

RECENTLY PATENTED INVENTIONS.

Engineering.

CABLEWAY CARRIER AND CARRIAGE.

—Carl E. Richson, Brooklyn, N. Y. This invention provides a suspension cableway, with means to support a hoisting rope and endless carriage rope, while providing devices to permit the carriage with its load to automatically switch past the hangers. A fixed rope or cable, stretched between towers or elevated points, carries hangers provided with means to engage mam cable forming a track for the carriage and pulleys to support the hoisting rope, there being means for switching the carriage past the hangers and returning the cable and the ropes to the hangers after the carriage has passed. The carriage is provided with tracks adapted to engage pulleys on the hanger to move the carriage and hanger transversely apart for the carriage to pass the hanger.

Mechanical.

CIRCULAR KNITTING MACHINE.—Willis A. Ingalls and Theodore S. Baron, Brooklyn, N. Y.

To facilitate the production of ribbed knit fabrics having a backing of woolen yarns or silk threads interlaced with the body of the fabric and formed with floating, open loops adapted to be fleeced or napped, this invention provides for slidable hooks outside the vertical needles and operated by cams, for bringing an extra thread from the outside of the machine over the horizontal needles, back of the latches, and down between such needles, to interlace the thread with the fabric body, and form open loops on one surface of the body. With the attachment on the outside of the machine the work can be inspected at any time, and a broken thread rethreaded into the carrier or guide without difficulty and without interfering with the body of the fabric, broken needles being also readily removed and replaced.

**MORTISING CHISEL.**—William Potter, New York City. This chisel has a chip-receiving channel, the inner faces of whose side walls are inclined upwardly in one plane and in opposite directions, and at their upper edges are turned toward each other to form flanges, the flanges being largest at the cutting or forward end of the tool. The chips have a free and ready passage from the cutting edge to the discharge point, being confined to the chisel for a certain distance from the cutting point, yet free to move rearward to the place of exit.

Bicycles, Etc.

**BICYCLE ATTACHMENT.**—Fred P. Hurst, Aurora, Oregon. To enable a bicycle to be run on a single rail of a railway track is the object of this invention, which provides the machine with two pairs of guides, respectively located at the front and rear. Rods clipped to the arms of the steering fork extend forward and down, and carry at their lower ends means for adjustably holding anti-friction rollers adapted to be brought to a bearing against opposite sides of the head of the rail, while at the rear of the wheel rods similarly clipped to the back stays also carry rollers likewise bearing against both sides of the rail, thus holding the wheel at the front and rear to run truly on the rail.

**BICYCLE MATCH BOX.**—Hilda Frank, New York City. The back of this box is curved to conform to the shape of the steering head or other part of the frame, on which the box is secured by a clip comprising side arms and a curved connecting bar. The spring-pressed cover of the box is made to overlap the casing to prevent entry of rain water, etc.

Agricultural.

**STACKER FOR THRASHING MACHINES,** etc.—Axel Erickson, Winfield, and August Johnson, Roseland, Minn. The novel features of this invention are embodied in a conduit into which the material is drawn and through which it is forced by a fan at the base, the main section of the conduit being adapted to be raised and lowered, while to it is connected a mouth section which may be freely turned to control the direction in which the material is to be discharged.

Miscellaneous.

**APPARATUS FOR RAISING LIQUIDS.**—Ralph W. Elliott, Brentwood, Cal. According to this invention a reservoir adapted to contain compressed air is submerged in the liquid to be raised, the reservoir being connected with a compressed air supply by a pipe in which is a novel arrangement of valves, whereby the compressed air is admitted to the submerged reservoir for a period sufficient to expel and raise the liquid contained in the reservoir, the air then being discharged simultaneously with the opening of a valve in the reservoir to permit the latter to be again filled with the liquid. The whole operation is automatically effected by the pressure and exhaust of the air.

**SEPARATING GAS AND OIL FROM WATER.**—Manley W. Bovee, Goodwill Hill, Pa. To separate the gas and water from oil issuing from a well, before the oil reaches the tank, thereby saving the expense of small tanks and preventing evaporation in warm and slush in cold weather, as well as saving expense and labor, is the object of this invention. It comprises principally a chamber having outflow openings at top and bottom, the lower discharge being against a head a little less than that of the upper, while a supply pipe from the well projects axially into the chamber and has discharge jets at its inner end giving the mixed fluid a rotary motion, when the separation is effected by the difference in specific gravity of the gas and oil and the water.

**ELEVATOR GUIDE LUBRICATOR.**—Mathew Abt, New York City. To facilitate evenly spreading thick grease upon the front and sides of an elevator guide rail, this invention provides a device in the form of a receptacle to be held by a handle and having forwardly extending leg portions, admitting of front and side discharge openings, there being in the body portion a plunger, movable by a stem extending through the cover. The grease is applied by moving the device up and down

the guide rail, with its bifurcate portions embracing the rail, and at the same time operating the plunger to eject the grease.

