

CENTER BOARD.—F. J. McFarland, San Francisco, Cal.—This invention relates to the location of the center boards of boats and sailing craft of all kinds, but is designed more particularly for freight-carrying vessels. It consists simply in employing two center boards and locating the same at the extreme ends of the hull.

MUSICAL INSTRUMENT.—George W. Van Dusen, Williamsburgh, N. Y.—This invention consists in a novel connection and arrangement of levers and valves between the plane of movement of the perforated surface or surfaces, and an alchest or chests, and the keys or levers for opening the valves to the reeds or for operating any other mechanism suitable for producing tones, whereby through such perforated surface or surfaces the mechanism forming the connection between it and the sounding mechanism will be operated through the perforations to produce the sound or note or notes desired, of whatever length such notes or sounds are to be.

COMBINED SEAT AND DESK.—Rev. Allen H. Burn, May's Landing, N. J.—The present invention relates to the combination of a desk or lid with a seat or bench, such lid or desk being hinged to the back of the seat in such a manner as to be raised or lowered at pleasure, and when raised, supported in position by means of supporting bars properly applied thereto.

MACHINE FOR REFITTING CONICAL VALVES.—Charles F. Hall, Brooklyn, N. Y.—This invention relates to a device by which the conical stop valves of gas, steam, and water works may be refitted or repaired when from any cause they are rendered leaky and unfit for use.

GRAIN-BAND CUTTER AND FORK.—E. G. Bulnis, Manchester, Iowa.—This invention has for its object to furnish an improved instrument by means of which the bands of the grain bundles may be cut at the same time that the bundles are pitched to the person who feeds them to the threshing machine, and by the same operation.

PROPELLING VESSELS, ETC.—Robert R. Spedden and Daniel F. Stafford, Astoria, Oregon.—This invention has for its object to furnish an improved means by which the motion of the waves may be used for propelling vessels or working pumps or other machinery.

MAILBAG FASTENER.—S. Denson, Portlandville, N. Y.—This invention has for its object to furnish an improved mailbag fastening by the use of which the mouth of the bag will be closed securely, and which may be operated, in closing and opening the bag, in less time and with less labor, than the fastenings now in use.

KNIFE AND FORK CLEANER.—John Merritt, New York city.—This invention has for its object to furnish an improved machine by means of which knives and forks may be quickly and thoroughly cleaned.

CHURN.—Thomas Bisbing, Buckstown, Penn.—This invention has for its object to furnish an improved churn conveniently and easily operated, and which will do its work quickly and thoroughly.

SAW BUCK.—Henry J. Dill, Cumington, Mass.—This invention relates to the manner in which a stick of firewood, or cord wood, is held fast or secured in the saw buck for the purpose of sawing it into suitable lengths, and it consists in arranging adjustable toothed clamps for holding the stick, which clamps are brought in contact with it by bearing upon a treddle with the foot.

PLATFORM SCALES.—D. Hazard, Milton, Del.—This invention relates to a new and improved method of constructing scales of the platform kind, and it consists in attaching a spiral spring to a spindle, to the top end of which spindle the platform is secured, and to the bottom end of which a rod and index finger is attached, so that when an article, to be weighed, is placed on the platform, the weight of the article will act upon the spring and be indicated by the finger.

WASHING MACHINE.—S. W. Curtiss, Sugar Grove, Pa.—This invention relates to a new and improved method of constructing washing machines, and consists in the arrangement of three fluted revolving rollers in a suitable washing box or vessel.

COMBINED TRY SQUARE AND BEVEL.—Samuel N. Batchelder, Prairie du Chien, Wis.—This invention consists in attaching the blade of a try square to the stock in such a manner that it can be set and fastened at any desired angle by operating a hook slide and set screws.

STEAM ENGINE.—J. F. Troxel, Bloomsdale, Ohio.—This invention relates to a new and improved method of constructing steam engines, whereby the same are greatly increased in power and effectiveness, and consists in operating a number of pistons in one cylinder.

STOVE.—T. W. Wisner, Kowell, Mich.—This invention relates to a new and improved method of constructing those stoves which are used for drying purposes, or for heating water, or steaming vegetables, and for all other purposes of a similar nature, and the invention consists in rendering the stove portable by providing for supporting the same on truck wheels, which allows of its being transported from place to place, as may be required.

