

### RECENTLY PATENTED INVENTIONS. Pertaining to Apparel.

**BUST-SUPPORT.**—J. BREE, Charlottenburg, near Berlin, Germany. This support differs from the usual corset in that it can be worn without any injury to health. It consists of two back-plates or frame-pieces. These plates are connected together in any suitable manner, and to them the other essential parts of the support are attached, so that when wearing the same neither the breasts nor the stomach nor the liver are tightened in by lacing.

**GARMENT HANGER AND LOCK.**—J. C. EPLER, Philadelphia, Pa. One purpose of the invention is to provide a hook adapted to receive a coat or like garment and a hat, together with a chain, whereby to hang a bag, and also a clamping device for umbrellas and canes and means for locking the wearing-apparel and an umbrella or cane in their supports, which means are simultaneously operated to lock or release the articles by the action of a single, preferably key-controlled, lock.

**PIN-RETAINING DEVICE.**—R. FISCHER, New York, N. Y. The invention in this case is the provision of a device for holding a pin in the position in which it may be placed in a fabric or garment until purposely removed by the wearer or other authorized person and to so construct the device that it will be light, simple, strong, and easily operated to lock the pin or release it.

**GARMENT-FASTENER.**—W. A. NICKLESS, New York, N. Y. In the present patent the purpose of the invention is the provision of a very light, simple, economic, and neat device especially designed as a hose-supporter or in connection with suspenders and one which can be quickly and conveniently operated.

### Electrical Devices.

**CABLE-HANGER.**—B. H. SKINNER, Canton, Ohio. This improvement relates to means for suspending cables used for telephone or telegraph purposes from a supporting-wire; and the object thereof is to provide a hanger which is easy to secure in place, which may be shortened or elongated, as desired, and which is exceedingly simple in construction and inexpensive.

**INSULATOR FOR LEADING-IN CABLES.**—L. STEINBERGER, New York, N. Y. Mr. Steinberger's invention has reference to insulators, and more particularly to a type of insulator for leading-in cables and other conductors and admitting of use generally wherever it is desirable for a conductor carrying a high-potential or heavy current to pass through a wall, roof, or partition of any kind.

### Of Interest to Farmers.

**DRAFT-GEAR FOR AGRICULTURAL MACHINES.**—J. TILLY, Ladysmith, Kilkerran, South Australia, Australia. The invention has been designed especially to lessen the side draft of a stripper or stripper harvesting-machine, thereby enabling a greater number of horses to be attached abreast, without walking in the crop. It may be applied also to any other agricultural machine having a body which is oscillated upon the main axle and draft attached to a platform at one side of the oscillating body.

**REELING AND UNREELING ATTACHMENT.**—A. J. DETERMANN, Beresford, S. D. The invention contemplates the production of a means which is to be attached to a wagon or like vehicle-bed and operated from the wheel thereof. It is especially adapted to the reeling and unreeling of barb-wire in constructing fences, which is difficult to perform by hand, but may be used with advantage for winding other forms of wire, particularly those employed in fence construction.

### Of General Interest.

**ICE-CRUSHER.**—O. T. LARKIN, Plattsburg, N. Y. The invention pertains to improvements in hand implements for breaking or crushing ice to any degree of fineness, the object being to provide a device of this character that will be so arranged that the clogging of fine ice between the breaking or crushing blades will be prevented.

**COFFEE SEPARATOR.**—R. F. CORDERO, Rubio, Tachira, Venezuela. This invention refers to improvements in separators or sizers for coffee-beans or other material the grains of which are of different sizes or specific gravity, the object being to provide a separator by means of which the work may be rapidly carried on, with the complete separation of the material as to size.

**PLANIMETER.**—E. MCC. SCOVILLE, Wai-pahu, Ter. of Hawaii. The principal objects of this improvement are to decrease the expense of construction and the number of parts of instruments of this character, to provide for additional smoothness, and to provide means for supporting a number of scales in a convenient position in such a manner that it will not be necessary to replace the scales in operation.

**WIRE-STRETCHER.**—O. C. A. SCHWIEN, Davenport, Iowa. In this inventor's former patent, he employed a lever having a curved and toothed portion adapted to engage a fixed post and provided with a wire-grip located between the post and the handle end of the lever. This grip traveled on the curved portion of the lever in stretching the wire, such travel occurring when the lever was swung around the

post. In the present invention he has adopted an arrangement, construction, and combination of parts whereby the power and efficiency of the stretcher as a whole are increased and the weight and cost of the same reduced.

