NEW YORK ACADEMY OF SCIENCES.

The chemical section of the Academy of Sciences held their regular monthly meeting at 64 Madison avenue, Monday evening, May 14, 1877, Dr. J. S. Newberry, President, in the chair.

Mr. Henry Newton, E.M., exhibited some plates illustrating the palæontology of the Black Hills. The President spoke of the failure on the part of Congress to appropriate sufficient funds to pay the cost of their publication, thus throwing much of the expense of this very useful and practical survey upon Mr. Newton and his colleagues. Mr. Newton will soon return to the Black Hills to finish the survey begun by him and Mr. W. P. Jenney last season.

Mr. C. Chamberlain exhibited a specimen of the new mineral—astrophyllite—from El Pasoz county, Colorado. This mineral contains 13 ingredients, including titanium, tantalum, copper, etc. It is micaceous, but the lamina are not flexible; it is of a yellowish color, and in powder looks like Mosaic gold. Also specimens of analcite with apophyllite, from Lake Superior.

The first paper of the evening was entitled

THE RELATION BETWEEN MALARIA AND VEGETATION,

as shown in the vicinity of New York, by General Egbert L. Viele. The speaker began by stating that in his plan of Central Park, which he made twenty years ago, he made a botanical garden one of the features of the Park. It was thrown out then, but now it is proposed to do what he then proposed. He next spoke of the drainage of the city, and exhibited a map showing the ancient watercourses. Many of these streams, he said, were supplied from perpetual springs, which will continue to flow until the end of time, yet no provision has been made to carry off the water of these springs; the city is absolutely without drainage. He had hoped that a botanical garden in the Park would develop certain plants that have the power of neutralizing the injurious effects arising from want of drainage. At that time 70,000 species of flowers and trees were growing in the Park, most of them being kept browsed down to 6 inches or a foot. The relation between plants and animals was next referred to, and much credit given to the researches of Tyndall, Huxley, Darwin, Pasteur, Bastian, and Haeckel. The opposite views of these investigators had promoted research and had been of great benefit, but much still remains unknown. The microscopist knows how close is the resemblance of plants to animals in the lower forms of life, how they seem to pass from one to the other. In higher forms of life, the refuse of one is the food of the other, so that they mutually sustain each other. An equilibrium of the two is a necessity for a wholesome state of the atmosphere. The tendency of civilization and the gravitation of people together into large cities is upsetting the equilibrium of natural forces. There is not enough vegetable life here to consume the refuse of the animal life. What are these surplus elements? They are everything that is offensive to any of the senses, whether in air, earth or water, indoors or out of doors, by day or by night. One of the results of this surplus of animal refuse is malaria. It has been established that there are present everywhere certain destructive principles which may at times and under favorable circumstances develop into malaria. We owe this word *mal aria* to the Romans, and it meant with them "bad air," which is recognized the world over as the cause of disease. The Greeks called it *miasma*, and built temples to Æsculapius to void off its evils. We wonder at their idolatry and ignorance, but our own ignorance is almost as great in regard to its true character. Malaria implies bad air; miasm, infection floating in the air. Under what circumstances does air become an agent in propagating such diseases as plague, cholera, yellow fever, and smallpox, which have destroyed millions, and are still at their deadly work? The speaker then spoke of the usual classification of diseases for statistical purposes, under "malarial," "zymotic," etc., in which malarial embraces all those which distinguish one country from another, one year from another, and which have at times decimated cities and countries. He stated that three fifths of all the deaths in the world result from miasmatic diseases. These have gone on from age to age almost unchecked and unrestrained, the average death rate increasing. He then spoke of the plague, cholera, smallpox, yellow fever, and their ravages in historical times; and said that an erroneous impression prevailed that malarial diseases are restricted to intermittent fever, chills, and fever and ague, which prevail wherever drainage is defective or the soil has been disturbed. People think that these fevers are never fatal, and come to think of malaria as something we can endure and become accustomed to. There were 30,000 deaths in this city last year, more than half of which were due to malarial diseases. He next referred to the three chief theories held by physicians in regard to malarial diseases; first, the gaseous theory, that they are due to certain gases; secondly, the vegetable theory, that they are due to germs; thirdly, the specific poison theory. Malaria has a history, a geology, a botany, a chemistry, a topography, a geography; yet all these have failed to explain it. It is hoped that the new science of biology will do more for it. Many of these diseases attack a person but once, and are contagious; a certain time elapses between exposure and the development of the disease. They generally run a certain length of time. These are called acute specific diseases. Could any gas do this? We know none with such power. The theory of specific poison only substitutes a general term and explains nothing, but only removes the question a step further. The vegetable theory is most worthy of study by biologists. The speaker exhibited a drawing of the *penicillium glaucus* magnified, also of a drop of blood from a patient that died within 48 hours with smallpox; the latter viewed under a microscope was as lively as a pond full of fish. The similarity of the two forms was quite remarkable.

