

**WASHING MACHINE.**—Adolph F. Kuhlman, Dubuque, Iowa.—This invention has for its object to improve the construction of the washing machine patented by the same inventor, August, 7, 1866, and numbered 56,955, so as to make it simpler in construction and more effective in operation.

**MACHINE FOR CUTTING BERRY BOXES.**—Charles Colby, South Pass, Ill.—This invention relates to a new and improved machine for cutting wooden strips for the manufacture of berry boxes. The invention consists of a reciprocating frame placed between suitable guides and provided with a knife for cutting the strips from the bolt and with an adjustable bed containing slitting or grooving cutters, and also provided with supports underneath for sustaining the strips while being cut from the bolt; all being so arranged that the desired work may be performed in a rapid and perfect manner.

**TRACE BUCKLE.**—R. J. Baker, Madison County, Wis.—This invention relates to an improvement in trace buckles, and consists in a double tongue, hung upon a central crankshaft which drops the two tongues at the same time, vertically into two holes in the trace for holding it fast, and lifts out of the holes at the same time to allow the trace to be adjusted or withdrawn from the buckle.

**PUMP.**—N. H. Sebby, Charleston, S. C.—This invention relates to the hanging of the wheel and its arrangement or attachment, within the casing of the pump.

**MEDICAL COMPOUND.**—O. W. Blanchard, Delavan, Wis.—This is a medical compound especially intended for the cure of consumption.

**PAD BREAK AND CRIMP.**—Hiram H. Beers, Toulon, Ill.—This invention relates to a self-adjusting pad break or crimp, for pad trees employed in the manufacture of harnesses.

**GRATER.**—Henry Stone, Williamsburgh, N. Y.—This grater is intended more particularly for grating stove blacking or polish, which is manufactured in solid lumps or cakes.

**GASOLINE HEATING APPARATUS.**—Jacob D. Spang, Dayton, Ohio. Patented August 27, 1867.—In this invention a new form of gasoline burner is used and a new device is employed for utilizing the heat of such burners and concentrating it upon particular points where the apparatus to be heated is situated.

**GRUB AND STUMP PULLER.**—Isaac H. Palmer, Lodi, Wis.—This invention relates to a new and improved machine for pulling grubs and stumps from the ground and consists in producing a powerful leverage by means of pivoted standards supported upon wheels the lower ends adjusted by means of suitable chains near together or further apart and whereby their upper ends are elevated or depressed.

**AMALGAMATOR.**—George B. Field, New York City.—In this invention the pulverizing roller has a backward and forward motion through the segment of a circle in an amalgam chamber of the proper form. The amalgam chambers, settling chambers, rollers and agitators, are so constructed and arranged that they will occupy a less space than in any amalgamator now in use. All the parts except the rollers and bottom of the amalgam chambers may be made of wood at a trifling expense, and the rollers and bottoms of the chambers may be made of stone or metal.

**ROLL FOR ROLLING STEEL-PAVED RAILS.**—Samuel S. Potter, Wyandotte, Mich.—The peculiarity of this invention consists in means for making the steel occupy the upper surface and sides of the head of the completed rail as also sufficient of a core to give it stamina. The means employed for this purpose are rolls with peculiar grooves by which a portion of the iron is crowded or pressed back giving the steel a certain prominence or projection from the yet imperfect head or upper surface of the rail or that surface which will eventually occupy that position. The rail is passed through between the rolls in the succession of openings formed by their counterpart grooves. It is modified by each transit and up to a certain point the process does not differ from that in common use.

**NURSERY LOUNGE.**—S. Buttenheim, New York City.—This invention relates to a lounge, in which everything, almost, is contained which pertains to the comfort of a nursery. Within it are arranged a bureau, a writing desk with shelves, a folding table, an easy chair, and a night chair, of which either can be used at a time, or more at once, as may be desired. All these devices can be concealed, so that only a common lounge will be visible.

