

is 2,000 miles, and the width 1,000. The waters are coffee colored, except those of the rivers that rise in the woody plain, which are more like molasses. In some places it is equally impossible to see across them or to see through them. We should think the country must be delightful and healthy—for alligators—and possibly for naturalists.

LADIES habitually carry pins in their mouths—we mean in the dressing-room—and always insist that no harm ever came of it. On the contrary, there are frequent warnings in the shape of fatal accidents resulting from this practice. A tailor at Croydon, England, met his death the other day, in consequence of bending a needle between his teeth and accidentally projecting a part of it into his throat.

THE wheat exports from Minnesota last year amounted to 9,267,153 bushels. The wheat crop of the United States (exclusive of the Pacific States) for this period is given as 153,045,857 bushels, an increase of 5,000,000 bushels over the crop of last year. The exportation of grain from California during the year will exceed \$6,500,000 in gold.

CRACKED BELLS.—A cracked bell, producing a disagreeable, jarring sound, is repaired by sawing or filing the walls of the rent so that the slightly-disparted edges may not be brought together by the vibration of the blow.

Recent American and Foreign Patents.

Under this heading we shall publish weekly notes of some of the more prominent home and foreign patents.

GATE.—S. A. Kroner, Doylestown, Pennsylvania.—This invention has for its object to furnish an improvement for gate so constructed and arranged that the gate can be easily opened and closed; that it can be opened in any depth of snow; that it will not blow open or shut; that it will exert no side pressure upon the posts; and that is applicable to gates of any form or size.

WINDLASS ELEVATOR FOR RAISING WATER AND OTHER PURPOSES.—W. E. Babcock, East Pembroke, N. Y.—This invention consists in arranging a drum upon a shaft in such a manner that, while it is entirely secure from accident while the weight is suspended from it, a slight reverse movement of the crank sets it free, and allows the bucket or weight to descend without turning the crank.

PETROLEUM STILL.—William C. Welles, Parkersburg, W. Virginia.—This invention consists principally in securing the fire sheets, or plates, to the bottom of the still, through the medium of a frame, whereby many important advantages are secured.

THE CHAIN FOR CATTLE AND OTHER ANIMALS.—Cyrus M. Baker, Bingham, Maine.—This invention relates to a new and improved tie chain for hitching cattle in their stalls, the object being to produce a tie chain of such a nature that the cattle, when hitched by it to their stalls, can not shift or move their heads to the other side of the posts or stanchions to which they are hitched, thus obviating all danger of the chain becoming twisted, which oftentimes causes the choking of the cattle.

STEAM PUMP.—George Doyle, Worcester, Mass.—The object of this invention is to improve and simplify the means of operating the steam valve in pumps of this description.

SUBSTITUTE FOR CURLED HAIR.—H. R. Hildreth, and W. H. Smith, Dutch Flat, Cal.—This invention relates to a new and improved substitute for the ordinary and common curled hair, so-called, used for the stuffing of the backs and seats of chairs, sofas, lounges, mattresses, etc., and it consists in so treating the fiber of the soap plant so known, as to convert or manufacture it into the proper form for being used as a substitute for the common curled hair, or as a stuffing for mattresses, the seats and backs of lounges sofas, chairs, etc.

MARINE MOTORS.—W. P. Kirkland, San Francisco, Cal.—The nature of this invention consists in applying as a motive or driving power, the speed or force generated by the propulsion of a vessel through the water, which result is obtained by so arranging a suitably shaped water wheel within the keel or bottom portion of the vessel, immersed in the water, that as the vessel moves through the water, it will be acted upon thereby, and thus made, through any suitable arrangement of connecting parts, to operate the ships pump, or pumps, or any other desired mechanism of the vessel.

CLEANING KNIVES, ETC.—R. R. Pattison, Chicago, Ill.—This invention relates to a machine intended more particularly for the cleaning or scouring of table knives and forks, although it can be used for other knives, etc.

AMALGAMATOR.—Syranus Standish, Pacheco, Cal.—This invention consists principally in providing the rotating muller shaft with a series of spiral flanges or wings, which, as the muller revolves, cause the pulp to be forced under the shoes, and thus brought into contact with the quicksilver or mercury used.