Nearly the entire food of plants is derived from the air. It must be the refuse of the animal world, things which are hurtful to animal life. We all know that the country, where vegetable life predominates, is more healthy than the town. Tyndall has shown the presence of minute organisms in the air, and how they can be developed into larger forms. This island was, in its primitive state, a most beautiful place, and now how changed! Nature is for ever dethroned, the rivers are encroached upon and polluted, watercourses are cut off; the supersaturated soil gives off these germs of disease which make it as bad as the Roman Campagna. Central Park has become a mass of shrubbery through which no winds can blow, and is dotted with pools of stagnant water. Let this be remedied, and let botanists plant there those trees which are capable of consuming most of these poisons, and let our citizens aid to destroy the poison by the same means. The speaker concluded by pointing out on maps that, where fevers most abound, there have formerly been watercourses, and showed that the Roman fever was likewise brought about by the destruction of drainage systems and watercourses.

A somewhat spirited discussion followed, in which Dr. Newberry remarked that the *globulus* and the other species of *eucalyptus* known to us at present, are not sufficiently hardy to endure our climate, but expressed a hope that the mountainous portions of Tasmania might yet give us a more hardy species, or that those known may be gradually acclimatized to our latitude by beginning to cultivate them further south.

Mr. Alfred R. Conkling then read a very interesting paper on the

GEOLOGY OF LAKE TAHOE AND VICINITY,

illustrated by a large blackboard map. The region about this lake seems to be an exceedingly interesting one. On the east side, near Carson City, are several hot springs with water at temperatures of 111° Fah. to 120°. The formation is quarternary. There are several gold mines on the east side of the lake, in quartz and granite, and several shafts have been sunk. In some of these mines copper minerals are also found. At the northern end of the lake is a peak called Mount Rose, 1,082 feet high. There are two other outcrops of igneous rocks on the east summit, one of which is called Shakespeare's Cliff, from the grouping of lichens on one side, which resemble that famous dramatist. The other is called Cave Rock. The lake itself is 21 miles long, and 12 broad at the widest part. Its depth near the south end is 900 feet, and increases to 1,645 near the north end. The temperature of the water is 54° Fah. It lies 6,000 feet above the level of the sea. On the west side are mineral springs whose waters contain carbonic acid and sulpheretted hydrogen gases, and have a temperature of 46° Fah. They are bottled and sent to Carson City. On the same side are some ridges and peaks. Evidences of ancient glacials are abundant. One of these old glaciers was equal to the Mer de Glace. The paths of several others are marked by morains. In the neighborhood are some small lakes, the basins of which may have been dug out by glaciers. At the southwestern side is a bed of graphite. Echo Lake, near by, is so called because there is no echo there. North of the lake is a hot spring, the water of which has a temperature of 132° Fah.

Dr. Newberry made a few remarks on this interesting phenomenon of a deep cold lake on the top of a mountain, and the probability of its being the result of glacial action.

Fly Paper.

Powdered black pepper is mixed with syrup to a thick paste, which is spread by means of a broad brush upon coarse blotting paper. Common brown syrup will answer, but syrup made from sugar is preferable, as it dries quicker. For use, a piece of this paper is laid upon a plate and dampened with water. The paper may also be made directly at the mill by adding sugar to the pulp, and afterwards ¼ to ⅓ of powdered black pepper, and rapidly working it into a porous absorbent paper.

