

**RECENTLY PATENTED INVENTIONS.**  
Of General Interest.

**OIL-PRESS MAT.**—R. F. WERK, New Orleans, La. The object in view in the present invention is the production of a hair mat or cloth for use in oil-presses which is capable of a certain amount of pliability in a longitudinal direction, whereby the formation of a cake of the compressed material is facilitated. The parts are arranged to afford protection to weft-threads, to reduce tendency of selvage to unravel, and to enable the mat to be folded longitudinally at any time without breaking or giving way in threads or strands. This inventor has secured another patent on an oil-press mat. It is made of animal hair by weaving together threads or strands in a well-known manner; and the distinguishing feature resides in warp-threads made of soft hair. This overcomes the great difficulty, a liability to unravel. The desired strength and durability of the mat are secured by use of hard, stiff, and coarse hair in the production of weft-threads. Both improvements are divisions of earlier applications for Letters Patent filed by Mr. Werk.

**LATCH AND LOCK.**—C. A. PRISCOTT, Victoria, Canada. The improvement refers to insertible or mortise locks adapted to serve the dual purpose of a door lock and latch, and has for its objects to provide novel details of construction for a combined door lock and latch which are simple and inexpensive and that adapt the same for convenient application upon a door without requiring a large mortise to be made therein.

**FOUNTAIN-PEN.**—F. E. SHAW, Evart, Mich. The piston being in inward position, the pen end of reservoir is immersed in ink and piston is drawn outwardly by the finger-piece of its rod, a protection contacting with inner side to move it. This sucks the ink into the reservoir. The rod is turned until its projection strikes the portion of contact member adjacent to the opening and is then thrust inwardly until its enlargement fills the opening. It is now ready for use. The charge exhausted, piston is returned to active position by drawing out piston-rod until the inner extremity of projection is outside the head. Then the projection is turned into coaction with contact member at the side opposite the opening, when the piston will be held so as to be forced inwardly.

**SECRET DOUBLE SAFETY-POCKET.**—C. H. SCOTT, New York, N. Y. The objects of the invention are to provide means for holding valuables or articles of any kind, effectually concealing the receptacle thereof by so constructing it as to permit it to be comfortably worn beneath the clothing, and to construct an efficient holding means for securing it to the person or garments, especially so as to enable it to serve the additional function of supporting hose or other garments.

**SENSITIVE PHOTOGRAPHIC-PRINTING PAPER.**—E. C. MORAN, Kew Foot Road, Richmond, Surrey, England. The improvement in this case pertains to sensitized photographic-printing papers, plates, and films, more especially of the "self-toning" class, the invention consisting, essentially, in the employment as vehicle for the light-sensitive salts in the emulsion with which the support (paper, glass, celluloid, etc.) is coated of agar-agar and arrowroot or other starch in substitution for gelatin or colloid. When paper is used as the support, it may be pure raw paper or paper with baryta-coated surface.

**HORSE-FLY TRAP.**—J. MCCONNELL, Blaine, Wash. In the present patent the invention has reference to fly-traps; and the object is to produce a device of this character which is intended especially to be used to catch horse-flies, deer-flies, and other insects which torment horses. The device may be attached to any suitable point, a very desirable place being on a trace opposite to the middle of the body of a horse.

**NON-REFILLABLE BOTTLE.**—J. E. MOSEMAN, Donaldsonville, La. The improvement belongs in that general class of bottles which are provided with attachments adapted to prevent refilling after discharge of original contents, and it is more particularly an improvement in that special class in which the attachment comprises a stopper permanently secured in a bottle-neck and provided with a passage having a valve that will permit discharge but prevent entrance of liquid.

**INFUSION DEVICE.**—MARY H. FRENCH, New York, N. Y. This invention relates to tea-making devices; and its object is to provide a new infusion device for making infusions of tea and like substances in a very simple and convenient manner and to a strength according to the desires of those for whom the infusion is intended, the device also serving for holding sugar and like substances used for sweetening beverages.

**SHAVING-BRUSH HANDLE.**—J. L. ERSKINE, New York, N. Y. The purpose in this improvement is to provide a construction of one-piece handle for shaving brushes in which all the advantages of a two-piece or multiple-piece handle are obtained and whereby at the same time the cost of manufacture is not materially increased over the ordinary one-piece handle.

**DRAFTING INSTRUMENT.**—A. A. ALLEN, Ortonville, Minn. In this case the object of the invention is to provide a new and improved drafting instrument more especially designed

for the use of tinners, plumbers, and other mechanics in laying out the blanks for forming elbows, T's, and other articles of sheet-metal and like material.

