

ENGINEERING INVENTIONS.

Mr. Frederick H. Rudd, of Hebron, Neb., has patented a self-acting contrivance for lifting the car coupling pin to allow the link to enter the drawhead and dropping it into the link after it has entered; also an improved arrangement for setting the pin so as not to couple when desired.

Mr. James Clement, of Grand Forks, Dakota Ter., has patented an improved elevator or carrier, for raising the earth from the plow by which it is dug in the ditch up to the chute by which it is discharged upon the bank at the side of the ditch, the object being to contrive an endless carrier that will not be clogged by the earth, but will keep free and run easily.

Mr. Leffert L. Buck, of New York city, has patented a machine which may be adapted to be used as a pump, a water motor, or a water meter. The invention consists in the combination of a screw of peculiar form with a wheel whose wings work in the threads of the screw, all of the working parts being inclosed in a metallic casing having suitable induction and ejection orifices for the reception and discharge of the water or other liquid.

Messrs. Thomas A. Cullinan and Augustus W. Baldwin, of Junction City, Kan., have patented a car coupling constructed with a drawhead, a hinged coupling pin, a hinged cross pin having a crank arm upon its end, a chain attached to the crank arm, a rod having crank arms for raising the coupling pin and locking it when raised, a guard to protect the hinged cross pin, and a cap plate to prevent rain and sleet from entering the drawhead.

An improved tie bar for railroad rails has been patented by Mr. E. Daniel Samain, of Pierceville, Kan. The invention consists in a bar having its ends bent over the outer edges of the bases of the rails, combined with a plate attached to the under side of the bar, and provided with upwardly inclined prongs or clips overlapping the inner edges of the bases of the rails, whereby the rails will be held firmly on the bar. The plate is held on the bar by means of a bolt in such a manner that the upper surfaces of the prongs or clips rest against beveled shoulders on the bar a short distance from the inner edges of the rails.

MECHANICAL INVENTIONS.

An improved combined cotton press and gin power has been patented by Mr. Edward Franklin, of Thomasville, Ga. This invention consists of attachments to a horse power cotton press, whereby the same power may also be utilized for driving the gin and other machinery.

Mr. Isaac F. Bissell, of Brooklyn, N. Y., has patented an improved car axle box consisting in a follower for applying lubricants to journals, made in two parts, hinged together at their adjacent edges, and provided with a fastening and separate springs, whereby the follower can be inserted in a journal box while the journal is in place.

An improved peg cutter has been patented by Mr. William R. Stringfield, of Pineville, Mo. The improvement consists in the construction of parts for attaching the peg cutter proper to a carrier or plate, for securing the cutter at any required angle, and for limiting the vertical movement of the bar to which the cutter is attached.

An improved carpenter's square has been patented by Mr. W. H. Callihan, of Galveston, Texas. The square is intended to be plated with nickel or similar metal; and the invention has for its object such construction of the square that the plated surfaces will be protected from wear, and the square made stronger and better than those in common use.

An improved straw conveyer belt has been patented by Mr. Alton J. Park, Jr., of Virginia, Mo. The invention consists in the combination, with a conveyer belt and the cross slats, of strips of leather secured on the belt in advance of the slats at the ends and overlapping the slats for preventing straw from passing between the slats and the belt.

An improved lock strike has been patented by Mr. James Hoover, of Gratis, O. This invention consists in a novel arrangement of a box or keeper, and a spring lever. This invention lessens the friction of the latch bolt in closing a door, as the bolt is not forced back, as in the old style of keepers. This improvement is adapted for use with ordinary door locks.

An improved machine for bending lock plates has been patented by Messrs. Thomas Donahue and William W. Cone, of Terryville, Conn. The object of this invention is to produce lock plates and caps more accurately and more cheaply than has heretofore been done. It relates particularly to feed devices which are combined with such machines for automatically feeding the plates. The feed devices consist of a funnel in which the plates are stacked and a reciprocating feeder that carries the plates one by one to the bending die. The punch and die are constructed to bend the plates and cut the pin and cheek holes at the same time, and the finished plate is displaced by the next one brought beneath the dies.

AGRICULTURAL INVENTIONS.

An improved garden tool has been patented by Mr. Joseph J. Swain, of Montevallo, Ala. This invention consists of an improved contrivance of the handle socket and the shank of a hoe or other tool for a ready and simple means of detachably connecting them together, so that one handle may serve for a whole set of hoes, weedeers, rakes, and other forms of hand tools employed in garden work.

