played at each table will remain on the table in proper order for the duplicate play. The table has a stationary square top, below which is a round revoluble top in which, at four equidistant points, are card-receiving receptacles, the round top being of a diameter about equal to the greatest diameter of the square top, whereby the portions carrying the card receptacles will project beyond the four sides of the square top. Means are provided for locking the revoluble top against rotation.

HEATING STOVE.—Cornelius Barnhart, Walker Valley, N. Y. In the ash pit of this stove is a number of fire pots, supported from the top of the ash pit, there being a combustion chamber into which the tops of the fire pots open, and a feeding magazine adapted to convey fuel to all the fire pots automatically, although the construction is such that, when but a small amount of heat is required, but one of the fire pots may be employed. Heat-radiating flues lead from the combustion chamber into a hot air chamber, from which a draught flue leads to a point of discharge, the stove being designed to afford high efficiency and be very economical of fuel.

WINDOW BRACKET.—Silas G. Dean, Norfolk, Neb. This bracket is designed especially for use as a scaffolding for persons cleaning windows, being readily adjustable to windows or openings of different sizes, and easily made secure in position. It has a body portion consisting of binding strips made in adjustable sections and connected by clamping devices, a platform being adjustably supported by the binding strips, while an adjustable support is hinged to the outer end of the platform, for which also a locking device is provided.

KETTLE RACK.—William C. Donica, Grayson, Ind. To facilitate suspending one or more kettles over a fire, for outdoor use, this invention provides suitable uprights, not liable to become unduly heated and which may be readily set up, and from which the pots may be easily suspended, the pots being directly connected to clamps adjustable upon the uprights or standards of the rack, and locking themselves thereto automatically.

WASHING MACHINE.—Samuel Hartridge, Huntington, N. Y. This invention relates to machines adapted to be attached to an ordinary tub, and consists of a bar clamped at its ends to the sides of the tub, while in the center of the bar is journaled a shaft on whose upper end is an operating crank and on the lower end a rubbing wheel. The ends of the bar are pivoted to clamps of peculiar construction which engage the sides of the tub, the device being adjustable to tubs of different sizes, and in operation the wheel, which is furnished with slats or ribs, is designed to rest directly upon the clothes and keep them beneath the water.

NAPKIN RING AND HOLDER.—John S. and William W. Hoagland, Long Branch, N. J. This device is made in detachably connected sections, each section being provided with a fastening device adapted for application to the clothing of a person and a holder for the napkin, whereby the ring may be utilized to hold the napkin in front of the person. When the sections of the ring are locked together, pendent members prevent the ring from rolling

CURTAIN HOLDER.—Ulysses S. Parish and Flavel A. Rudolph, Carmi, Ill. This holder is arranged to permit of conveniently and quickly moving the ordinary spring roller carrying the curtain up or down on the window, permitting the unscreening of the upper portion of the window while the lower portion is screened. Upon a centrally depending rod is a longitudinally adjustable support having a slotted plate in which an adjustable frame for the curtain roller may be held in adjusted position, the device being of simple construction, easily manipulated and not liable to get out of order.

CAME.—Christopher C. Tracy, Brooklyn, N. Y. This invention relates to latticed or stained glass windows, and provides useful improvements in lead cames whereby a pane is securely united with the came to prevent rattling and to render the joint between the came and pane waterproof. The came is formed at the inside with recesses or grooves for the reception of cement or other binding material to hold the pane securely in place between the flanges, the recesses being formed at the time the came is produced in the lead press.

Designs.

CARPET.—Eugene A. Crowe, Brooklyn, N. Y. Three carpet designs have been patented by this inventor, in one of which the main figure is a rosette comprising a floral center and foliate fringe, there being opposing triangular groups of leaves and irregular checkering, with scrolls. Another design comprises a fanciful composite figure of floral center piece and border of palm scrolls, with leaf scroll decorations, while a third design has an irregular checkered background upon which a main figure represents a branch with leaves, the leaves apparently resting on other larger and shadowy leaves.

KNOB FOR VESSELS.—Cæsar A. Cuppia, New York City. The leading feature of this design consists in a stag crown, the shank being reduced relatively to the crown, the back of which is roughened to simulate a stag horn.

CONDIMENT HOLDER.—This is a further patent of the same inventor, the design representing the crown of a stag horn, as a body, framed by a top and base, the holder being adapted for all kinds of handleless vessels.

FRAME FOR SPOOLS OR REELS.—August Scherrer, Biegel, Texas. This design provides a device designed to facilitate holding and handling spools of wire, the trunnions of the spools being received in apertures in the ends of a forked portion of the device, the other end of the frame of which is provided with two handles.

NOTE.—Copies of any of the above patents will be furnished by Munn & Co. for 10 cents each. Please send name of the patentee, title of invention, and date of this paper.

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(7358) H. P. R. asks: Would an engine 3×4; revolutions, 500; steam pressure, 100 pounds; give power enough to run the dynamo described in SUPPLEMENT No. 600? A. This engine should have ample power. It will be necessary to use a pulley 3⅜ times as large on the engine as on the dynamo to bring the speed up to 1,800 turns per minute.

(7359) A. J. M. asks for some means to remove frictional electricity from a pile of paper that is just printed. A. There does not seem to be any better mode of preventing the electrification of paper in running through the press than to dampen it with water. The paper is thus made a fairly good conductor and the electric charge is dissipated.

