealand. A construction is provided for by which air passes under the grate bars and in the rear of the bridge wall, from the sides of which it is discharged over the fire, and also from a projection forward from the bridge walls into the center of the furnace.

A steam pumping engine has been patented by Mr. Edward G. Shortt, of Carthage, N. Y. It is direct-acting, with the pump piston and steam piston connected together and working in unison in a containing case, one end of which forms the pump, the other having valves and ports, and making an engine within the same case. This invention covers several features of improvement on a patent issued to the same inventor in 1881.

A furnace for treating ores continuously has been patented by Mr. Amédée M. G. Sebillot, of Paris, France. This invention covers an improvement on an ore furnace of the same inventor patented last year. In a tunnel-shaped furnace is a tunnel-shaped muffle, connected by flues with a receiver for the gas of the materials in the cars, which fit closely within the muffle, and are slowly moved therein by an endless chain in a gutter or trough in the bottom of the furnace, the chain having catches to take hold of projections from the bottoms of the cars.

MECHANICAL INVENTIONS.

An improved saw set has been patented by Mr. John S. Long, of Murphysborough, Ill. It is a novel construction and arrangement of parts, to be worked by the foot of the user, and so the hammer delivers upon the saw teeth a blow of uniform force, regulated with precision by a thumb screw; the blow may be made heavy or light, for thick or thin saws, but its force is adjusted as desired by the thumb screw.

A lifting jack has been patented by Mr. Benjamin F. Mansfield, of Centerville, Oregon. A toothed wheel is rigidly mounted on a screw spindle below the head, the wheel being held between the shanks of the forked end of a lever; two pawls are pivoted on opposite sides of this forked end, their inner ends being pressed outwardly by springs, so the outer ends engage with the teeth of the toothed wheel, the whole making it easy to rapidly raise and lower the screw.

An improved jack has been patented by Mr. Samuel J. Wisdom, of Montgomery, Ala. The object of the invention is to obtain a compact and powerful means of purchase for removing piston rods from the cross heads of steam engines, etc., for which is provided a cone-pointed screw, a nut in which it works, and means to take the wedge strain, by which great power can be applied without need of hammering or bruising the finished parts.

An improved loose collar attachment for hanging circular saws has been patented by Mr. William D. Sherman, of Grand Haven, Mich. By this means the lug or driving pins projecting from the fast collar of the arbor, and passing through holes in the saw and loose collar, are so connected as to relieve the lug pins of wear, strain, and breakage, and hold the loose collar as firmly as a fast one, while preventing irregularities or obstructions in the holes of the lug pins and saw.

AGRICULTURAL INVENTIONS.

A corn planter has been patented by Mr. Thomas Bell, of Shelby City, Ky. It is simple in construction, strong, light, and durable, will drop the corn at the required distances, and has an automatic marker indicating the position of the corn dropped, thereby making it easy to pass obstructions and plant the corn in straight rows.

A separator for grain has been patented by Mr. Frank L. Kieder, of Terre Haute, Ind. This invention provides for a separator formed of screws, with connected threads intermeshing but not in contact with each other, and mechanism to rotate the adjacent surfaces of each pair of screws in opposite directions, in combination with a suitably arranged box, supply tube, hopper, etc.

MISCELLANEOUS INVENTIONS.

A mail sack tag has been patented by Mr. George W. Dwenger, of Brooklyn, N. Y. It is formed of a rigid piece with a longitudinal beveled slot, a transverse slot, and a spring tongue, and can be easily and rapidly attached and detached from mail sacks or bags.

A toy target has been patented by Messrs. Arthur H. Hoffman and William F. Lloyd, of East New York, and Joseph H. Block, of Brooklyn, N. Y. It is a simple and amusing toy for children, combining toy cannon with different targets, figures, etc., and can be manufactured at small cost.

A skewer puller has been patented by Mr. Augustus F. Friend, of Gravesend, N. Y. It is intended to facilitate the withdrawal of skewers from cooked meats, and provides for handles pivoted to each other at their forward ends, where are jaws with their faces concaved.

A broom holder has been patented by Mr. Herman C. Berg, of College Point, N. Y. This is an exceedingly simple device, made of a single piece of wire, bent in such shape that it may be attached to the wall and will hold the broom in an inverted position by the whisk thereof.

A shading pencil has been patented by Mr. George B. Hecklinger, of Streator, Ill. It provides for a handle inclosing leads of different colors placed side by side, which permits of two or more such leads being used simultaneously, so that a mark shaded in different colors may be made at a single stroke.

A door and gate latch has been patented by Mr. Charles Wormuth, of Little Falls, N. Y. This invention covers improvements in latches with reversely-hooked ends to engage catches on door or gate frame and the wall, and, while simple, strong, and durable, can be used to hold a door or gate open or closed.

