

An Exhibit of the History of Medicine.

The seventeenth Congress of German Men of Science and Physicians is to be held at Düsseldorf, September 19 to 24. In connection with this congress, there will be several exhibits, one of scientific apparatus, one of scientific photography, and one illustrating the history of medicine and science.

works, among the latter especially such as are of older date than 1580 (receipt books, books about animals, anatomy, distillation, alchemy, astrology, magic, etc.) The exhibitors are not put to any expense, the exhibition committee undertaking to pay all freights and the cost of fire assurance.

Duodecaplex Telegraphy.

Experiments are at present being conducted on the Paris-Bordeaux line with some very interesting machines, which the inventor, M. Mercadier, has been working on for many years.

Each transmitter receives its current through a tuning fork having a special note, its vibrations being electrically maintained. These vibrations furnish a current of the proper period to cause resonance at each application in the proper receiving circuit, which has its self-induction and capacity adjusted for this result.

The Current Supplement.

The current SUPPLEMENT, No. 1181, contains a number of articles of interest. "The Town of Tsimo, in Shantung," is the subject of an article profusely illustrated with interesting engravings, taken from photographs which were taken on the spot.

paper, by Mr. Charles H. Coe. "Improved Radiographic Apparatus" describes some of the latest forms of apparatus in use in Germany. There are a number of articles devoted to machinery, including shaping and polishing machines, forging presses, and engines, taper hole widening machines, and other devices.

Contents.

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Of the August Number of the SCIENTIFIC AMERICAN, BUILDING EDITION.

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RECENTLY PATENTED INVENTIONS.

Electrical Appliances.

BATTERY-ELECTRODE.—HENRY E. WILKINSON, Mount Vernon, O. This invention is an improvement in grids or battery electrodes. The improvement provides a main or central plate and a pocket-plate secured thereto, having pockets formed with front sides which slope inwardly toward its bottom, and with ends arranged at angles to these front sides and converging downwardly.

TELEPHONE-TRANSMITTER ARM AND ATTACHMENT.—WILLIAM J. BARR, Ashtabula, O. Hitherto, telephone transmitter-arms have been pivoted or hinged to a base adapted to be secured to a wall or other fixed support. In the present improved attachment, a base is provided with one or more integral trunnions. The transmitter-arm is detachably secured to the trunnions by means which insure a firm joint at all times and yet permit easy disconnection of the arm when required.

Bicycle Improvements.

BICYCLE-SUPPORT.—ABRAHAM W. LEWIS, Asbury Park, N. J. In this improved bicycle-wheel holder a curved bar is provided, vertically arranged and pivoted to a fixed support at the middle of its length, so as to rock and be capable of adjustment. A pair of clamping rings is arranged at the middle. At the end of the bar, bifurcated lugs embrace and hold the wheel rim.

BICYCLE CRANK-SHAFT.—SAMUEL A. DONNELLY, Chicago, Ill. The drive shaft provided by this inventor has integral with it opposite end cranks, and also has seats for the cones and a back-stop between the cones of greater width or thickness than the cone-seats. Cones there are, with one or more recesses or wings, such recesses or wings permitting the cones to pass from their seats over the wide back-stop and all exterior parts. The purpose of the enlarged, flattened ends of the cranks is to reinforce these ends, so that they will not spread by reason of the strains to which the pedals are subjected.

BICYCLE STEADYING DEVICE.—FRANK BARTO, New York city. The purpose of this invention is the provision of a new and improved bicycle-steadying device, arranged for convenient attachment to a bicycle and adapted to hold the front or steering wheel normally in proper alignment with the rear or driving wheel. The rider may turn the front wheel in any position and return the wheel to its aligned position whenever he releases the pressure on the handle-bars, after steering the bicycle in the proper direction.

Mechanical Devices.

WINDOW RAISING AND LOCKING DEVICE.—FRANS BRUNO, New York city. The purpose of this invention is the provision of a simple mechanism, comprising a spring-motor that will be automatically wound up or set by a downward movement of the sash. This mechanism dispenses with the usual weights. The device comprises a rack on a window-sash, a spring-operated gear-wheel to engage with this rack, a frame in which the wheel is mounted, and a pivot extended across a mortise in the window casing. This pivot passes through a bore in the upper portion of the casing arranged in the mortise, whereby the lower portion of the frame may be swung wholly out of the mortise.

ILLUSION APPARATUS.—ATTILIO PUSTERLA, New York city. This invention provides an apparatus which produces on spectators the impression of traveling on land or water. In this apparatus, moving scenery is provided which comprises a number of sections or strips, supporting pulleys or disks of different diameters over which the strips pass, intermediate supports for the strips having individual supporting devices for the central portions of the strips, and means for moving the strips. The distance between the strips gradually increases from the center toward the disks, thus obtaining a better effect of objects receding into the distance.

