

## RECENTLY PATENTED INVENTIONS.

## Engineering.

**STEAM BOILER.**—William C. Stuckel, Chicago, Ill. To facilitate the distribution of the heat of the burning fuel to all parts of the water, and thus promote the quick generation of steam, this inventor has designed a boiler in which rods of copper, brass, or other metal traverse the water space and project into the fire box at one end and into a hood or smoke box at the other end, it being the idea of the invention that these rods, with portions exposed where the greatest heat of combustion is being evolved, will take up and distribute the heat through the water most effectively.

**FURNACE DOOR.**—Russell B. Hobson, New York City. According to this invention the door is so arranged with relation to the furnace that in the event of an exploded tube or pipe the pressure of the escaping contents of the boiler will act to effectually close the door, preventing the blowing of steam or water, or the contents of the fire box or ash pit, into the fire room, but necessitating their passage into the smoke flue or stack. It is an inwardly swinging door, with a casing or frame which overlaps the edges of the door at the outside, thus practically forming a valve and valve seat. The door is swung open by pushing it inward, when an adjustably mounted weight holds it open as long as desired.

**SMELTING FURNACE.**—John D. McDonald, Sudbury, Canada. This is a furnace designed to facilitate the smelting of pyrites, blend, sulphurets or sulphides, etc., without the continued use of coal, the apparatus providing a steady feed of the ore, the feed being controlled by lateral vibration, and the temperature at which the ore is delivered into the crucible, in treating fusible ores, being governed by the feeding devices. A feeding carriage has its frame formed with hollow base and upright side sections forming water jackets, and a deflector prevents the ore from clogging in the mouth of the crucible, and prevents the fine particles of ore from being subjected to the direct action of the blast upward from the crucible.

## Railway Appliances.

**SWITCH.**—Charles Troup, Watseka, Ill. According to this invention the main rails and switch rails may be of ordinary construction, and a train or car may be shifted directly from the siding to the main line without operating the switch stand. In connection with the devices for operating the switch points a lock is provided, and means for releasing the lock, to be operated by the switch stand or other hand devices, there being also devices for automatically releasing the lock by the passage of trains from the siding to the main line. When the lock is released from the switch point the target is shown and remains exposed until the lock is again in engagement with the point.

**CAR AXLE LUBRICATOR.**—James S. Patten, Baltimore, Md. When the oil box is filled to the maximum depth with oil, according to this invention, the oil is in contact with the axle journal, and to insure contact when the oil surface is lower, an inclined trough is arranged lengthwise, causing the oil to reach the journal when the car lurches or makes a sidewise movement, there being also a spring plate, with inwardly curved side wings, lined with leather or other flexible material, which embraces the sides of the journal, to aid in effecting perfect lubrication. The spring plate conductor also forms a wiper to prevent the oil from running along the journal beyond the bearing, while baffle plates of flexible material prevent the escape of oil between the sides of the conductor and oil box.

## Electrical.

**FIRE HYDRANT VALVE.**—Frank McDonald, Portland, Me. According to this invention an electrically operated valve is arranged in a casing to be situated near a fire hydrant, and through which run supply and discharge pipes. The valve and its operative mechanism to be connected with a conductor on a reel to be carried by a hose carriage, or as otherwise desired, and provided with a switch, whereby the man holding and directing the nozzle will be able to control the flow of water, avoiding the necessity of shouting orders, and preventing the flooding of a building after a fire is extinguished. When used in connection with a pumping engine an indicator advises the engineer as to the position of the valve, that he may govern the pumping power accordingly.

**TROLLEY SWITCH MECHANISM.**—Walter S. Browne, Brooklyn, N. Y. This invention is an improvement on a formerly patented invention of the same inventor, and provides for making only a single movement of the switch, for whichever way the car is traveling, instead of a double movement, as heretofore. It is an automatic switch in which the current switch consists of a short section of the trolley wire, split vertically into two parts insulated from each other, one of the parts being connected with the trolley wire circuit and the other with the circuit operating the switch moving mechanism, and adapted to be connected by the passage of the trolley, to supply the current for throwing the switch.

