

ticles in a casing and automatically delivering one bag at a time upon manipulation of any desired starting device—such, for instance, as coin-controlled mechanism; also means for preventing the delivery of more than one package at each operation of the controlling device and for heating the packages, to keep the contents warm at all times.

**FEEDER FOR SUGAR-CANE CARRIERS.**—L. M. DILL, Avoca, La. The purpose of this invention is to provide a simple and economic machine especially adapted for raking cane from a car upon the carrier which conducts it to the sugar-mill and to so construct the machine that the operator can cause the rake to move forward or backward or be raised or lowered at will.

**TRAP.**—W. E. WERD, Deer Lodge, Mont. The object of the improvement is to provide details of construction enabling convenient and safe setting of the trap, its easy and rapid release from a captive, which avoids liability of maiming the animal or bird caught, and which enables a person accidentally caught to easily release himself without suffering injury to the member held therein.

**MEAT ROLLER OR WRINGER.**—B. L. PACKARD, Denver, Col. The object of this invention is to provide an improved device in which means is provided for regulating the pressure applied to meat when passing through the device and in which means is also provided to permit the separation of the pressure rollers to allow bones to pass between them without crushing and splintering.

#### Prime Movers and Their Accessories.

**CARBURETER FOR EXPLOSIVE-ENGINES.**—J. H. JOHNSTON, 145 Rue de la Pompe, Paris, France. In this patent the invention has reference to a carbureter for explosive-engines so equipped as to allow of obtaining an explosive mixture the richness of which will always remain the same whatever may be the speed of the engine. In this case the richness depends on the speed at which the air passes around the orifice of the spray-pipe.

**HEAT-SCREEN FOR STEAM-CHESTS.**—D. C. BAILLY, Rea, Minn. The object of the invention is to prevent the condensation of steam in steam-chests, due in part to the reduction in pressure in passing from the governor to the steam-chest and the consequent loss of heat and to the further loss of heat due to the radiation from the steam-chest covering. The invention is intended to prevent this radiation.

**LIFT-PUMP.**—H. M. CROW, Oakdale, Cal. The aim of this invention is to provide a pump which may be driven by means of an engine or similar motive power, but which is adapted to be altered readily, so as to enable the well-rod to be attached to the rod of a windmill. It is especially useful in localities where windmills are used for raising water, but which cannot be depended upon under all weather conditions.

#### Railways and Their Accessories.

**LATCH DEVICE FOR DUMPING STRUCTURES.**—C. F. SHELBY, Globe, Ariz. Ter. The purpose of the invention is to provide a latch device especially designed for normally holding the dumping or rocking body of a car in carrying position on the platform and to so construct the latch that it is simple, durable, economic, and readily applied. It can be quickly and conveniently disconnected from its keeper when the body of the car is brought to its normal or carrying position.

**SPIKE-PULLER.**—T. W. HARBER, Dudenville, Mo. One purpose of the improvement is to provide a device for pulling spikes used in connection with railway-rails or bolts or common nails, even though said articles be headless, and to so construct it that the jaws may be adjusted to close properly on the articles to be drawn, and so that as it is applied the jaws automatically open and then close as the device is put in withdrawing action, tightening their grip correspondingly to the applied withdrawal force.

**RAILWAY-SWITCH.**—A. A. SHAW, Arkadelphia, Ark. The object in this case is to provide a compact and efficient switch-frog with a view of obtaining a convex track-rail both for the main line and switch or siding, and that will be adapted to all kinds of switching whether the switch is operated from a switch-station or a tower. It embodies all the essential features of a safe and reliable switch frog, yet is simple in construction, having no complicated mechanism to break or get out of working order, thus insuring reliable action at all times, with cost of manufacture reduced to the minimum.

**CAR-COUPLING.**—F. KELLER, Allentown, and D. BOWERS, Emaus, Pa. The coupling comprises coupling-heads practically duplicates of each other and constructed interiorly to contain and permit of the working organization of the inner operative devices of the head. A locking-block is used in each coupling-head, combined with which are devices for securely holding same in operative position both when the two heads are in coupled or uncoupled relation, further devices being employed for setting and securing the locking-block in rearward position within the head to enable either one of the coupled cars to be disconnected from the other without the presence of an operator. Action of locking-block of each coupling-head is automatic.