FLOOR-CLAMP.—EDWIN C. INGERSOLL, Philadelphia, Pa. The floor-clamp provided by this inventor is more especially designed for the use of carpenters to force a loose floor board conveniently in engagement with the one already fastened to the joist, so as to facilitate nailing the board in place. The clamp has a frame with a downwardly-extending flange, toothed at one face and adapted to engage one side of a joist or like support. A lever is fulcrumed on the frame and carries a depending jaw at one end adapted to engage the opposite side of the joist, at a point opposite the forward end of the toothed flange. Near the other end, the lever carries a spring pawl. A segment forms an integral lateral extension of the frame, and is provided with teeth on its upper face to engage the pawl. The lever is further provided on its under surface with a guide engaging a segmental recess on the under side of the toothed segment, whereby the lever is held against up-and-down movement. The frame has a guideway and a bar carrying a presser foot, adapted to slide in the guideway. This guideway is located at the outer side of the toothed flange and parallel therewith, whereby the presser-foot engages the board to be nailed at one side of the joist.

CORN HARVESTER AND HUSKER.—JOHN TROSEM, Paulina, Ia. The object of this invention is to provide a machine so constructed that it will remove the ears from the standing corn, husk the ears, and convey the ears to an elevator, whence they are delivered to a wagon traveling alongside of the machine. In this machine a supporting frame is connected with inclined snapping and husking rollers mounted in the frame and having spirally grooved forward ends. Converging shields extend over the forward ends of the rollers. Feed-belts travel along the inner faces of the shields and a trough is carried on each side of the feed-rollers. In the bottom

of the troughs conveyer belts are located. One of the troughs empties into a hopper from which an elevator leads. In operation the standing corn is received between the shields and by them is directed so as to pass between the snapping and husking rollers, the feed belts assisting the corn in its passage to the rollers and giving the corn a rearward inclination before it meets the rollers. The inclined position of the rollers serves to draw the stalks downwardly and rearwardly, thus snapping the ears from the stalks. The husks being caught between the rollers will be stripped from the ears, and the cleaned ears are delivered by the rollers to either trough and from thence to the elevator, from which the corn may be dropped into a near-by wagon.

PUNCHING MACHINE.—CHARLES SEYMOUR, De fiance, O. In this invention novel means are provided for punching D-shaped openings in handles forshovels, forks, and the like, the arrangement permitting the opening to be formed by one operation in a very simple and effective manner. The punching tool is carried on a frame. On this frame a bracket-shaped slide is mounted to move vertically, and is provided with a horizontal portion having an opening. A chute is attached to the bottom of the horizontal portion of the slide and surrounds the opening to conduct the chips therefrom. A U-shaped projection straddles the chute and is attached to the horizontal portion of the slide. There are means in connection with the projection by which to impart reciprocal movement to the slide. A holder is mounted on the horizontal portion of the slide and has a central opening registering with the slide opening. The holder also has a horizontal guideway in its top face. Plates are mounted to slide toward and from each other in this guideway. Clamping jaws attached to the plates hold the work between them. Means are provided for moving the plates toward and from each other to grasp and release the work.

LOCK FOR FLUSHING-VALVES.—CHARLES H. SHEPHERD, New York city. By means of the lock patented by this inventor, a raised flushing-valve lever may be set to lock in position until the tank is empty and the lever is released by the float-lever unlocking the lock. The lock comprises a lever-arm arranged to connect with a flushing-valve lever, a shaft carrying the arm, a toothed wheel on the shaft, and a spring-pressed lever-pawl to engage the wheel and lock the latter in position against rotation in one direction, the lever-pawl being adapted to be actuated from the float-lever of the tank to unlock the wheel and lever-arm.

BELT-REGULATOR.—OSCAR K. SLETTO, Fergus Falls, Minn. This belt-regulator is adapted for use upon threshing machines and their driving engines, and is so constructed that the guide-pulley or idler may be vertically and laterally adjusted relative to the driver pulley. The device is furthermore designed to prevent the belt vibrating in the wind, thus avoiding side-wear, and causing the belt to run true and without undue friction. The belt-regulator comprises a hanger provided with a tubular section having exterior teeth, a frame mounted to revolve upon the tubular section of the hanger, a pawl carried by the frame and arranged for engagement with the teeth of the hanger, a guide-pulley mounted on the frame and adjusted by means of a latch carried by the guide-pulley support and adapted for engagement with the teeth of the hanger.