INTERNATIONAL POSTAL ORDER SYSTEM.

Since the system of interchange of our postal orders with those of foreign countries, persons abroad can remit small amounts to this country safely and without any trouble. It is a great convenience to the public to be able thus to transmit money, and to publishers it proves especially convenient.

In a letter before us, from Leeds, England, the writer states: "There appears some difficulty in getting your papers at reasonable prices in this country. We are at the mercy of news agents, who seem to charge what they like. I would suggest the advisability of your inserting the subscription price by post, as a means of increasing the circulation of the paper to a considerable extent, for it is increasing every day in the estimation of engineers and others." Now, had it occurred to our correspondent that he could readily have deposited his pounds or shillings with the postmaster at Leeds, to be transmitted to us, he would probably have done so, in place of scolding the news dealers; and likely there are many other intelligent foreigners who would like to have the SCIENTIFIC AMERICAN, but who do not know how to remit for it. So, in accordance with the suggestion of our correspondent, we annex a list of prices, in the currency of different countries, for the SCIENTIFIC AMERICAN, for the SCIENTIFIC AMERICAN SUPPLEMENT, and for both papers, as the subscriber may desire:

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Deposit either of the above amounts in any of the important post offices in Great Britain or Ireland, or in any country on the continent of Europe, making the order payable to MUNN & Co., New York city, and send us the receipt, with the name of the sender, and the address to which the paper is to be mailed.

NEW BOOKS AND PUBLICATIONS.

HOW TO TEACH ACCORDING TO TEMPERAMENT AND MENTAL DEVELOPMENT; or Phrenology in the School Room and the Family. By Nelson Sizar. Illustrated. Price $1.50. New York; S. R. Wells & Co., 737 Broadway.

Although physiologists generally believe that phrenology has not yet settled itself into a fixed science, its disciples invariably use its theories as mathematical axioms and undisputed facts. The many instances in which its teachings are nullified, by the fine skull development of many idiots and criminals, have done little to shake the faith of believers in the suggestions of Gall and Spurzheim; and as is usual in such cases, those celebrated craniologists would have been surprised to find their ideas (founded with apparent justification on the comparison of many heads) resolved into arguments as to the direction of the studies of youth. The volume before us attempts to do this; and it is illustrated by engravings of various types of heads, from which many people might deduce a theory that a man's errors and vices are due not to his immoral nature or his neglect of self-control, but to the shape of his head.

HOW TO RAISE FRUITS: a Handbook of Fruit Culture. By Thomas Gregg. Illustrated. Price $1.00. New York city: S. R. Wells & Co., 737 Broadway.

This little book is a thoroughly excellent and practical treatise; and it has our special commendation, not only on account of its valuable instruction to fruit growers, but for its convincing demonstration of the value of fruit, to the farmer as a source of a revenue, and to the consumer as an article of diet.

A HISTORY AND HANDBOOK OF PHOTOGRAPHY. Translated from the French of Gaston Tissandier. Edited by J. Thomson, F.R.G.S. New York city: Scovill Manufacturing Company, 419 to 421 Broome street.

M. Tissandier is the editor of our excellent contemporary *La Nature*, and one of the best French writers on popular scientific topics. In the present volume he has combined a history and a useful manual of the photographic art, the latter of which is excellently adapted for the purposes of the amateur. For general perusal, the work can be especially commended, as it gives in pleasant, readable style, a capital account not only of photography but of many of the new processes, for the mechanical reproduction of pictures, dependent on photographic manipulation. The subjects of photo-micrography and astronomical photography are fully discussed. The illustrations are numerous and remarkably good; and an appendix is added, giving many valuable practical recipes.

Inventions Patented in England by Americans.

From April 24 to April 30, 1877, inclusive.