**PAPER-HANGER'S TRESTLE.**—J. R. KINGSELEY, New York, N. Y. The purpose of this invention is to furnish a trestle especially adapted for paper hangers' use and which may be set up in a hallway, utilizing the stair-rail and banisters as a support. A further purpose is to provide a device which will be light and strong and which may be compactly folded up and conveniently placed in position for service.

**EXCESS-BAGGAGE COUPON-CHECK.**—F. H. CRUMP, Los Angeles, Cal. This check is used in combination with any ordinary baggage-check and is characterized by improved construction and novel means of attaching or associating same with the ordinary strap check or shell so that after being attached the excess coupon-check can be opened or unfolded in order that one or more coupons may be removed by the baggage-man.

**MOLD.**—H. BESSER, Alpena, Mich. This device makes brick, blocks, and other plastic material. The principal objects are to so arrange the parts of the mold that they will recede from the concrete without sticking to it or injuring the same, all parts being drawn away from the beginning of the movement thereof, also to provide means for opening, closing, and locking the mold, and also to provide means for guiding the molding material into the mold and guiding a tamper-tool. Mr. Besser has invented another mold, the principal objects of the invention being to provide means whereby the blocks can be molded face down, the cores withdrawn vertically after mold has been filled and turned over on the pallet; to provide for automatically taking up the pallets and locking them to the mold, and depositing the molded articles on the pallets, and to provide means whereby various parts of the mold can be separated from the molded article without injuring the surface thereof.

**RACK FOR TISSUE-PAPER AND THE LIKE.**—W. A. BLACKMAN, New York, N. Y. In this improved rack any of the different kinds of paper may be removed without displacing any of the other kinds, and the removal or insertion of paper does not destroy or injure in any way the paper already on the rack. All of the different kinds of paper are exposed to view, and any color may be selected without disturbing any other sheet or color.

**HOLDER FOR PAPERS OR BAGS.**—GERTRUDE S. PRIDDY, Chicago, Ill. In this case the invention relates to a device for clamping and holding a plurality of sheets of papers or bags; and one of the objects is to produce a device from which the papers or bags may be readily removed one by one without tearing them, and at the same time they are held secure against accidental displacement or removal.

**AUTOMATIC STEAM AND HOT-WATER SAFETY-COCK.**—J. A. FREY, Washington, D. C. The cock is for use as an attachment of domestic water-heaters and steam boilers or generators for relieving pressure of steam when it exceeds a predetermined limit of safety. It is adapted for use in the usual way for discharge of water from a heater or boiler, the automatic feature being additional or supplemental and adapted to come into action only when the usual turning spigot is closed or adjusted to cut off discharge.

**DIPPER.**—C. F. SMITH, New York, N. Y. In dipping milk from cans after the can is almost empty it is impossible to use an ordinary form of dipper, for the reason that the handle of the same cannot be turned to bring the cup of the dipper to a horizontal position, in which it is most readily filled. The inventor overcomes this objection by providing means to swing the cup to a vertical or horizontal position, said means being operable by the hand holding the dipper.

**MARKER FOR BUST-FORMS.**—A. WATERMAN, New York, N. Y. One purpose of the invention is to provide a device particularly adapted for use in connection with bust-forms, wherein the marking-arm of the device may be swung around the form and adjusted vertically and laterally, thus enabling any portion of the form to be conveniently and expeditiously reached to mark the garment placed upon it.

**METHOD OF MAKING BRUSHES.**—J. MORRISON, Troy, N. Y. The invention relates more particularly to a method of assembling and constructing brushes. By this method comparatively inexpensive machinery may be used, and the operation is very simple. The die member, which is made, preferably, of metal and provided with bristle holes or apertures, disposed radially, taken together with a simple means for applying a general pressure, is the only mechanism needed. This die member is in effect a simple form of mandrel.

**COLLAPSIBLE DAM.**—W. W. JONES, Granada, Col. The invention relates to dams designed to be used for many special purposes, but particularly in connection with irrigating canals and ditches. The collapsible dam is intended to be far more effective than the solid, and much cheaper in construction, for the reason that the stationary dam requires more than double the width of the bed, longer piling, and must be made doubly strong to withstand a first flood coming down stream.