**WASH-BOARD.**—Lucien de Golia, Batchellerville, N. Y.—This invention relates to a new wash-board, which is provided with two corrugated surfaces, the one being formed in wood, the other in zinc. The object of the invention is to make one board answer all requirements, all kinds of garments to be washed, and so all notions as to the best kind of wash-boards; so if there are two parties in a house differing in opinion as to whether the metal or wood-wash-board is the best, this invention will satisfy both.

**MATCHES.**—Emory Andrews and Wm. Tucker, Fiskdale, Mass.—The object of this invention is to dip the matches before cutting. In order to effect this purpose, cards are prepared equal in width to the length of the matches to be produced, and of any desirable length. One edge of each of these cards is scolloped or notched so as to form a series of points or teeth, which can be dipped in the sulphur vat, in the explosive compound, and after the cards have thus been dipped, they are exposed to the action of suitable cutters, and the matches are ready for use.

**WRENCH.**—Theodore D. Christopher, Madison, Indiana.—This invention consists in combining a screw and ratchet wrench in such a manner that while the jaw is firmly held by a catch bar working in the ratchet, the jaw can be adjusted with the greatest nicety by the screw and nut.

**REFRIGERATOR.**—Anthony B. Sweetland, Fitchburg, Mass.—This invention consists in constructing the same with revolving shelves and in providing for the admission and discharge of air in a peculiar manner and in the general construction and combination of parts.

**WATER CLOSET RECEIVER.**—W. Smith, San Francisco, Cal.—This invention consists in constructing the receiver in two pieces and bolting them together whereby I am able to do away with the wastepipe behind the pan and to save much expense in carting.

**GRIDDLE.**—Edwin A. Jeffery, Trappe, Maryland.—This invention relates to a new and improved method of constructing griddles for baking cakes, and it consists in making the griddle in two separate parts one of which parts is reversible and the other stationary.

**RINGS FOR RING SPINNING.**—Henry G. Hall, Fayetteville, N. C.—This invention relates to an improvement in the construction of rings for ring spinning whereby the inside ring may be exactly adjusted or centered so that the spindle shall run perfectly true.

**DEVICE FOR CATCHING ANIMALS.**—W. L. Hopper, Monmouth, Ill.—The object of this invention is catching hogs and other domestic animals by a device that catches one leg and holds it fast.

**COUPLING JOINT FOR THE PITMAN AND SICKLE BAR.**—Wm. J. Keeney, Norwalk Co., Ohio.—This invention consists in coupling the pitman to the sickle bar of a reaping machine with an adjustable knuckle joint formed by a movable box fitted against the end of the sickle bar, so that it can work freely and accurately while compensation for wear is fully provided for.

**COTTON-BALE TIE.**—S. J. Mitchell, St. Louis, Mo.—This invention relates to an improved construction of a fastening for the ends of iron hoops to secure them to a cotton or other bale.

**LIFTING JACK.**—J. N. Parker, Darlington, Wis.—This invention relates to a new and useful improvement in the construction of a jack for lifting the axles of wagons.

**SWINGLETREE.**—Martin Ryerson, Huntsville Co., Ala.—This invention relates to an improvement in swingletrees or doubletrees for wagons.

**SWIVEL SHIP FENDER.**—William Sniffin, Sing Sing, N. Y.—The object of this improvement is to provide a fender for vessels which shall have a rotary motion, by means of swivels or rollers at the end or ends, to which the rope for suspending it is attached.

**WAGON JACK.**—J. M. Spittler, Clinton, Kansas.—This invention relates to an improved wagon jack.

**SMOOTHING IRON.**—John Fraser, Dowagiac, Mich.—This invention relates to an improved smoothing iron and consists in having the smoothing surface of copper attached to the body of the iron by rivets cast with the copper plate.

**MACHINE FOR CLEANING BRASS TURNINGS AND FILINGS.**—Julius Jonson, Baltimore, Md.—This machine was tested by a Board of Engineers at the Washington Navy Yard, August 3, 1867, and the following is an extract from the report made to the Chief of the Bureau of Steam Engineering.

