

RECENTLY PATENTED INVENTIONS.

Electrical Apparatus.

TELEPHONE-CIRCUIT.—WILLIAM E. PEMBLETON, Wittenberg, Wis. It is the purpose of this invention to arrange the circuit so as to enable telephone-subscribers to know whether the operator's instruments at the central station are cut in or cut out, while conversation between two subscribers is being carried on, and, further, to make it impossible for a third person to be connected by the operator with the two talking subscribers.

Mechanical Devices.

STAMP-MACHINE.—CHARLES H. KRAUSE, Southlake Linden, Mich. The invention relates to stamp-machines or mills for ores, and provides improvements on a similar machine patented twelve years ago by Mr. Krause. In the improved mill differential communicating cylinders are placed one above the other. In the smaller cylinder a piston operates which carries a stamping device. A pressure-actuated valve controls the exhaust from this lower cylinder. A valve-casing communicates with the cylinders. In the casing is an inlet-controlling valve actuated by the movement of the lower piston. In the casing is also an air-pressure actuating valve. The air-cushion between the two pistons permits the pestle to accommodate itself to the amount of material in the mortar.

PROPELLER-GOVERNOR.—FRANK S. CORMIER, Moncton, New Brunswick, Canada. This governor comprises a brake-shoe adapted to engage the shaft; a cylinder; a piston operating in the cylinder, and a valve which controls the steam supply to the cylinder. The piston is connected with the brake-shoe; and the movements of the valve are controlled by a float. If the stern of the vessel should be lifted the float moves downward, thereby opening the passage into the rear of the cylinder. The steam moves the piston so as to cause the brake-shoes to engage the shaft, thus preventing the racing of the propeller.

BEATING-ENGINE.—JAMES CONLEY, Administrator of the estate of Edward Conley, Manhattan, New York city. In the beating-engines which have been hitherto constructed it has been found that when the beating-drum runs at a higher speed than the bed-roll, the knives on the beating-drum are worn concave, while the knives on the revolving bed-roll appear convex, showing that the machine works unevenly. Mr. Conley devised an engine arranged to insure a uniform straight wear on the knives and to permit the beating-drum to yield upon the passage of lumpy matter between the drum and the bed-roll, thereby avoiding injury to the knives.

BED-ROLL.—JAMES CONLEY, Administrator of the Estate of Edward Conley, Manhattan, New York city. The invention relates to beating-engines used in paper manufacture, and its object is to provide a bed-roll arranged to hold the knives securely in position throughout their length on the central solid plug so as to prevent the knives from springing up in the middle even though the plug should warp or swell.

TRAP.—WILLIAM A. BRUNKER, Farmersburg, Ind. The trap is intended to snare burrowing animals, such as moles. The trap may be repeatedly set and will, as a rule, require no repairing. It is absolutely certain of its victim. The novel feature of the invention is a forked plug which must be dislodged for the animal to pass, and to dislodge the plug the animal must come within slings by which it is captured.

ROPE-GRIP.—HOWELL HANSEL, Manhattan, New York city. The device is intended to grip ropes or cables. Its construction is such that it may be conveniently carried in the pocket when not in use. It is particularly adapted for use by yachtsmen and sailors in raising and lowering sails and to prevent the cutting of the hands.

MACHINE FOR REMOVING SNOW AND ICE.—CHARLES POORE, Box 177, Aurora, Ill. The machine is intended for use on railroads, city streets and common roads. It is provided in front with rotary drums which cut and pick up the snow and ice and deliver them into a heated receptacle where they are melted. The water thus produced is conducted off at the side of the machine. The receptacle is heated by electric incandescent lamps; and the drums are rotated by electric power.

PROPELLING MECHANISM FOR VESSELS.—ALBERT J. TAPLIN, 420 Bernard Street, Vancouver, British Columbia, Canada. The propelling mechanism is located on both sides of a vessel's hull, slightly forward of the middle of her length. It is the object of this invention to increase the speed and steering capacity of a vessel and enable her to be turned in a very short distance.

