RECENTLY PATENTED INVENTIONS.

Bicycle Appliances.

BICYCLE-SUPPORT.—CHARLES L. RAYMOND, JR., New Orleans, La. In order to provide a light and durable stand that can be conveniently carried on the frame of a bicycle, this inventor has devised an arrangement comprising a standard provided with folding legs, means for connecting the standard pivotally at its upper end with the bicycle frame, and a hanger. This hanger has side-members formed integral with the clip-sections of its clip body. A latch is hinged to the outer end of a side-member and is adapted to engage a keeper on the outer side of the opposing side-member. The hanger is arranged to receive the standard and legs when folded.

BICYCLE-GEARING.—JAMES B. WESTHAVER, Edgewater, Col. The gearing which forms the subject of the present invention is particularly adapted for use with bevel-gears. The power-shaft is provided with a bevel-gear, meshing with another bevel-gear on the crank-shaft. The rear end of the power shaft is connected with the rear wheel in the manner usual in bevel-gear bicycles. One face or flank of the crank-shaft bevel-gear is radially formed. The bevel-gear with which the crank-shaft bevel-gear meshes is formed with a body and a plate. The teeth in this wheel also have one flank extending radially. In the face of each tooth is formed a slot located mainly in the previously mentioned body of the bevel-gear. This portion of the slot opens toward the flank of the tooth and toward one side which is closed by the plate already mentioned. A ball is inserted in the slot and kept in place by flanges. When the bevel-gears are operated, the flanks of the teeth no longer slide over one another, but, by reason of the ball, roll away from one another, thus diminishing the friction.

Mechanical Devices.

MACHINE FOR MAKING SKEWERS, PINS, ETC.—GEORGE A. ENSIGN, Defiance, O. This invention provides a machine for making butchers' skewers, dowel-pins, and similar articles, with great accuracy and in large quantities in a comparatively short time. The machine has a frame on which a slide is mounted. A plunger is carried by the slide movably to engage the blanks which are fed to the machine and to force them from engagement with the means by which they are held and fed. As it passes away from the feeder, the blank is engaged by a die. After having been partially shaped, the blank is engaged by a gripping device as it passes from the die. A cutter, located adjacent to the gripping device, points the blank. The blank, after having been thus transformed into a pin or skewer, is ejected by the pin immediately following.

WRENCH.—JOHN H. ATKINSON, Winnebago, Minn. The purpose of this invention is to provide a wrench designed for use as a clamping-wrench to prevent a bolt from turning while tightening or loosening a nut. On the head of the wrench, which engages the nut, is loosely fulcrumed a lever carrying two pawls extending in opposite directions. Ratchet-wheels on the head are adapted to be engaged by the pawls to turn the head and screw up or unscrew the nut. A clamping device is provided, comprising a yoke carried by the head. A clamp is held on the yoke and is formed with a U-shaped portion adapted to straddle a rail-joint and to engage the head of a bolt.

APPARATUS FOR RAISING SEWAGE.—SAMUEL H. ADAMS, London, England. According to this invention, a flush-tank is provided with a siphon forming the upper end of a pressure-pipe, the lower end of which is connected with an air-cylinder. Into this cylinder dips one leg of a withdrawing siphon, the outlet or discharge leg of which siphon leads to a storage-tank from which water is supplied through pipes to the flushing-tank. An air-pipe leads from the air-cylinder to a forcing cylinder. In the pressure-pipe a cone is arranged, and adjacent to the cone a vent-pipe or air-pipe is connected, extending to or beyond the level of the top edge of the flush-tank, the cone acting as an injector, so that the water flowing therethrough will draw in a corresponding amount of air through the vent-pipe. By this means sewage may be raised with same water used for flushing.

FIRE-ALARM.—HILMAR TERSLING, Copenhagen, Denmark. This fire-alarm is constructed to reduce to a minimum the danger of sounding false alarms, and is characterized by a mechanical alarm sounding in the immediate vicinity and by a mechanism moving in unison with the mechanical alarm, whereby an electrical circuit is influenced to sound a distant alarm. The apparatus is mounted in a casing from which projects a crank-arm. By means of the crank-arm an alarm gearing may be operated to sound an alarm. An electric circuit-closing mechanism is provided which is operated by a motor, the motor being controlled by the crank-shaft. The movement of the circuit-closing mechanism releases a stop-pawl engaging the alarm-operating gearing to stop the alarm. The circuit-closing apparatus is connected with a distant signal, which signal may be operated after the apparatus has been properly adjusted.

TOOL-SHARPENING DEVICE.—JAMES W. SCULL, Elizabeth, N. J. By the ordinary method of sharpening a milling tool, the edge is made irregular and, consequently, the surface operated on by the tool is left rough. It is the object of the present invention to overcome this difficulty. The means whereby this is accomplished comprise a support for the tool and a rest for a hone-holder. This hone-holder consists of a rotatively-mounted part, the upper surface of which is on a horizontal plane with the edge of the tool operated upon by the hone.