**RAILWAY SPIKE AND TIE-PLATE.**—T. G. PETERMAN, Cumberland, Md. The invention relates to improvements in spikes and tie-plates for railway-rails, the object being to provide a spike so constructed as not only to firmly hold the rail, but effectually to prevent the passing of water down the spike to the tie, thus preventing rotting of the wooden tie at this point and consequent loosening of the spike.

**RAILROAD-TIE.**—J. F. BAILEY, Valdosta, Ga. The tie may be formed of a single plate and afterward divided or may be formed of two plates, and a block of wood is made of larger size than the pocket and driven thereto, thus providing a firm hold for the spike. When the flanges are embedded in the ballast, the tie is restrained both from transverse and from longitudinal movement with respect to road-bed, and by provision of a hinge a tie is formed free from the objections found in the ordinary metallic tie—that is, lack of resiliency. It is resilient and flexible, yet not sufficient to impair alignment of the rails.

**CAR-COUPLING.**—F. A. RAMEY, Woodstock, Va. By this improvement the inventor seeks to provide an oscillating draw-head section and devices for holding the coupling-knuckle in locked position when said section is in normal position and for releasing the locking devices for said knuckle when the oscillating section is moved laterally in either direction out of its normal position.

**ANTICREEPER.**—C. LIEN, Salt Lake City, Utah. The principal object of the invention is not only to check the longitudinally creeping tendency of rails, but also to prevent it entirely. With this and other objects in view the invention comprises a clamp to be secured to the rail and a fastening device for the clamp adapted to engage with a sleeper on the road-bed to prevent movement of the rail transverse to the sleeper.

**CAR-COUPLING.**—B. J. COBB, Leesville, La. A coupling is employed of the ordinary link-and-pin type, comprising coupling members, each practically a duplicate of the other. A specially-constructed coupling member is employed for each of the two cars to be coupled together, associated with which is an ordinary coupling-link, together with a specially-constructed pin-fastening therefor, cooperating with which is a controlling-block of special construction, located and operated interiorly of the coupled member.

**SIGNAL SYSTEM.**—J. H. LYNCH, Red Bank, N. J. Principal objects of this invention are to provide means whereby the passage of a train over a certain part of the road can be caused to set signals in the rear for the observation of the crew of any train approaching from behind, and further, to provide means whereby the setting of these signals will not only permit the crew to understand the position of train in advance, but to automatically stop the approaching train.

#### Pertaining to Recreation.

**GAME-CARDS.**—C. WARNE, Asbury Park, N. J. In the present patent the invention has reference to new and useful improvements in game-cards; and it has for its object to provide a pack of playing-cards with which certain interesting and instructive games may be played. The rules permit of two, four handed, and other styles of games.

#### Pertaining to Vehicles.

**TRUCK.**—D. H. ROWE, Oakland, Cal. The object in this case is to provide a truck which will be capable of carrying baggage and freight with the same facility as such loads are carried by the ordinary trucks, but which, in addition, shall be so constructed as to enable a heavy load to be taken up and down a flight of stairs.

**VEHICLE-WHEEL.**—R. F. MARTINDALE, Memphis, Tenn. More particularly the invention relates to such vehicle-wheels as are portions of draft-wagon running-gears. The object is to provide a wheel very light, durable, and exceedingly strong, well adapted for convenient repair, and not liable to become clogged with clay or the like when the wagon is traversing muddy roads. It is manufactured of metal, and largely from plated metal cut and stamped into form, whereby it is adapted for rapid and perfect production at a low cost.

**MOTOR-VEHICLE RUNNING-GEAR.**—R. B. VAUGHN, Kingston, Pa. The leading object of the invention is to so construct the running-gear and frame of a motor-car or other automobile-vehicle as to dispense wholly or in part with the necessity for pneumatic or other cushion tires on the road-wheels. It is also an object of invention to mount the frame and body so as to permit easy and free movement on the springs, preventing, however, violent and erratic movement.

**TIRE.**—J. C. RAYMOND, New York, N. Y. In operation the parts, a circumferential cushion, a tire-frame, and a base plate are assembled. The frame holds the casing, the cushion, and the inner tube and the plate is applied to secure the casing in engagement with the frame and to form a carrier for the parts ready for application to the frame of the wheel. The plate, with the tire in place, can now be slipped laterally over a rim-plate and screws applied to secure the parts in place.