**MANUFACTURE OF VARNISHES, BAL-SAMS, AND RESINS.**—A. KRONSTEIN, Karls-

ruhe, Baden, Germany. This process is of considerable importance in avoiding complicated and expensive purifications, and in affording a much greater field. The manufacture is carried out in such manner that the substances to be thickened or the mixtures of several oils are heated, preferably, in closed vessels—that is, practically under exclusion of air in a moderate temperature below that at which decomposition commences.

**FEED-BAG.**—W. H. ROBINSON, New York, N. Y. A feed-bag is provided consisting of a tray from which the animal takes the feed, one or more receptacles for storage of feed and having valve-controlled outlets leading to the tray, and means for opening the valves when the bag is in position upon the animal, whereby the animal can not only feed and have its nostrils exposed, but whereby also the feed is fed to the tray as needed, thus obviating waste.

**PROCESS FOR COOLING COKE.**—C. E. ARNOLD, Wilmington, Del. The improvement has reference to a process for cooling or quenching coke after it is removed from the coke-ovens, and comprises the employment of certain steps by which the temperature of the coke is rapidly reduced and combustion prevented even while the coke is at a high temperature.

**TABLE.**—A. P. SWITZER, New York, N. Y. Mr. Switzer's invention relates to tables, and especially to those adapted for the support of such machines as typewriters. Its principal objects are to provide a table which may either hold the machine in position for use by the operator or which may be shifted with minimum effort to leave the forward portion of the table-top free for other purposes.

**MOLDER'S FLASK.**—G. H. RAYBURN, Columbus, Ohio. By means of this device the impression in the sand of the article to be cast may be expeditiously and perfectly formed. The invention consists of a cope and a drag capable of being opened laterally, combined with a pattern-board adapted to form a partition therebetween, the whole being provided with effective means for holding them in perfect register or for holding the cope and drag in register only.

**BLAST-FURNACE.**—H. W. HIXON, Victoria Mines, Ontario, Canada. The main features of the furnace comprise a lining of refractory material, and an air-jacket constituting a substitute for the water-jacket formerly used and through which the air passes on its way to the tuyers. Greater economy in fuel to smelt the charge is obtained, as all of the heat transmitted through the lining is employed to heat the air in the air-jacket, and this heat is again returned to the furnace proper as the air enters the tuyers. When a water-jacket is used, all of the heat transmitted through the lining is carried away by the water and lost. The furnace saves all of this heat.

**MOLD FOR CONCRETE CONSTRUCTION.**—J. F. SWINNERTON, New York, N. Y. A plurality of strong frames is provided which can be readily attached to provide molds of any dimension and detached after use and repeatedly used in concrete construction. This permits the frames forming the molds to be packed in small compass and easily carried. The frames are made of wood and built so that distortion from moisture is reduced to a minimum and are covered on their inner faces with sheet metal, giving a smooth surface to and avoiding rapid and injurious waste of water from the concrete as the latter dries out.

**AUTOMATIC VALVE.**—C. A. DUNHAM, Marshalltown, Iowa. The invention relates to a valve arranged automatically to close in the presence of heat. It is useful in many connections, particularly as applied to the return ends of radiators in vacuum heating systems. The valve permits the air and water of condensation to flow freely from the radiator; but as steam begins to flow from the valve it will be closed and the movement of the steam arrested.

### Hardware.

**LOCK.**—O. KATZENBERGER, San Antonio, Texas. The object of the inventor is to provide a lock so arranged as to be opened by a key from the outside of the door or by the manipulation of a combination on which the lock may be set, and, further, so constructed that the lock may be opened from the inside without employing a key or operating the combination.

**HEATING AND LIGHTING.**—L. H. THURSTON, Belt, Mont. The improvement is in the nature of a new heating-stove, applicable for heating stoves and furnaces of all kinds, and to which is given the name of "oxygen blast." It is designed to secure a more economical use of fuel, a thorough heating of the lower stratum of air in the room, and a perfect ventilation of the room with removal of foul air.