A butter cutter has been patented by Mr. Newton H. Sweet, of Stephentown Center, N. Y. It is an improved device for removing butter, lard, etc., from jars and tubs, in regular shaped cakes or blocks, which may be made of specified sizes; it may also be used as a butter trier, and that which is not required may be placed back in the tub.

A sole for rubber boots and shoes has been patented by Mr. Henry A. Watson, of Granite, Colo. This invention covers the making of the soles and heels of rubber boots and shoes with metallic studs embedded in the solid body of the sole, thereby greatly increasing their resistance to wear, and in this way being especially desirable for miners' use.

A filter has been patented by Mr. Justin Durel, of New Orleans, La. This invention provides for filtering, under pressure of a force pump, such liquors as the cane juice or sirup of sugar plantations, so that the sediment and coarse matters will settle away from rather than be forced through the filter proper, and the filter can be easily cleaned.

An improved roller fixture has been patented by Mr. James H. Skidmore, of New York city. It is constructed with a bracket with an open bearing to receive a roller pivot, and with a fastener so the pivot will be kept from accidental displacement, to prevent shade, towel, and other rollers from getting out of their supporting brackets.

A checker and baseball combination game has been patented by Mr. Hiram S. Towner, of Dutton, Mich. The game board is divided after the manner of a checker board, with additional outside squares, and the game is played with two sets of stones of nine men in each set, designated by letters in the way players of baseball are put down in the score books.

An ash sifter has been patented by Mr. William T. Adams, of Baltimore, Md. This is a combination of a sieve, slanting shelf, and drawers, inclosed and arranged in a suitable box, whereby, when the refuse coal and ashes are dumped together, the box may be closed, the sifting done without dust, and the coal deposited in one receptacle and the ashes in another.

An improved tuyere has been patented by Mr. Enoch P. H. Martin, of Wilmington, Del. An annular space surrounds the central space through which cinders and ashes fall from the fire above, this space being protected from the cinders, and from thence air is distributed to the fire, so the fire will not clog, a better consumption will be effected, with economy of coal, and labor in cleaning out ashes is saved.

An apparatus for bottling and siruping aerated beverages has been patented by Messrs. James McEwen and Simeon Spencer, of Manchester, Eng. There is an aerated water cylinder, and valve operated by a cam or eccentric on a revolving shaft, an adjustable valve controls the sirup charge, there are revolving bottle carriers, and the operation is such as to allow the air to escape from the bottles being filled.

An unlocking attachment for time locks has been patented by Mr. Hiram P. Prunin, of Grand Haven, Mich. It provides for a weighted lever worked by the mechanism of the lock, and connected by a pawl and ratchet wheel with a train of gear wheels operating a rack bar with a trip arm to engage with the trip latch of a time lock, so the latch can be tripped by the continued movement of the combination lock mechanism.

A recording table or desk has been patented by Mr. Mathew S. Holt, of Weston, W. Va. This invention covers a novel construction whereby, with a supplemental leaf, a large book may be held with its right hand cover in line with the writer's arm, and if many leaves are turned over, the adjacent leaf may be lowered, to bring the surface of the page being written on in same plane with the top of the table.

A separator and conveyer has been patented by Mr. John S. Fairly, of Charleston, S. C. This invention covers a screw conveyer with flights in sections, armed at their outer edges with flexible or pliable material, and combined with a perforated trough or box, more especially designed for separating the kernels of cotton seed from the hulls after passing through the huller.

An improved pearl button has been patented by Mr. Henry Smith, of Newark, N. J. The object of this invention is to improve the construction of buttons for which a patent was issued to the same inventor last year, the tubular rivet being provided with transverse openings in its sides for the cross bar, and other changes made to insure a stronger and more durable button.

A sash holder has been patented by Mr. William A. McDonald, of Minneapolis, Minn. It is simple in construction and action, is entirely out of sight, permits the free raising and lowering of the sash, while holding it in the desired position, is durable, and prevents the sash, door, etc., from rattling by the wind. It consists of a novel construction in that class of fasteners where a friction roll is pressed by springs.

A polishing machine has been patented by Mr. Jean Pierron, of Elizabethport, N. J. The object of this invention is to furnish an improved machine for polishing wood, stone, and other materials, and to this end there are various devices whereby the position of the abrading wheel may be adjusted and its work definitely gauged, its disk being pressed on the material by a spring, and being easily removed when worn out.

A steam heated evaporator has been patented by Mr. Robert W. Turner, of Thornton, Tex. This invention is primarily designed to facilitate the reduction of cane juice to sirup, and covers a receptacle with a surrounding chest, both of which are contained in a vat, a steam coil surrounding the chest and steam pipe connecting with it as desired, and also a pipe for condensing vapor leading from the interior receptacle.

