

camphor is that exhibited by Hance Brothers & White, of Philadelphia. The rest of their exhibit, extracts and pills, belongs rather to pharmacy than chemistry. The latter statement may apply in part to the exhibit of Keasbey & Mattison, of Philadelphia; but some of their preparations, such as pancreatine, pepsine, crab orchard salts, Vichy salt, and compounds of lithia and bismuth, all on a grand scale, attract our notice.

The exhibit of Alexander Fries & Brothers, of New York, of artificial fruit and liquor essences, is particularly interesting as showing how far the chemist in his laboratory is able to imitate the natural productions of the plant. The number is very large, most of them being compound ethers derived from methylic alcohol or fusel oil, and imitate not only the flavor, but the composition, of the natural essences. The same exhibit contains a large specimen of carbamide, $\text{CO}(\text{NH}_2)_2$, a white crystalline solid, which has the honor of having been the first organic substance produced synthetically, a thing previously supposed to be impossible.

The United States Salicylic Acid Works, New York, exhibits the only specimen of American salicylic acid. The acid is both sublimed and crystallized, and compares favorably with the foreign specimens made under the immediate supervision of Professor Kolbe.

Aniline colors are exhibited by two firms only, and in such insignificant quantities as scarcely to deserve notice. The Silliman Chemical Works, of Philadelphia, exhibit six flasks holding about a quart each of as many different colored solutions of aniline dyes. The same company exhibit several other coal tar products, including the tar itself, dead oil, coke, benzol, toluol, xylol, rosolic acid, rosolate of lime, anthracene, and naphthaline: also a set of pure chemicals, designated in the catalogue as Fresenius' tests.

A much finer exhibit of coal tar products is made by Page, Kidder, & Fletcher, of this city. Besides the tar itself, they exhibit seventy five different derivatives thereof, among which we noticed the latest product of the synthetic chemist, artificial oil of spirea or salicylic aldehyde. Professor Kolbe's discovery of a new and certain method of preparing salicylic acid cheaply from carbolic acid has caused chemists to direct attention to its ethers and other derivatives, the result being the production of artificial oil of wintergreen (also exhibited here), or salicylate of methyl, the substance which was previously the source of salicylic acid having come at length to be a product of the latter. In addition to these two new and curious synthetic products obtained from salicylic acid, we noticed the following rare and interesting scientific preparations: Benzyl aldehyde (oil of bitter almonds), pyrene ($\text{C}_{16}\text{H}_{10}$), stilbene ($\text{C}_{14}\text{H}_{12}$), chloranile, pyramic acid, pyridine ($\text{C}_5\text{H}_5\text{N}$), picoline ($\text{C}_6\text{H}_7\text{N}$), a substance isomeric with aniline yet of totally different properties, crude and refined anthracene, anthraquinone, alizarine, leucaniline, etc. A few aniline colors in small tubes are shown. One portion of this exhibit, and indeed the larger part, is devoted to creosote and its use in the preservation of timber. A model of the creosoting apparatus is shown; and numerous specimens, of wood decayed or bored by insects and wood protected by creosote, prove its efficiency.

J. Bishop exhibits a large variety of costly platinum utensils for chemical use.

E. B. Benjamin, of New York, exhibits a few chemicals, with some fine chemical glassware, in the educational department, and also in the United States government building. In his exhibit in the Main Building may be seen two of those new scientific puzzles called radiometers, which are usually in motion on a clear day, a fact not equally true of the dozen or more exhibited in the English department, by Mr. Hicks, of London.

In the exhibit of the Stevens Institute of Technology, Hoboken, may be seen a large dish of beautifully crystallized nitrate of uranium, and a full set of the other uranium salts used by President Henry Morton and Dr. H. C. Bolton, in their recent researches on the fluorescent spectra of these bodies.

There are several exhibits of gunpowder, but none of nitrolycerin, although there are plenty of the harmless materials from which it is made.

A few chemicals are met with scattered about in most unexpected places, especially in the United States government building, but the above embrace the most interesting exhibits in the Main Building.

CENTENNIAL NOTES.

A THREE HUNDRED DOLLAR HAT.