CARRYING WEIGHTS.—J. E. Barlow, Sing Sing, N. Y.
CHEMICAL TELEGRAPH.—C. A. Randall *et al.*, New York city.
CONCENTRATING SULPHURIC ACID.—F. W. Kalbfleisch, Brooklyn, N. Y.
EMERY WHEEL.—I. P. Brown, Jr., Newark, N. J.
FEED WATER HEATER.—G. Steel, New York city.
HYDRAULIC LIFT, ETC.—H. R. Plimpton, Boston, Mass.
JOURNAL BOX AND BEARING.—W. B. Bishop, New York city.
LIFE BOAT.—G. Bates, Massachusetts.
MILLING MACHINERY, ETC.—T. D. Jones, Syracuse, N. Y.
PROPELLING VESSELS, ETC.—J. H. Carpenter, New York city.
RECORDING THERMOMETER, ETC.—R. K. Boyle, New York city.
REDUCING ORES, ETC.—C. M. Dupuy, Philadelphia, Pa.
REFRIGERATOR CAR.—J. M. Ayer, Chicago, Ill.
SHIP'S BERTH, ETC.—J. C. Thompson (of Brooklyn, N. Y.), London, Eng.

Recent American and Foreign Patents.

Notice to Patentees.

Inventors who are desirous of disposing of their patents would find it greatly to their advantage to have them illustrated in the SCIENTIFIC AMERICAN. We are prepared to get up first-class WOOD ENGRAVINGS of inventions of merit, and publish them in the SCIENTIFIC AMERICAN on very reasonable terms.

We shall be pleased to make estimates as to cost of engravings on receipt of photographs, sketches, or copies of patents. After publication, the cuts become the property of the person ordering them, and will be found of value for circulars and for publication in other papers.

NEW MECHANICAL AND ENGINEERING INVENTIONS.

IMPROVED COMBINED COTTON CHOPPER AND SCRAPER.

Empson C. L. Bridges, Brick Church, Tenn.—In this machine the frame to which the hoes or choppers are attached is vibrated by suitable gear connection with the transporting wheels, and the said vibrating frame can be raised and lowered by a crank shaft, and adjusted forward or back by a like adjustment of the sliding frame to which it is attached. The scraper, which goes in advance of the chopping mechanism, may be adjusted laterally by a treadle mechanism.

IMPROVED CAR COUPLING.

Edward B. Middleton, Charleston, S. C.—This coupling is composed of a hook fixed on a rod which slides vertically in suitable bearings in the drawhead. When two cars meet, the hook engages with a catch block, which is also fixed on a vertically sliding rod in the opposite drawhead. The upper ends of the said rods project above the drawheads and are provided with enlarged heads which are so constructed that they tend to hold the hook and catch block in proper position, lengthwise with the drawhead.

IMPROVED DOUBLE ACTING ANTI-FREEZING FORCE PUMP.

Henry M. Wyeth, Richmond, Ind.—This invention is intended chiefly to provide a submerged double acting porcelain lined pump, which shall be of a simpler construction and less expensive manufacture than those heretofore made. It is an improvement upon that form of pump in which two inlet valves are employed in connection with a single outlet valve arranged in a side pipe which opens into both ends of the cylinder. The invention consists mainly in casting the pump and the side pipe in a single piece, which secures the desideratum of cheapness, and with the greater portion of the said pipe offset or removed from the periphery of the cylinder so as to leave a space between, which permits the successful lining of the pump with porcelain.

IMPROVED COMBINED CENTER AND CARRIER FOR LATHES.

Charles A. Niebell, Scranton, Pa., assignor to himself and P. Franz, of same place.—This device is so constructed as to enable the workman to get the correct center of a shaft without its being necessary to remove the work from the lathe more than once. It may be adjusted to correspond with a long or a short center. It also may be used for gas pipe centers, on shafts for cutting off the riser, for facing pipes, and as a chuck upon any kind of a lathe.

IMPROVED NUT LOCK.

Joseph C. Wright, Philadelphia, Pa.—The object of this invention is to construct a nut in such manner that it may be rigidly held on its bolt, when set in position, by inserting a packing of soft metal or other material capable of expansion, into a recess cut, punched, or swaged in the face of the nut in such manner that the packing may have a direct bearing on the thread of the bolt.

IMPROVED HOSE COUPLING.

William B. Kilbourne, Auburn, Me.—This hose coupling may be readily united. It is not liable to clog so as to prevent it from being quickly put together, and the threads cannot be crossed. The lugs of one part are placed in the recesses in the other part, and the parts of the coupling guided by the lugs are brought squarely together. A sleeve is then moved forward and screwed on the threads of the recessed part by means of a spanner placed on the lugs.

