

of homogeneous or steel pipe is probably the only remedy. The same pitting and cutting is known to affect iron boiler tubes, and is a source of much trouble with vertical tubes with internal circulation, although the water is not pure and soft as from condensed steam.

(4755) Z. asks: How can I remove the acid from beef tallow so that it will not corrode iron when used as a lubricator? A. Boil or melt and stir into very hot water a small quantity. Test the water with litmus paper to see if it contains acid. If so, then treat the tallow before you use it in the same way, adding a slight excess of caustic soda to the water, and heating and stirring thoroughly. The tallow will separate on cooling.

(4756) J. S. asks: Is water absolutely non-compressible? Or can its bulk be reduced by any known method? A. Water is slightly compressible. No substance is non-compressible at existing temperatures.

Replies to Enquiries.

The following replies relate to enquiries published in the SCIENTIFIC AMERICAN, and to the numbers therein given.

(4655) In query No. 4655, where X. Y. asks for an acid or spirit that will soften glass so he can bore holes in it with an awl, "well, hardly;" but your advice is good as to a diamond drill or glass tube and emery. But please allow me, for the benefit of X. Y. and others, to give a cheap and simple receipt (if we may call it such) of drilling holes in glass with a common steel drill by using turpentine, the same as you would oil in drilling iron or steel. I have bored some holes as large as 3/8 inch by this process and have never had any trouble when my drills were hard and speeded high.—J. T. PRETTYMAN, M.E., Portland, Ore.

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

March 7, 1893,

AND EACH BEARING THAT DATE.

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

Table of inventions with descriptions and patent numbers, including items like Acid compound, Adding or registering machine, Air circulating and cooling device, etc.

Table of inventions with descriptions and patent numbers, including items like Car safety guard, Car wheel, Cash register, etc.

Table of inventions with descriptions and patent numbers, including items like Lamp, electric arc, Lamp filler, Lamp, incandescent, etc.

Table of inventions with descriptions and patent numbers, including items like Steam boiler, Steamer, Steam engine, etc.

DESIGNS.

Table of designs with descriptions and patent numbers, including items like Badge, T. Even, Badge, G. B. Smith, etc.

TRADE MARKS.

Table of trade marks with descriptions and patent numbers, including items like Ale, soda, and mineral waters, and draught and bottled beer, etc.

A printed copy of the specification and drawing of any patent in the foregoing list, or any patent in print issued since 1865, will be furnished from this office for the patent desired, and sent to Munn & Co., 361 Broadway, New York.