"The machine is strictly correct in principle and very simple in its construction occupying but little space and functioning at a very small cost, about ten cents per diem. The patentee has ingeniously fitted a series of 'electro magnets' in a revolving cylinder, and so arranged the stops as to break the currents and discharge the particles of iron in one box while the brass is received into another, these performing the duty for which the machine was intended, viz.: to separate the iron from the brass trimmings."

**WASHING MACHINE.**—Dr. E. Beckwith, South Pass, Ill.—This invention relates to a new washing machine which is adapted for washing coarse as well as fine articles in a very effectual and satisfactory manner. The machine is particularly intended to wash the articles when the same are rolled into a cylindrical form and is made in shape of a cylindrical shell within which a roller is eccentrically arranged so that between the corrugated surfaces of the shell and roller the articles to be washed are thoroughly rolled and pressed.

**SADIRON.**—James Gray, Newark, N. J.—This invention relates to a new manner of securing a solid sadiron to a shield formed on the loose ends of the handle supports so that the handle is always kept cool and so that it can be easily taken off the iron and attached to the same for the purpose of making one handle available for many irons.

**BRANDING BARRELS.**—George St. George, New York City.—The object of this invention is to prevent fraud being practiced against the government by liquor dealers in the way of refilling whisky barrels which have not had the old brand marks thoroughly erased or cut out. These empty branded whisky barrels are purchased by distillers and wholesale liquor dealers from retail or small dealers and refilled and sold as legitimately branded whisky. The fault lies with the inspectors, who in many cases do not thoroughly erase the old brand marks, the operation being rapidly performed and the facility for cutting out the marks not being very good. This invention is designed to obviate this difficulty, and it consists in having one of the heads or other part of the barrel constructed with raised or prominent surfaces, formed by grooves or otherwise, on which surfaces the brand is made or cut, and which raised surfaces may be readily chipped off when it is desired to remove the brand mark.

**COMPOUND.**—J. F. McCafferty, Forest, Ohio.—This compound is intended to be used in beehives to free them from moths and so retain them, without the least danger of injury to the bees.

**STRAW CUTTING MACHINE.**—Wm. Schreck, Des Moines, Iowa.—This invention relates to an improvement in the construction of machines for cutting straw, hay, etc., for feed for animals.

**MASH AND BEER COOLER.**—Charles Schenck, Mannheim, Baden, Germany.—This invention relates to a new apparatus for cooling mash, beer, and other liquids, in which the liquid is poured upon a revolving disk, from which it is thrown by centrifugal power against the inside of a cylinder which revolves in a direction opposite to that in which the disk is rotated. The liquid thrown from the disk is spread and is deposited upon the inner wall of the cylinder in a thin sheet and flows down in a spiral ring along the cylinder. A current of cool air is, by a fan, which is arranged in the cylinder and which revolves with the disk, thrown against the liquid as the same flows down in the cylinder, and rapidly cools the same.

**CLOTHES PIN.**—H. T. Bootell, Springfield, Vt.—This invention relates to a new and improved clothes pin of simple and economical construction which admits of being readily adjusted to the line so as to secure the clothes thereon, and effectually prevent the same being casually detached from the line.

**SEWING MACHINE.**—W. S. Hill, Manchester, N. H.—This invention relates to certain improvements in the single thread or chain stitch sewing machine, and it consists in a novel feed mechanism, the mode of operating the looper and a general arrangement of parts, whereby a very simple and sufficient machine of the kind specified is obtained.

**RIDING ATTACHMENT FOR HARROWS.**—James M. Freeman, Belleville, N. Y.—This invention relates to a new and improved riding attachment for harrows, whereby the driver, instead of walking behind or by the side of the harrow, may ride on a convenient seat and have much better control over the team and implement than heretofore.

**BALING PRESS.**—J. H. Godwin, Scotland Neck, N. C.—This invention relates to a new and improved press for compressing articles or substances into a small compass for baling. The invention consists in a novel construction and arrangement of the parts composing the press, whereby several advantages are obtained.