ORGAN ACTION.—JOHN H. ODELL, New York city. The purpose of this invention is to obtain a more positive working of the pallets and to permit the operating parts to be conveniently adjusted from the outside of the organ to give any desired degree of sensitiveness to the action. In order to attain the desired end, the inventor has provided a diaphragm, a passage leading from the wind-chest and having a branch running to one side of the diaphragm, and a sleeve extending into the passage so as to form a lining therefor. The sleeve has a lateral aperture for air, open to the branch passage. A screw works in the end of the sleeve and is arranged to vary the area of the lateral aperture, thus enabling a very sensitive action to be produced.

WINDING-MACHINE.—EMMETT J. SATTERWHITE, Falls City, Neb. This invention provides a machine for winding-wire on a core to form electromagnets, and its object is to wind accurately the desired amount of wire on a core of the desired length. The winding machine is furnished with a traveling carrier. A double nut is held on the carrier and is adapted to engage alternately two revoluble screw-rods to move the carrier forward and backward. With the nut, a lever is operatively connected and arranged to swing about an axis extending transversely of the screw-rods. Stops are adapted to engage the lever and to move it alternately in opposite directions. By this arrangement the wire is wound on the core and is properly placed in position by the traveling carrier.

SWITCH AND SWITCH-OPERATING MECHANISM.—JAMES P. ORR and GEORGE H. FUGH, Pittsburg, Pa. The purpose of this invention is to provide a practically continuous trolley-line with means to enable a motorman to switch his car from a main line without materially checking the speed of his car. Another object of the invention is so to arrange the switch that it may be vertically moved instead of laterally, as usual. The switch comprises a tongue, a track section, and electrical means for moving the tongue and track-section vertically. One section is moved downwardly as the other section is moved upwardly. With the electric circuit, controlling devices are connected, operated from the car. To a swinging frame a switch trolley-wire is connected and is normally not in engagement with the main trolley-wire. Means are carried by the switch-operating mechanism for swinging the frame and its wire into connection with the main wire.

BALING-PRESS.—SUMMERFIELD M. PERRIN, Columbia, S. C. This improved baling-press is continuous in operation and arranged to discharge a completed bale automatically. The press has an elongated frame formed of a bottom portion with sides standing thereon and with a top covering a portion of the frame to form a packing-box. This packing-box diminishes in size toward its discharge end. The remainder of the frame is open at its top to form a receiving and packing-chamber. A plunger is movable back and forth through the packing-box and receiving-chamber. Anti-friction rollers are held between the sides of the frame and guide the rear portion of the plunger-rod by means of straps attached to the rod. A lever is fulcrumed on the frame. To the lever, two cam-arms are attached, which straddle the plunger-rod, and pass respectively between the members of the pairs of anti-friction rollers. The decreasing area of the packing-box causes the material to be partially compressed. The plunger further compresses the material and from the bales in the box receives sufficient resistance properly to compress the material.

PNEUMATIC DREDGER.—THOMAS R. JONES, Sacramento, Cal. Connected with a suitable support is a dredging-bucket, a pneumatic conveyer, connecting the support and bucket, digging devices mounted on the bucket, and means for operating these devices by compressed air introduced in the bucket from the support.

Miscellaneous Inventions.

PORTABLE FIRE-ESCAPE APPARATUS.—DAVID W. LEACH and OSCAR TURNER, Truckee, Cal. This invention belongs to a class of fire-escapes that are mounted upon a vehicle for ready transportation. The invention possesses many novel devices, among which may be mentioned various means for permitting a quick and easy uncoiling of a helically-coiled trackway, constituting an important feature of the invention. Practical means are also provided for rendering the flexible trackway rigid at any point of its extension and elevation, thereby adapting the trackway for use as a safe bridge whereon a car may be moved to carry passengers from a burning building. A tubular flexible conduit is also provided through which persons may slide from the upper portions of a burning building to the ground. Convenient and trustworthy means have been devised for elevating lines of hose along with the trackway to enable the flames in a burning building to be readily extinguished.

VEHICLE RUNNING-GEAR.—JAMES F. HENNESSY, Winona, Minn. One of the main features of this invention consists in reinforcing the hounds by wooden bars fitted to the vertical and horizontal members. The bars extend rearwardly sufficiently to pass across the axle. The hounds are thus not only strengthened at their forward ends, but their appearance is enhanced and the connection between the sand-board, or bolster and axle is strengthened. By securing the strengthening bars to the hounds, the attachment of the draw-bolt of the hounds is also materially strengthened, and the head of the bolt and the nut at the opposite end are brought outside of the hounds, thus permitting ready access.