FURNACE HOT-AIR BLAST.—Richard Long, Chillicothe, Ohio.—This invention relates to a new and improved method of constructing and arranging the air pipes for heating the air blast for furnaces for smelting and reducing the ores in the manufacture of iron, having particular reference to the materials of which the air pipe is formed, the method of its construction, and also to the materials and method of construction of the supporting walls.

PRINTING POINTERS.—R. W. Macgowan, New York city.—This invention relates to a new and improved application of pointers to printing presses for registering the sheets of paper as they are fed to the press. Hitherto these pointers have been operated automatically, from the running parts of the press, allowed to remain in an elevated or nearly upright position, and through the sheet until the fingers or nippers of the cylinder arrive in proper position to grasp the sheet, at which time the pointers are drawn down and the sheet released, so that it may be connected with the cylinder, and related with the same in order to receive the impression. This improvement consists in applying a spring or an equivalent weight to the pointers, the latter being pivoted at their lower ends, or attached to axes and all constructed and arranged in such a manner that the pointers will hold the sheets properly in position on the feed board, and the nippers of the cylinder allowed to draw the sheet off from the points on account of the latter yielding or being allowed to be drawn down under the slight pull of the sheet, the springs or weights throwing the points back to their original position as soon as the sheet is withdrawn.

CLEANER FOR LAMP CRIMNETS, ETC.—R. B. Musson, Champaign, Ill.—This invention relates to an improved cleaner for lamp chimneys, bottles, and other hollow ware.

SAWYER'S RULE.—Thomas Carter, Louisville, Ky.—This invention relates to an improved sawyer's rule, and consists of a rule on which is a scale showing at a glance the number of boards or planks, of any desired thickness, which can be sawn from a log of any given diameter.

WINDOW SCREEN.—A. W. Griffith, Roxbury, Mass.—This invention relates to an improvement in window screens, and consists in a screen wound round a spring roller at foot of a window, and attached to the bottom of the lower sash so that on opening the window the screen opens with it, admitting the air but excluding insects, and on closing the sash the screen winds up itself.

SHOVEL PLOW, CULTIVATOR, ETC.—P. Atkinson Ross, Harveys, Pa.—This invention has for its object to improve the construction of single and double shovel plows, cultivators, etc., to enable them to be readily adjusted for use upon sidehills or level ground, so that the handles may be secured in nearly a level position, while the plow is held in the best position for doing the work properly.

SKY ROCKETS.—John W. Hadfield, East Williamsburgh, N. Y.—This invention consists in dispensing with the long stick or guide which is now attached to sky rockets in order to insure a straight upward flight of the same in the air, and using instead a plurality of short guides, whereby several important advantages are obtained, to wit: the packing of the rockets in a small space, so as to economize in transportation, the forming of a stand or support for the rocket, so that no fixture of any kind will be required when they are to be fired or "set off," and lastly, the obtaining of an efficient guide to insure the straight flight of the rockets upward in the air.

CATCHING THE OXYDE OF ZINC.—G. C. Hall, Brooklyn, N. Y.—This invention relates to an improved means for catching the oxide of zinc, as it escapes with the fumes and gases from roasting zinc, or zinc ore. Hitherto the oxide of zinc has been caught and retained by forcing the fumes and gases from the

roasting ore into a large bag or receptacle composed of cotton cloth or other porous material, which will admit of the gases and air passing it, but not the oxyde, the latter being retained within the bag, and, by its superior gravity, falling to the bottom thereof and settling in teats or pendant receptacles at the bottom of the bag, from which it is removed from time to time. This invention has for its object the dispensing with the large bag, which is very expensive—the gases from the ore affecting the same so that it rots in a very short time, and soon becomes ruptured under the blows which are given it to cause the oxyde which adheres to the sides of the bag to drop into the teats or receptacles made to receive it. The invention consists in having the fumes and gases from the roasting zinc or zinc ore forced into a close building, provided with openings or apertures, over which screens are placed, constructed in such a manner and of such materials as to admit of the air and gases passing through them, but not the oxyde.

FERRULE.—Archibald Shaw, Philadelphia, Pa.—This invention relates to a new and improved ferrule, for the handles of tools and other implements, and it consists in providing the interior of the ferrule with oblique spurs or projections, disposed or arranged in such a manner as to admit of the ferrule being driven on the handle and at the same time prevent it from casually slipping off therefrom. The object of the invention is to obviate the necessity of tacks or screws being used to secure the ferrule on the handle, as well as the pinching of the same externally to form a burr to sink into the handle to effect the same end.