## Bicycles, Etc.

**BICYCLE HANDLE ATTACHMENT.**—James Godfrey, Pittsburg, Pa. A third or supplemental handle, to facilitate steering a wheel with one hand, is provided by this invention, a vertically adjustable steering handle being pivotally attached by a clevis to the center of the handle bar. Two slotted and segmentally curved pieces are rigidly attached to the clevis and the central handle bar, the pieces being adapted to slide on each other, and to be clamped in any desired adjustment, to fix the central steering handle at a convenient height.

**MAKING CYCLE GEAR CASES.**—Horace W. Dover, Northampton, England. In moulding gear cases of xylonite this invention provides a preparatory tool for bringing the sheet roughly to shape to be completed by a finishing tool, for which a further patent has been applied for. It comprises a die plate with rib surrounded orifice, a pressure plate adapted to engage the rib of the die plate, and means movable through the orifice in the die plate for drawing a plastic sheet between

the pressure and die plates and moulding the sheet. Care is taken to avoid tearing the material by excessive pressure of the plunger, while maintaining sufficient pressure to prevent wrinkles in the moulded article.

## Mechanical.

**COMBINATION TOOL.**—Beniamino Ibello, New York City. A foldable measuring rule, with knife blades and a spring balance scale, is so made, according to this invention, as to unite these triple functions in a tool which is very compact in form, and may be carried in the vest pocket. The rule is in two hinged sections, there being in one section a recess for the knife blades and in the other a recess for a scale bar connected at its inner end with a contractile spring, the bar being graduated, and the scale being adapted to weigh small articles to be suspended from a hook projecting from the outer end of the bar.

## Agricultural.

**PLANTER.**—Joseph A. Pritchard, South Mills, N. C. A planter in which cotton seed may be placed just as they leave the gin, and without being oiled, and which is also adapted for planting any kind of seed, has been devised by this inventor. The hopper is so made that it may be readily applied to the frame of a machine for planting corn or similar seed, and means are provided for keeping the driving wheel clean, and whereby the boot or furrow opener may be made to travel at any desired depth in the ground. In front of the boot is a wheel cutter, to separate clods of earth, tough grass, etc., and prevent trash from gathering around the boot.

## Miscellaneous.

**PASTEURIZING MILK.**—Horace Atwood, Arden, N. Y. The apparatus designed by this inventor is adapted for the treatment of either milk or cream, or both combined, and comprises a central receptacle surrounded by a jacket for steam and hot water heating, and arranged to be rotated by a belt, the contents of the receptacle to be subjected to the desired degree of heat for the length of time required, and then made to pass off through separate channels for the milk and cream from the effect of the centrifugal force. The milk and cream are thus heated to a temperature below the boiling point to render innocuous any germs the liquid may contain.

**SEWING MACHINE NEEDLE GUARD.**—Warren B. Davis, Brooklyn, N. Y. This device is formed of a single piece of flat material bent upon itself to form an eye, a twin shank and an arm at the end of each member of the shank, the arms being bent outwardly and then inwardly toward each other to form a clamp for engaging the presser foot shank. The device is simple and inexpensive, being applicable by a child, and is designed to prevent the operator from pricking the fingers or hand while adjusting the work under the presser foot, or during other manipulations while the machine is at rest.

**SEWING MACHINE PRESSER FOOT DEVICE.**—William A. Scott, Newcastle, Col. This is a device to be attached to the presser foot for folding in the edge of the material previous to stitching, and also applicable for a number of purposes, being adapted for all widths of hemming and all sizes of tucking, as well as to facilitate stitching bias or straight stripes to the surface of the material. The attachment comprises a conical tube, holding clips on its lower side and an arm movable in the clips and having transversely extended fingers at one end, the end being turned upward and curved rearward.