IMPROVED PUMPING APPARATUS.

Waldemar F. Plockross, Fagundus, Pa.—This relates to apparatus used in pumping oil or water from deep wells. It consists of a suitably braced right angled lever, which swings on a pivot between stationary posts, and is connected at the end of its horizontal arm with the pump rod, and at the lower end of its vertical arm, by means of rods, with any convenient motive power.

IMPROVED CORNSTALK PRESS.

Edgar P. Davis, James E. Davis, and John Fisk, Crete, Neb.—This is an improved machine for pressing cornstalks, weeds, hay, brush, etc., into small bundles for fuel. It presses the material compactly, holds it securely until bound, and is so made that one person can be sawing the bundles into lengths while another is passing the bands around them.

IMPROVED PUMP.

Michael Cook, West Le Roy Mich.—The object of this invention is to provide an improved means for giving motion to the piston; also for counterbalancing the same, and for readily removing the lower valve of the pump without removing the pump from the well. An advantage gained by the peculiar construction of this pump is, that the displacement of water by the enlarged piston rod reduces the weight of the water resting on the piston.

IMPROVED STEERING PROPELLER.

Clemens Uller and Jasper N. Bennett, Columbus, O.—The object here is to provide, as an auxiliary device for vessels already built, or to be built, an improved propelling and steering apparatus, by which the vessel may be propelled to the right or left, forward or backward, without stopping the engine. The invention consists of a vertical revolving shaft, with horizontal paddles that are submerged in the water and turned alternately into horizontal position by a cam of a sleeve around shaft, said sleeve being adjusted by a steering lever, in connection with a disk and ratchet device.

IMPROVED FOLDING BOAT.

John H. Bates, Nanticoke, Pa.—This consists in the arrangement in a boat of a folding bottom, folding ribs, and flexible sides, and a removable rail, seat, and oar lock. A covering of canvas, or other flexible waterproof material, is attached to the boat bottom by means of nails, and is secured to the rails at the top of the boat by straps which are engaged by buttons that project from the rails and from the posts at the bow and stern. The boat thus constructed is light and strong, and is capable of being quickly taken apart or put together, and when taken apart it may be folded together and packed in small compass.

IMPROVED STEAM ROAD WAGON.

George W. Wade, Clam Lake, Mich.—The track wheels are made large and with wide flanges upon the inner sides of their rims, to serve as tracks for the small driving wheels to run upon, so that the machine may lay its own track as it advances. A power is applied to the axle, the driving wheels roll forward upon the flanges of the track wheels, and are all the time rolling up a slight inclined plane. Should the track wheels, or either of them, strike an obstruction, they will stop, while the driving wheels will roll up a steeper inclined plane until the center of gravity has passed the point of resistance, when the track wheels will gently tilt over the obstruction, and the wagon will pass on without jar.

IMPROVED COMBINED NOZZLE AND SPRINKLER.

Neil Malmquist, Brooklyn, N. Y., assignor to himself and John Loyd, New York city.—This invention consists in a sprinkler provided with a short tube in its face directly opposite its screw socket, and having its outer end covered with a perforated cap, with a tube in its side, having the outer end closed. A small marble is placed within to adapt the device for throwing water in a solid stream or a shower.

NEW AGRICULTURAL INVENTIONS.

IMPROVED PLOW.

James F. Wilson and Richard I. Wilson, Calhoun, Ga.—The wings of this plow are so constructed that they may be raised out of, and lowered into, working position separately or both together, as may be desired. They also may be adjusted to prevent small plants from being covered or injured by having soil thrown upon them.

IMPROVED CORN PLANTER.

Robert Fox, Deerfield, Iowa.—This relates to improvements in corn planters; and it consists in an arrangement of plows on an adjustable shaft, by turning which the plows are raised or lowered.

IMPROVED PLOW.

Charles Atkinson, Monterey, Ill.—This is an improved plow for opening trenches and subsoiling. It is so constructed as to clear itself in opening trenches, and may be readily adjusted to work at any desired depth in the ground.

IMPROVED DITCHING MACHINE.