COGGED-GEARING.—AMBROSE M. SEARLE, Geneseo, Ill. The gearing is intended to be used in traction-engines. A brace-frame is pivotally connected with a hanging boxing and is rockable therewith and also independently. A tumbling-rod and a pinion on the tumbling-rod are held in place by the frame; and the frame is boxed to the pivot-lug and to the journal on the hanging boxing. A cog-wheel meshes with this pinion and runs on the journal of the hanging boxing. The pivot-lug and journal are at opposite points and upon a line drawn through their respective centers. A free lateral movement of the tumbling-rod is thus obtained, the pinion being

constantly held upon the cog-wheel and transmitting the power from the cog-wheel by means of the guidance of the swinging frame. Thus the traction-engine is enabled to perform its work in any position relatively to the objective work to be done within an arc of 180 degrees described about the engine with the hanging boxing on the main shaft as a center.

GLASS-MOLD-OPERATING MACHINE.—FRANK A. SHUNK, 211 South Monroe Street, Streator, Ill. This invention is a labor-saving machine and is designed to open a mold in which a bottle or other article has been made; to remove the bottle therefrom; then to close one side of the mold, and place the bottle on a stand ready to receive it. After material for a fresh bottle has been placed in the mold, the other side, which has been left open before blowing another bottle, is closed. The invention is designed to provide means whereby most of these operations can be quickly performed in a practically automatic manner.

Miscellaneous.

BROILER.—JOHN FERRACIOLI, Manhattan, New York city. The invention is a broiler which enables one to prepare food rapidly and thoroughly, and which at the same time is convenient to handle and operate, the broiler being placed on top of an ordinary range, or upon a table or the like.

RADIATOR.—TIMOTHY S. MARTIN, Butte, Mont. This radiator is simple in construction. One of its main features is that it requires no air-cock. Provision is made for automatic collection and drainage of the condensation-water and for an adjustment of the distance between the two pipes, through which steam is admitted and returned respectively.

VARIABLE MEASURE.—THOMAS E. WHITE, Chicago, Ill. The invention provides a measure which can be quickly adjusted for different quantities of solids, making it particularly useful for hucksters or peddlers in measuring liquids.

EMERY-STEEL.—GEORGE F. LUCAS, Manhattan, New York city. The emery-steel is provided with cushions so arranged that should the steel drop the cushions will engage the surface on which the steel may fall. Thus the force of the fall is broken and the steel protected.

BUTTONHOLE AND RUFFLING GAGE FOR SHEARS.—EMMA L. N. STEEN, Manhattan, New York city. The invention provides an ingenious combined buttonhole and plaiting or ruffling gage for shears, and a buttonhole-gage adapted for attachment to any buttonhole-shears. When a strip of material is to be cut from a main web for plaiting or ruffling, the shears will cut the strip with an upper and a lower support and to a regular width either on the straight or on the bias. The buttonhole-gage can be applied to any construction of buttonhole-scissors.

SWIMMING-SHOE.—THOMAS J. A. FREEMAN, Jersey City, N. J. The shoe, or rather sandal, is arranged to aid the user in swimming or treading water, and likewise to permit convenient walking on land. The construction provides a foot-plate having a wing which acts as a propelling surface during swimming. The sandal is strapped to the foot.

LIFE-RAFT.—JOHN V. JANIN, Seattle, Wash. The life-raft is a pneumatic raft of simple construction, having means whereby it may be quickly inflated either when afloat or on shipboard. Pockets are arranged on the opposite sides of an inflatable body portion. In the pockets cork or similar material is placed. Inflating-pumps are mounted on opposite sides of the raft, the pumps being mounted to swing relatively to the raft. When the device is deflated and not in use it may be rolled compactly together for storage or transportation.

BROOM-HOLDER.—DANIEL H. MOWEN, Myersville, Md. Mr. Mowen has provided a novel construction for holding a broom, in which clamping-arms stand at angle to the carrier or base; in which the clamp includes a sliding member operated by the gravity of the broom handle and of the clamp; and in which the sliding, clamping member is made with a stop for limiting the dropping movement of clamping devices.

FUMIGATING APPARATUS.—GILBERT E. ALPHIN, Mount Olive, N. C. The apparatus is designed for fumigating fruits, vegetables, milk and other alimentary substances in order to prevent early decay. Sulfur or other prepared chemical capable of emitting fumes is employed. These fumes flow directly in contact with the articles to be treated and finally into contact with water by which they are wholly or partly condensed and absorbed. The water thus impregnated is subsequently used for preserving the article which has been treated.

Designs.

PIPE.—ARTHUR Q. WALSH, Manhattan, New York city. The pipe is a Pan-American Exposition pipe and is therefore made in the shape of a pan.