### Household Utilities.

**AUTOMATIC ALARM.**—P. BOURNE, New York, N. Y. One purpose in this case is to provide an alarm device applicable to windows and which can be readily set at the right-hand or left-hand side of a window, the device being adapted for attachment to the lower sash and for rack or frictional engagement with the upper sash, whereby the upper or lower sash, under ordinary conditions, cannot be raised or lowered without sounding an alarm.

**FLUSHING-VALVE.**—W. S. WHITE, Denver, Col. The invention refers to a valve or mechanism which is applicable to various purposes. The object is to provide a mechanism which will be certain of operation under different conditions and which may be regulated to increase or diminish the flushing period, as may be desired. A float-valve is employed which is adapted to be manually raised into open position, so as to permit the water to flow through the device, and which is gradually deprived of its buoyancy, so that the float-valve may in time return to its seat and cut off water-flow. The longer the time taken in returning the valve the longer the period during which flushing operation continues.

**CARPET-STRETCHER.**—J. DRIVER, San Leandro, Cal. The teeth are set at the requisite distance from the carpet edge, and the device placed upon the carpet. By steady pressure or by a succession of blows with the knee, the operator forces the device forward until the carpet is stretched as required. Powerful pressure may be easily applied in this manner, and the two sets of claws or teeth take a firm hold on the carpet, the latter not liable to be torn or injured.

**SERVING-TRAY.**—C. A. WEISS, New York, N. Y. One purpose of the invention is to so construct the tray that a series of objects and receptacles are carried by a common base and to so group the objects and locate the fastening devices for the tray that when the tray is secured upon the table or other support it will occupy no more room than usually required for a single object. It can rest or be freely moved upon a table and is provided with means for attachment to tables of varying depth of top board.

**WASHING APPARATUS.**—F. H. COLE, Groveton, N. H. Broadly, the invention comprehends a peculiar nozzle, having a suitable handle, a water-supply pipe connected with the nozzle passage-way, a cut-off valve for the control of water, a sponge, brush, or similar scrubbing means, and peculiar means for support thereof, in front of the discharge opening of the nozzle. It is designed for washing cars, windows, etc.

**ADJUSTABLE WINDOW-CHAIR.**—D. S. LEGER, Lynn, Mass. The chair is adapted to be secured to a window-sill and upon which chair a person may sit when cleaning the outside of the window. All liability of accident when sitting or standing on the sill is entirely eliminated. The chair may be secured very quickly and requires no special skill to adjust it to fit the window.

**SELF-CLOSING VALVE.**—N. NILSON, New York, N. Y. The valve is useful in connection with devices adapted for flushing closets, urinal-bowls, and the like. The object is to provide a valve which may be operated manually to permit the flow of water through the same, and which automatically closes the inlet to the valve in a gradual manner, permitting a slow afterflow. The inlet is closed through the rotation of a motor actuated by the flow of the water and which rotates a cam-wheel adapted to close the inlet-valve.

### Machines and Mechanical Devices.

**WEFT-REPLENISHING MECHANISM FOR LOOMS.**—L. MILLER, Yonkers, N. Y. In weaving operations the contents of the shuttles soon become exhausted, and frequently it is necessary to stop the operations of the loom in order to substitute another. The object of the invention is to provide an arrangement whereby another shuttle may be substituted for the one in use without necessitating the suspension of the weaving operation.

**CLUTCH.**—T. J. FAY, New York, N. Y., and J. M. ELLSWORTH, Bernardsville, N. J. This invention relates to certain improvements in clutches, and particularly clutches designed for use in transmitting power from the driving member to the driven member of motor-vehicles; and one object is to provide a clutch of small diameter, whereby the weight is very materially reduced and whereby a flywheel fan is employed.

**HOISTING APPARATUS.**—F. D. MILLIN, Spokane, Wash. This apparatus is to be used in lifting brick, beams, and other forms of building material, also in extracting stumps, stretching wires, and where a pulling strain is necessary. It can be readily moved from place to place under the action of its own power and employed to drive hoisting apparatus or the carriage on which the machine is mounted by the will of the operator, combined with suitable means to anchor the machine when used in the hoisting operation.

**TRAINING-MACHINE.**—E. BROWN, St. Louis, Mo. The invention refers to that type of machines in which an inflated bag is suspended in a position where it may be repeatedly struck by a person employing a machine; the object being to provide a device in which the bag may freely swing back and forth, as in the common form of training-machines of this character, but in which the point of suspension may also move about and give the person added exercise.