**PRODUCING ENGRAVINGS.**—Benjamin F. B. Fagg, Forestville, Wis. To facilitate the inexpensive production of matrices from photographs, drawings or other pictures, this invention provides for subjecting the pictures to a low temperature to produce frost, then dusting them with an adhesive substance and subjecting them to a higher temperature to cause the frost to melt and absorb the adhesive substance, causing the latter to adhere along the sides and ends of the lines of a picture, to form a matrix which may be used to form printing plates. To produce a thick frost on the sheet, it is moistened before being subjected to the freezing temperature.

**PLASTIC COMPOSITION FROM CORK,** etc.—Maxime Hocquet, Paris, France. This invention provides for the production of novel compounds as substitutes for wood, paper, leather, felt, ceramic ware, etc., which can be made capable of resisting water, rigid or resilient or semiflexible, serving also as a non-conductor of heat or electrical insulator, and which can be turned in a lathe, carved or otherwise worked or moulded into shape. The cork, reduced to a more or less finely divided condition, is treated with a solution of borax and then dried, after which it is mixed with a solution of gelatine, Dutch glue, glycerine, crystallized sugar, ammonia and flowers of sulphur, tannin, etc., the various components being mixed and combined as described, according to the use to be made of the composition.

**CYCLOIDAL CHARIOT.**—Joseph W. Evans, Haskell, Texas. This invention provides a novel apparatus for affording amusement and diversion at seaside and other pleasure resorts, consisting of a truck mounted to roll on a fixed track and carrying a wheel with peripherally hung pivotal carriages, the wheel being geared with a moving part of the truck; so that as the truck moves along the track a rotary movement will be imparted to the wheel, and the passengers in the carriages will have a combined progressive and orbital movement. Within the structure of the wheel and supported by its axle is a horizontal platform on which persons may be seated without experiencing the orbital movement, this platform being especially adapted to accommodate an orchestra.

**HAT SUPPORT FOR THEATER CHAIRS.**—Harriette G. Cozzino, New York City. According to this invention, a cylindrical telescoping device is introduced in an opening in the back of the chair, the outwardly sliding member of which is provided with a frame in which is a mirror, while the frame is adapted to afford a support for the crown of a hat. When the support is not in use, the telescoping portion may be pushed in close to the back of the chair, when the device does not interfere with the passage of persons between the rows of seats.

**GATE.**—Otto Honegger, Fairmont, Minn. A gate which may be conveniently raised to clear an obstruction, and at the same time may be swung inward or outward as desired, is provided by this invention. Its strap hinges are attached to a vertical tube which passes through guides secured to a swing post, while a rod within and turning with the tube carries near its upper end a pulley. A rope or chain passes up from a central hinge and over this pulley to a drum secured centrally on the gate, the drum being provided with a ratchet wheel, and being turned by a crank, by means of which the gate may be raised and lowered.

**JAR CLOSURE.**—John Schies, Anderson, Ind. The cover of the jar, according to this invention, is made with a serpentine groove across its upper face, and a clamp of spring wire has a similar serpentine main or body portion to rest in the groove of the cover, the clamp having downwardly and inwardly inclined ends to engage the bead around the top of the neck of the jar. The form of the main portion of the clamp permits it to yield or expand longitudinally, facilitating its application to the jar, while also allowing for quite a range for the varying diameters of the mouths of jars.

**WASHING MACHINE.**—Herman G. Weilage, Crete, Neb. In this machine a grate is mounted to rock in standards, there being a pivotally mounted compressing table above the grate and locking devices carried by the table for engagement with the standards. The clothes are cleaned without rubbing them upon a board or together, but by using compressed air to force the washing fluid through them, thereby preventing the breaking off of buttons and damaging of fine fabrics, the pieces placed in the machine occupying a space between the compressing table and the rocking grate. A tub or tank of any form may be used the bifurcated standards being secured to its opposite sides.

**EMBROIDERY FRAME.**—Norris C. Leonard, McMinnville, Tenn. This frame comprises two open hoops, their ends lapping on each other, and each hoop having a series of apertures for the reception of pins at the ends of the hoops, the pins pointing in opposite directions, while clamps prevent their leaving the apertures. The hoops of the frame may be quickly and conveniently adjusted, not only to different sizes of material, but also to different thicknesses, thus doing away with the necessity of having different hoops for each size of material to be worked on.

Designs.

