

(13) G. R. R.—The theoretical velocity of air flowing into a vacuum is 1,347 feet per second.

(14) D. F. Co.—The term case hardening is generally applied to the operation of forming a superficial steel surface upon iron.

(15) J. W. W.—The "squeaking" or jarring noise in a music box is generally due to the absence of the small pieces of quill placed underneath the tongues to arrest them on the near approach of a pin.

(16) F. L. M. asks: 1. How many cells of battery will it take to work a telegraph line an eighth of a mile long, using a ground wire and having two instruments, one at each end of the line?

(17) J. K.—About 166 feet of gas can be made from a gallon of gasoline.

(18) H. R. H.—The link motion is a very safe and sure arrangement for quickly reversing engines, and is therefore used on locomotives, hoisting engines, etc.

(19) F. W. I.—To deodorize petroleum, mix chloride of lime with petroleum in the proportion of three ounces for each gallon of the liquid to be purified.

(20) G. M. C.—Plumbago or powdered graphite mixed with some oily material is largely used for lubricating purposes.

- Beeswax 18 parts. Spermaceti 6 parts. Oil turpentine .66 parts. Asphalt varnish 5 parts. Borax, powdered 1 part.

MINERALS, ETC.—Specimens have been received from the following correspondents, and examined, with the results stated:

W. A. C.—From a superficial examination of the specimen sent, it seems to be nothing more than common clay.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

Letters Patent of the United States were Granted in the Week Ending

April 3, 1883,

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.

Acids and chemicals, apparatus for boiling, J. Hesch 275,041. Aerated water apparatus, A. D., Jr., & L. W. Puffer 275,076.

Alphabet block and case, W. E. Crandall... 275,329. Anthracinone and alizarine, purifying impure... J. Brünner... 275,128. Axes, machine for making, E. Rogers... 275,273.

Lamp, electric arc, E. A. Edwards... 275,168, 275,170 to 275,174. Lamp, electric arc, J. R. Finney... 275,182, 275,183. Lamp, electric arc, F. G. Van Choate... 274,997.