**TIME-RECORDER.**—J. G. WYNN, Madison, Wis. The invention admits of general use, but is of peculiar value in factories, stores, and similar institutions in which it is desirable to make records of time of employees. It relates more especially to mechanism for cutting time-cards so as to note in contrast with each other the respective times for beginning and finishing different pieces of work.

**TYPE-WRITER ATTACHMENT.**—W. C. PLANK, Las Flores, Mexico. The principal object of the invention is to provide means for allowing the carriage to move varying distances according to the letters struck, so as to provide a uniform spacing between the adjacent letters instead of between the centers of the letters. This will greatly improve the appearance of the work, and it is accomplished without greatly modifying the construction of ordinary machines and permits the use of regulation printing-type; and use of capitals without striking the spacing-bar afterward.

**TRANSMISSION MECHANISM.**—J. J. TROEGER, Chicago, Ill. The principal objects of the invention are to provide for obtaining the same number of different speeds in both the forward and reverse motion with the use of fewer gears than are ordinarily used in reversing and varying speed devices; also, to provide a device which will give additional speed in both directions by the simple addition of two gears; also, to so construct a device that all the gears can be placed in an oil-tight case, and readily lubricated.

**SPEED-INDICATOR.**—L. L. B. DENIS, 135 Boulevard Menilmontans, Paris, France. The device is so constructed as to indicate even at a distance the speed of a part to which a rotary motion is imparted, such speed being expressed, according to the applications, either by the number of turns per minute in the case of a machinery-shaft, or, for instance, in the case of a motor-car by the journey run by the rim of the wheel within a given unit of time, miles run in an hour, etc. It can give the number of pulsations per minute made by a part having a reciprocating motion and operated by a crank.

**DRIER.**—R. F. CORDERO, Rubio, Tachira, Venezuela. This invention pertains to improvements in driers for coffee, cereals, fruit, etc., an object being to provide a device by means of which the material may be rapidly and thoroughly dried. When the drier is used for drying fruit or the like, the several plates which are designed to prevent the passage of hot air to the middle portion of the drier-section when the drier is used for coffee, cereals, or the like, are removed.

**TRANSMISSION MECHANISM.**—F. STRICKLAND, Muskogee, Ind. Ter. The object of this inventor is to produce a mechanism which will operate to transmit power at a varying-speed ratio. It is applicable in connection with many machines having a reciprocating part which does work on one stroke only. By means of the invention the return stroke is made at a greater speed, so that the power is most advantageously applied to the work.

**THEATRICAL APPARATUS.**—R. F. STALEY, Rochester, N. Y. The object of the improvement is to provide certain improvements in apparatus whereby a group of stage properties representing a set of articles belonging to one scene may be almost instantly transformed to a set of different articles belonging to an entirely different scene—for instance, changing a scene representing a cooper-shop to one showing the interior of a room—the transformation taking place without changing the position of the properties on the stage.

**TYPE-WRITER.**—E. B. PIERCE, Alameda, Cal. The invention more particularly relates to mechanism for returning the carriage to its initial position and for advancing the platen. Its principal objects are to provide means for effecting the reversal and feed, either automatically or manually, with minimum effort on the part of the operator, and in either case to effect this speedily and with little shock upon the machine.

**COTTER.**—T. F. MCANDREWS, Cohoes, N. Y. In this case the invention has reference to cotters used on motion-rods using a taper key or gib; and its object is to provide a new and improved cotter arranged to eliminate the possibility of losing the rod-key when the gib is set out properly against the rod.

**PHOTOGRAPHIC-PRINTING MACHINE.**—J. F. JUNGKIND, Little Rock, Ark. There is provision in this invention for conveniently turning on and off the light at the desired times; for also manipulating a red light in a most convenient manner, so that it will always be lighted when desired and extinguished when not needed; to provide for printing both from plates and from films, and further, to provide for holding the printing-paper in contact with a negative.

**FEED-REGULATOR.**—G. HALLIDAY, Superior, Wis. The invention is an improved feed-regulator for the feeding of grain and other materials in a broad, thin, and continuous stream. The invention contemplates a device which shall be an effective means for positively distributing grain uniformly and at any desired rate.