**COMB.**—John T. Wilcox, Leominster, Mass. The teeth of this comb are arranged in two groups, one at each end, and those in one group are curved oppositely to those of the other group, the teeth also having a wavelike form.

**BICYCLE CARRIER.**—Robert G. Woodward, Alameda, Cal. This device comprises a bracket adapted for ready attachment to the frame and carrying two forwardly and upwardly projecting hooks.

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Notes & Queries

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(7326) F. & B. ask: Where can we obtain directions for enameling photographs? We do not mean the ordinary method of squeezing onto a ferrotype plate, but the method where a hot solution is poured over the photo. A. Use very clean plates and rather larger than the prints to be enameled. Wipe them well, rub them with talc, and remove the excess with a soft brush passed lightly over the surface. In a dish, half filled with ordinary water, immerse the photographs and allow them to soak. This being done, coat one of the talcked plates with enameling collodion. The ordinary way, agitate to cause the ether to evaporate, and when the film has set—that is to say, in a few seconds—steep this plate, the collodionized surface up, in a second dish containing pure water. Now take one of the prints in the first dish and apply the printed side to the collodion, remove the plate from the dish, keeping the print in its place with the finger of the left hand, and remove the air bubbles by lightly rubbing the back of the photograph with the forefinger of the right hand. Care has been taken beforehand to prepare some very pure starch paste, passed through a cloth, and some thin cardboards, or simply thick paper, the size of the plates used. The air bubbles having completely disappeared, and the perfect adherence of the print ascertained, dry with bibulous paper, and spread over the prepared cardboard or paper a coating of the collodion by means of a flat brush. Apply this sheet on the print, pass the finger over it to obtain complete adherence, and give it twenty-four hours to dry. At the expiration of this time, cut with a penknife the cardboard or paper even with the print, and detach by one corner. If the plate has been well cleaned, the print will come off itself. We get in this manner a very brilliant surface and as solid as that obtained by the use of gelatine, which, as it is seen, is entirely done away with in this process. The prints are afterward mounted on thick cardboard in the usual way. It is possible, by mixing with the collodion some methyl blue dissolved in alcohol (a few drops are sufficient), to obtain moonlight effects, especially if a rather strong negative has been used. For sunsets, make use of an alcoholic solution of coccine.

(7327) G. F. H. asks for the receipt for a good sarsaparilla.

- A. Fluid extract of sarsaparilla..... 3 oz
- Fluid extract stillingia..... 3 "
- Fluid extract yellow dock..... 2 "
- Fluid extract May apple..... 2 "
- Sugar..... 1 "
- Potassium iodide..... 90 grn.
- Iron iodide..... 10 "

Mix them. (7328) A. K. D. asks: 1. Would it be safe in changing the type of dynamo described in SUPPLEMENT, No. 600, if care is taken to get about the same bulk of iron in the fields, must the winding have that length and thickness, or would it matter if the legs were a little shorter and thicker, just so as to get on the amount of wire? A. The field magnets of eight light dynamo may be shortened if care is taken to preserve the same area of cross section and same number of turns of wire in field and armature coils. It will require more wire on the spools, since there will be fewer turns in a larger magnet. 2. Would a 10 or 12 foot windmill do to run a ten or twelve light dynamo satisfactorily? A. You will require

about 1 horse power to drive the dynamo. A 12 foot windmill will give this when the wind blows 20 miles per hour. 3. Would it be safe to put a power mill on a barn, especially if the shaft is run down inside between the hay and wall (of course a box around it), dynamo outside? What I mean is as regards lightning. A. If proper lightning rods are put up, you will probably be able to insure your buildings with the windmill on them.

(7329) W. J. K. asks: 1. What is meant by "boiled out" lined oil such as Tesla used for insulating his "high frequency" coils? Does it mean common boiled lined oil such as used for painting? A. We do not know what "boiled out" lined oil is, unless it may be boiled oil. 2. What inch spark would be obtained from the Tesla disruptive coil described in "Ruhmkorff Induction Coils," chapter xii, by H. S. Norrie, if the primary is run by a static machine giving a 2-inch spark? A. The voltage is raised by such a coil in the ratio of the number of turns in the primary to those of the secondary, approximately. We can give no exact answer in inches of spark, since the spark length does not correspond to the voltage as measured by a voltmeter, but upon the highest voltage attained at the instant when the surges of the discharge are greatest, and this cannot be measured. 3. Is that plan of a coil a good one? A. Yes. 4. Could the spark obtained be used for X ray tubes? A. Yes, if the original voltage is strong enough to be transformed. The machine should give a torrent of 2-inch sparks to start with.

(7330) H. F. and others write concerning formula 3 of query 7299, issue of January 8, asking if it is correct. The amounts of chloride of gold and nitrate of lead should be expressed in grains, not ounces.

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