SUCTION OR VACUUM PUMP AND BLOWER.—John Doyle and Timothy A. Martin, New York City.—This invention consists in arranging valves and air passages with a hollow cylinder or drum, having an oscillating movement, and provided with a chamber or chambers to receive water, mercury or other fluid, whereby an exceedingly simple and compact pump or blower is obtained, one not liable to get out of repair or become deranged by use.

MACHINE FOR REGISTERING NUMBERS FOR ODOMETERS.—Henry F. Hart, New York city.—This invention relates to an improved machine or apparatus for registering numbers applicable to odometers or measurements of quantities of all kinds, such as the numbers of barrels of flour, bushels of grain or any other commodity that requires a tally or record of the quantity packed, stored, weighed, or handled in any manner.

DITCHING MACHINE.—A. H. and P. S. Whitacre, Morrow, Ohio.—This invention relates to an improvement in the construction of a machine for cutting ditches suitable for laying tile for draining lands, or pipe of any kind, and consists in a sled worked by tackle and supporting a frame carrying the machinery, in such manner that the frame can be raised and lowered to cut the ditch to any required depth.

WINDOW SHADE RACK AND PULLEY FASTENING.—Wm. H. Woods, Philadelphia, Pa.—This invention relates to an improvement in constructing a fastening for window shades and consists in a metal rack to be attached vertically as usual to the side of the window frame for holding the cord connected with the shade by means of a lever dog that works in a longitudinal slot in the rack and is engaged and disengaged with the teeth thereof by moving the lever in and out of the slot to be secured in places when engaged by a swivel knob on which is a pulley that covers the cord of the shade.

FENCE POST.—Warren H. Shay, Sylvania, Ohio.—This invention relates to an improved method of constructing fence posts and consists in forming them of plank uprights supported by braces and held together by cross ties and keys.

CLOTHES-WASHING MACHINE.—John D. Swartz, Milton, Pa.—This invention relates to a new and improved clothes-washing machine of that class which are provided with an oscillating rubber and a concave of rollers.

RAILROAD RAILS AND CHAIRS.—John H. Downing, Salem, Mass.—This invention relates to an improvement in railroad rails and chairs, and consists in forming the rails in two parts, to lie side by side, with lap-joints combined with narrow chairs, having single heads placed on each side of the rail to clamp the two parts together at the joints, and fasten them to the ties.

MACHINE FOR STRETCHING CLOTH.—A. C. Corpe, Stafford, Conn.—This invention relates to a new and improved machine for stretching cloth, with a view of rendering the same smooth and unfolding such portion of the selvages which may have been rolled over in the manipulations to which it was subjected after being taken from the loom.

MACHINE FOR SHARPENING SAWS.—E. B. Rich, South Boston, Mass.—This invention relates to a machine for the sharpening of saw blades, whether straight or circular, and consists in the combination of a revolving or rotating grinding wheel, made of any suitable material, and a holder for the saw-blade, so arranged together that as the grinding wheel revolves the saw will be presented to the same, or the wheel to the saw-blade, in such a manner as to produce the desired sharpening of the teeth, in regular order and succession.

DOOR SPRING.—Rudolph Schrader, Indianapolis, Ind.—The present invention relates to a spring for doors, that being properly connected with the door will operate to close, whether when opened it swings inside or outside through the casing to the door, the spring being especially applicable to doors hung to swing through their casing, or inside and outside.

PORTABLE DERRICK.—D. J. McDonald, Gold Hill, Nevada.—This invention relates to a new and improved derrick, and it consists in a novel construction and arrangement of parts, whereby the device may be readily drawn from place to place, the crane or derrick frame adjusted in any desired position within the scope of its movement, friction avoided, and the whole apparatus manipulated with the greatest facility.

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."

All reference to back numbers should be by volume and page.

J. F. McK., of Md.—"What kind of silk is used for balloons, what is the varnish which covers them, and what amount of common illuminating gas will support one pound weight?" Silk for large balloons is now rarely used, stout cotton cloth being substituted. Ordinary boiled linseed oil makes a good varnish. Any elastic varnish will do, however. The specific gravity of ordinary illuminating gas ranges from 0.540 to 0.700, air being 1.000. Its weight may be called one-thirty-second of a pound to the cubic foot and atmospheric air about three-fourths of a pound.