**HAND DEVICE FOR OPERATING SEWING-MACHINES.**—MILDRED J. RAPIER, Beaumont, Texas. The aim of this improvement is to provide a device which shall be capable of rapid and easy adjustment, whereby it may be put into combination with the drive-wheel of a machine to enable persons who through illness, accident, weakness, etc., are incapable of operating the ordinary foot-treadle of a machine to operate sewing-machines by hand-power.

**ACETYLENE-GAS GENERATOR.**—B. W. SCOTT, San Jose, Cal. The intention in this improvement is to provide an apparatus for generating gas from carbide which will be

simple, compact, and thoroughly safe and so constructed that the feed of carbide may be made automatic when desired, but wherein the feed of carbide at all times will be under the control of the attendant.

**MOLDING-MACHINE.**—H. BESSER, Alpena, Mich. The objects of the invention are: to quicken the closing of the mold, so as to save time; to render certain parts of the mold as nearly as possible automatic in their movements; to enable blocks to be molded directly upon the ground or similar surface, so that the blocks when finished will continue to occupy positions originally occupied by the material of which blocks are made, and to facilitate the construction of waterproof blocks. Mr. Besser has invented another molding-machine in which the more particular object is to produce a type of machine suitable for molding bricks and blocks of concrete or other plastic material and from which the molded blocks may be readily detached.

#### Medical Appliances.

**DENTAL FLOSS-HOLDER.**—C. M. OVERBAUGH, Clarion, Iowa. This invention refers to improvements in holders for floss employed in dentistry for cleaning between the teeth, the object being to provide a device of this character that will be simple in construction in which new lengths of floss may be quickly adjusted when required and tightly clamped.

**TABLET-MACHINE.**—J. V. BRANN, Knoxville, Iowa. Mr. Brann's invention is an improvement in machines for molding and compressing tablets. The machine may be made to manufacture any desired number of tablets at a single operation and is especially suitable for physicians' use, since it may be constructed at small expense and is capable of producing either compressed tablets or tablet triturates.

#### Prime Movers and Their Accessories.

**ENGINE.**—A. S. BARNES, Batavia, N. Y. The improvement is in an engine adapted for the use of steam, gas, or other motive agent. The engine comprises a casing, a piston mounted to swing in the arc of the circle in the casing, a crank-shaft, a connection between the piston and crank-shaft, an inlet-pipe for a motive agent, a valve for controlling the inlet, a cam on the crank-shaft for operating the valve in one direction, an exhaust-pipe, a valve for the exhaust-pipe, a cam on the crank-shaft for moving the valve in one direction, and a pipe leading from the exhaust into the upper portion of the casing.

**ASH-PAN FOR LOCOMOTIVES.**—C. G. ECKENRODE and N. BALDWIN, Pierre, S. D. The invention has reference to an improved construction in ash-pans for locomotives whereby the pan may be dumped at any time by the movement of a single lever within easy reach upon the cab. The ashes may be dumped from the pan in a few seconds without the fireman leaving the cab or climbing to any dangerous position.

#### Railways and Their Accessories.

**AIR-BRAKE ATTACHMENT.**—G. EMERY, Airton, Ark. Primarily the object of the inventor is to so construct the usual angle-cocks applied to the train-lines in air-brake systems that should the cock be accidentally, maliciously, or otherwise closed during operation of the train the engineer will be instantly informed, thus avoiding the possibility of the engineer running the train in ignorance of the fact that a part thereof is cut off from the brake control.

**GRAIN-DOOR FOR CARS.**—E. SCHREIBER, Atchison, Kan. The door is such as is used on freight-cars for preventing the leakage of grain in shipment. The object of the invention is to produce a door which may be easily closed or opened and held out of the way so as to clear the doorway. The purpose more specifically is to produce a door which will be light and admirably adapted to support the pressure of the grain within the car.

#### Pertaining to Recreation.

**FISHING-REEL.**—T. V. BUCKWALTER, Altoona, Pa. The object of the invention is to provide a reel of simple and strong construction and which permits the strain in winding the line upon the spool to be exerted in the plane of the longitudinal axis of the rod, and thus obviates a distortion of the same in the hand of the operator.

**HAMMOCK.**—E. F. PILLMAN, Boston, Mass. One object of the invention is to provide a frame on the order of a tripod and which occupies a substantially horizontal position in use above the hammock, which frame is provided with means for connecting it with the back and the front portions of the hammock and also with an overhead support.