**Household Utilities.**

**HOLDER FOR BROOMS AND BRUSHES.**—J. HUTCHINSON, Belleville, Ill. This article of manufacture comprises an improved broom-holder formed of a single piece of wire, one end of which is screw-threaded and projects laterally, and a U-shaped body portion composed of opposite jaws formed by loops of the wire, the latter extending across diagonally from one jaw or loop to the other.

**Railways and Their Accessories.**

**AIR-BRAKE SYSTEM.**—J. E. SHAW, Council Grove, Kan. The regulation by the engineer of the exhaust and the establishing of communication between the locomotive-cab and the train, in this invention, is secured without in any way impairing the efficiency of the brake systems as they are used at present. On the contrary, they are made more effective by the maintenance of control of the brakes under all conditions.

**MEANS FOR PREVENTING RAILS OF RAILWAY-TRACKS FROM CREEPING.**—J. R. LEIGHTY, Cumberland, Md. This device serves as a stop to prevent any creeping of the rail—that is to say, when the device is applied it then constitutes a stop by reason of its construction and arrangement irrespective or in advance of the canting of the nut on the bolt which occurs by actual creeping of the rail and only serves to increase the gripping action of the device. The thrust of the tie in case of creeping of the rail is on the end of the main plate proper and not on the wings thereof.

**FRUIT, PRODUCE, AND REFRIGERATOR CAR.**—E. M. PHILLIPS, Castile, N. Y. The car is adapted for ventilation and for heating or refrigeration, as may be required. The most loss is from frost affecting cars at the bottom and ends. By the manipulation of the shutters and doors the car can be made much warmer in winter and cooler in summer; also, when it is desired to ship fruits, vegetables, etc., in warm weather (in bulk), the cold air from the ice-box will circulate beneath the floor, making the refrigerator much more effective than in the ordinary refrigerator-car. For this purpose it is necessary to close the door at the lower edge of one of the partitions.

**CATTLE-GUARD.**—J. COSTELLO, Glasgow, and W. D. MILLER, Saco, Mont. The object of the invention is to provide details of construction for a guard which effectively obstructs the passage of live stock along or across the rails and bed of a railroad. Means permit an animal to lift its feet and escape from the guard, the insecure footing and pain inflicted while avoiding serious injury so alarming the beast that it will retreat from the guard rather than traverse it in any direction.

**RAILROAD SAFETY-ROD.**—B. SARGENT, Rock Island, Ill. The improvement is in that class of bridle, ties, or couplings employed for preventing rails from spreading and which may be utilized independently of the ordinary ties upon which the rails are laid and spiked. Most efficient means are provided for preventing rails from spreading whereby perfect safety is obtained, and sleepers or ordinary ties supporting the rails are relieved of strain and wear incident to the usual means of fastening the rails thereto.

**Pertaining to Recreation.**

**DEVICE FOR ATTACHING FISHING-LINES TO FLOATS OR SINKERS.**—A. R. ROBERTSON, Pass Christian, Miss. This invention has for its purpose the provision of an attaching device of simple construction, by means of which a line may be quickly attached to and securely held in contact with a float or sinker, but permitting the float to be adjusted as desired, and that may be readily detached without removing hooks from the line or line from the rod.

**Pertaining to Vehicles.**

**RUNNING-GEAR.**—S. S. BREESE, Southampton, and C. L. LAURANCE, Bayshore, N. Y. This running gear is especially applicable for automobiles, but capable of general use. The objects are to provide a gear which will be lighter and of greater strength than those now known and also which will be flexible in all directions, but will operate without vertically deflecting the body of the vehicle.

**STEERING-GEAR.**—H. M. LORTON, Atlanta, Ga. This steering-gear is especially intended for use on automobiles. Means are employed by which the inventor is able to avoid any and all of the accidents which result from a sudden jar acting upon the handle of the steering-gear, as the steering-wheel locks positively with the rack-bar, so the latter cannot move to any extent in either direction except when positively operated in such direction by the manipulation of the steering-wheel. By turning the wheel in either direction the bar may be moved in one direction or the other as desired.

**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 the paper.

**Business and Personal Wants.**

READ THIS COLUMN CAREFULLY.—You will find inquiries for certain classes of articles numbered in consecutive order. If you manufacture these goods write us at once and we will send you the name and address of the party desiring the information. In every case it is necessary to give the number of the inquiry.  
MUNN & CO.

Marmetron Works, Chicago. Catalogue, free.  
**Inquiry No. 6956.**—For manufacturers of stereopticon views.