APPARATUS FOR DRAWING LIQUIDS.—ALEX. RITZER, Basle, Switzerland. This new and improved apparatus is designed to draw wine, ale, or liquids likely to foam or leave sediments, without disturbing the sedi-

ment and rendering the liquid cloudy. The apparatus has a receptacle with a valved inlet for connection with a barrel containing the liquid to be drawn. An air-pressure inlet-pipe opens into the valved inlet to close the valve therein, to interrupt the communication between the barrel and the receptacle and to permit the air to flow into the receptacle and force the liquid to the faucet. This faucet has a connection with an air-pressure supply, with the air-pressure pipe and with the lower end of the receptacle to connect the air-pressure supply with the air-inlet pipe at the time the faucet is open, so that the air-pressure forces the liquid from the receptacle to and through the faucet.

MACHINE FOR WORKING BALLS.—HEINRICH MELTZER, Ratibor, Prussia, Germany. For working roughly-prepared balls, the latter were hitherto kept in circular grooves and in describing always the same circular line, they were worked either upon a flat grinding-disk or this working was effected by the walls of the finely toothed guide-grooves or in such a manner that the balls were ground in oil and emery between the smooth walls of the groove. The result was that the disks grooved themselves or the disks inclosing the grooved guide-plates were moved in opposite directions, rendering it necessary that the grooves corresponded to the size of the ball. In the present invention, a frame is provided with which a bowl is connected. A stamp coacts with the bowl. A spindle attached to the stamp is slidable and revolvable and is connected with a lever engaged by a cam. An arm is pivoted to the lever and is capable of holding the lever raised out of engagement with the cam. The balls introduced into the machine are rapidly and uniformly distributed around the revolving stamp, and it is not necessary to place them as formerly—circularly into the grooves. Not only a single row, but several rows of balls may be worked simultaneously.

Miscellaneous Inventions.

FASTENER.—CHARLES V. WALTER, New York city. This fastener is particularly adapted for use in securing gloves and similar articles, but adapted as well to secure any article having overlapping flaps. The fastener consists of stud and socket members. The socket member comprises a plate having its edges flanged or curved inward and under, and a plate having a series of rectangular apertures disposed along the line of strain and projections on the body at opposite side edges of the apertures. These projections are bent over so as to clasp and hold the stock and the inwardly flanged members of the other plate. The stud member having a side projection adapted to enter the apertures.

FOLDING UMBRELLA.—FRANK G. GROVE and FRANK E. STOVER, Luray, Va. The folding umbrella of these inventors is considerably simplified in its framework. Its telescopic ribs are so constructed that when drawn out to their full length and the runner carried upwardly on the stick, the action of the contracting portions of the two ribs will be such as to hold the ribs immovable and render the telescopic or sectional ribs as strong as a one-piece rib. The folding stick is provided with a spring at its lower section, which is adapted to hold the runner when the umbrella is closed and which may be conveniently placed therein. This spring serves to limit the movement of the lower section of the stick and lock this lower section either when drawn from the upper section of the stick or when carried to an engagement with that section.

COMPUTING SCALE.—CLARK CORBIN, Carbon Cliff, Ill. This computing scale is designed to indicate both

the weight and net price of commodities. The beam of the scale has a weight scale at its lower portion and a value scale at its upper portion.

MUSIC-HOLDER.—OLAVES I. BYE, Hillsborough, N. D. The purpose of this invention is to provide a simple and cheap music-holder which may be directly attached to the instrument so as to hold the music at all times in clear view of the performer.

SUGAR-CRYSTALLIZER.—EDWARD P. EASTWICK, Jr., New Orleans, La. The purpose of the present invention is the provision of an apparatus for crystallizing sugar in motion that will give a more complete movement to the mass than has hitherto been attained.

NECK-YOKE.—SAMUEL J. McDONALD, Gallatin, Mo. In this invention, the center ring or loop has a swivel connection with the cross-pole of the neck-yoke, thus enabling the center ring or loop to adjust itself to any necessary position.

MILITARY EQUIPMENT.—HENRY J. ROSE, Hythe, and WILLIAM GILBERT-COOPER, Dover, England. This invention provides an equipment for military and sporting purposes by means of which equipment a knapsack or handbag, great coat, canteen, ponch and the like can be carried with the utmost convenience and least discomfort.

SKIRT.—BERTHA E. MARTIN, Asbury Park, N. J. The skirt provided in this invention is a bicycle-skirt, having the appearance of an apron front. The skirt is designed not to blow up over the knees and to be used upon drop frame or diamond frame bicycles.

PASSAGEWAY FOR BULKHEADS.—DALLAS DU BOIS, Montclair, N. J. In this invention, a device is provided whereby communication may be obtained between one compartment and another, at the same time maintaining a waterproof and fireproof division between the compartments.