MEANS FOR FASTENING INSULATOR-PINS TO CROSS-ARMS.—LORON MITCHELL, Augusta, Ga. To provide a pin that can be conveniently placed in position and that cannot be readily withdrawn is the object of this invention. The pin is provided with an annular groove in its shank, triangular in cross-section and with an open ring of a spring material adapted to be contained within the groove. The ring offers little resistance to the entrance of the pin. So closely, however, is the shank bound to the cross-arm that much force will be required to remove the pin.

PROCESS OF DEPHOSPHORIZING STEEL OR OTHER METALS.—JOHN GORDON, Rio Janeiro, Brazil. This inventor has observed that in rock-forming magmas, slags, and the like, the phosphorus present seeks, by preference over other substances, the metals of the cerium group and their oxids, forming monazite, xenotime, and similar phosphates. He has also found that in the manufacture of steel by the basic or lime process that, while most of the phosphorus present combines with the lime, some still remains in the molten metal, and that it is possible to remove a further amount by using metals of the cerium group or their salts or other compounds. The high temperature of a Bessemer converter, the inventor declares, is sufficient to decompose all compounds of the class mentioned and produce the dephosphorization of the metal.

GAME-APPARATUS.—BARON FRIEDRICH VON HOLZHAUSEN, Graz, Austria-Hungary. The apparatus of this inventor comprises a series of trays, and portraits made in separable pieces and adapted to fit into depressions in the trays. The pieces consist of a nose-piece, mouthpiece, chin-and-cheekpiece, eyepiece, head-piece, and bodypiece. By removing, for example, the mouthpiece of a portrait of Napoleon III. and inserting in its stead the mouthpiece of Bismarck's portrait, the player will form a character study. In a like manner, by interchanging the various pieces of several portraits, character studies can be formed which often afford considerable amusement.

BILLIARD-CUE TIP.—FRANK YOUNG and HARRY BUNDY, Santa Ana, Cal. The purpose of this invention is to provide a tip for billiard-cues which may be easily removed, repaired, and placed in position without the use of any adhesive substance. The invention consists principally of a bolt carrying the tip and fitted into a head for the base of the tip to rest on. The head is provided with a threaded shank screwing into a ferrule on the cue.

AUTOMATIC FLUE-OPENING DEVICE.—WILLIAM KANE, Philadelphia, Pa. Much difficulty is often experienced by firemen in ascertaining the location of a fire in a burning building. Smoke and steam are liable to fill the entire room in which the fire has started to such an extent as to make it impossible to discern whence the flames are breaking forth. In order to overcome the difficulty, this inventor provides buildings with a series of ventilating flues having openings leading into the several rooms of the building. The openings are normally closed by lids held in place by mechanism adapted to release them when a predetermined temperature exists within the room. In case of fire, the smoke will be drawn away in the room in which the fire has started, thus considerably lightening the task of the firemen.

CAR-TRANSOM.—GUSTAF A. AKERLIND and JOHN T. CARROLL, Chicago, Ill. This invention is an improvement in car-transoms. The transom is constructed so that the greater portion may be cast in one piece and furnish bearing surfaces for the floor-beams, sockets for the draft-beams, and also side bearings and a center plate, which will at the same time increase the effective depth of the beam and consequently its strength, and permit the use of a wrought-iron or steel tension member passing over the floor-beams.

COMBINED POCKET ASPERSORIUM AND INCENSE-HOLDER.—AVELIN SZABÓ, Terre Haute, Ind. This aspersory comprises a receptacle constructed in detachable sections. One of the sections is provided with apertures. The receptacle is provided with some absorbent material adapted to be saturated with water. The handle is slidably held in a sleeve screwed to the incense-holder. In operation, the aspersory is drawn out from the sleeve and the cover removed, permitting the water contained in the aspersory to be forced out through the apertures. By removing the sleeve from the mouth of the incense-holder, the incense may be poured out in desired quantities.

BENCH-STOP.—HARVEY E. SHAWVER, Harvey, Ill. To provide a device which shall securely hold the work in place while being operated on with a plane or other tool, this inventor has devised a bench-stop provided with a guide-plate having a vertical guideway, a dog movable in the guideway, and a clamping-plate the central portion of which has a bend engaging a shoulder of the guide-plate, while the free edge of the clamping-plate is adjacent to the edge of the dog. Means are also provided for pressing the other edge of the clamping plate toward the shoulder to cause the free edge to clamp the dog.

THREAD-GUIDE.—PETER M. LIBBY, Waterville, Me. This guide is provided with a slot through which the thread is adapted to run in its course from the bobbin to the spool. A supporting finger is mounted in front of the slot and over it the thread passes. The finger is mounted to turn axially and extends at an acute angle to the direction of the slot. With the use of the guide-finger the thread is continuously in motion, rolling backward and forward, up and down the incline, guiding the thread without injury.