For hoisting engines, J. S. Mundy, Newark, N. J.  
**Inquiry No. 6957.**—For manufacturers' works of an electric clock; also dials and pendulums.

"U. S." Metal Polish, Indianapolis. Samples free.  
**Inquiry No. 6958.**—Wanted, address of parties handling thermite used for welding rails and cast iron appliances for using same.

Perforated Metals, Harrington & King Perforating Co., Chicago.  
**Inquiry No. 6959.**—For manufacturers of electrothermopiles.

Handle & Spoke Mch'y. Ober Mfg. Co., 10 Bell St., Chagrin Falls, O.  
**Inquiry No. 6960.**—For manufacturers of paper tubes and tube boxes, cartons, etc.

Adding, multiplying and dividing machine, all in one. Felt & Tarrant Mfg. Co., Chicago.  
**Inquiry No. 6961.**—For manufacturers of Geissler tubes.

Commercially pure nickel tube, manufactured by The Standard Welding Co., Cleveland, O.  
**Inquiry No. 6962.**—For manufacturers of fountains, vases, urns, etc.

Sawmill machinery and outfits manufactured by the Lane Mfg. Co., Box 13, Montpelier, Vt.  
**Inquiry No. 6963.**—For manufacturers of drop hammers run by compressed air.

I sell patents. To buy them on anything, or having one to sell, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y.  
**Inquiry No. 6964.**—For manufacturers of laundry supplies.

The celebrated "Hornsby-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company, Foot of East 138th Street, New York.  
**Inquiry No. 6965.**—For manufacturers of mica-cutting machines.

Gut strings for Lawn Tennis, Musical Instruments, and other purposes made by P. F. Turner, 46th Street and Packers Avenue, Chicago, Ill.  
**Inquiry No. 6966.**—For manufacturers of lock umbrella stands, patented by A. M. Foote, February 7, 1890.

Sheet metal, any kind, cut, formed any shape. Die-making, wire forming, embossing, lettering, stamping, punching. Metal Stamping Co., Niagara Falls, N. Y.  
**Inquiry No. 6967.**—For manufacturers of churn power which could be applied to the dash.

You can rent a well equipped private laboratory by day, week or month from Electrical Testing Laboratories, 548 East 80th Street, New York. Absolute privacy. Ask for terms and facilities.  
**Inquiry No. 6968.**—For manufacturers of machinery for making round and square split matches.

Manufacturers of patent articles, dies, metal stamping, screw machine work, hardware specialties, wood fiber machinery and tools. Quadriga Manufacturing Company, 38 South Canal Street, Chicago.  
**Inquiry No. 6969.**—For manufacturers of floral oil, such as is used in making perfumery.

Space with power, heat, light and machinery, if desired, in a large New England manufacturing concern, having more room than is necessary for their business. Address Box No. 407, Providence, R. I.  
**Inquiry No. 6970.**—For manufacturers of working models of locomotives and steamboats, such as are displayed in ferry stations.

WANTED.—The patents or sole agency for Britain and France, of new machines and articles used in the Brewing and Allied Trades. Highest references given and required. State best terms with full particulars to "Wideawake," care of Streets Agency, 30 Cornhill, London, England.  
**Inquiry No. 6971.**—Wanted, address of some model-making works and electrical novelty dealers.

Electrical and Mechanical Devices Manufactured. Inventors and others wishing to have specialties manufactured or estimates made as to the probable cost of manufacture, will do well to correspond with the undersigned. Frank Riddell Company, Manufacturers of Specialties, No 200 Summer St., Boston, Mass.  
**Inquiry No. 6972.**—For manufacturers of metal specialties.

Specialist opening for a high-grade mechanical engineer, who has had a broad experience in managing machine shops, the manufacture of machinery, engines and metal specialties. Applicants must be in prime of life and now employed. Preference will be given to applicants who have had modern scientific training in mechanical schools of high standing. Unqualified references will be exacted. All communications received will be regarded as strictly confidential. Address Mechanical Engineer, Box 778, New York.  
**Inquiry No. 6973.**—For manufacturers of foot-power, coil-winding machines.

**MOUNTAIN AND LAKE RESORTS.**

Is the name of a beautifully illustrated publication of one hundred and twenty-eight pages just issued by the LACKAWANNA RAILROAD. The book contains a list of more than four hundred hotels and boarding houses among the various mountain and lake resorts reached by that road in New York, New Jersey and Pennsylvania. It suggests where to go, how to go, what it will cost and what can be seen and done when you get there. In addition there is a delightful love story entitled "A Paper Proposal," illustrated by well-known artists.