BELT.—LOUIS SANDERS, Brooklyn, New York city. The belt has a flat body with outwardly projected longitudinal series of crescent-shaped loops, and longitudinal strips passing through these loops.

STATIONARY PLATE FOR STATIC MACHINES.—JAMES M. G. BEARD, Fruita, Col.

The plate has as its leading feature an approximately semi-circular curved edge, and an oppositely disposed straight edge.

HANDLE FOR SPOONS, FORKS OR SIMILAR ARTICLES.—CHARLES A. BENNETT, Taunton, Mass. The chief feature of the design is a particular arrangement of tiger lilies on the obverse of the spoon or fork handle. Minor features of the design are the final or end ornament of the handle, and scrolls extending along the sides of the front panel. The obverse side of the handle is provided with scrolls or leaves joined with and forming part of some of the lilies on the front, and other leaves which are extended and curved to form the borders or sides of a panel.

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

NEW BOOKS, ETC.

DER SCHORNSTEINBAU. Von Gustav Lang, Professor an der Technischen Hochschule zu Hannover. Drittes Heft: Anordnung gemauerter Schornsteinschäfte. Illustrations 24 to 103a and two photolithographic plates. Hannover: Helwingsche Verlagsbuchhandlung. 1901. Large octavo. Pp. 332. Price, paper, \$3.

Prof. Lang's third volume of his work on chimney construction deals with the arrangement of masonry chimney-shafts in a manner which is both scholarly and thoroughly practical. The author has thoroughly tested the old formulae for simple chimney-shafts, with the result that he found many of them deficient. He has therefore drawn up new rules which fully consider the influence of height, clear distance, material, formation of stone, local wind pressure, and which enable the builder to construct his chimney with the least possible mathematical labor.

VON LOEBELL'S JAHRESBERICHTE UEBER DIE VERAENDERUNGEN UND FORTSCHRITTE IM MILITAERWESEN. XXVII. Jahrgang. Bericht fuer das Jahr 1900. Unter Mitwirkung zahlreicher Offiziere herausgegeben von v. Pelet-Narbonne, Generalleutnant z. D. Berlin; Ernst Siegfried Mittler & Sohn. 1901. Octavo. Pp. xiv, 651. Price, paper, \$4.

The latest volume of the well known Jahresberichte chronicles with characteristic German accuracy the progress which has been made in military science during the past year; the changes which have been made in the organization of the various continental armies; new weapons which have been adopted; new tactics which have been devised; and new experiments which have been made. Not the least interesting portion of the work will be found in the discussion of the stirring events which have taken place during the last year in South Africa, the Philippines and China.

THE LIMITS OF EVOLUTION. By G. H. Howison, LL.D., Mills Professor of Philosophy in the University of California. New York and London: Macmillan & Co. 1901. 16mo. Pp. xxxv, 396. Price, \$1.60.

The volume is a series of essays and papers which, written and published at widely different times, have a connection with one another not apparent at first sight. The connecting link, however, is to be found in the author's peculiar doctrine of "personal idealism"—a modified form of pluralism. In the preface of the volume will be found a very entertaining, though unfortunately brief, exposition of the tenets of this new philosophy.

HOW TO BUILD A MOTOR LAUNCH. By C. D. Mower, Designing Editor of the Rudder. New York and London: The Rudder Publishing Company. 1901. Price, cloth, \$1.

This work has been written by a self taught boatbuilder who is qualified to give the novice just that kind of advice that he particularly needs, and he succeeds, by clear description and easily understood drawings, in putting into the hands of the amateur boatbuilder all the necessary instruction to enable him to put together a thoroughly servicable hull, suitable for any kind of motor. In the after part of the book are given designs of several launches, from 18 to 50 feet in length. The letterpress and drawings are up to the best work of the publishers.

YACHTS AND YACHT HANDLING. By Thomas Fleming Day. New York and London: The Rudder Publishing Company. 1901. Price, cloth, \$1.

The author of this work, which is as charming as it is instructive and practical, has established such an excellent reputation in this particular class of literature that his mere name is a guarantee of the excellence of the book. In his preface the author makes an apology for writing the work in the first person; but all who read it will be agreed that it would be a distinct loss to the interest and value of the work had it been written in any other form. The first ten chapters—which include such subjects as seamanship, rigging, reefing, anchoring, stranding, etc. are chiefly the outcome of personal experience. There are ten halftones, many of them of well-known vessels, and a host of clear line cuts showing the many different types of rig. An excellent book for the amateur yachtsman.