There are two exhibits in the Peruvian section which attract an unusual share of attention. The first is the hideous collection of mummies and fragmentary portions of the bodies of ancient Peruvians; and the second is what appears to be an ordinary Panama hat, until the sight of the price label, inscribed \$300, induces one to examine it more carefully. Close scrutiny elicits the fact that the article is woven with wonderful fineness; and by the aid of a lens, 108 stitches, or picks, as weavers would call them, may be counted to the inch, measured radially from the center. The hat is exhibited by Juan Daste, of Monte Christo, Peru. The material is *jipijapa*, a species of palm, the leaves of which are gathered before they unfold. After the veins and other coarse portions are removed, the leaves are made into bundles and macerated in boiling, and then in cold water until they become white. Bleaching in the shade follows and then the hats are plaited from the straw by the Indian natives of the country. For so fine a fabric as the hat exhibited at the Centennial, the above process would be too rough. The only wetting the straw receives is done by

the dew, to the influence of which it is exposed. Then the braiding is done in a dark damp room; and to produce a single hat, a woman often works from five to six hours daily for three or four months. When the article is finished it will wear indefinitely, provided there be no defective straws in it. Probably the \$300 hat exhibited in Philadelphia would outlast the lifetime of its purchaser, and serve as an heirloom to his descendants for years afterward.

FLEXIBLE SHAFTING.

Imagine a workman handling the nozzle of a short section of hose. In place of the nozzle, substitute an auger; and then conceive the astonishing appearance of the man directing the auger toward a block above his head, then to the floor, then sidewise in every direction, twisting the hose meanwhile into all sorts of kinks and curls, while the tool, wherever it touches, sinks into the solid material as if the latter were putty. Yet the hose does not rotate. Certainly the invention is a remarkably ingenious one, and it is as simple as it is effective. A long section of wire is made into a close spiral. Over this is wound more wire, the turns being, however, in reverse direction; then follows a third spiral envelope, and so on until suitable thickness is attained. The extremities of the flexible shaft thus formed are brazed. One end is feathered into a driving pulley; the other has a clutch for the tool. A piece of hose or other suitable covering envelopes the shaft, which transmits rotary motion to any desired distance from the source of power and through any number of curves, so that the power may be taken to the work instead of the work to the power. We were told that the device has been successfully applied to marble, granite, and other stone surfacing, polishing, and working; iron drilling and surfacing; wood boring, carving, and facing; horse cleaning and clipping; casting, cleaning, and emery grinding of all kinds. It has been tested, we learn, up to the transmission of 9 horse power.

A NEW STEERING APPARATUS.

This is exhibited in the Russian section in Machinery Hall, and is the invention of M. Nozikoff. The helm being located directly above the propeller shaft, motion is communicated from the latter by a bevel gear to a vertical shaft, which rises immediately abaft the wheel. By turning the latter in one or the other direction, one of two clutches is thrown into action, the effect of which is to communicate the motion of the vertical shaft to an ordinary hand wheel which moves the rudder in the usual way. The essential feature of the device is the mechanism whereby the power of the main engines is utilized to manoeuvre the helm, thus obviating the use of the additional small engine commonly employed in steam steering gear for a like purpose.

A PAINTING MACHINE.

Everyone who has had to paint slats or laths, or like narrow work, knows that doing so is a tedious and not over easy operation. Plenty of paint is wasted in using a big brush, and to employ a small one is to throw away time. Mr. W. Roberts, of Liverpool, exhibits, in the English section of Machinery Hall, a very ingenious little apparatus which performs this work very rapidly and in a much better manner than it could be done by hand. The paint is poured into a lower tray. Above are located, first, a pair of rollers, which seize the slat and draw it in between a series of brushes, one of which paints the upper side, another the lower side, while two more cover the edges. To keep these brushes wet with paint, two wheels beside the grasping rollers rotate partially in the paint in the tray beneath. These are so grooved as to carry up the liquid at every revolution and dash it on the brushes. The machine, we learn, will paint 6,000 running feet of lath per hour, without the aid of steam power.

SWEDISH GYMNASIUM APPARATUS.