The book will be sent on receipt of ten cents in stamps addressed to T. W. LEE, General Passenger Agent, New York City.

**Inquiry No. 6974.**—For manufacturers of small gears for models.

2d-hand machinery. Walsh's Sons & Co., Newark, N. J.  
**Inquiry No. 6975.**—For manufacturers of small gray iron castings 1/8 to 3/16 of an inch in thickness and about three inches long.

**Inquiry No. 6976.**—For manufacturers of creosote.

**Inquiry No. 6977.**—For manufacturers of soap machinery.

**Inquiry No. 6978.**—For manufacturers of an apparatus burning petroleum or kerosene that can be used in residences for heating hot water boilers.

**Inquiry No. 6979.**—For manufacturers of milk powder machinery.

**Inquiry No. 6980.**—For manufacturers of hand sewing machines to make Hessian flour and grain bags.



**Notes and 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. 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.

(9664) N. D. M. says: I require to build a cement flume and penstock in connection with my flour mill here to obtain power by water wheels to operate my mill. I have 11-foot head of water, my dam backs the water back about 25 miles, spring freshets are heavy. I want the flume and penstock all one piece of work, same width and depth from pond to tail race, except in penstock where wheels will be. Now what would be the proportion of cement and sand or fine gravel used and how thick would the walls and end be at bottom and top to stand pressure, or if all the same thickness all the way up? Flume and pit in all would be about 50 feet long and 9 feet wide. Flume part would be in a bank of earth while penstock would be exposed. A. In reply to your inquiry, we would say that a concrete for such a piece of work as you describe should be made of 1 part of a good brand of Portland cement, 3 parts of good, clean, sharp sand, and 5 parts of broken stone or clean, coarse gravel, free from dirt or sand. It is impossible for us to advise you regarding the thickness of the walls or their required width at the base, without detailed information regarding every part of the work. The work which you suggest is too important for it to be wise for you to go ahead with it without having plans prepared for you by an expert engineer or one who has had wide experience in such matters.

(9665) W. H. M. says: Will you kindly inform the writer how many pounds a balloon 8 feet in diameter, inflated with approximately 258 cubic feet of the ordinary street gas, will be able to lift? A. One cubic foot of coal gas at 32 deg. F. weighs 0.0354 pound. One cubic foot of air at the same temperature weighs 0.0807 pound. One cubic foot of coal gas in a balloon will therefore be able to lift 0.0453 pound, and 258 cubic feet will be able to lift 11.7 pounds, provided the temperature of the gas and the air is 32 deg. F. If it is 70 deg. F., this amount will be reduced to 10.8 pounds.

(9666) J. T. R. asks: Will you please favor me with the recipe for making concrete for sidewalks, something that I can guarantee not to crack. A. In order to make a thoroughly first-class cement sidewalk, proceed as follows: First, put in about six inches of clean, dry cinders. On top of this put six inches of concrete, made up as follows: 1 part of Portland cement, 3 parts of clean, sharp sand, 5 parts of good broken stone. This concrete should be thoroughly rammed in place until the water appears at the surface at every point. After the concrete is set, cover it with a coating, about 1 1/2 or 1 3/4 inches thick, made up of equal parts of best Portland cement and clean, sharp sand. The latter should be troweled to a smooth, even polished surface. The concrete, if required in small quantity, can be most easily mixed by hand, turning the mixture of cement, sand, and stone with shovels until they are evenly distributed through the mass. If very large quantities are needed, it is more economical to do this mixing by machinery. The cost of concrete will depend very much upon the locality in which the work is done and the quantity desired. It should not, under ordinary circumstances, exceed about \$6 per cubic yard.

(9667) B. G. asks: 1. I have been asked why it is that cream came to the top of milk. Now, the specific gravity of cream is greater than milk, so why should it float? A. Your difficulty in understanding the rising of cream upon milk, and its separation in a separator, is due to your statement that the specific gravity of cream is greater than that of milk; this is not the case. Milk is heavier than water, its specific gravity ranging from 1.029 to 1.034 at 60 deg. F. A quart of water weighs 2 pounds 1.38 ounces. A quart of milk weighs 2 pounds 2.38 ounces on the average; if it contains a larger per cent of butter fat it will weigh less, and if less butter fat it will weigh more. Since fat is lighter than water the more fat it contains the less the milk weighs, unless the lime and other solids which are heavier than water are also in greater proportion. So, also, milk is heavier after the fat has been removed. Skim milk has a specific gravity from 1.033 to 1.037. Cream, therefore, comes to the top of milk which is