Changeable scenery for theaters forms the subject of a patent granted to Mr. Lafayette W. Seavey, of New York city. Each separate piece or portion is mounted on rollers arranged to rest upon the stage, so that all may be revolved in either direction. To bring a set scene into any desired position the rods are built up in sections, and suitably connected, to serve as guides for the rotation of the scenes and as ties to hold the structure firmly together.

A sad iron has been patented by Mr. Alfred R. White, of Stevens Point, Wis. The ironing block or base of approximately diamond shape, and from the center of its top projects a post, which has a spring catch for engaging a detachable handle, the latter preferably made in two parts; this handle can be adjusted in a lengthwise or crosswise position, to better adapt the iron for working on wide or narrow surfaces.

A fire escape has been patented by Mr. Robert Stevenson, of Ferrysburg, Mich. A balcony is devised for each floor of the building, the balustrade and floor of which fold up against the side wall under the windows, and are secured by catches, connected with a rod for releasing any one, when the floor falls on supporting brackets and the balustrade swings upright by springs, ladders being provided with the balconies to be let down by hooks.

A washing machine has been patented by Mr. Lars Christiansen, of Council Bluffs, Iowa. A suds box or tub has a series of brushes on the bottom, standing vertically, with another series fixed to the sides, while a hub standing in the center has brushes on its circumference, working in combination with a vertical shaft with radial arms, so portions of the clothes may be held between the cover and arms, and other portions rubbed against the stationary brushes.

A polisher and cleaner for metal and other surfaces has been patented by Mr. William Heard, of Paterson, N. J. It is more especially designed for cleaning and polishing cutlery in kitchen use, but used as a scrubber for floors, walls, etc. There is a container, and a percolator of cork, rubber, leather, or an equivalent, the container holding the polishing material, and the percolator being adapted to distribute the same over the surface to be polished or cleaned, as the polisher is passed backward and forward over it.

An apparatus for the application of compressed air to the manufacture of glass has been patented by Messrs. Adrien A. and Leon A. Appert, of Paris, France. It may be adapted to the goblet maker's chair at present used in crystal and glass works, so the blowing can be done mechanically there for all kinds of such work, and the escape and expansion of the compressed air can be utilized for the cooling of the glass, as well as other metal or moulds, thus facilitating the manufacture and saving moulds.

A barrel finishing machine has been patented by Mr. Robert O. Dobbins, of Waterloo, Ontario, Canada. This invention, while recognizing former patents in the same line, provides new and special mechanism for finishing barrels after they are set up in truss hoops. There are two rotating chucks and a stationary chuck with adjustable jaws, so a barrel may be centrally compressed until the end chucks are secured, when the jaws of the central chuck are radially withdrawn, and the barrel may be revolved. There are numerous special features, and while the machine can be adjusted to different sizes, one machine for each size is most economical, and all the hoops, heads, staves, etc., of one barrel will fit any other of the same kind, reducing the cost of both manufacturing and repairing.

An apparatus for the manufacture of carbon black has been patented by Mr. George G. Shoemaker, of Edenburg, Pa. This invention relates more particularly to making the black from crude petroleum and thick oil sediment, also from the acid waste of refineries, the fuel being supplied under pressure to burners charged with asbestos or other incombustible material. Over the cup-like burners inclined cones are rotated, their apex upward, and over their upper surfaces cold water is distributed from perforations, so the flames strike cool portions of the cones, and the fumes are condensed, while steel scrapers extend up the opposite sides of the cones and detach the carbon black formed as the cones rotate, the black descending into a funnel and thence into a trough or tube for removal.

NEW BOOKS AND PUBLICATIONS.

OBSERVATIONS OF THE GREAT COMET OF 1882, MADE AT THE UNITED STATES NAVAL OBSERVATORY. Prepared by William C. Winlock, Assistant Astronomer. Government Printing Office, Washington.

This appendix to regular report of 1880 is valuable as affording a complete and chronologically arranged report of observations at the National Observatory from September 19, 1882, to April 4, 1883. The comet observed was the visitor whose nucleus presented so many changes and the whole of the comet such a wide variety of forms, which are well illustrated in the exquisitely beautiful plates here given. No theories respecting comets find place in this concise record, which embraces the observations of Prof. A. Hall, Commander W. T. Sampson, Prof. J. R. Eastman, and Prof. Edgar Frisby, U. S. N., and Assistant Astronomers A. N. Skinner and William C. Winlock.

Special.

REVIEW OF A GREAT AND BENEFICENT WORK.

Two recognized epochs of human life have been completed since we began this work. It is meet that we make a halt, long enough at least to take note of the region over which we have journeyed, and to examine the horizon which opens up to us.

Twice seven years ago one of us started single-handed to inaugurate and develop a new use, at once scientific and practical, professional and commercial, business-like and beneficent. They only who have tried it know the difficulties to be encountered in creating an entirely new business and securing its recognized entrance into the rank and file of business. That we have done this gives us the right to speak.