**GEAR FOR MERRY-GO-ROUNDS.**—W. F. MANGELS, New York, N. Y. The object in this instance is to provide a gear arranged to accommodate any desired number of crank-shafts and to drive the same directly and at the same time from the main gear-wheel, thus obviating all compounding of the gear and rendering the merry-go-round simpler and more durable in construction and effective in operation.

**PUZZLE.**—W. J. BYCRAFT, Ashtabula, Ohio. The object in this case is to provide a simple and durable puzzle or game which is of suf-

ficient difficulty of performance to necessitate some skill and practice, which can be used as a puzzle by an individual or as a game by two or more, and which is easy and inexpensive to manufacture.

**FISHING-FLOAT.**—W. S. PETTIS, JR., Pass Christian, Miss. The invention resides in the peculiar form of detachable ring arranged on the quills of the float for attaching it to the fishing-line, and consists in forming the attaching-ring of helical coils of wire having an intermediate convolution thereof bent into loops or clamping form adapting the ring to be fastened on the line and carried thereby ready to be slipped on the float quills, effecting connection of the upper and lower ends of the float in desired adjustment on the line.

#### Pertaining to Vehicles.

**VEHICLE COVER.**—E. L. WESTBROOKE, Jonesboro, Ark. The object of the invention is to produce a cover properly supported and suspended from above the vehicle and capable of being dropped down around it and protect it from dust and at the same time is light enough to be readily drawn up from the vehicle when it is desired to use the latter. It is desirable as a protector from dust for automobile carriages, surreys, and the like.

**DEVICE FOR RETARDING THE REBOUNDING ACTION OF SPRINGS.**—A. C. WALLING, Belleville, N. J. The object of the invention is to provide a device for preventing or retarding sudden rebounding action of springs in the space between the axle and the body or frame of the vehicle to insure easy riding to the occupants of the vehicle and without danger of the occupants being unduly jolted or unseated when the vehicle passes over deep gutters or over stones and other obstructions.

**NECK-YOKE ATTACHMENT.**—D. N. LUSE, Carroll, Iowa. Many accidents are caused by poles dropping, and thousands are annually killed or crippled by the use of unsafe neck-yoke centers, and the safety feature of this device is therefore of great importance. The safety-stirrup being in the rear of and engaging with an eccentric flange will prevent the pole-section from becoming displaced, and will hold same securely on the pole-tip without interfering with any of the desired movements of the pole-section, the stirrup forming a safety device which catches behind the flange on the pole-tip and securely braces by a brace-loop. The yoke is turned one-half round in order to be placed on and removed from the tip.

**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.



#### 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. Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn. Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same. Special Written Information on matters of personal rather than general interest cannot be expected without remuneration. Scientific American Supplements referred to may be had at the office. Price 10 cents each. Books referred to promptly supplied on receipt of price. Minerals sent for examination should be distinctly marked or labeled.

(10386) E. O. H. asks: Will you kindly inform me what composition pulp or fiber water pails, tubs, and trays are made of? Also kindly explain how they are formed or pressed. A. Old paper stock is boiled to a pulp with water. It is then pressed to remove the excess of water and mixed with glue, gum dextrine, starch paste, or rosin size and pressed into oiled molds under heavy pressure. Dry. Then soak with linseed oil and dry with heat. It is usual to add some mineral weighting material to the pulp, such as clay, barytes, etc.

(10387) F. R. J. asks: How should paper to be treated (manila or wood pulp or straw paper) to prevent mold when placed on damp or moist surface? A. Any antiseptic chemical can be used; as these are all poisonous, paper so treated must not come in contact with edibles. Dichloride of mercury, sodium fluoride, carbolic acid, salicylic acid, or benzoic acid are a few of such chemicals. The essential oils are also very good, and would not be poisonous to any extent; dissolve in alcohol and flow it over the paper to be treated. Oil of sassafras is one of the cheapest that can be so used. Oiling or paraffining the paper will also serve.