#### Wearing Apparel.

**HAIR-PIN.**—G. H. BIGELOW, San Francisco,

Cal. The purpose in this case is to provide a pin that will be effective to support the hair, will not accidentally slip from place, and is provided with means for readily and quickly removing the pin from the hair, the handle means being so disposed as to secure an arrangement of the legs of the pin in different planes, so one may readily slide back of the other in pressing the pin into the hair and in removing the pin.

**COMBINED UNDERGARMENT AND TESTES-SUPPORTER.**—W. C. A. BULLOCK, Jackson, Miss. In the present improvement the object of the inventor is the provision of an undergarment for a man with novel features of construction that coat with supporting-bands for the comfortable support of the scrotum and testes when such treatment is found necessary.

#### Designs.

**DESIGN FOR A PLATE OR SIMILAR DISH.**—A. S. HIGGINS, New York, N. Y. A design patent has been granted to Mr. Higgins for a plate. It is round and the width from the central depression to the outer edge is broadly wreathed by beautiful clover blossoms and fern leaves. An ornamental circle in the center of the dish surrounds the head and neck of a cow.

**DESIGN FOR A WOODEN MUG.**—R. P. SPOONER, Cornwall-on-the-Hudson, N. Y. In this case the mug which is somewhat high for its width is designed with a rustic body, slightly and gracefully widening to the bottom. A rustic handle is inserted at the wooden bands encircling the mug.

**DESIGN FOR KNIT FABRIC.**—C. H. FRENCH, Canton, Mass. This ornamental design comprises a field of fabric alternating with comparatively light and heavy bands. The light bands are the narrowest and quite plain, while the heavier and broader ones are reinforced by clusters of irregular and unpatterned forms. Mr. French has also designed another knit fabric wherein the bands are relatively wider and narrower. The darker and broader have the appearance of ragged and indefinite transverse stripes. The narrow bands are plain.

**DESIGN FOR A COOKING-STOVE.**—E. C. COLE, Chicago, Ill. This design includes a round fire pot and stove body and a rectangular oven mounted upon suitable supports above the body, the supports being mounted upon the top, the latter being provided with suitable lids and key plates, and the whole presenting an attractive appearance.

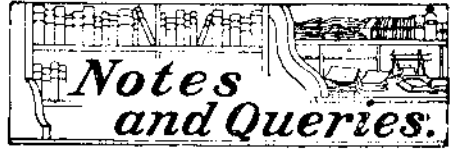
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MUNN & CO.

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- "U. S." Metal Polish. Indianapolis. Samples free.
- Inquiry No. 8045.**—For manufacturers of fine quality sewing needles.
- Handle & Spoke Mch. Ober Mfg. Co., 10 Bell St. Chazrin Falls, N. Y.
- Inquiry No. 8046.**—Wanted, address of ivory-carving machine manufacturers.
- I sell patents. To buy, or having one to sell, write Chas. A. Scott, 719 Mutual Life Building, Buffalo, N. Y.
- Inquiry No. 8047.**—For manufacturers of tin-foil rolling mills for foil in endless lengths.
- WANTED.**—Patents on bed spring constructions. Mebane Bedding Co., Mebane, N. C.
- Inquiry No. 8048.**—For manufacturers of machine used in vacuum closed jars.
- FOR SALE.**—Patent No. 74043. Self-reversing trolley pole. W. R. Cooper, 640 Morton Ave., Greencastle, Ind.
- Inquiry No. 8049.**—For manufacturers of 20th Century Gyroscope, also manufacturers of novelties and specialties.
- We'll gotten up typewritten letters will increase your business. \$2 per 1000. Typewritten Letter Co., St. Louis.
- Inquiry No. 8050.**—Wanted, address of dealer that sells a machine to cut noodles.
- The celebrated "Hornsey-Akroyd" Patent Safety Oil Engine is built by the De La Vergne Machine Company Foot of East 135th Street, New York.
- Inquiry No. 8051.**—For manufacturers of preparation called "Koa Span," which is a powder designed to sprinkle over coal and thus increase the heat given out.
- I have for sale the U. S. and all foreign rights of new patent improvements in Water Tube Types of Boilers. Great economizer. J. M. Colman, Everett, Wash.
- Inquiry No. 8052.**—For manufacturers of malleable iron thumb screws.
- Manufacturers of patent articles,** dies, metal stamping, screw machine work, hardware specialties, machinery tools, and wood fiber products, Quadriga Manufacturing Company, 18 South Canal St., Chicago.
- Inquiry No. 8053.**—For manufacturers of skees.
- Inquiry No. 8054.**—Wanted, address of dealers in Jupiter wire cables of small size.
- Inquiry No. 8055.**—Wanted, address of firms installing alcohol lighting plants.