Mr. Seth Bottomley, of Nashville Center, Minn., has patented an automatic straw stacker having an upright shaft journaled in an extension of a separator top, and having hinged to its lower end a frame provided with pulleys carrying endless toothed belts. The upright swivelled shaft has a ratchet wheel attached to it, and is operated by a double pawl placed upon a vibrating lever, and is reversed by pins attached adjustably to the ratchet wheel. The toothed belts of the stacker are driven by gear wheels and pulleys and bands from the driving mechanism of the separator.

An improvement in churns has been patented by Mr. James Reesman, of Agency, Ia. This invention is based on the discovery that cream may be rapidly converted into butter by causing it to be forced through and discharged from suitable pipes or passages arranged in the churn. In carrying this invention into effect a double acting force pump is provided, which forces the cream from the main body of the churn through the piston wells of the pump, thence through suitable passages and pipes which discharge the cream back into the body of the churn, the circulation of the cream being thus made continuous and caused to pass through the pipes or passages over and over again.

MISCELLANEOUS INVENTIONS.

Mr. Wilhelm Reissig, of Darmstadt, Germany, has patented an improved printing ink consisting of black or dioxide of manganese and linseed oil varnish.

Mr. Joseph W. Congdon, of Paterson, N. J., has patented a garment that may be worn either as an outer or an inner garment and as a shirt, frock, coat, jacket, blouse, or a waistcoat, as occasion may require.

Mr. William K. Rairigh, of St. Petersburg, Pa., has patented an improved trace hook. The hook is cast with the recess filled with rubber packing, by which the hook is made noiseless.

Mr. Benjamin Wilson, of Keyport, N. J., has patented a composition for polishing metals, consisting of potter's clay, four pounds; soot from hard coal, two pounds; oxide of iron, one pound; chalk, one pound.

Mr. Henry D. Merrill, of Springfield, Ill., has patented a fence for low lands liable to be submerged by high water, so constructed that it will swing down in either direction when struck by rubbish floating upon the water, and will again rise into an upright position when the rubbish has passed.

Mr. Charles E. Seabury, of Stony Brook, N. Y., has patented a fire escape constructed with a shaft, a flexible ladder connected with the shaft, guy ropes connected with the flexible ladder by brace ropes to steady the ladder, and a hauling rope for drawing out the ladder.

Mr. Charles S. Barnard, of New York city, has patented an improved draw handle which consists of a spun or sheet metal cap for receiving the ends of the ring or pull, into which cap a stem or pin is placed, and is secured therein by pouring molten metal into the cap.

Mr. James H. Baxter, of Portland, Me., has patented a package of boneless fish pressed into a solid mass of uniform size throughout its length and incased in a wrapper which is marked into equal divisions indicating where the package may be cut across to separate it into multiples of the whole package, as one-half, one-third, one-fourth, etc.

Mr. Francis G. Powers, of Champaign, Ill., has patented a die or mould for forming elastic corn and bunion pads, consisting of a metal core having the circular rounded lateral projection formed solid therewith, in combination with the metal dies having a central cavity adapted to receive such projection, but fitting closely to the end portions of the core.

Mr. John H. Solis, of New York city, has patented an improved close fitting cock of simple construction. The invention consists in the employment of a cock casing having in the upper surface of one side a longitudinal groove, a rack or toothed bar having a valve and shoulder sliding in the groove, and a spindle provided with teeth gearing with a rack.

An improved fence and gate post has been patented by Mr. Arthur O. Barnes, of Moore Park, Mich. The invention consists in a post for fences and gates, having a foot moulded of cement and sand, with a conical lower end, and having an interior screw collar or sleeve, with which is connected the lower end of a post provided with an ornamental head, and having a collar to rest upon the upper end of the foot.

Mr. James H. Barrett, of El Dorado, Ill., has patented an improved contrivance by which the evener may be tripped by the driver, and turned by the horses, so that the traces will detach and allow the carriage to be disconnected from the horses when they become uncontrollable, the arrangement by which this is accomplished being very simple, cheap, and effective.

Mr. Francis M. Hazleton, of Red Bluff, Cal., has patented an improved car coupling. The drawhead has a sliding block actuated by a spring for holding up the coupling pin when uncoupled and pressing against the link and pin when coupled, a sliding bar, levers, and connections for raising and lowering the coupling pin, and a pair of springs for pressing laterally against the link to hold it in position.

A table which may be folded into small compass, for convenience in transportation, moving, and stowing away, has been patented by Mr. Charles D. Blakeslee, of Grand Rapids, Mich. The invention relates to the construction and arrangement of parts, whereby the hinged braces of the folding legs are held in place both when the legs are extended and folded, and whereby the folding side leaves are supported when extended.