We can express no opinion as to the therapeutic value of the Swedish movement cure, other perhaps than to consider that the exercise which it provides for the muscles may be beneficial. We can express an opinion, however, on the machines employed in the various gymnastic exercises, a dozen or more of which are exhibited in Machinery Hall. Some of these are splendidly constructed; and as pieces of mechanism involving ingenious devices for obtaining odd motions, they are well worthy of study by mechanics. Some idea of what these motions are may be gained from the following brief description of the apparatus: One machine, when its handles are grasped by the patient, twists the arms, another exercises the flexor and extensor muscles of the wrist, a third pulls the arms back, a fourth exercises the knee muscles, a fifth exercises the muscles which carry the leg outward, and a sixth exercises the ankle muscles. On the seventh the patient lies down and is shaken up so that the extensor muscles of the back are exercised. Another machine is very complicated, and calculated to excite some dismay in the patient whose "thorax" (to quote the descriptive card) "is pulled upward by means of two levers, while a pad makes a horizontal pressure on the back. The trunk is thereby elongated a few inches, and the spine and walls of the chest are stretched." There is something about all this dismally suggestive of the rack. In another machine the patient is put through all the misery of horseback riding without any of the accompanying pleasures. He is seated on a saddle, and the latter then becomes possessed of a desire to shake him off. "This," we are informed, "causes the abdominal viscera to be kneaded and rubbed together against each other and the abdominal walls." There is still another machine, consisting of a couple of wheels having peripheries of padded bars. These, when revolved, serve to warm the feet, the latter being pressed against them. Lastly there is a hammering machine, which in any household might serve

as a mechanical child corrector. There are a number of vertical beaters which are set in rapid vibration, so as to hammer the patient in the small of the back or at any desired point. The reader can form his own idea of the possible condition of the sufferer after being treated by so formidable a series of apparatus.

Recent American and Foreign Patents.

NEW MECHANICAL AND ENGINEERING INVENTIONS.

IMPROVED TUBING CHAIN WRENCH.

Orlando H. Smith, Kane City, Pa.—The object of this invention is the construction of a device whereby a section of the perpendicular tubing, such as that of oil wells, may be turned more or less on its axis, without danger of being cut, dented, bruised, or otherwise injured. The invention consists in joining together, by a reversible dog, a chain and hook; the latter, which is for the purpose of maintaining the hold of the chain on the pipe, has its point formed into an inwardly projecting claw, and is provided near the middle of its concavity with a slightly projecting blunt point. These projections form two of the bearing points against the tube over which the hook rests; the third is formed by the edge of the dog. To the free end of the chain is secured a ring, into which a lever is inserted when the device is to be used.

IMPROVED GRAIN CAR UNLOADER.

George M. Moulton, Chicago, Ill., assignor to himself and Joseph T. Moulton.—This apparatus is for unloading grain in bulk from railroad cars; and it consists in the employment of two sets of racks, so arranged that the first rack is operated by a crank placed on a shaft which receives its power from a convenient motor, the said rack giving motion to a pinion placed on a shaft which supports a larger wheel, that communicates a reciprocating motion to a longer rack supported on suitable frame work, and connected with drag ropes attached to scoops within the cars. The invention also consists in the peculiar arrangement of the supports for the guiding pulleys in the car. A hopper leads to the elevator leg, and is placed conveniently near the track, so that the grain may be readily discharged from the scoop into it. Two scoops are worked in each car, and a number of cars may be unloaded at the same time, and from both sides of the apparatus, by providing a number of sets of drag ropes.

IMPROVED BREECH-LOADING FIRE ARM.

Henry J. Altman, Birmingham, Great Britain.—This invention consists in a breech block, arranged to slide in grooves in the solid slides of the breech piece at right angles with the bore of the barrel, as it is carried up and down by the breech block holder. The arrangement of the lock lever is such that an accidental blow that might discharge the gun only pushes the lower end of the lock lever back and locks the trigger. Another advantage claimed is that, when the trigger is locked and the fore finger is placed upon it to discharge the arm, the said finger comes in contact with the lock lever, and can push it forward to unlock the trigger without being removed from the position required for firing the arm.

IMPROVED WATER WHEEL.

William H. Rector and Henry C. Black, Santa Rosa, Cal.—This invention consists of a reaction wheel of the S-shaped type, receiving water from the under side, and having a water tank or chamber on the shaft, subject to downward pressure of water to counterbalance the upward pressure on the under side. The chamber is packed watertight to prevent leakage.