R. B. C., of Pa., says: "Here is a proposition in geometry which I would like to see demonstrated theoretically by one of your correspondents. The side of a regular heptagon is equal to half the side of an equilateral triangle inscribed in the same circle. The mechanical construction is very simple and will be found useful. I discovered it some years ago, and am not aware of its ever having been in print."

F. H., of Mich., asks "if sal-soda will scale a boiler?" H. N. Winans, 11 Wall street, N. Y., replies that in some waters it is partially effective; but at the expense of the boiler, with a certainty of foaming and corrosion. The most reliable and positively uninjurious remedy for incrustations is his anti-incrustation powder—in successful use for 12 years past.

T., of R. I., speaks of the famous mechanical horse shown at the Paris Exposition which is said to have accomplished 1 with its rider a little over an English mile in fifty seconds, and asks what is the motive power. As it is said that the French Government took possession of the machine and preserves its mechanical construction a secret, we know no more about it than about the much vaunted Napoleon cannon.

S. S., of N. Y.—"Please give the ingredients of the composition used for tipping matches" Different manufacturers employ different materials and in varying proportions; the mixture of phosphorus melted and stirred up with this zinc is sufficient, although some add a quantity of powdered glass, niter, chlorate of potash, sulphur, etc. The phosphorus, however, is the light-producing material.

R. S. B., of N. Y., alluding to the inquiry of S. W. P., in No. 28, for a water-proof paste: "Calico printers when they wish to leave white figures on a dark ground use what they term a 'resist paste' to cover such places as are designed to be unaffected by the dye. If the ingredients of this paste were known it might be what S. W. P., desires." This "resist paste" is 1 lb. of binacetate of copper (distilled verdigris), 3 lbs. sulphate of copper dissolved in 1 gal. water. This solution to be thickened with 2 lbs. gum senegal, 1 lb. British gum and 4 lbs. pipe clay; adding afterward, 2 oz. nitrate of copper as a deliquescent.

M. A. H., of Vt.—"I have a surplus of water power and desire to know the probable cost of the apparatus for producing the electric light, with a view of employing my surplus power in that direction." A serviceable magneto-electrical machine for giving light is quite expensive.

Business and Personal.

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

Parties in want of Fine Tools or Machinists' Supplies send for price list to Goodnow & Wightman, 28 Cornhill, Boston, Mass.

Pattern Letters and Figures for inventors, etc., to put on patterns for castings, are made by Knight Brothers, Seneca Falls, N. Y.

Allen & Needles, 41 South Water street, Philadelphia, Manufacturers of Allen's Patent Anti-Lamina, for removing and preventing Scale in steam boilers.

All Parties having any article to sell through an agent, address, with circular, etc., Box 499 Oil City, Pa.

Manufacturers of Tag Holders will please send address to Box 1019, St. Paul, Minn.

Manufacturers of Presses for making Castor Oil, address or send circular to F. M. Peck, P. O. Box 150, Montgomery, Ala.

Manufacturers of Cotton-Spinning and Knitting Machinery send circular and price list to W. L. Jones, Holly Springs, N. C.

Dr. W. Spillman, Marion Station, Miss., wishes to correspond with manufacturers of buckshot or bullets, either conical or spherical.

Toy Makers—One-half of Patent Right of Toy Wind Wheel given away! Address Dr. W. H. Benson, Norfolk, Va.

Milton Darling, East Macdonough, Chenango Co., N. Y., wishes the address of those that want broom handles for the year 1868.

A. B. Woodbury, Winchester, N. H., wants to sell two valuable patents—Jack-Spinning Improvements.

E. C. Tainter, Worcester, Mass., wants to sell a good set of Sash and Door Machinery, used only six months.

Parties desiring any of their new ideas put into practical form, or wanting any new apparatus invented for manufacturing purposes, etc., address, with confidence, A. E. W., Inventor and Draftsman, 114 Fulton street, N. Y. References given.

MANUFACTURING, MINING, AND RAILROAD ITEMS.