(7360) T. S. asks (1) if the motor described in SUPPLEMENT, No. 641, can be changed into a dynamo, and how. A. The motor in SUPPLEMENT, No. 641, may be run as a dynamo by applying power to the armature. 2. I wish you would also state what kind of a battery and how to make it as a plunging battery. A. The plunge battery is fully described in SUPPLEMENT, No. 792 (price ten cents); so that any one can make it from the drawings there given. 3. How are the filaments in incandescent lights made, and from what material? A. The filaments of incandescent lamps are made of vegetable fiber, formerly of split bamboo, but now of cellulose or something of that sort prepared chemically from vegetable material. The process is a long one. The principal change is produced by heating it for a long time in a red hot iron box in a furnace where the fibers are carbonized.

(7361) F. G. G. writes: A says that crystals of ice form at the bottom of a body of water and rise as crystals to the surface and are then massed in a sheet of ice. This has reference to a small fresh water lake or pond. B says that this is not the process of the freezing of ice. Please say who is right, A or B. A. B is right. The water toward the bottom of a fresh water lake in winter is at 39° Fah. Water colder than 39° is lighter than water at 39°, and therefore the colder water floats on the warmer. Ice can form only in water at 32°, and water at this temperature can only be found on top of the water at higher temperature. Hence ice forms on the surface. This is true of all ice excepting anchor ice, the formation of which it is difficult to explain.

(7362) "Old Reader" asks: Will you very kindly give in Notes and Queries a recipe for a furniture renovator and polish? Something that can be used on pianos, furniture and all polished or varnished surfaces, a polish that will dry hard and not be sticky. A. Formulas for excellent furniture polishes are given in our SUPPLEMENT, Nos. 1067, 1099, and 1145, price 10 cents each by mail.

(7363) I. D. asks: 1. Have you a SUPPLEMENT which contains a good article with diagrams on building a canvas canoe? If so, will you let me know through your Notes and Queries? A. Full details for the construction of a canvas canoe are given in SUPPLEMENT, No. 216, price 10 cents by mail. 2. What wood do you advise for the ribs of a canoe? A. Use oak.

(7364) Since replying to query 7329 we have received from a manufacturer a sample of "boiled out" linseed oil. Excepting for a slight odor it bears no resemblance to linseed oil. It is a solid, noninflammable, nearly fibrous and elastic like a sponge. We are not informed as to the article, except as to its name, which seems to be a trade name. Its insulating qualities would be no greater than those of air, since air fills its pores, and it has been proved that porous insulators are pierced as easily as the air. It could not be used to separate the layers of a coil nor to immerse a coil in. All liquid insulators fill the spaces of the coil and are continuous. If a spark ruptures them, they close again instantly and are as strong as before.

(7365) W. F. R. writes: As a core for a choking coil I use an iron pipe, into which other and smaller pipes may be inserted. These pipes soon become inconveniently hot. Would slitting the pipes longitudinally diminish the heat sufficiently to repay one for the trouble of doing it? Does the unslit pipe really waste much energy, and about how much? Would the slit pipe choke more, and about how much more? If you need data they are these: Length of coil 18 inches, diameter of core 2 inches, volts 106, amperes about 8, 300 turns of No. 12 wire in 2 layers. A. The object of a choking coil is to offer a counter-electromotive force. The only energy which is lost is due to the ohmic resistance of the wire and the core losses, which can be made very small. Make your core of a bundle of No. 18 best annealed Norway iron wire. Slitting your pipes would help your case a little, but not enough for your purpose.

(7366) H. T. W. asks (1) where to get information how to make a direct current dynamo that will produce as small a current as 10 to 15 volts. A. The hand dynamo described in SCIENTIFIC AMERICAN SUPPLEMENT, No. 161, has about 3 amperes at 12 volts when run at full speed. You could attach a motor to it with little trouble. Croft's "How to Make a Dynamo," 60 cents; Halliday's "Small Dynamo," $1, are both for amateurs. 2. Can the little alternating dynamo mentioned in SCIENTIFIC AMERICAN of November 11, 1897, be changed (from the directions given) so as to produce only 10 or 12 volts instead of 150, as stated? More than 12 volts will heat up the fields of the magnet too much. A. You would have to charge the fields of the alternator by battery and would be no better off than at present. We think you will have less trouble with your battery than with more complicated machinery.

(7367) L. & B. ask: 1. By using a transformer could we cut a 110 volt current down to about 10 volts? A. If the current is alternating, it can be changed by a transformer from 110 volts to 10 volts, but if the current is direct, a rotary converter must be used. 2. Would 10 volts give a large enough spark to explode gasoline in a gasoline engine? A. Yes. 3. Where could we have one made? A. Consult our advertising columns or some electrical engineer in your vicinity.

(7368) A. S. asks: 1. Where can I get miniature accumulators such as described in SUPPLEMENT, No. 842? A. Consult our advertising columns. 2. Can I charge 52 of them on a 104 volt lamp circuit? A. Accumulators are charged at a pressure of 2½ volts each. At this rate 42 could be charged on a 104 volt circuit.

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FEBRUARY 15, 1898,

AND EACH BEARING THAT DATE.

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