For eight years this single-handed work was prosecuted. The operator had a conviction that in the Compound Oxygen he had found a mode of redeeming his fellow-men from the sufferings of disease, more potent and benign than the world had ever seen. This inspired him with the courage to abandon a lucrative practice which he had been twelve years in building, and to overcome all obstacles in the way of realizing his dream—of proving to the world that his conviction was securely founded. That this has been fully accomplished, thousands of people—either cured or made richer in greatly improved health—stand ready to testify.

Sixteen years ago the senior partner had his attention called to a few persons who were taking the Compound Oxygen. They declared that they were improving with satisfaction. He felt sure that they were being stimulated; and that, consequently, they would soon show the effect of all stimulation, and retrograde below the point of health at which they began the treatment.

By carefully watching the cases for several months, his prediction failed of verification in a single case. He then induced several of his own patients—cases which any physician would have considered very doubtful under any system of medication—to try the effect of the Compound Oxygen. With surprise he watched them making commendable speed healthward. He then put members of his own family under treatment, and with like good results.

All this provoked a conflict in his mind. He had proof that in the Compound Oxygen there was an agent that would cure many sick ones whose condition would baffle the medical skill of any physicians whom he knew. And many others whom he might cure in six or twelve months would get well in as many weeks under the action of that agent.

Now the question forced itself upon his mind and peremptorily demanded an answer: "What are you going to do with this latter class of patients, who confide to your care the restoration of their health? As a faithful physician, is it not your duty to take the surest and shortest way to secure to them that for which they are paying you?" Well, what is the proposition? "Evidently, send such patients where you know they can be better served than they can be under your care and ministrations." But that would be suicidal. "No, the proportion of such patients would be small." True, but the public will not discriminate. They will see only that the doctor sends his patients elsewhere to be cured, and, therefore, he lacks confidence in his own medical skill. "Well, there is one way out of the dilemma; get possession of the superior curative agent, and thus make peace with your professional conscience and prove yourself a friend to suffering humanity." What, and be jeered by one's friends, and tabooed by one's professional brethren! "That appears to be about the price. But what is the alternative?" Result: He gives up his hard-earned practice, secures at a great price the knowledge of and the right to administer the Compound Oxygen in this city.

This included only the Office Treatment in Philadelphia. Soon he was exercised by the fact that the operation of an office business was very limited. Something must be done to dispense the blessing far and wide. Accordingly, at no little expense, he hastened to make known to his professional brethren the virtues of Compound Oxygen, and to furnish them with outfits for administering it. As he ought to have known would be the case, his efforts excited ridicule and reproaches.

Nothing daunted, he entered upon a long series of experiments, which resulted in the conviction that there was a much better method of accomplishing the end in view than the one which had failed. Hence the widely known Home Treatment.

In this untired field he labored for a year; meeting many failures in his experiments, working hard at details, and creating a literature which the work absolutely required. On the last of June, ten years ago, the practicability of the enterprise was demonstrated. But he had exhausted his resources, broken his health, and almost sacrificed his life. The ship was built and launched, but three years' struggle proved to him that he could not freight and man it. Six and a half years ago he found a man who could appreciate the value of the work in hand. Our united forces have fulfilled the brightest hopes of the pioneer.

A new departure was the order of the day. The first and essential thing to be done was, to let those who needed our curative agent know that we were in possession of it. Knowing that many fortunes have been sunk in advertising, we decided to put that part of the business into the hands of one whose skill and experience had been proven. It is enough to say that the methods which he adopted have revolutionized important branches of advertising.

From the outset we have dealt truthfully with the suffering sick, realizing that they at least had a right to demand such dealing. We knew that we had a curative agent superior to any other in the world, and therefore the simple truth about it would be the best credentials it could have; hence we were not tempted to invent testimonials, nor to steal genuine ones, nor to romance on any.

The growth of the business has been phenomenal. During the first year the business doubled each month. During the last four years we have recorded in our books statements of diseases, reports of progress, repeated advice and prescriptions, of over twenty thousand persons. Much more could be said in proof of the success of our work as a commercial enterprise; but let this suffice. It is of much greater importance to prove that our professional success has exceeded the other.

What have we to show in this direction? During those fourteen years we have treated thirty thousand patients. Among these a large proportion had been sick for years. They had exhausted the skill of the best physicians of all schools, different sanitariums, various natural health resorts, shops of nostrum-mongers, and months of hygienic traveling. In many of these cases it has cost more to remove the baleful effects of the treatment practiced on them, than those of the original disease. How many of them have been desperate cases may be inferred from the fact that we have filed scores of orders—sent unconditionally—in which the patient had passed beyond the reach of any remedy on its arrival. And out of this un-