AMERICAN ENGINEERING COMPETITION. New York: Harper & Brothers. 1901. 12mo. Pp. 140. Price, \$1.

The sixteen chapters of this little book are made up of a series of articles published in the columns of the London Times, and have been published in full in our SUPPLEMENT. They are the investigations by an English engineer of American methods in the great iron and steel industries of our country; and they lead to the broad conclusion that American competition in engineering industries is certain to prove a serious menace to English trade in the same line in neutral foreign markets hitherto almost exclusively British. The book is of value to Americans because of the insight it gives into the methods employed in these vast industries. Among those described are the iron and steel industries, including the manufacture of steel, locomotives, engines, machine tools, and the like. A clear exposition is also given of the methods of transporting the ores from mine to factory, via the Great Lakes.

MODEL BOILER MAKING. By E. H. Pierce. London: Dawbarn & Ward. 1900. 88 pp., 35 illustrations. Price, \$1.25.

This is a practical little handbook on the designing, making and testing of small steam boilers. Stationary locomotive and launch boilers are described, and scale drawings given of the different types.

EMILE ZOLA. A Psycho-Physical Study with Appendix. By Arthur MacDonald. Fourth edition. Washington, D. C. 1901.

It is difficult to understand what Mr. MacDonald has accomplished in this so-called "study." A vast amount of information is catalogued; elaborate measurements are given; psychological examinations are made—all apparently to no purpose. Of this data gathered no use whatever is made. Nor is anything new told of the man Zola. With all due respect for the undeniable industry displayed in collecting material, we must confess that Mr. MacDonald's task is singularly unproductive of any valuable results.

PRACTICAL ELECTRICAL TESTING IN PHYSICS AND ELECTRICAL ENGINEERING. By G. D. Aspinwall Parr, Assoc. M.I.E.E. New York: Longmans, Green & Co. 1901. 392 pp., 231 illustrations. Price, \$2.50.

This book is intended as a textbook and book of reference. The different methods of measuring magnetism, resistance, etc., are fully described, and their algebraical solutions are included in an appendix, as well as illustrated descriptions of the laboratory apparatus usually in use.

L'EVOLUTION DU PIGMENT. Par le Dr. G. Bohn. (Série Biologique "Scientia.") Paris: Georges Carré et C. Naud. 1901. 16mo. Pp. 96. Price, 75 cents.

The eleventh volume in the "Scientia" series is an admirable biological study of the coloring matter of organic tissues. Dr. Bohn has performed his work with a conscientiousness that will certainly be appreciated by students of cellular biology.

THE DESIGN AND CONSTRUCTION OF OIL ENGINES. By A. H. Goldingham, M. E. New York: Spon & Chamberlain. 1900. 16mo. Pp. 196. Price \$2.

Full directions are given for erecting, testing, installing, running and repairing oil engines, including descriptions of American and English kerosene oil engines. The book is illustrated by a considerable number of diagrams and engravings.

EVOLUTION OF THE THERMOMETER. 1592-1743. By Henry Carrington Bolton. Easton, Pa.: The Chemical Publishing Co. 1900. 16mo. Pp. 98. Price \$1.

Dr. Bolton has devoted himself to chemical literature and his bibliography of it is a masterpiece. He has also written considerably upon such curious subjects as alchemy. The little book before us is a most interesting treatise, and the list of authorities which he cites is quite remarkable.

SELECT METHODS IN FOOD ANALYSIS. By Henry Leffmann, A.M., M.D., and William Bean, A.M., M.D. Philadelphia: P. Blakiston's Son & Co. 1901. Pp. 380. 53 illustrations, together with 4 full-page plates and many tables. Price \$2.50.

In this book will be found many of the valuable processes and data which have been published during the last decade in bulletins of the Department of Agriculture, Association of Official Agricultural Chemists, and the various State experiment stations. The book is intended to be a concise summary of analytic methods adapted to the needs of both practicing analysts and advanced students in applied chemistry. Special attention has been given to the presentation of methods for detecting preservatives, artificial color, and poisonous metals.

BONE PRODUCTS AND MANURES. By Thomas Lambert. London: Scott, Greenwood & Co. 1901. 8vo. Pp. 162. Price \$3.

An account of the most recent improvements in the manufacture of fat glue, animal charcoal, size, gelatine and manures. The literature of this subject is not very extensive, and the present work deals with the subject in both a practical and scientific way. It will