PENCIL HOLDER AND SHARPENER.—CONSTANT E. COURY, New York city. To provide a holder in which the pencil may be readily advanced as it wears and at the same time permits the sharpening of the point, this inventor employs a spirally grooved case having a longitudinal slot.

Designs.

WIRE-FENCE.—ALBERT HENLEY, Lawrence, Kans. This design consists of a series of horizontally disposed trapezoidal figures in which the parallel sides are approximately vertical, of the same length throughout the same rows and of gradually increasing length from row to row.

BOTTLE.—HERMAN TAPPAN, New York city. A circular base is provided for this bottle, from which base rises a cylindrical body slightly tapering inwardly at its upper end, terminating in a neck formed with raised spirals and ending in a reduced cylindrical mouth.

JET FOR LIME LIGHTS.—JOHN A. MANTZ, Jersey City, N. J. The leading feature of this design consists in a boss, from one side of which extends a bend of the base portion and from the top of which boss rises upwardly and forwardly a spout terminating in a contracted mouth.

HOOK.—EUNICE R. MORTON, Revere, Mass. This hook consists of a bar, from the upper end of which rise the spaced side members of a loop, from the middle portion of which extends upwardly the shank of a hook ranging in an opposite direction to a hook-plate depending from the upper edge of the bar first mentioned and from between the side members of the hook.

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.

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Notes & Queries

HINTS TO CORRESPONDENTS.

Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication. References to former articles or answers should give date of paper and page or number of question.

(7474) F. W. M. says: I take the liberty of sending you a cutting of an ash tree I have, with a growth which I believe are eggs, and asking you what it is and for a cure.

(7475) F. G. G. asks: Is there any rule by which I can find the strength of an electromagnet, having given the size of the core and wire, the number of coils, and the amount of current? A practical formula for this case is

T C M / 2661 L = sqrt(Ib) = sqrt(VA)

T=number of turns of wire on magnet. C=current in amperes. M=magnetic permeability of the iron. A=area of poles in square inches. L=mean total length in inches all round the iron circuit.

The value of M varies greatly with the quality of the iron and the degree of saturation. For strong saturation of well annealed wrought iron its value may be as low as 400, and its value may rise as high as 3,000.

The mean total length is half the sum of the inside and outside distances around the core and armature. The armature should have as large an area of cross section

as that of the core of the magnet. No allowance is here made for the leakage of the magnetic lines; so that the actual result in any case will be somewhat less than is given by the formula. Much depends upon the accuracy with which the armature fits upon the poles of the magnet. The full calculations of the lifting power of an electromagnet may be found in S. P. Thompson's "Electromagnet," price \$6 by mail. The formula expressed as a rule is: Multiply the number of turns of wire by the number of amperes of current. Multiply this product by 400 for full saturation, and this in turn by the square root of the total area of the poles of the magnet. Divide the final product by 2661, and this quotient by the mean length of the iron circuit. The result is the lifting power in pounds.

(7476) J. H. L. writes: I wish to call your attention to the difference between an eighty gear on a bicycle or a sixty, backpedaling down a hill. Does it require any more strength to hold a large gear down a hill than it does a small one? A. It requires less pressure on the pedals of a low gear bicycle than on those of a high gear, in going down hill.

NEW BOOKS, ETC.

AN ELECTRICAL THEORY EXPLANATORY OF THE SOLAR SYSTEM. By "Delta." Published by the author. 1898. Pp. 12. Cloth. 12mo.

This is a reprint from the Electrical Review of January 21, 1898, and embodies a theory that is at least ingenious.

DIE SCHLEIF-, POLIR-, UND PUTZMITTEL für Metalle aller Art, Glas, Holz, Edelsteine, Horn, Schildpatt, Perlmutter, Steine, u. s. w. Von Victor Wahlburg. Vienna, Budapest and Leipsic: Verlag von A. Hartleben. With 91 illustrations. Pp. 304. Price \$1.25.

The second edition of "Die Schleif-, Polir-, und Putzmittel" has given the author an opportunity thoroughly to revise and enlarge his work, and to eliminate all that seemed antiquated when viewed in the light of improved methods. After having exhaustively treated the various polishing substances in the order of their hardness, the author passes to a description of the manufacture of polishing papers and cloths, of emery disks, rings, cylinders, etc.

We have received a new catalogue of photographic lenses, shutters, and accessories issued by the Bausch & Lomb Optical Company, of Rochester, N. Y. It is one of the finest catalogues which it has been our good fortune to examine.

TO INVENTORS.

An experience of fifty years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

AUGUST 9, 1898,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

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