

out, or could you suggest any other method of transferring the liquid? A. The most satisfactory method of pumping acids is by means of compressed air, for which you will need an air compressor equal to 20 cubic feet free air per minute. One of the smallest sizes made by the Ingersoll-Sergeant Drill Company will be large enough. Draw the acid into closed tanks suitable for 50 pounds pressure per square inch, although you may not need a higher air pressure than 30 pounds per square inch. Attach air pipes to top of tanks and the exit pipe at the bottom. You will need no extra valves other than the draw cock from the acid vat and a cock to let out the air when the acid is discharged into the tanks.

(4935) F. T. B. asks: Which side of a leather belt should be run next the pulley? Why? Should this hold true under all conditions? A. For best efficiency the hair side should run on the pulley; but appearance and custom has made the flesh side on the pulley the almost universal practice. The soft surface of the hair side gives a belt a closer and more perfect contact with the pulley, which increases its pull or decreases the tension necessary for the same pull with the flesh side next the pulley.

(4936) M. F. asks: Which of the two is the superior incandescent lamp, one with carbon filament or one with platinum filament, both being of good manufacture? A. We believe it is pretty well settled that platinum incandescent lamps are of no practical value.

(4937) W. B. F.—You can make your aluminum solder by melting together 3 parts tin, 2 parts zinc, 5 parts cadmium; or 9 parts tin, 1 part bismuth. Use paraffine, stearin, or copaiva balsam as a flux. Use a soldering copper to coat the surfaces to be soldered.

(4938) J. M.—You will find batteries described in SUPPLEMENTS 157, 158, 159, and 793; but we would advise you to purchase a battery for your purpose rather than to try to make one. For ringing bells on an open circuit, we recommend the Leclanche battery.

(4939) J. C. F.—You could not successfully reduce the voltage for electroplating by means of a resistance box.

TO INVENTORS.

An experience of forty-four years, and the preparation of more than one hundred thousand applications for patents at home and abroad, enable us to understand the laws and practice on both continents, and to possess unequalled facilities for procuring patents everywhere. A synopsis of the patent laws of the United States and all foreign countries may be had on application, and persons contemplating the securing of patents, either at home or abroad, are invited to write to this office for prices which are low, in accordance with the times and our extensive facilities for conducting the business. Address MUNN & CO., office SCIENTIFIC AMERICAN, 361 Broadway, New York.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

April 11, 1893,

AND EACH BEARING THAT DATE.

[See note at end of list about copies of these patents.]

Table listing inventions with page numbers, including Agricultural implement, Air apparatus, Annunciator system, Arch structure, Asbes, etc.

Table listing inventions with page numbers, including Car coupling, Chair fan attachment, Check row, Chlorine making, Churn, etc.

Table listing inventions with page numbers, including Lamp, gas, T. C. J. Thomas, Lamp heater, Lamp, incandescent, G. H. Benjamin, etc.

Table listing inventions with page numbers, including Sulphur compound, A. Spiegel, Sulphur compound of hydrocarbon, E. Jacobsen, etc.

DESIGNS.

Table listing designs with page numbers, including Brush or mirror back, A. F. Jackson, Buckle, G. E. Adams, etc.

TRADE MARKS.

Table listing trade marks with page numbers, including Baking powder, C. N. Hoagland, Beer lager, Conrad Seipp Brewing Company, etc.

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1863, will be furnished from this office for 25 cents. In ordering please state the name and number of the patent desired, and remit to Munn & Co., 361 Broadway, New York.