COAL HOD OR SCUTTLE.—David Wright, New London, Conn.—This invention consists in providing a coal hod or scuttle, with a mouth or spout at or near its lower end, for the purpose of removing the coal therefrom without necessitating the lifting of the scuttle.

Auger.—A. C. Kasson, Milwaukee, Wis.—This invention consists in forming the twist of an auger or auger bit, so that while half circles shall be formed by the twist for the discharge of the shavings by turning the edge of the twist inward, the cutting lip of the auger shall receive its shape from the form of the twist, and the outer edge of the twist shall be a cutting edge the whole length.

PUMP VALVE.—A. S. Cameron, New York City.—This invention relates to a pump valve, which is made of india-rubber or other soft and elastic material, confined in a metallic case, in such a manner that when the valve comes down on its seat, its elastic face will freely accommodate itself to the same, and close tight, and at the same time the india-rubber or other soft and elastic material is confined in the metallic case, so that it cannot be compressed sufficiently to allow metallic contact between the valve and its seat, and, furthermore, by the metallic case the india-rubber or other material is protected, and a valve is obtained which is not liable to leak, and which will not wear out or require refitting for a long time.

SAD IRON.—B. B. Hood, Milford, N. H.—This invention consists in constructing a sad iron with a metallic face and handle, and with the body of the article composed of soapstone or other mineral substance.

Plow.—William S. Huntington, Byron County, Mich.—This invention relates to a device to be attached to a plow for the purpose of preventing it from choking by the accumulation of weeds, grass, stubble, etc., in front of the mold board.

SMOKING PIPE.—James W. Truman, Macon, Ga.—This invention relates to an improvement in the packing of a pipe stem tip, which is so constructed that it will be durable, easily applied, and not liable to drop off.

Sheep Pen.—Burton Gifford, Pedee, Iowa.—This invention has for its object to economize feed and time in feeding sheep, and to promote their healthy condition.

Hog Pen.—Burton Gifford, Pedee, Iowa.—This invention has for its object to furnish an improved hog pen, so constructed as to prevent the animals from wasting their food, and so as to promote their healthiness and cleanliness.

Dish Washing Machine.—Gilbert Richards, Cummington, Mass.—This invention has for its object to furnish an improved machine, by means of which dishes may be washed quickly and thoroughly.

SMOKING STAND.—John Holmes, New York City.—This invention consists in a smoking stand, which is provided with a reservoir for smoking tobacco, forcigars, for snuff, for chewing tobacco, for matches, and for pipe lighters, and also with a suitable bracket to support a pipe, in such a manner that all the utensils required by smokers or by persons using tobacco are contained in a narrow space, and persons in quest of one of the above-named articles can easily find them, and, furthermore, a stand is obtained which can be manufactured at a reasonable cost, and which forms an ornament for a counter in a public house or for the mantelpiece in private or dwelling houses.

TURNING MACHINE.—Franz Anton Armbruster, New York City.—This invention relates to a turning lathe, which is intended particularly for the manufacture of pipes, but which may also be used for articles of any other description. The tool or tools used in turning are secured to a chuck, which is fastened on the spindle of the lathe, and said spindle is so arranged that an oscillating motion can be imparted to it for the purpose of turning such parts as, for instance, that portion of the bowl of a smoking pipe where the same joins the stem, and where the tool cannot pass clear round. The oscillations of the tool holder can be increased or decreased according to the article to be turned.

Stove.—Samuel S. Utter, New York City.—This invention consists in the arrangement of a secondary archchamber, and a separate plate over the bottom part of the back plate of the fire place of a stove, in such a manner that an additional space is obtained for heating the air before the same is allowed to pass to the main air chamber, and through it to the fire, and, furthermore, by said secondary air chamber, the lower part of the back plate is prevented from burning. It consists further in the arrangement of air channels leading from the back plate of the stove down to the lower part of the back oven plate, in combination with the air chamber in the back plate of the fire place, in such a manner that the vapors rising from the articles to be baked are free to escape, and a supply of hot air is carried to the oven and to the fire, and thereby the process of baking is facilitated, and the gases emanating from the fire are consumed more perfectly than in ordinary gas-consuming stoves.