**DEVICE FOR ELEVATING ICE.**—Henry Little, Middletown, N. Y.—This invention relates to a new and improved device for elevating ice from the river, pond, or lake where it is cut, into the ice house contiguous thereto, and is an improvement on a device for the same purpose for which letters patent were granted to this inventor, bearing date of May 21st, 1867. The present improvement consists in the application of a curved platform to the lower end of the screw elevator, and in the employment or use of a sectional raising and falling bearing to the lower part of the frame of the device, whereby the adjusting or placing of the cut or floating ice on the screen is greatly facilitated.

**MACHINE FOR FILLING RUTS AND LEVELING ROADS.**—John W. Minor and David P. Ward, New Bedford, Mass.—This invention consists in attaching to a suitable frame a pair of conifers or shares, and a pair of scrapers, and a heavy roller, whereby the ridges in the road are cut up and the earth loosened and scraped with the rut by the scrapers, and the earth is rolled down level by the heavy roller.

**BELLS.**—Andrew Jusburg, Galva, Ill.—This invention consists in constructing the bells of a metallic composition hereinafter named and so forming the bells that there shall be different tones or sounds from bells of the same size and weight although formed of the same metal.

**BED SPRING.**—George B. Markham, Plymouth, Mich.—This invention relates to an improved bed spring and consists of several wires having one end of each formed into a loop or eye, each wire is then passed through a spiral spring and the straight end of each passed through the loop in the other. The straight end is then curved round into an eye to receive the loop attached to the slats.

**SHEEP RACK.**—J. S. Beals, Alabama Center, N. Y.—This invention consists in such an arrangement of the feed board and the board which is hinged thereto, that with a small amount of boards, and with a simple construction of the parts, the same and better results can be obtained, than with other sheep racks now in use.

**PLOW.**—J. S. Beals, Alabama Center, N. Y.—This invention consists in the construction of a supplemental share, and in the manner of securing the same to the standard, and in securing the colter to the lower end of the same standard on which the supplementary share is arranged.

**APPARATUS FOR CARBURETING AIR, GAS, ETC.**—George H. Peacock, Fairport, N. Y.—In this apparatus there is so combined and connected with a supply tank or reservoir for the liquid hydro-carbons, another vessel, into and through which the air or gas, etc., to be carburated, is passed, that the liquid within the air vessel can be always kept at a uniform and even or given height, or nearly so, whereby the air, etc., forced or passed into the same, from time to time, whether the apparatus has been running for a longer or shorter time, is always subjected to an equal or corresponding amount of the liquid hydro-carbons, thus producing a gas of uniform density and richness at all times.

**BARREL, KEG, ETC.**—Christopher S. Provost, New York City.—This invention relates to a barrel, keg, or cask, which is divided into two or more compartments by one or more partitions. The object of this invention is to arrange barrels for holding beer, cider, and other liquids, in such a manner that the said liquids may be kept free from the injurious influences of the air, as long as they are in the barrel.

**PAINT CAN, ETC.**—George W. Bennett, Brooklyn, N. Y.—This invention has for its object to furnish an improvement in the construction of cans for holding paint, and for other purposes, by means of which the can in which the paint or other substance is packed for storage or transportation, becomes a vessel from which it may be conveniently used.

**FOLDING-DOOR BUTT.**—B. F. Barker, San Francisco, Cal.—This invention consists in forming a butt in such a manner that it shall be a three-leaf hinge, folding together from a single butt, working alternately as the door swings back and forth from the center.

**DUST BRUSH.**—Ellis Thayer, Worcester, Mass.—This invention relates to a dust brush in which the bristles or hair are secured to a block, which is reversible on the holder, so that both ends of the brush may be used, and so that the brush need not be useless because one end is used up, while the other is still good.

**PLOW.**—L. L. Sloss, South Union, Ky.—This invention has for its object to furnish an improved means, simple, durable, and effective, for connecting or coupling shovel or other plows together for convenience in seeding small grain, and in cultivating corn, cotton, etc.