IMPROVED NUT LOCK.

Thomas C. Conrad, Philadelphia, Pa.—This invention is an improved nut lock for rail joints, and other parts exposed to vibratory motion, the nut locks being so arranged and connected that the tendency of any one nut to work off tightens the other nuts, and that the expansion and contraction of the bolts, and change of position in the ends of rails by the difference in temperature, exert no influence upon the lock. It consists of a washer with recess for the nut to fit in slots in the circumference, and a circumferential recess at the backs, along which a stiff locking wire is passed that is bent outwardly through the top slot, and then downwardly to the next washer, and around the same to the top slot, and so on.

IMPROVED NAIL-FEEDING MACHINE.

Frank Toepfer, Milwaukee, Wis.—This invention consists of a descending trough, in which the nails hang by the heads, points downward, arranged so as to drop the nails horizontally into a hopper in advance of the sliding driver. The driver is to be worked by a foot treadle, and, in practice, a number of drivers, each having an automatic feeder, will be connected to a cross head or slide of suitable form to work as many drivers as there are nails to be driven into one side of the box to be nailed, and the drivers will be adjustably connected for shifting toward and from each other, according as the nails are to be driven more or less distant from each other.

IMPROVED STEAM BOILER.

Robert M. Beck, Westminster, Md.—This invention is an improvement in the class of vertical steam boilers, and consists in a dome, flue head, and smoke box formed of one casting, and certain peculiarities of shape, whereby certain functional and economic advantages are attained. The invention also relates to a tapered cast iron fire box.

IMPROVED CAR COUPLINGS.

Richard A. Kelly, Manchester, Iowa.—The first of these inventions is an improvement in the class of automatic car couplings, and consists in a hook and draw bar pivoted at their rear ends to a swiveled cross bar, and suspended free at their front ends from a sway bar or lever which is pivoted to the end of the car, so that it may be tilted to adjust the hooks and draw bars, for coupling or uncoupling. The invention also includes a peculiar device for adjusting the said sway bar. The second invention belongs to the same class of automatic car couplings as the above, and it relates to certain peculiarities in the coupling whereby ease in working and reliability and safety in its operation are obtained.

IMPROVED WATER WHEEL.

Reuben D. Sayre, Westville, Ohio.—This invention consists of the buckets of an overshot or breast wheel, pivoted to the wheel rims so as to remain upright and hold the water until the center is reached at the bottom, when they are tilted by a cam to empty the water, by which the wheel retains all the water as long as it can do any good, and the weight can be applied farther from the center of the wheel by pivoting the buckets at the periphery of the wheel rims. The buckets are pivoted to the wheel rims at or near the periphery so as to remain upright and hold all the water as long as it is efficient, when they are tilted by a crank and cam and the water emptied, after which they return to the upright position again while ascending to the place for receiving the water, the cam being continued up to the top to prevent the buckets from tilting too far to come back again to the upright position. In front of each bucket is a cross bar, to prevent it from being overturned by the water falling into it from the spout. In practice, the cam for tilting the buckets will be constructed so as to revolve, to lessen the friction as much as possible.

IMPROVED COMBINED PRESSER FOOT AND THREAD CUTTER FOR SEWING MACHINES.

John M. Stamp, Washington, D. C.—The various forms of thread cutters heretofore applied to the presser feet of sewing machines have proved objectionable, for various reasons, chief among which are a too complicated and expensive construction, and such a location or arrangement as renders them inconvenient in use. The object of this invention is to provide a presser foot with a thread cutter, which shall be so constructed as to obviate these and certain other objections; and to this end a vertical cutter is attached to or formed on the left hand side of the presser foot, near the toe or front end thereof. The device is cheap, simple, and conveniently located.

IMPROVED AIR MOTOR.

Benjamin F. McKinley, New Richmond, Ohio.—This invention relates to a novel construction of an engine to which has been applied the name of "thermainator," the same being designed to utilize the alternate pressure and partial vacuum produced by the alternate heating and cooling of the same body of air. It consists mainly in the combination with a working piston moving in a cylinder, of a cylinder made entirely of woven wire, without a shell or case, operating consecutively with the working piston, and located in a chamber communicating with the cylinder of the working piston and between the working piston and the surface through which the heat is applied.