**PUMPING JACK FOR WELLS.**—Fred J. Moser, Kane, Pa. This improvement comprises pairs of toggle links to whose upper sections are pivoted a clamp or collar adapted for connection to a sucker-operating rod, there being a fixed device to which the lower sections are pivoted, a collar adapted for connection to a pump tube, and a rock lever fulcrumed on the collar. Links connect the opposite ends of the rock lever to the lower sections of the toggle links, and an angle lever pivoted to the rock lever is adapted to engage near its angle with the fulcrum point of the rock lever. The device is designed to combine lightness with a maximum of strength, requiring no framework to rest it on or assist in its operation, and may be easily and quickly attached to or disconnected from a pump.

**WIRE STRETCHER AND STAPLE PULLER.**—Jesse R. McElroy, Southmayd, Texas. A tool which may be used with any form of fence post is provided by this invention, the tool enabling successive grips to be obtained on the wire, thus facilitating stretching and holding it under tension, while it may also be used for drawing staples and splicing between posts. The tool has a curved jaw with a body and two members terminating in claws, a handle connected with the curved jaw having a lengthwise slot in which a second handle slides, the second handle having a single-membered jaw terminating in a slot.

**SWING JOINT FOR GAS FIXTURES.**—Henry P. Drew, New York City. This invention relates to joints in which two cupped sections each have a socket extended from the periphery, the sections being pivotally connected. The invention provides for making a reliable joint rapidly and at a moderate cost of manufacturing, affording a perfectly smooth working, tight joint at all points of swinging movement, and obviating difficulties heretofore experienced from which the joints were liable to be tight at one point of their swinging movement and loose at another.

**SPRING SEAT.**—Jules Compin, Montargis, France. For all kinds of seats, chairs, benches, etc., this invention provides an improved construction, according to which the leaf spring of each seat is preferably fixed by one of its extremities to the frame of the bench or seat, while the other suitably bent movable extremity of the spring is arranged to engage a sleeve or eyelet on a stud or rod around which is a spiral spring. The latter is compressed by pressure upon the leaf spring, giving a variable elasticity to the seat, the leaf spring being returned to its original position as soon as the pressure ceases.

**BRACKET.**—Albert Taubert, New York City. A lazy tongs adapted for horizontal extension is,

according to this invention, connected by a fixed sleeve at its inner end with a vertically supported rod, an outer section of the lazy tongs being connected with a manipulating rod having connection with a movable sleeve lower down on the rod, the latter sleeve moving down and up as the manipulating rod is folded, with the lazy tongs, close to the vertical rod, or held in extended position. The bracket may be arranged to swing at any desired angle to its support.

**ADJUSTABLE INDEX TAGS.**—Charles C. Smith, Exeter, Neb. This invention is for a metal clip having spring jaws, and a flexible tab secured to the clip and forming a cover for it, a projecting portion of the tab forming a tag on which may be printed any desired index guides, according to the use to be made of it in ledgers, account books, correspondence records, etc. The device is small, easily moved from one portion of a book to another, and is adapted to be to a ledger what a thumb index is to a dictionary. The inventor has already, we are informed, had great success in the manufacture and sale of these tags for use by banks, financial institutions and large manufacturing concerns.

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SCIENTIFIC AMERICAN  
BUILDING EDITION

AUGUST, 1897.—(No. 142.)