#### 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.

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Minerals sent for examination should be distinctly marked or labeled.

(9944) P. J. L. asks how to make tracing cloth. A. 1. Boiled linseed oil (bleached), 10 pounds; lead shavings, ½ pound; zinc oxide, 2½ pounds; Venetian turpentine, ¼ pound. Boil for several hours, then strain, and dissolve in the strained composition 2½ pounds white gum copal. Remove from the fire, and when partly cold, add oil of turpentine (purified), sufficient to bring it to proper consistency. Moisten the cloth thoroughly in benzole and give it a flowing coat of varnish. 2. Varnish the cloth with Canada balsam dissolved in turpentine, to which may be added a few drops of castor oil, but do not add too much, or it will not dry. Try a little piece first with a small quantity of varnish. The kind of cloth to use is fine linen; don't let the varnish be too thick.

(9945) G. O. W. says: I want to build a stereopticon using a 7-inch Mangin mirror, an acetylene illuminant of six or eight 2-foot burners giving 100 candle-power each, bunching the burners together as much as possible. I want to use condensing lenses 7-inch diameter, 12 inch focus, and a two-third size achromatic projecting lens whose equivalent focus is 12 inches. A. We would say in reference to your inquiries regarding the arrangement of lenses, light, and mirror for a stereopticon, that all such instruments are made adjustable, so that the various distances may be altered to adapt the projection to halls of different lengths. You can determine the proper position for each by trial, and make the parts of the apparatus to correspond. It is not possible from the data you give to make any reliable calculations for the various positions. You say "a 7-inch Mangin mirror." If this means the focal length, then 7 inches is the proper distance for the center of the light. If it is the diameter of the mirror, it does not give any information upon the subject. Proceed as follows: In a darkened room place a candle flame, so that the reflected light emerges as nearly parallel as possible, or so that the beam can all of it enter your 7-inch condenser, and come to a focus after it passes the condenser at such a distance from the condenser as to allow the two-thirds lens to take in most or all of the light. These directions are the best we can do, and give the method we use in the same case. 2. How far the center of the flame must be from the mirror? A. The place for the flame of a stereopticon is a short distance beyond the focus for parallel rays. You can find this focus by placing the mirror in the sunlight and measuring the focal length—the distance from the center of the mirror to the focus of the sun's rays. 3. How far the mirror must be from the condensing lens nearest the mirror? A. The mirror should be at such a distance from the condenser that the beam from the mirror may enter the condenser. Find by experiment. 4. Which would be more satisfactory—to place the flames so that they cover the mirror reflector, or place them in line with the axis of the mirror? The Mangin mirror is concave, so as to throw the rays of light parallel. A. Acetylene flames are usually placed in a straight line in the axis of the lenses. We have never seen more than four used. Seven would make too long a line of flame. Perhaps with so large a mirror and lens the lights might be staggered to advantage. 5. Would it interfere with the intensity of the light to place a thin glass over the mirror, so as to protect it from the heat to prevent breaking the same? A. A thin glass or a sheet of mica is frequently used to protect the condensers from the heat of the calcium light. You can use such an arrangement. 6. The condensing lenses are placed so that their convex sides are together. How far apart ought they to be, measuring from the surface of one at the center to the surface of the other at the center? A. The lenses of a condenser are placed with their convex surfaces toward each other, and as close to each other as they can be without touching each other. Distance not important further than this. 7. How far from the plane surface of the condensing lens nearest the objective to the center of the two-thirds size objective? A. The distance of the objective from the condenser depends upon the distance of the screen from the lantern, or the length of the hall in which the lantern is used. The objective