IMPROVED BALE TIE.

Willis Wilkinson, Charleston, S. C.—This invention is formed of a wire having a hook formed upon one end, to receive and support the other end when the band is under strain.

NEW AGRICULTURAL INVENTIONS.**IMPROVED FEEDER FOR THRASHING MACHINES.**

Jesse W. Dozier, Nashville, Tenn.—This invention relates to an improvement in feeders for threshing machines by which the quantity of grain supplied to the cylinder is automatically regulated.

IMPROVED SEED PLANTER.

Peter Kranz, Arago, Neb.—This seed planter is so constructed that it may be adjusted to operate as a self-dropper or as a hand dropper, and may be adjusted to drop the hills at different distances apart, and to drop any desired amount in a hill. The frame of the rear part or carriage rides upon the axle, on which the wheels revolve, and their rims are made wide, and are concave to adapt them for covering the seed. To the inner sides of the wheels are attached pawls, which engage with the teeth of the ratchet wheels attached to the axle, so that the wheels may be made to carry the axle with them when desired. The forward ends of the side bars of the frame are connected with the rear cross bar of the frame of the forward part of the machine by clevises and eyebolts or other suitable hinges. To the rear corners of the forward frame are attached the seed hoppers, to the bottoms of which are attached ring plates upon which a dropping wheel rests and rotates, and in the rear part of which is formed a slot for the passage of seed from the dropping wheel to the conductor spout. Through the center of the dropping wheel is formed a hole to receive the upper end of the spindle, which passes down through, and is swiveled to, the bottoms of the hoppers. When the machine is adjusted as a self-dropper, the dropping wheel must be keyed, or otherwise rigidly secured, to said spindle; but when adjusted as a hand planter, the said dropping wheel may be allowed to revolve loosely upon the said spindle.

IMPROVED COTTON CLEANER.

Amos J. Lee, Lineburg, Ala.—This apparatus consists of a kind of long trough or case, with a bottom of longitudinal slats or grates, and sides of vertical or inclined grates or slats, in which trough is a shaft having paddles arranged obliquely and in spiral rows around the shaft for beating the cotton out, and at the same time feeding it along from the end in which it is supplied to the end for discharging it, the same being a very efficient contrivance, which does not clog or twist the material; but the paddles generate a considerable amount of wind, which drives out all dust and dirt through the openings between the slats.

IMPROVED MANURE WAGON.

Jason W. Town, South Woodbury, Vt.—This wagon has its bottom formed of parallel bars arranged sufficiently closely together to prevent escape of the manure while being transported to the field, and yet at such distance apart as will allow the discharge of the manure when the bars are rotated. In using the wagon, it is loaded and drawn to the place where the manure is to be spread. A lever is then operated to throw wheels into gear, so that, as the wagon is drawn forward, rollers may be revolved to pulverize the manure and work it out through the bottom of the wagon, spreading it evenly over the surface of the ground.

IMPROVED PORTABLE FENCE.

Strander Crum, Macon, Mo.—This invention relates to certain improvements in portable wooden fences; and it consists in jointed A-shaped frames combined with bars arranged upon the outside of one of the inclined sides of the frames, so as to alternate with each other, together with a binder which is arranged parallel with one of the stakes of the frames, and upon the outside of the bars so as to hold them in place, which binder is fastened below by a pin driven in the ground, and above by a pin driven into the stake.

IMPROVED METHOD OF ATTACHING HARROW TEETH.

Christoph Schottler, Greenville, Wis.—This invention consists in fitting the tooth, which is long, tapering, and with a square transverse section, into a similarly shaped vertical groove on the side of the harrow beam. The tooth passes above and below through holes in the ends of a semicircular metallic strap, which is keyed on the side of the beam opposite the tooth by a key of the shape of half a frustrum of a cone.

NEW MISCELLANEOUS INVENTIONS.**IMPROVED SKATE.**

John A. Dodge, Amherst, Nova Scotia.—This invention is a skate so constructed that it may be easily and quickly attached to, and detached from, the boot of the skater, and when attached will be securely held.