Machinery for Dressing and Separating Fiber of Plants.—Eduardo Juanes y Patullo, Merida, Mexico.—This invention relates to an improvement in machinery for dressing and separating the fiber of the leaves and stalks of tropical and other plants, such as the banana, cocoa, and the agave Americana.

CONVERTING MOTION.—Augustus Eckert, Trenton, Ohio.—This invention relates to a novel kind of an escapement, which is so constructed that by the action of a weight or spring on suitable gear wheels an oscillating motion can be imparted to a pendulum, and a device is obtained which can be used to advantage for operating a fan, or for imparting motion to a device of a similar nature.

CONDENSER.—J. P. F. Datchy, West Hoboken, N. J.—This invention relates to an improvement in that class of condensers which are based on the application of water or air, separate or together, so as to condense the exhaust steam of an engine, and return the same to the boiler.

PILE FOR MAKING STEEL-HEADED RAILS FOR RAILROADS.—Herbert Davis, Troy, N. Y.—This invention relates to a new and useful improvement in the manufacture of steel-headed rails, or those which are composed of an iron neck or base and a steel head or upper surface. The invention consists in a novel manner of forming the pile from which the rail is rolled, whereby the steel head or upper surface is firmly connected to the lower iron portion, and effectually prevented from separating under the wear and tear to which the rail is subjected by the action of the car wheels upon it.

BEEHIVE.—Orson Colvin, Belvidere, Ill.—This invention relates to a new and improved beehive, and it consists in a peculiar construction of the same, whereby the bees will be protected from dampness and from severe cold in winter, and better provision made than usual for the removal of surplus honey from the hive.

NECK YOKE.—Alonzo Benedict, Janesville, N. Y.—This invention relates to a new and useful improvement in the connection employed between the neck yoke and draft pole. Hitherto leather alone has been employed, and this soon becomes worn and cracked, and is very liable to break or give way. The object of this invention is to obtain, at a small expense, a durable connection, and one which may always be kept in proper order without the aid of a mechanic.

APPLYING OR LAYING PLASTIC ROOFING.—Lorenzo D. Ford, Canaan, N. Y.—This invention relates to a new and improved mode of laying that kind of roofing which is composed of a plastic material spread upon a foundation of paper, cloth, or other flexible material. The invention is more especially designed for the laying of what is termed the plastic slate roofing, and it consists in bending the edges or selvages of the prepared paper or cloth in such a manner that the edges of the same, when applied to the roof, may be connected together by a lock joint, which will effectually prevent leakage.

THRILL COUPLING.—John F. Bridgett, Washington, D. C.—The thrill at the point of its articulation with the clip iron is supported by a set plate whose screw is threaded into the forward extended end of the plate under the axle through which the bolts of the axle clip pass. A packing intervenes between the set plate and the thrill, which latter is prevented from jarring by being passed upward against the bearings.

WINDOW BLIND.—Robert Hutton, Williamsburgh, N. Y.—Patented January 1st, 1866.—This invention relates to window blinds having tenon slats, and it consists principally in a novel manner of connecting the several slats to the operating rod employed for moving the slats.

SPRING BED BOTTOM.—H. H. Palmer, Rockford, Ill.—This invention relates to a new and improved spring bed bottom of that class in which wooden slats are used in connection with wire springs. The object of the invention is to obtain a bed bottom of the class specified which will possess a requisite degree of elasticity and still not be liable to sink or become depressed or lose its elasticity and which will be stronger and more durable than those hitherto constructed on the same plan.

SULKY PLOW.—George Basket and Samuel M. Gaskill, Bluffton, Ohio.—This invention relates to a new and improved plow of that class which are connected to a framemounted on wheels, so that the plowman may ride and drive while manipulating the plow, and which are commonly termed sulky plows. The invention consists in a peculiar construction and arrangement of the parts, whereby the plow may be manipulated with the greatest facility, and a very simple and efficient improvement or device of the class specified obtained.