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- No. 1. Two perspective elevations (one in colors) and floor plans of a cottage at Binghamton, N. Y. recently erected at a cost of \$3,500 complete. Mr. Alfred Bartoo, architect, Binghamton, N. Y. An attractive design in the English style.
- No. 2. A cottage at Scranton, Pa., recently erected for Mr. E. Healy, at a cost of \$7,000 complete. Perspective elevation and floor plans. A modern design well treated. Mr. Edward H. Davis, architect, Scranton, Pa.
- No. 3. A residence at Prohibition Park, S. I., recently erected for Mr. J. W. Hoban, at a cost of \$3,300 complete. Excellent design of modern American style, with Colonial treatment and detail. Mr. John Winans, architect and builder, Prohibition Park, S. I. Two perspective elevations and floor plans.
- No. 4. A suburban school house at Overbrook, Pa., designed to resemble a private residence instead of a public building. An exceedingly attractive design. Mr. William L. Price, architect, Philadelphia, Pa. Two perspective elevations and floor plans.
- No. 5. Residence at Larchmont, N. Y., recently erected for Mr. Henry A. Van Liew. Pleasing design, with many excellent features. Two perspective elevations and floor plans; also a view of stable, with ground plan. Mr. H. C. Stone, architect, New York City.
- No. 6. Cottage at Clinton Township, N. J., recently erected for the Protective Building and Loan Association, at a cost of \$1,500 complete. Two perspective elevations and floor plans. Messrs. Hobbs Brothers, architects, Newark, N. J. A neat design.
- No. 7. A residence at Larchmont, N. Y., recently erected for Miss Flint. Two perspective elevations and floor plans. The design presents a good, modern, sensible house of pleasing appearance, treated with Colonial detail. Messrs. G. E. Harney and W. S. Purdy, architects, New York.
- No. 8. Residence at Prince's Bay, Staten Island, recently erected for A. W. Browne, at an approximate cost of \$8,000. A rustic design of much artistic merit. Perspective elevation and floor plan. Mr. F. W. Beall, architect, New York City.
- No. 9. Cottage at Forest Hill, N. J., recently completed for Mr. Charles W. Clayton, at a cost of \$3,800 complete. An attractive design. Perspective elevation and floor plan. Mr. H. Galloway Teneyck, architect, Newark, N. J.
- No. 10. Residence at Evanston, Ill., recently erected for Mr. C. B. Congdon. A substantial and dignified design. Two perspective elevations and floor plans. Messrs. A. M. F. Colton & Son, architects, Chicago, Ill.
- No. 11. A pulpit of the Cathedral of Treves. Half page engraving.
- No. 12. Washington Monument, Philadelphia. Presented to the city by the State Society of the Cincinnati and unveiled by President McKinley. One of the most important and imposing monuments ever erected in the United States. Cost \$250,000. Designed by Mr. Rudolph Siemerling, the German sculptor.
- No. 13. Miscellaneous Contents: Palais Royal to be demolished.—Largest hotel on earth.—A quick piece of work.—Drawing materials, surveyors' instruments, etc.—Statue of Mercury at the Nashville Exposition, illustrated.—Compo-board.—Improved heaters and furnaces, illustrated.—Stair builders' goods.—Architects' and builders' directory.

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(7184) H. B. B. asks: Can you tell me why light colored clothes are supposed to be cooler than dark ones? A. Because they reflect heat as well as light.

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With a special article on nickel plating and polishing bicycle work. Giving the best and most approved methods of preparing and cleaning all metals for electroplating and polishing. Illustrated. New York: Zucker, Levett & Loeb Company. Pp. 114. Price 80 cents.

This is a welcome addition to the elementary works upon electro plating which are already so numerous. The book appears to be very practical, the formulas having been tested. The subject of nickel plating, bronze plating, brass plating, silver plating, gold and tin plating are treated. Considering the size of the work, it is remarkable to see how much useful information is compressed into so small a space.

## HEAVEN AND ITS WONDERS AND HELL.

From things heard and seen by Emanuel Swedenborg. Philadelphia: J. B. Lippincott Company. 1897. Pp. 453. Price 60 cents.

This work was originally published in Latin at London, A. D. 1758, and will prove interesting to those who are adherents to the Swedenborgian faith. The low price of the book places this important work in the reach of even those who wish to investigate his writings from curiosity. It is accompanied by an excellent index.