

about \$25 consumption of lamps alone. Attendance, oil and general maintenance cannot possibly be estimated without full knowledge of the case. It would require a comparatively small portion of a man's time.

(2674) G. C. W. asks (1) for formula for arsenic complexion wafers. A. Arsenic should only be taken internally under advice of a physician. 2. Recommend books for the beginner at pattern making.

(2675) W. E. D. writes: On examination of a burned-out Edison incandescent electric lamp (16 candle power), I noticed around the inside of the neck of the globe a very thin deposit of what appears by reflected light to be copper.

(2676) J. H. B. asks how large copper pipes are brazed and bent, say 4 inches to 6 inches diameter, and whether flanges to be attached to such pipes by brazing require a special mixture or will any ordinary brass answer?

(2677) R. A. asks: How many feet of illuminating gas will a gallon of 88° gasoline make in a carburetor where the air is passed through the gasoline in small jets under pressure?

(2678) W. C. Van N. writes: On page 400, of vol. lviii., there was a description of a new style of pad for hektographic work. In trying to use it I made a failure. At least the work was not satisfactory to me.

(2679) G. W. L. asks: How long must two cylinders of tin or galvanized iron, 1 foot in diameter, be to support 200 pounds on the water and not sink over 6 inches?

(2680) W. R. asks how to make a bright green ink from verdigris (copper acetate). A. You can approach to what you want by mixing verdigris with a solution of shellac in borax water.

(2681) F. H. V. asks: 1. Can you inform me through your paper what is used in painting blackboards? I have painted one, but it does not seem to take the chalk very easy.

(2682) G. C. asks for the best process to soften a cow's horn, so as to straighten it? A. Immerse in boiling water.

(2683) S. B. B. asks the best methods for testing old gold for its purity. Also the best tests for silver. A. An assay or analysis is the only good method.

method is to determine its specific gravity. Silver may be dissolved in nitric acid. It should, with excess of ammonia, give a colorless, clear solution.

(2684) G. S. writes: A man has a field whose sides are to each other as 5 to 6; if one foot be added to each side, it will contain 304 square feet. What are the lengths of the sides?

x : y :: 5 : 6 or x = 5/6 y (1)

From the conditions of the problem we have (x+1) x (y+1) = 304 (2)

substituting (5/6 y + 1) x (y+1) = 304

reducing y^2 + 2 2/3 y = 303 2/3 solving y = 15 x = 15

The problem cannot easily be solved by pure arithmetic.

(2685) J. S. writes: How should I connect coil with cells, in a pocket battery? Battery is a physician's battery with three cells, current breaker and induction coil.

(2686) H. W. R. writes: I have two jars of acid deadened with zinc; one jar I used sheet zinc, the other I used zinc out of galvanizing pot; the one with sheet zinc I can use, the other I cannot use; when the iron is put through the latter, the tin will not stick, but it will when put through the acid with the sheet zinc.

(2687) C. A. C. asks for a preparation for cleaning kiln gloves to take the blackness off. A. Use bread crumb or India rubber sponge.

(2688) E. C. W. asks: 1. What is the effect of glycerine added to tobacco? A. It keeps it soft. 2. What will keep cut tobacco moist in packages?

(2689) A. T. asks: Can you suggest a convenient method by which one could index the Notes and Queries, one of most valuable features of the paper, for future reference?

(2690) P. J. L. asks: 1. If an electric motor were used to run a dynamo, would the dynamo develop more electricity than the battery that would be necessary to work the motor?

(2691) E. P. A. asks the meaning of the term "A curve of versed sines." I know what a versed sine is, and have a table of such sines, but am puzzled to understand how they can form a curve.

TO INVENTORS.

An experience of forty 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.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Granted

December 30, 1890,

AND EACH BEARING THAT DATE.

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

Table listing inventions such as Alloy, I. H. Johannes; Altar bread or wafers, apparatus for cutting, P. H. Horan; Alum cake, making, H. W. Shepard.

Main index table listing inventions with names and page numbers, such as Banjo, A. C. Fairbanks; Barrel washing machine, U. & H. E. Eberhardt; Basket cover fastener, J. F. Donley.

Continuation of the main index table, listing inventions such as Fire box, revolving, J. C. Henderson; Fire escape, R. G. Strother; Fire extinguisher, B. J. C. Howe.