James R. Slaton and John M. Wadlington, Morganfield, Ky.—This is an improved machine for opening ditches of any desired depth and width. It may also be used with advantage for grading roads, and for various other purposes where soil is to be moved. The scraper may be raised or lowered by the advance of the machine, according as a lever is operated. Devices are provided to lock the scraper in place and hold it down to its work in operating upon hard soil. There is an upper carrier designed for use in opening deep ditches to prevent the soil, and especially clods and lumps, from sliding or rolling back. As the soil reaches the upper end of the carrier it passes into an inclined spout, by which it is conducted to the side of the ditch. The spout may be inclined in either direction to deposit the soil upon either side of the ditch, as may be desired.

IMPROVED CHURN DASHER.

John L. Maxwell, Bentonville, Ark.—By suitable construction, as the dasher is raised, the tendency is to form a vacuum beneath it. This opens the valve and draws air into the cavity of the handle and the cavity of the dasher. As the dasher is forced downward the valve is closed, and the air is forced into and through the milk. This introduction of air, and the peculiar form of the dasher, throws the milk into violent agitation and brings the butter quickly.

IMPROVED DITCHER.

Wilbur R. Peet, Viola, Iowa.—With the bottom cutter is connected a rest, supported on any suitable bar, so as to allow the furrow slice to begin to turn only at some distance from the knives, and thus prevent any strain that might arise from tearing the slice. A turning board is arranged, cut and fitting diagonally across the face of the rest, and rising on a gradual lateral slant to and above the bars, so that when the furrow slice rises above the bars it will be thrown over and reversed from its natural position, and not merely turned on end. The turning board is provided with water channels to allow the moisture to drip back into the furrow.

IMPROVED SWINGING GATE.

William A. Ohaver, Monmouth, Ill.—To the shorter end section of the gate is attached a balancing block, which facilitates the swinging of the gate into open or closed position, but which does not entirely balance the longer section, so that the latter is slightly heavier than the block and shorter section, for bearing, by its outer and lower end, either on a notched block when closed, or on the ground when opened, for being retained in either position without propping or holding.

IMPROVED PLOW.

William Clore, Rising Sun, Ind.—This invention consists in so constructing and connecting the share, land side, and colter of a plow, that a close and firm joint will be formed, and the parts always maintained in exactly their true relation to each other.

IMPROVED PLOW.

John M. Looker, Abilene, Kan.—This plow may be readily adjusted for the different kinds of plowing, and to take and leave land. The invention consists in a plow provided with an arrow-head point having its landside wing projecting beyond the line of the landside of said plow; and in the share formed solid with the arrow-head point, made nearly flat, and having the outer part of its forward edge curved forward.

IMPROVED FARM GATE.

Orlando F. Fuller, Lamont, Mich.—This is an improved farm gate that may be conveniently adjusted at suitable distance above the ground, to clear the snow in winter, and admit the passage of smaller animals. It is also self-closing by its own weight as soon as released.

IMPROVED HOP DRYER.

Charles A. Sands, Burlington, Kan.—This invention consists of a hop drying apparatus, consisting of a centrally pivoted box that takes the place of the drying floor. The box has a top and bottom of wire gauze, and hinged end doors that connect with openings in the walls of the upper and lower stories, for charging and discharging the hops to and from the dryer. The end doors of the drying box are provided with transverse rubber cushions or strips for closing the space between the walls and the box when said doors are in a horizontal position, and thereby compelling the heat to pass through the drying box.

IMPROVED HAY RAKER AND LOADER.

John S. Hewitt, Wheatland, Mo.—This is a machine that may be attached to the side of a wagon, which will gather the hay from the ground and deliver it to the hay rack carried by the wagon. As the wagon is drawn forward the machine is set in operation by the rotation of a wheel. The forward motion of the machine gathers the hay on the teeth of the rake. An endless apron elevates the hay and delivers it to another apron, which carries it laterally to the rack of the wagon.

IMPROVED SELF-RAKE FOR HARVESTERS.