IMPROVED COMPOSITION PASTE FOR FLY PAPER.

John Ralston, Greenville, Pa.—This improved sticky fly paper paste is put up in boxes, so that it can be spread upon paper by the user, will always be fresh, and it is claimed, much less expensive than the ordinarily prepared paper. The invention consists in a paste, formed of flaxseed oil (but various other oils may be used), Venice turpentine, and rosin.

IMPROVED FRUIT DRYER.

Andrew M. Mortimer, Salt Lake City, Utah Ter.—This is an improved apparatus for drying fruit in the sun, so constructed that the fruit may be easily covered and protected in stormy weather. The dryer may be conveniently adjusted into such positions as will best expose the fruit to the sun's rays.

IMPROVED HARNESS PAD.

Hibbard R. Ridgley, George A. Nelson, and William H. Bushnell, Haysville, Ohio.—The rim which forms a part of the pad has an offset, provided with imitation stitches, giving it the appearance of having been stitched together.

IMPROVED HARNESS SADDLE.

P. S. Carroll, Louisville, Ky.—This invention consists in making each side of the back strap of two parts, the upper one of which is fastened to the saddle tree and flap, and to an inner stay or spring by the terret screw, which is secured inside by a nut. The two parts of the back strap, on each side, are joined by a metallic fastener provided with rivets on its under surface, and a ring on its lower end: the former securing it to the upper part of the back strap, saddle flap, and inner stay or spring, the latter for the attachment of the lower part of the back strap.

PACKING CASE FOR CRACKERS AND CONFECTIONERY.

Joseph Garneau, Sr., St. Louis, Mo.—This invention consists of a main case and a sample case, the latter being provided with a transparent side, of glass or other improved material, and being detachably connected to one side of the main case by an extension thereof at the bottom and the cover, the sample case corresponding in length and breadth with the side of the case.

IMPROVED REED ORGAN TREMOLO.

Henry L. Pierce, Easton, Pa., assignor to himself and Samuel Trumbore, of same place.—The first part of this invention consists in an arrangement of a propelling wheel having curved blades, and a governor consisting of a piston attached to a valve in such a way that the pressure of air acting on the piston controls the jet of air which propels the wheel. The second part consists in a cut-off of peculiar construction, which is rotated by the propelling wheel. The vacuum in the organ bellows is more or less perfect, according as more or fewer exertion is made on the pedals or blowing lever, or as more or fewer of the keys are opened. Under these circumstances the piston acts as a governor, maintaining a uniform rate of speed. When the tremolo attachment is in use, the entire current of air which goes into the bellows may be allowed to pass through it, or by an arrangement of stops the tremolo may be made to affect certain portions of the reeds. The cut-off breaks the current of air twice at every revolution. The advantages claimed are that the governor maintains a uniform rate of speed whether the air passes into the bellows with greater or less force. The curved veins in the propelling wheel insure a positive and uniform action. The cut-off, by stopping the in-going current of air at small intervals, produces the tremulous effect which is so necessary to the complete rendering of certain kinds of music.

IMPROVED HEATER FOR CARS, ETC.

Milton W. Hazelton, Chicago, Ill., assignor to himself and Anson W. Eggleston, of same place.—This heater consists of two cases of metal or other suitable substance, placed one within the other, so as to form a space between them, except at the top, which is filled with asbestos or other non-conducting material, and is charged with hot balls or other form of metal, for heating the car or other room by radiating the heat contained in the said objects; and in the top of the heater is a register, and in the bottom an opening for allowing the air to flow in to be heated and be discharged at the top, by which the heat may be given off more or less rapidly, according to the volume of air allowed to pass, which can be regulated at will by the register. The register may be in the inlet passage, if preferred. The heater is designed mainly for cars and carriages; but it may also be used for heating rooms, temporarily, in hotels. The hot balls will be supplied to the cars at the stations, and may be introduced through a door in the top or side, as preferred. For street cars the heater will preferably stand on the floor like a stove; but for railway cars it may be let down from the floor, and the balls may be put in at one side or end under the floor of the car.

IMPROVED ICE CREAM FREEZER.