SCAFFOLD-BRACKET.—LOUIS S. MILLER, New York city. The purpose of this invention is to provide a bracket that shall be light yet strong and rigid, and that shall be easily transportable. The bracket has an arm with a hooked inner end, and notches near its outer end. A brace is provided, having a tooth at its lower end designed to be driven into the sheathing-board. A tooth at the upper end of the brace engages a notch of the arm. Cheek-plates on the brace engage against the sides of the arm. The arm is designed to pass through a loop on the brace. The notches in the arm are provided so as to adjust the bracket to varying widths of studding.

COUPLING.—WILLIAM N. LONG, Salem, Ore. In this coupling are combined a union and stop-cock and an L-fitting. The coupling is especially adapted for use in connecting the pipes leading from a boiler to the water-back or coil of a stove or range, enabling a separation to be effected between the water-back or coil and the boiler without drawing off the water from the latter. In order to effect this, the coupling is made in two members capable of turning one in the other. A key is mounted to turn in both members, and by its means communication can be established or cut off between the members.

Designs.

PRINTER'S QUOIN.—WILLIAM H. O'BRIEN, Akron, O. This quoin consists of a base member, side members connected by a cross-bar and an apex. The sides, connecting-bar, base, and apex combined, form two triangular spaces. A longitudinal rib is formed at the inner face of the side and base members of the quoin. Upon the outer face of the sides and apex members, teeth appear.

STORAGE AND DISPLAY CASE.—ALPHONSE WALTER, New York city. This design in its entirety represents a series of pockets within the case, the pockets being closed upon two opposing sides and partially open on the other two opposing sides.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for 10 cents each. Please send the name of the patentee, title of the invention, and date of this paper.

Notes & Queries

HINTS TO CORRESPONDENTS.

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References to former articles or answers should give date of paper and page or number of question.

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(7479) H. L. S. writes: Please give information on polishing abalone shells. A. Clean the surface with hydrochloric acid until the outer skin is removed. Wash in warm water; dry in sawdust and polish with chamois skin. If the shell is destitute of natural luster, rub with tripoli powder and turpentine applied with a chamois skin. Finally finish with olive oil.

(7480) J. Q. W. writes: Besides a damp course and a concrete base under the stone foundation, will you kindly explain what other steps can be taken to preserve a bouse from dampness in a locality where the land is low and marshy? In the section named nearly every cellar is damp and many have water in. In the case of some the water leaks through the bricks and trickles down the inside of the foundation. What precautions can be taken in a case like this? Will you kindly tell me what is meant by a damp course? How is it constructed? Is asphalt ever used in brick or stone foundations to prevent dampness? In what manner is the asphalt used? Wish you and your many readers would discuss this matter in which many persons are interested. I think now of one house built on a hill where the soil is clayey. The cellar to all appearance is perfectly dry and free from damp, yet in one room on the first floor (the pantry) eatables have been known to get mouldy. What is the cause of this and what the preventive? A. Where land is low and marshy, cellar drainage becomes a difficult matter, unless sewer drainage at a lower level than the cellar floor can be obtained. Where such drainage is possible, a tile drain outside close to the wall and below the cellar floor, on all sides in detached houses, is the only safeguard. The ordinary ground dampness can then be prevented by a Portland cement floor. Where no drainage can be obtained, an asphalt covering on the outside of the wall will keep the water from penetrating the wall; the entire surface from sill to base should be covered. Cellar walls already built should be ditched on the outside to their base, when the asphalting can be properly done. Another way much in practice is to build a thin brick wall on the inside, close to the cellar wall, with brick dipped in hot asphalt, closing with an asphalt floor. When new walls are made in wet places, a heavy asphalt outside course is the usual practice. The commercial asphalt is used, melted in an iron kettle, carried to the required place and brushed over the wall with a heavy brush, several coats. For a cement floor, the surface should be dry when the asphalt applied; which may be by brush, as with the walls. Houses or parts of houses having no cellar should have a cement course laid on the ground under the floor and so arranged that storm water cannot wet it. Brick houses or parts of houses that are plastered upon their walls are subject to dampness either by condensation of the moist air of the house upon their cold walls or by the capillary attraction of moisture from the ground upward. Cases of this kind have shown that walls will draw moisture enough to loosen the paper on the walls at a distance of three feet above the ground. A most prevalent and erroneous habit with house builders in the country and with detached houses in villages and cities is to squat them on the ground, when there is plenty of room to make them dry and healthy by having the sill at least three feet from the ground, with an embankment all around at least two feet more; bank to slope so as to shed the water away.

(7481) S. C. B. asks: If a north pole attracts a south pole or vice versa, why does not a compass needle lie with its north end to the south of the earth? A. Certainly it does. The magnetism in the