Isaac N. Cherry and Robert N. Cherry, Jersey city, N. J.—The object here is to provide a rake for harvesters that will deliver the gavels at the rear of the machine in compact form for binding. The reciprocating motion of the ratchet bars, the teeth of which move the grain along the platform, is continuous, and when a sufficient quantity of grain is carried into the fingers of the delivering apparatus, they first close down on the gavel and then are drawn backward. When the gavel is drawn from the platform the fingers fold down and allow it to pass, but afterward spring up and prevent the escape of loose grain. The entire mechanism is exceedingly ingenious.

NEW HOUSEHOLD INVENTIONS.

IMPROVED NIGHT LAMP.

Harry W. Huntington, Williamsburgh, N. Y.—This lamp is provided with a very small wick tube, and is intended for burning through the night; and by the arrangement of the wick tube the flame is located at a distance above the oil, so that the oil is not heated and gas is not generated, and, consequently, danger is avoided. By the use of a chimney of suitable length smoking is avoided without using many of the devices common to larger and more complicated burners.

IMPROVED SPITTOON.

Pierre Célestin Ste. Marie, Montreal, Canada.—This spittoon is composed of two parts, so constructed and fitted together that when the spittoon is overturned its contents are received by the upper part thereof, thereby preventing soiling of the floor or carpet. The spittoon is supported upon casters, whose stems or pivots are fitted in sockets formed in ornamented bases or enlargements of the base rim of the spittoon.

IMPROVED COMBINED DESK, WASHSTAND, AND BLACKING CASE.

Alexander O. Kirkwood, Yonkers, N. Y.—This consists in the combination, in a single piece of furniture, of a desk having a convenient receptacle for books and papers, a washstand having a convenient reservoir for water, a stationary bowl, an adjustable mirror, and a closet for towels, etc., and also a towel rack and a blacking case, which contains a folding rest for the foot and a place for the blacking and brush.

IMPROVED SPRING BED BOTTOM.

John H. Palmer, Warren, Pa.—This spring bed bottom is so constructed that the springs may be conveniently adjusted according to the weight they may have to support, that the rails may be braced against the pull of the springs, and that the springs may be kept in proper position when under pressure. In it, plates are provided with single or double notched flanges, and made in two parts, with their adjacent ends inclined to cause them to meet at an angle, in combination with the frame and springs of a bed bottom and couplings, formed of two short rods, are rigidly connected by an arm, in combination with the springs.

IMPROVED STOVE MAT.

Christian A. Reimers and John C. Branch, Davenport, Iowa.—The wooden body of the mat is covered with a zinc sheet which is spun over its circular edge. In order to form a raised rim on the zinc a bead is spun, or otherwise formed, on its upper side, near the edge of the mat, and a rod or stout wire is laid in the groove (on the under side of the zinc) to prevent the bead being indented or flattened by blows or pressure.

IMPROVED VEGETABLE SLICER.

Joseph H. Alfred, Rosbach, Iowa.—This consists of a frame containing a pivoted and grated support on which to place articles to be cut, and in a series of knives arranged tangentially to a circle described from the pivot on which they swing, and which pass between the bars of the support. The whole is supported by a frame, to which are attached receptacles for the articles to be cut, and for the slices cut by the apparatus.

IMPROVED KNIFE AND FORK CLEANER.

Albert E. Van Horn, Sebewaing, Mich.—This consists of an inclined scouring table with side rims, having a till or receptacle at the lower end for the scouring powder. A leather strap is stretched on a fork-shaped support for facilitating the cleaning of the forks.

IMPROVED DOOR CHECK.

James B. Everest, Yonkers, N. Y.—This consists in a spring of peculiar shape made from a single piece of spring wire; the object being to provide an inexpensive and simple device that may be readily placed under doors of every description for holding them in any desired position.

IMPROVED TABLE EASEL.

Christine Fisher, Salisbury, N. C.—This easel is adapted to the use of architects, civil engineers, and others, and is so constructed that it may be adjusted to have a level top, or to give its top any desired inclination, and to enable paper of any desired length to be used, holding the part being worked upon smoothly and firmly.

IMPROVED BUTTER AND FRUIT JAR.