CORN PLOW.—John Hindmarsh, Ill.—This invention relates to a new and improved plow for cultivating corn and other crops grown in hills or drills, and it consists in a novel manner of applying the plows to the machine whereby the former may be raised and lowered and also moved laterally by the manipulation of a single lever, and the plows thereby placed under the complete control of the driver and made to conform to the sinuosities of the rows of plants. The invention also admitting of the plows being set or adjusted to plow at a greater or less depth as may be desired.

DOUBLE-SHOVEL CULTIVATOR.—Silas M. Whitney, Galesburg, Ill.—This invention relates to a new and improved manner of attaching the shovel standards to the team whereby the standards, and consequently the shovels, may be adjusted higher or lower, or set to work at any required depth and also adjusted in a more or less oblique position as occasion may require. The invention also relates to a gage wheel applied to the rear part of the beam for governing the depth of the penetration of the shovels and admitting of the same being readily guided to the right or left to conform to the sinuosities of the rows of plants.

NEW PUBLICATIONS.

THE SLIDE VALVE PRACTICALLY CONSIDERED. By N. P. Burgh, Engineer. Henry Carey Baird, 406 Walnut street, Philadelphia, Pa.

Mr. Burgh is well known by former volumes on steam and other machinery. He is an English Engineer of note, and although sometimes holding opinions at variance with commonly accepted theories, he generally fortifies his position with the demonstrations of experiments. In this volume all his conclusions are drawn from actual trials, no assumptions, as such, having been ad-

mitted. The treatment of the common, exhaust, relief and equilibrium valves is lucid and plain, easily understood, and illustrated by a number of engravings, sectional and plain. It will be found a useful guide to the engineer and the mechanic.

A NEW GUIDE FOR THE SHEET IRON AND BOILER PLATE ROLLER, containing Tables estimated and collected by C. K. Perkins and J. G. Stowe. Baird, Publisher, 406 Walnut street, Philadelphia, Pa.

This volume is a collection of twenty-five tables, giving the weight and proportions of slabs and piles for producing plates, with the thickness by weight of the product required, in feet, inches and fractions. The tables are printed on only one side of a sheet, and are well arranged for reference.

Answers to Correspondents.

CORRESPONDENTS who expect to receive answers to their letters, must, in all cases, sign their names. We have a right to know those who seek information from us: besides, as sometimes happens, we may prefer to address the correspondent by mail.

SPECIAL NOTE.—This column is designed for the general interest and instruction of our readers, not for gratuitous replies to questions of a purely business or personal nature. We will publish such inquiries, however, when paid for as advertisements at 50 cents a line, under the head of "Business and Personal."

N. M., of N. J.—"Cold short" iron is that sort of wrought iron which although tough when heated, is very brittle when cold. It will resist oxidation better than other kinds of forged iron and is distinguished by a texture consisting of shiny plates when fractured without signs of fibers. "Red short" iron is brittle when cold. It may be distinguished by the cracks and fissures on the outside of the bars. The brittleness in both these kinds of iron is supplied to be caused by the presence of sulphur and phosphorus.

L. P. S., of Pa.—We believe the first paper mill in this country was established at Roxborough near Germantown, Pa., on Paper-mill Run by William Rittenhousen, an ancestor of David Rittenhouse, the eminent American Philosopher. Paper was made here in 1683.

D. A. R., of N. Y.—Sponge may be bleached almost snow white by repetitions of the following process: Soak it in diluted muriatic acid ten or twelve hours, then wash it with water and immerse in a solution of hypo-sulphite of soda to which a small quantity of diluted muriatic acid has been added. Wash and dry it.

E. W. P., of Ind.—13° Cartier are equivalent to 13° Baume. Cartier's hydrometer is used to some extent in France. The formula for converting one scale to the other is: 16C=15B+22.

R. L. S., of Pa.—There are inexhaustible sources of salt in the United States; there is no other country so favored in the quantity. Unfortunately, however, for the present, our best salt mines on account of the expense of transportation, are unavoidable. When Texas and the States on the Pacific coast are netted over with railroads and canals we will carry to market more salt and the substances which depend upon it, than all the rest of the world.