Mr. William B. Farrar, of Greensborough, N. C., has patented an attachment to a bed, couch, or berth which serves as a brace or stay to the body of the sleeper, to prevent involuntary rolling in bed, such as is caused by the lateral pitching of a sleeping car, the rolling of a ship, or even the involuntary movement of a sleeper in an ordinary bed, when it may be desirable, by reason of a wound or other cause, to prevent the individual from turning over.

A device for effectually securing, sealing, and labeling bags and other receptacles generally, but more especially intended for use on mail bags containing mail matter, specie bags containing specie, and other receptacles for private or valuable matter, has been patented by Mr. Thomas A. Platt, of Brooklyn, N. Y. The device consists of the cup and the frame, the cup being slotted for the passage of a strap and the frame provided with a staple or loop.

An improved electrode for batteries has been patented by Mr. James Pitkin, of Clerkenwell, County of Middlesex, England. This invention relates to improvements in the construction of secondary batteries, but it is also applicable to primary batteries. It consists in an improved construction of holder or frame to contain turnings or other shreds of lead of which the electrode is made, without the use of any inclosing fabric.

Mr. Charles Knopp and Joseph Knopp, of Winona, Minn., have patented an improved carrycock consisting of a series of coils of spring wire placed side by side on a back of any kind, and intercoiled with each other and attached to the back at the ends of the coils, so that the numerous oval projections of the coils form excellent and very efficient teeth for carrying animals, the teeth being not only harmless but agreeable to the animals.

An improved bottle label holder has been patented by Mr. William Wallace Quiggle, of Winnebago City, Minn. The invention consists in the combination, with a bottle provided with horizontal segmental grooved flanges, of a glass or porcelain label having its top and bottom edges passed into the grooves of the flanges, between which label and the bottle a wedge or strip is inserted to hold the label in place and prevent it from sliding or slipping out from between the grooved flanges.

An improved furnace grate has been patented by Mr. Frederick Shriver, of Grand Rapids, Mich. The invention consists of an improvement in the form of the grate bar, calculated to enable the bar to resist the tendency of the heat to spring and bend it more effectually. It also consists of improvements in the construction of the points or projections of the sides of the bars, designed to facilitate the discharge of the ashes and other matters by the rocking of the grates and without the use of the poker.

An improved thill loop for harness has been patented by Mr. William K. Rairigh, of St. Petersburg, Pa. This is an improvement in that class of thill loops for harness having a metal bushing or block provided with a frictional roll, to reduce friction between the thill and the bushing or block; and it consists in providing the block or bushing with continuous flanges projecting beyond its sides, and with a pin or projection at its lower end, the flanges having loops formed integral with themselves upon their side edges at the upper ends.

Mr. Hans J. Müller, of New York city, has patented a dynamo electric machine constructed with two sets of field magnets, which are united and combined in such a manner as to form two double outer poles, and four independent inner poles, between which poles the armature rotates, the armature coils being overlapped by the projecting ends of the magnet cores. The coils of the magnets can be united in such a manner that the polarity of the double pole and the corresponding inner poles will be alike or opposite, as may be necessary, according to the kind of armature used.

An improved filter has been patented by Mr. John N. Stevens, of Toledo, O. This improvement is designed to facilitate the settling of the matters contained in the water into a mud space before the water enters the filtering material; also, to facilitate the cleaning of the mud drum and the filtering material at the same time by causing water to flow back through the filtering material from the clear water pan into the mud space under the filtering material, and thence directly out through a discharge passage in a manner calculated to efficiently cleanse the filter.

Mr. Henry Coker, of Indianapolis, Ind., has patented an improvement in conveyers used in buildings for storing grain for conveying grain in bulk or large quantities from one part of the building to another, which consists in a novel construction of parts, whereby a more perfect dump hole than is usual with other trough and flight conveyers is obtained, the flights move with more perfect freedom through the trough, and are prevented from carrying grain over the dump hole or its edges, and the links of the chain by which the flights are carried and moved are prevented from holding grain while passing over the dump hole.

A novel book holder and arm rest combined has been patented by Mr. John J. Armstrong, Jr., of Brooklyn, N. Y. The principal object of this invention is to provide a device for book-keepers' use for holding the journal or day book open and in convenient position for posting therefrom. Another object of the invention is such construction of the book holder that it is adapted to receive and hold the ordinary book keeper's arm rest, so that the two may be united and sold as one article. The device consists of a board provided with a hinged book rest on one side and a sliding arm rest on the other, the one folding down flat and the other sliding in ways close to the board.

Mr. Alexander C. Laundry, of New Orleans, La., has patented a novel filter press, designed more particularly for separating the sirup or juice from the solid residuum in the manufacture of glucose and grape sugar, but applicable also for other purposes, such as oil refining, etc. It is an improvement upon that form of filter press in which a set of separable rectangular frames are clamped together in marginal contact, and are provided with filtering partitions having a central hole that permits the mash to distribute itself through the entire series of chambers formed by the frames, which chambers retain the solid residuum, while the juices pass under pressure through openings in the partitions and are separated from the solid matters.