David J. Rogers, Bardstown, Ky.—This invention has reference to that class of ice cream freezers which consist of a can pivoted upon a step in the bottom of the tub or pail, and are adapted to be rotated to effect the freezing without any internal stirrer. The present improvements consist in the particular construction and arrangement of a rim attached to the tub, which holds the can in an upright position, and also in the construction and arrangement of the handle.

IMPROVED PEANUT ROASTER.

Jean Esposito, New York city.—This peanut roaster is provided with a hot water chamber, arranged vertically in the case above the draft passage, and between the roaster and storage chamber. The peanuts are transferred, after being roasted, directly to the storage chamber, to be sold in warm and nice state, without keeping them too long in the roasting drum, to become dry.

IMPROVED CAMP KETTLE.

Antoine Alexis Gervais, Paris, France, assignor to A. Gervais & Co., of same place.—This invention is designed, says the inventor, to remedy the defects of camp kettles in present use, which in fair weather require about three hours, at least, for making soup, and this only by a considerable expenditure of fuel, while in rough weather the fire is liable to be extinguished. By the improvement a considerable saving in fuel is insured, and much less time is occupied in cooking, whatever may be the state of the weather. A number of these kettles may be combined so as to have two, three, or more draft chimneys with a single tunnel running beneath the whole series of kettles, which are placed over a trench made in the ground.

IMPROVED BILLIARD CHALK AND BALL HOLDER.

Rafael Martinez, New York city.—This cue-chalking attachment for billiard tables consists of a little case for holding the chalk, combined with a billiard ball holder, the case having one end contrived to open and close for putting in and adjusting the chalk, and having one or more holes through the side for inserting the cue tips against the chalk. A stud or key prevents the chalk from turning while the case is closed. The case is attached to the table at any place, so that the player can at any time chalk his cue tip without taking the chalk in hand, also without scattering it on the floor.

IMPROVED POCKET KNIFE.

Amos W. Coates, Alliance, Ohio.—This invention relates to an improvement in pocket knives of the kind ordinarily used by boys; and it consists, as a new article of manufacture, in a pocket knife having a blade extended beyond the handle and formed with a knob of metal upon the end thereof to prevent accidental injury resulting from the careless or thoughtless use of the knife.

IMPROVED MANUFACTURE OF LIME AND CEMENT.

Uriah Cummings, Buffalo, N. Y.—This invention relates to the manufacture of lime and cement, so that neither too high nor too low a temperature may be employed, and consists in blowing with a force pump air and hydrocarbon into the furnace simultaneously, so as to bring them in contact with the stone when at a red heat and subsequently, thus producing a perfect combustion, a great economy of fuel, and a more uniform as well as a better article.

IMPROVED SADDLE.

John T. Gathright, Louisville, Ky.—This invention consists essentially in providing the tree of a gentleman's saddle with attachments for horns and a supplementary seat, the former fitting over the pommel of the same, and being strengthened by the necessary re-enforcements. These attachments may be so constructed as to be used with gentlemen's saddles of any shape and style.

IMPROVED CORSET.

Catharine A. Griswold, New York city.—The object of this invention is to improve the corset for which letters patent have been granted to the same inventor, under date of July 4, 1871, No. 116,585, that the same may be made available for imparting better carriage to the upper part of the body, and prevent, by strengthening the back and bracing the shoulders, the inclination to stoop and contract the chest.

NEW HOUSEHOLD INVENTIONS.**IMPROVED MOP HOLDER.**

John W. Cabbage and John Alexander, Gallipolis, Ohio.—In this device the handle has a wire secured to it and bent twice at right angles, with arms that pass through holes in the ends of a plate or clamp bar. The arms of wire or clamp rod are bent inward as well as upward, and their ends are attached to a socket. Through the latter passes the end of the handle, the socket being secured thereto by a hand screw. The cloth is placed between the middle part of the clamp rod or frame and the clamp bar, the handle being then inserted in the socket or sliding head, and its end pressed down against the clamp bar. This clamps the cloth very securely between the bar and rod, while, the clamp screw being then tightened, the parts of the mop head are locked together.

IMPROVED CLOTHES DRYER.

Orlando B. Lee, Greenville, Conn.—This invention consists in the peculiar devices which are used in holding the sides of the frame together, the object being to furnish in a clothes dryer such connections for the top or sides of the parts of the dryer as will permit them to be readily attached and detached.