V. R., of O.—Your speculations on a tough and elastic glass we fear are only a dream. Mica and gelatine are fair substitutes for what you are striving for, and there is still a good opportunity for ingenuity in devising new applications of their combined elasticity and transparency.

S. C. B., of Conn.—The combustion of gas in a gas stove is seldom as perfect as from the ordinary gas light burner. As to the amount of heat, therefore, the latter has a slight advantage. The same remark is also applicable to the combustion of petroleum oil.

W. R. S., of Pa.—Carbolic acid is a substance quite like creosote in odor and disinfectant properties, and they have a similar origin. Creosote is obtained from wood tar, and carbolic acid from coal tar. Carbolate of lime is a mixture of carbolic acid and lime.

A. and M., of N. Y.—You will probably find that you can make a suitable covering for your large wooden roller out of the rubber cloth which contains no fiber: the cloth is commonly called hospital sheeting. You would find it a very troublesome business if you attempt to dissolve rubber and spread it on a large surface of wood.

C. H. I., of Pa., enquires how to tan or otherwise preserve bladders so that it will not taint the water of an aquarium if used as a reservoir.

S. P., of Ill.—You will probably succeed in bleaching your ancient engravings by exposing them to air slightly charged with chlorine, or immersing them in chlorine water, or a solution of chloride of soda, Ozone is said to be an admirable bleaching agent, and without doubt may be used successfully for bleaching ancient specimens of printing.

R. B., of N. Y.—Crude or unvulcanized rubber becomes hard and brittle at very low temperatures. Vulcanized rubber is comparatively little affected by changes of temperature, and it preserves its elasticity sufficiently for all ordinary uses. Whether the latter will answer your purpose we can give no opinion until we have more information about the use to which you propose to put it. . . . Goodyear's patents for soft rubber have expired. The patents for hard rubber are still in force and if you use it, you must have the permission of the proprietors of the patents.

R. H. J., of Del.—The best way to preserve green corn is to dry it thoroughly. When kept moist its substance is in a more fermentable condition than that of most other vegetables, and the use of an anti-ferment is impracticable for the reason that it would injure the taste. The acid of fruits and tomatoes is a natural anti-ferment, and consequently they are very easily preserved.

J. A. G., of —.—A very good way for removing the flesh from the skeletons of small animals is to place them near ant hills. The ants very soon eat up the flesh and leave the bones clean. The flesh is also sometimes removed by boiling or by placing the bodies in a stream of running water.

W. F. C., of Ill.—The pressure of water is always proportional to its depth, and is a trifle less than half a pound for each foot. The form of the containing vessel has no effect whatever on the pressure. In the case you suppose of two vertical pipes of an inch in area of section united at the bottom by a horizontal pipe and each of the vertical pipes containing 50 lbs. of water, the pressure on each square inch of the horizontal pipe would be fifty pounds. Did you imagine it would be one hundred pounds?

Business and Personal.

The charge for insertion under this head is 50 cents a line.

A 90 horse-power Turbine wheel wanted; best construction. Address J. H. Watson, Esq., 227 Palace street, Toronto, C. W.

A dynamometer is wanted by Ford & Kimball, Concord, N. H., for measuring the power of shafting.

John S. Tucker, Omaha, Nebraska, Box 254, calls for the best laundry machinery.

B. and C., of Canada, can learn something in regard to pin machines by addressing Hoxie, Bowdoin & Co., Hartford, Conn.

Albert D. Rust, of St. Louis, Mich., wishes to engage parties to make his patent wire clothes line and fastening, patented January 4, 1867. Rights for sale. See advertisement.

O. M. Fletcher, Elmira, N. Y., wishes to communicate with manufacturers or dealers of small wood planers and dovetailing machines.

Dr. Landis, 13th street and Girard avenue, Philadelphia, Pa., wishes the address of parties who will manufacture his Patent "Magnitude Syringe and Organic Bath," on royalty, or become partners. A fortune is certain. Send for "Medical Guide" for its explanation and uses.