**COTTON SCRAPER.**—T. T. Fleming, Memphis, Tenn.—This invention relates to a new and improved implement for cultivating cotton, scraping the earth from the standing or growing plants, and it consists in constructing the scraper in such a manner that the blade or share is prevented from penetrating too deep into the earth, and also prevented from sliding laterally out of its proper course.

**FENCE.**—Benjamin Force, Mount Pleasant, Iowa.—This invention relates to a new and improved fence of that class which are commonly termed "portable," and are designed to be readily put up and taken down. The object of the invention is to obtain a simple, strong, and durable fence of the class specified, one which will be better braced than hitherto, and which will admit of being properly supported without having its stakes sunk into the ground.

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.

**A. T., of Kansas,** lives at a place 1,800 feet above the ocean level. He says: "We are setting a steam mill on a bank 31 feet above low water and 100 feet from the stream. We purpose setting the suction pump at the mill 8 feet below the surface of the ground which gives it 23 feet to suck the water and 8 feet to lift it to the heater. Will this plan work?" The plan will not work. You gain nothing by setting the pump 8 feet below the surface; you do not in that way lessen the force required to raise the water to the top of the bank 31 feet. We see no escape out of your difficulty but cutting a deep trench over the bank or setting a pumping apparatus at the water. A simple suction pump cannot be depended upon to raise water 31 feet even at the sea level.

**E. M., of Tenn.**—No solvent of plumbago is known, but you may make a very intimate mixture of it, with minerals substances and viscid liquids. Plumbago is one of the most durable substances known.

**S. T. N.**—Cotton seed oil is manufactured on a large scale in New Orleans, and is used for lubricating and for soap. . . . Platinum may be deposited on copper without much difficulty by the battery, but the deposited metal is not so dense, nor is it so little affected by corrosive substances as the hammered metal.

**A. F., of Va.**—Kaolin is simply a very pure species of clay, silicate of alumina. The purest natural silica or silicic acid, is crystallized quartz, but white sand is sometimes found nearly as pure. Kaolin and silica are used for porcelain and pottery, and silica, white sand, in addition, is in demand for glass making. The market for these articles is now pretty well supplied, but there is always room for superior qualities, and in the due progress of manufacture all the good beds of kaolin and sand in the country will be called for.

**L. H. P., of Ill.**—"What will be the power exerted in each hand while drawing out a spring balance, when it indicates 25 lbs., pulling horizontally, one hand on each end of the scale? Will the resistance be 50 lbs. or 25 lbs., with each hand or, 25 lbs. and 12½ respectively or other wise?" The resistance on each hand will be 25 lbs. This is a new form of an old question.

**L. and C., of Ind.**—Soldier is never directly used to unite a metal with glass; glass and metallic solders are incompatible. A metallic brilliance is often given to buttons and other small articles of glass by attaching to the back a bright metallic foil. The internal surface of glass ornaments are also sometimes silvered by a fusible amalgam.

**S. N., of N. Y.**—The black varnish liquid blacking for boots is not to be recommended. When the blacking becomes dull, it is difficult to remove the hard resinous matter from the leather.

**J. C. T., of Ark.**—It has often been proposed to carry up, with a balloon, hydrogen condensed in a metallic vessel, and to use the hydrogen as a reserve to keep the balloon inflated. But the idea seems impracticable; the weight of the vessel would more than counterbalance the ascensive power of any gas that it could contain.

**W. B., of C. W.**—The spent acid of the oil refineries is mostly used here for preparing super-phosphate or other manures. The acid does not bear much transportation, and should be used up where it is produced.

**R. G. of Conn.**—Sea sand is not a special and peculiar mineral formation, but is simply a finer sort of gravel. All the particles of sand and gravel were once undistinguishable parts of the solid rock. The variation of currents, etc., account for the deposition of such materials according to fineness in different localities.

**S. C., of O.**—We think you are mistaken. There is no alloy of lead and tin which has a higher melting point than lead. . . . The ores of mercury which are worked are always solid.

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