IMPROVED WRITING DESK.

Jerome M. Keys and Homer J. Taylor, Tecumseh, Neb.—This invention is a writing desk for business purposes, having greater capacity for the space occupied, and being more convenient for use than the desks as ordinarily made. It consists of a case of hexagonal form, or any equivalent form will do, with a writing table in each alternate side, which slides out and in, and has pigeon holes and other repositories on the back part to be brought forward for convenience when the table is pulled out for use, the said tables being closed in with circular covers. Above the case is a tower of similar form containing two or more revolving book racks, one above another, for convenience in taking down and putting away the books.

IMPROVED EVAPORATOR FOR REGISTERS.

W. R. Fowler, Baltimore, Md.—This invention consists in moistening hot air as it passes into an apartment from a furnace or stove by causing it to pass through strips of absorbent material more or less saturated with water. The absorbents are endless pieces of fabric, held by opposite rolls and dipping into the water being spaced by ring grooves in the top roll. The invention is equally adapted to any form or location of register, by means of an attachment, open at bottom so as to enclose with a lid the ordinary floor register, and provided with a rear opening to correspond with that of the evaporator.

NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.**IMPROVED SLED.**

James L. Brannock and James A. Cleveland, Antioch Mills, Ky., said Cleveland assignor to said Brannock.—This invention is an improved runner for sleds and sleighs, which saves a great deal of the time and trouble necessary to put in the ordinary sole or runner. It consists of a separate curved front part that is connected to the main body of the runner in rigid manner.

IMPROVED EXTENSION STEP LADDER.

Wilhelm H. Bitter, Fort Howard, Wis.—In this invention, the several parts of a step ladder are made of such form that, while it may be used as a step ladder in the ordinary way, it may also be unfolded and extended, and used as an ordinary ladder. It is composed of three sections, two of which are capable of extension by sliding one upon the other, and a third section, which is hinged to one of the sliding sections, which is capable of unfolding, the whole being provided with hooks for uniting two or more ladders.

IMPROVED MACHINE FOR SAWING LATHS.

John W. Calkins, Avoca, N. Y.—This invention consists of a mandrel carrying a number of saws, separated the required distance by washers, and a frame for supporting the same, with a friction roller, placed in the table, over which the saws run. The advantages claimed for a board grooved or formed into a series of connected laths are that it may be more rapidly applied to the walls and ceiling of a building, that it produces a more solid wall and ceiling, and that it does away with sheathing.

IMPROVED PLASTERING TOOL.

Asa A. Howe, Ulysses, Pa.—This invention consists of a kind of box with open top and hinged bottoms, and also guides on two sides, the said bottom being two smooth steel plates, which overlap each other at the uniting edges, and are raised toward the upper side of the box to make a cavity in the lower side, which is filled with mortar to spread on the wall by sliding the tool along the wall, and at the same time pressing the bottom by a handle attached to one of the parts, so as to force the mortar on to the wall, and spread it smoothly as the tool moves along. The handle is adjustable along the brackets, according to the leverage it is desirable to employ in pressing the plaster on the wall.

IMPROVED SHAVINGS SEPARATOR.

Elijah Brown, New York city, assignor to himself, Eben Peek, and Gilbert J. Bogart, of same place.—This invention is for separating the finer from the coarser shavings made in planing mills and other woodworking machines. It consists of a screen hung in an inclined position upon two sets of swinging arms, and provided with a divider or frame carrying a number of cross wires a short distance above the screen. The screen is arranged to take motion from a crank driven by any convenient power, and the divider is arranged to move with the screen, but through a greater space, constantly shifting its position in relation to the screen.

IMPROVED STENCH TRAP.

John Peter Schmitz, San Francisco, Cal.—This is an improved construction of stench trap, designed more particularly for wash basins and sinks, but applicable also to general use. It consists mainly in combining with the ordinary water trap a subjacent flap trap, or weighted valve, which remains closed until its weight is overbalanced by the greater weight of water, when it opens automatically and allows the water to escape; by means of which arrangement the bubbling up of sewer gas through the water trap is prevented by relieving the water trap from the pressure of the same.