



the inside of the chamber and allow the air to escape? A. Make your cups as before, but use glycerine, with about one-third water, to soak the cups, and use glycerine as a lubricator. If the metal of the cylinder is hard the glycerine may answer your purpose. If soft or common brass, you may still have to use oil for a lubricator. A trial of a small quantity of pure plumbago, ground fine and mixed with glycerine, may give good results.

(18) P. J. D. asks: Can a regular heptagon be inscribed in a circle? If not, please give the reason why. Is there any other polygon which cannot be inscribed? A. All polygons can be inscribed in a circle. The larger the number of sides, the more complex is the labor of laying out. For the drawing board, divide 360° by the number of sides required, and with this sum lay off the radial lines of the polygon with a sector, or from this sum and the radius, compute trigonometrically the chord of the arc of one side, which will be the actual length of the side in parts of the radius. For a heptagon the area = side² × 3.639126; the side = radius × 0.8677; the angle at the center = 51° 25' 42"; the angle of the sides upon each other = 257° 08' 36"; the angle of the side with the radius = 128° 34' 18'.

[OFFICIAL.]

INDEX OF INVENTIONS FOR WHICH Letters Patent of the United States were Granted in the Week Ending May 23, 1882, AND EACH BEARING THAT DATE. [Those marked (r) are reissued patents.]

A printed copy of the specification and drawing of any patent in the annexed list, also of any patent issued since 1866, will be furnished from this office for 25 cents. In ordering please state the number and date of the patent desired and remit to Munn & Co., 251 Broadway, corner of Warren Street, New York city. We also furnish copies of patents granted prior to 1866; but at increased cost, as the specifications not being printed, must be copied by hand.

Table listing various inventions such as Acid from bones, Alarm, Amalgamator, Annuciator, Boat, Boiler, Brake, Carriage, etc. with corresponding page numbers.

Table listing various inventions such as Chimney cap, Chopper, Churn motor, Clock escapement, Comb, etc. with corresponding page numbers.

Table listing various inventions such as Lamp, Coal oil, Electric, Lock, Mill, Mould, Motor, etc. with corresponding page numbers.

Table listing various inventions such as Telegraph, Valve, Wagon, Wheel, etc. with corresponding page numbers.

DESIGNS.

Table listing various designs such as Bottle, Pickle, Carpet, Chain link, etc. with corresponding page numbers.

TRADE MARKS.

Table listing various trade marks such as Baking powder, Boots, Canned fruits, Chocolate, Cigars, etc. with corresponding page numbers.

English Patents Issued to Americans.

From May 16, 1882, to May 26, 1882, inclusive.

Table listing various English patents issued to Americans such as Alarm clocks, Bell alarm, Boots and shoes, etc. with corresponding page numbers.