(10388) B. J. L. asks how to digest old rubber. A. Place the material, cut in small shreds, in a strong (boiler iron) airtight vessel, provided with a good safety valve, and introduce into it 4 or 5 parts of bisulph-

ide of carbon for each part (by weight) of rubber. Close all the openings, and place the vessel over a suitable water bath or, what is better, have a small steam coil inserted within the boiler. Heat for an hour at the boiling point of water. This will insure the complete solution of the rubber. The vapor of the bisulphide is very inflammable; and when mixed with air, it is explosive when ignited. For these reasons, as well as because of the offensive odor of the solvent, the operation is best conducted in the open air, and with steam heat only.

(10389) E. E. S. desires a method of identifying the element rhodium, also its chemical reactions, which would enable one to test ores for the presence of the above-named substance. A. The separation and detection of rhodium is difficult and requires expert chemical work; it would be impossible to give any simple method of detection, as it is always associated with other metals of the platinum group. There is no book published devoted to the analysis and separation of the rare earths. The information must be obtained by consulting the various standard works on chemical analysis and by looking through the journal literature. Fresenius' "Qualitative Analysis" gives considerable information as to rhodium, as well as on the other rare metals.

(10390) J. W. W. wishes to know what is best for a mold to burn a substance at a red heat that will not crack or give? Have tried wrought iron. Cast sometimes gives or bends. How would fire clay or the same composition as Berlin crucible do? Can you give me a formula for it? A. Fire clay, mixed with some molder's sand, or kaolin, can be used for making such molds. If mixed with stale beer or ale, it gives a firmer mold than if mixed with water. Phosphate of lime, also mixed with stale beer, gives a very clean, white mold, but is not strong. Thoroughly dry and bake before using.

(10391) R. M. L. asks how to preserve flowers. A. I. A method of preserving the natural colors of flowers, recommended by R. Hegler in the Deutsche Botanische Monatshefte, consists in dusting salicylic acid on the plants as they lie in the press, and removing it again with a brush when the flowers are dry. Red colors in particular are well preserved by this agent. Another method of applying the same preservative is to use a solution of 1 part of salicylic acid in 14 of alcohol by means of blotting paper or cotton wool soaked in it and placed above and below the flowers. Powdered boracic acid yields nearly as good results. Dr. Schonland, in the Gardener's Chronicle, recommends, as an improvement in the method of using sulphurous acid for preserving the color, that in the case of delicate flowers they might be placed loosely between sheets of vegetable parchment before immersion in the liquid, so as to preserve their natural form. 2. Insert their stems in water in which 25 grains ammonium chloride (sal ammoniac) have been dissolved. Flowers can be preserved in this way for fifteen to thirty days. To preserve them permanently for several months dip them into perfectly limpid gum water and then allow them to drain. The gum forms a complete coating on the stems and petals, and preserves their shape and color long after they have become dry.

(10392) C. N. asks how to join or weld tortoise shell. A. 1. Bring the edges of the pieces of shell to fit each other, observing to give the same inclination of grain to each; then secure them in a piece of paper, and place them between hot irons or pincers; apply pressure, and let them cool. The heat must not be so great as to burn the shell; therefore try it first on a white piece of paper. 2. Small pieces of good tortoise shell may be joined so as to form one large, apparently seamless piece in the following manner: Slope off the margins of the shells for a distance of about one-quarter of an inch from the edge. Then place them so that the margins overlap one another; and thus arranged put them in an iron press and immerse in boiling water for some time. The pieces by this means become so perfectly united that the joints cannot be seen. The filings and very small scraps may be softened in hot water and consolidated by hydraulic pressure in metal molds. Prolonged heating of the tortoise shell darkens it, and greatly lessens its beauty.

(10393) R. J. asks: Can you kindly advise us as to the best means of oxidizing yellow and red brass (in castings or in rolled sheets) copper and bronze. We have several showcases, the metal trimmings of which are backed with wood, rendering it impossible to heat same sufficient to oxidize in the usual manner. A. If the blackening effect is the one desired (and this is what is known as "oxidizing" in the trade) it can be obtained by using a very dilute solution of potassium sulphide, to which sometimes a little ammonium sulphate is added. As the article itself cannot be heated, it will be well to heat the solution of potassium sulphide.

(10394) F. T. H. asks: Will you kindly inform me what is the common practice in writing the past participle of the verb to arc, a term which I believe is common in electricity? Is this spelled arced or arched? Also, what is the practice regarding the spelling of the past participle of the verb shellac? Should this be spelled shellacked or shellaced? A. The word "shellac" is spelled both with and without a