Charles A. Sands, Burlington, Kan.—This improvement consists of a butter and fruit jar having a bevelled lid seated by an interposed rubber gasket on the tapering top edge of the jar, and being secured by a rubber band lapping over the lid and the recessed edge. The bottom edge of the jar has also a circumferential recess with a rubber band extending into the recessed part and lapping over the bottom edge, to produce, in connection with the top band, protecting cushions.

IMPROVED ARM REST.

Philo R. Wago, Rockport, Mo.—This is a novel device to be attached to a desk or table for supporting the arm while writing; and it can be adjusted to the required height to suit books of different thickness. In working on large sheets of paper or maps covering the whole desk, it is used to widen the desk, thus making it convenient to write on the extreme lower edge of the sheet. It also can be used with equal advantage in any position which the writer may assume.

NEW MISCELLANEOUS INVENTIONS.

IMPROVED AWL.

George P. Harley, Allendale, S. C.—By this invention leather may be stitched together with rapidity and facility. It has a recess and hook back of the point, and tapering side channels running from the recess to the point.

IMPROVED CARD HOLDER.

Henry J. Herbert, London, England, and Edward R. Wilbur, New York city.—This is an improved device for holding business cards, adapted to be hung upon a wall, and so constructed as to display a card. The chief feature of the invention is a hinged card receptacle, and a case therefor. The rear side of the receptacle is provided with a weight or spring, to draw it closed when released, after having been opened.

IMPROVED WHIP.

George P. Overin, New York city.—The core is formed of one or more strings of gut, and is stiffened and filled out by rattan sections. Hitherto, the rattan sections have not been used with the enameled surface, as the pith only has been employed; but, by this method, the natural strength and elasticity of the outer or enameled surface are retained and utilized.

IMPROVED COPY BOOK.

John W. Manning, Cambria, N. Y.—This consists in an arrangement of movable copies, and in an improved method of fastening the same in the book, which facilitates the operation, so that the copy books may be readily made. The copy slips are of the same length as two of the pages of the book, and are folded in the center and placed on the threads and wire. The copy is moved down the page, so as to cover each line as it is written, so that the scholar imitates the copy and cannot follow the line he has previously written.

IMPROVED FILTER RACK.

Byron Fenner, Westfield, N. Y.—This consists of a filter rack made of a spirally coiled wire, attached by top hook and jointed center link with lower hook to the top and bottom of funnel.

IMPROVED FRUIT DRYER.

Samuel Myers, Adamsborough, Ind.—This consists in novel means employed to pass a current of dry heated air over fruit until it is completely dried, without allowing the air to stand, or that which has been moistened by contact with fruit on lower shelves to come afterward in contact with that on the upper shelves.

IMPROVED HARNESS SADDLETREE.

James McCormick, Glidden, Iowa.—This invention consists in a saddletree made in two parts having lugs formed upon their upper ends, halved to each other, and provided with teeth to mesh into teeth formed upon the under side of the base of the water hook. The lugs are perforated to receive the screw by which the said parts are firmly locked together. Upon the rear end of the screw is formed a loop to receive the back strap, and which also serves as a handle for screwing the said screw in and out. The tree may thus be adjusted to fit the horse's back.

IMPROVED MANUFACTURE OF SPECTACLE TEMPLES AND JOINTS.

Dormer C. Winans, New Haven, Conn.—According to the method heretofore practised, the temples and joint pieces of spectacles have been constructed from separate pieces of metal, and soldered together. The object of the patentee is to cheapen and improve the construction of temples and joint pieces by forming them solid together, or in one piece. For details, see patent.

IMPROVED TALKING AND CRYING DOLL.

William A. Harwood, Brooklyn, N. Y.—The object of this invention is to provide a sound-producing attachment to be applied to the bodies of dolls, which may be blown by the mouth to imitate vocal sounds.

IMPROVED ICE BOX ATTACHMENT FOR COOLING ALE, ETC.

James J. Moloney and Isaac S. Schuyler, Brooklyn, N. Y.—This is an ice box provided with a cooling chamber below the ice chamber, and at one side of the latter with keg compartments. A track with movable hoisting apparatus is arranged above. There is a detachable extension of the tracks upon the outside of the ice box to receive a truck and cask, and a combination of crank shaft and rope for moving the trucks upon the tracks.