For the benefit of the Union Pacific railroad, the base of the Rocky Mountains has been fixed at the base of the Black Hills, a distance of 6-677 miles west of Cheyenne, and according to the railway surveys 525-078 miles from Omaha.

The Pittsburg, Fort Wayne and Chicago railway have just re-built in the most permanent manner an iron bridge over the Allegheny river, to replace the old wooden Howe truss bridge, which had become inadequate to the increasing traffic. The new bridge opens like a fan towards the freight yard at Pittsburg being at the narrowest part, next to the main span 55 feet wide. The river is crossed with spans averaging 153 1/4 feet in the clear, with a bearing of 17 feet on each pier. The principle of the construction is known as the lattice girder plan, with vertical stiffening. The work was executed under the superintendence of its designer, the engineer and architect of the company Felician Stataper.

The production of precious metals in the United States from 1819 to 1867 inclusive, has amounted in value to \$1,174,000,000.

The president of one of the New Jersey railroads proposes a plan to avoid the danger to life and limb from the series of trains that run into and out of Jersey city. The new project is to elevate the present tracks fifteen feet above the streets, and by safe machinery to lower at once an entire train in the depot at the river.

A mining company at Newton, Nev., are making preparations to work their claims by means of a steam engine which will be used to throw a stream of water instead of the ordinary hydraulic pressure. They estimate that with a ten or twelve horse power engine, then can throw 100 inches of water with a force equal to at least 150 feet fall. The result of this experiment is looked upon with a good deal of interest, as there is a vast amount of good hydraulic ground in the adjoining countries, which, as in this case, can not be worked by the ordinary process for want of water fall, but which, if the expedient in this case proves successful, will soon be worked by steam engines.

By an oversight in the article on the trans-continental railroad, published in our last issue, the Western or California section of the road was styled the Union Pacific, instead of the Central railroad. In the race to reach Salt Lake the California company have 400 miles more to build, while the Union company have only 323 miles. But the country to be traversed by the former is comparatively level, and favorable for winter work, while that on the other side crosses four distinct mountain ranges, and winter storms must interrupt work for several months in the year.

PATENT OFFICE DECISIONS ON APPEAL.

USEFUL COMPOUNDS ARE PATENTABLE—THE APPLICANT NOT REQUIRED TO PROVE THE FUNCTION OF EACH INGREDIENT.

S. H. Hodges for the Board of Examiners in Chief.

Application of *Reo* for a Patent for Preventing and Curing *Syphilis*.—The applicant's specific is composed of a number of medical articles, the nature of which is not important upon the present occasion, and it is unnecessary to enumerate them. But it is objected that "a medical prescription" "should contain some recognition of the medicinal properties of the several ingredients" and the part they perform in the compound: "or, as it is elsewhere expressed, such a mixture should not receive the sanction of this department 'unless perhaps a satisfactory rationale should be given for the use of each of the ingredients in the proportions named.' " If the medical faculty were always satisfied themselves as to the operation of the various remedies they employ, there might be more reason in the objection. But it is well known that different schools disagree widely on this subject, and there are remedies employed with success the effect of which the most intelligent are unable to account for. So long as there is a single one of this character to be found, and while the operations of the vital functions are so concealed from us that we are unable fully to comprehend the process by which any specific operates, so long it is impossible to prescribe as a condition of patentability, a full explanation of the mode in which any one acts that is brought forward. It would be still less justifiable to require such an explanation as would content any particular class of medical men. Every year new therapeutics are introduced into practice, and not unfrequently some whose beneficial results are not understood. And as long as one such may be found, it is not just to make it a condition of its being protected by a patent, that the discoverer should bring the scientific world to agree with him in his theory respecting it, nor even that he should have one "The man who stumbles upon a new and useful article is just as much entitled to the exclusive use of it as if he had elaborated it by the most profound and painful study. It is true that there is danger upon this principle of commencing mere nostrums, and giving them undue prestige. This can only be guarded against by the exercise of great caution, and requiring convincing proof of utility. Such has been furnished in this case, in abundance. The applicant cannot be rejected except upon such grounds as would insure the rejection of nearly all medicine whatsoever. Nor is the Office responsible for the false importance which the public may attach to its proceedings, so long as they are confined to its legitimate province. It duties certainly must not be neglected, and meritorious petitions refused, in order to obviate such misapprehensions. The objection of the Primary Examiner is reversed.