Mr. Allen C. Burner, of Green Bank, W. Va., has patented an improvement in cider mills which consists mainly in the combination, with a case having an elliptical or oval shaped chamber, of a horizontal revolving disk having radial sliding pistons, with the pairs of pistons which are at right angles to each other coupled or connected together for the same movement, so that when one of these pistons is resting against the wall of the chamber at the minor axis of the ellipse the other piston of the pair will be projected beyond the periphery of the disk to the major axis of the ellipse, acting to squeeze and crush the apples in the crescent shaped spaces between the periphery of the disk and the inner wall of the case.

[OFFICIAL.]

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FOR WHICH

Letters Patent of the United States were Granted in the Week Ending

November 28, 1882.

AND EACH BEARING THAT DATE.

[Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, will be furnished from this office for 25 cents. In ordering please state the number and date of the patent desired and remit to Munn & Co., 261 Broadway, corner of Warren Street, New York city. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications, not being printed, must be copied by hand.

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Notes & Queries

HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be given to inquirers.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from \$1 to \$5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

(1) W. H. D. asks how the polish on bright wire screw eye hooks is put on, and what is used to prevent their rusting readily (they appear to be rust resisting); at what part of the process of manufacture is it done? A. Screw eye hooks receive their bright polish before the thread is cut, by tumbling in sand, gravel, or any mixture that will produce a clean surface. They are then threaded, and receive a final tumbling with leather skivings and any cheap polishing powder with an admixture of lime. Some boil them in lime water, and use sawdust for finishing.

(2) G. M. asks: 1. What book would you advise me to get concerning steam engines and how to make them, for amateur? A. "Goodeve on the Steam Engine" and "Roper on Land and Marine Engines." 2. Is working a lathe in a machine shop a good branch of mechanics? A. It is only a part of a machinist's trade, and should be learned as such. 3. How long does it generally take a person to learn lathe work? A. It depends much upon the person; some two years, others five years, and others never can learn so as to become ready and quick workmen.

(3) R. S. T. writes: I have just been reading an article in your last issue entitled "How a Fire sweeps a Wooden House." Thinking it would do no harm, even if it does no good, I will tell you how I fixed a house as a protection against mice, and I think it must be of service in case of fire, although that was not thought of at the time. After the house was up and closed in and the under floors laid, I took any pieces of waste boards, cut them to the right length and width to fit the spaces between studding, and nailed them in flush with the bottom of the ledger board between that and the outside boarding, and by so doing I had a box between each pair of studs that would hold about six or eight quarts, which I filled with cheap mortar made by using a very little lime and the coarse sand and gravel that the masons could not use in their mortar. I also let the under floors run to the outside boarding, and spread the mortar on them about one inch deep between the base boards and outside boarding in each story. This was done only to stop rats and mice, and was a perfect success.

(4) H. K. asks (1) how many cubic feet of air it takes to burn a cord of soft wood per hour. A. In practice, 70 to 80 cubic feet per 1 pound of wood. Theoretically, only about half this quantity. 2. Also what per cent of heat is put into steam where ordinary return-fue boilers are used? In other words, what part of the heat goes up the smoke stack? A. This cannot be determined, and it depends much on the setting and proportions of the boiler and the temperature maintained in the furnace. The temperature of the gases in chimney usually varies from 400° to 600° Fahr. 3. How many cubic feet of air will a three pound pressure force through an eight inch pipe a hundred and fifty feet long? A. About 62 feet per second, depending upon the character of the pipe and number and shortness of bends.

(5) J. R. W. writes: In your November 4 number of the SCIENTIFIC AMERICAN, on page 299, question No. 4 is asked by E. B., and answered, as to a simple test for detecting sewer gas in a room or apartment. I wish to know whether the same method or some other will determine the existence of coal gas in distinction from other gases, when they cannot be determined by the odor? A. The test there noted is for sulphureted hydrogen, and would also show coal gas, or any gas containing sulphureted hydrogen.

(6) E. H. asks how much water is used to the pound of lime in preparing lime water. A. Twenty gallons.

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From October 31 to November 3, 1882, inclusive.

Bathing apparatus, W. W. Rosenfield, New York city.

Boat lowering apparatus, M. Bourke, Youngstown, O.

Cable traction railway, C. F. Findlay, Chicago, Ill.

Compound for preventing the passage of heat, R. J. Elbert et al., New York city.

Door check, The Elliott Pneumatic Door Check Company, Boston, Mass.