Business and Personal.

The Charge for Insertion under this head is One Dollar a line for each insertion; about eight words to a line. Advertisements must be received at publication office as early as Thursday morning to appear in next issue.

NEW BOOKS AND PUBLICATIONS.

UEBER DAS TECHNISCHE SCHUL UND VEREINSWESEN FRANKREICHS. VON WILHELM VON NORDLING. Wien, Pest. Leipzig: A. Hartleben. 1881. 54 pp. (Technical Schools and Societies in France.)

The author gives a brief description of the origin and growth of the several institutions for technical education in France, their average attendance, course of study, and the several societies of the former scholars of these institutions. Among the schools and colleges mentioned are: the Ecole polytechnique, Ecole des Mines, Ecole des Ponts et Chaussees, Ecole des Arts et Metiers, Ecole des Arts et Manufactures, and several others. From this work it will be seen that there are 13 technical societies, with 17,000 members, in France.

PARIS UNIVERSAL EXPOSITION OF 1878. Reports of the United States Commission. Washington: U. S. Government Printing Office. 5 vols. 8vo. Illustrated. 1880.

The several volumes of these reports comprise: (1) Report of Commissioner-General R. C. McCormick, with accompanying papers, including lists of exhibitors and awards. (2) Report of Commissioners William W. Story (Fine Arts); Joshua L. Chamberlain (Education); Andrew D. White (Political Education); Elliot C. Jewett (Manual Training Schools); John T. Norton (Wood Carving); Henry Howard (Textile Fabrics). (3) Daniel J. Morrell (Iron and Steel); William P. Blake (Ceramics and Glass and Glassware); F. P. Baker (Forestry); P. M. B. Young (Cotton Cultivation). (4) Thos. E. Jenkins (Chemical Processes); James D. Hague (Mining Industries); A. J. Sweeney (Steam and Gas Engines); William T. Porter (Machines and Machine Tools); Edward H. Knight (Clocks and Watches); William J. Anderson (Railway Apparatus). (5) Edward H. Knight (Agricultural Implements); John J. Woodman (Agricultural Products); Samuel Dysart (Live Stock); George W. Campbell (Horticulture); Thomas B. Ferguson (Pisciculture). The several reports are illustrated with engravings and charts, some of them profusely, and the several volumes are well indexed. That they contain a vast store of practical information and suggestion goes without telling. To a great extent the information here given was set before the public in our newspapers and technical journals during the holding of the exhibition; but it is well worth preserving in this more compact and accessible form. For the set of reports on our table our thanks are due to Commissioner E. H. Knight.

HYGIENE AND TREATMENT OF CATARRH. By Thos. F. Rumbold, M.D. Part II. St. Louis: George O. Rumbold & Co.

Our favorable opinion of the first part of Dr. Rumbold's work, treating of the hygiene of catarrh, was expressed some months ago. The second part is devoted to therapentic and operative measures for chronic catarrhal inflammation of the nose, throat, and ears. The work is plainly written, and illustrated by forty engravings of anatomical structures, apparatus, operations, etc. Thoughout the author insists on the paramount importance of hygienic measures and the advantage of non-irritating remedies and mild methods of treatment.

HAND-BOOK OF USEFUL TABLES FOR THE LUMBERMAN, FARMER, AND MECHANIC. Ithaca, N. Y.: Finch & Apgar. 25 cents.

A handy little book, especially for the lumberman. The numerous tables are the work of a graduate of Cornell University and presumably accurate.

Notes & Queries

HINTS TO CORRESPONDENTS.

No attention will be paid to communications unless accompanied with the full name and address of the writer.

Names and addresses of correspondents will not be given to inquirers.

We renew our request that correspondents, in referring to former answers or articles, will be kind enough to name the date of the paper and the page, or the number of the question.

Correspondents whose inquiries do not appear after a reasonable time should repeat them. If not then published, they may conclude that, for good reasons, the Editor declines them.

Persons desiring special information which is purely of a personal character, and not of general interest, should remit from $1 to $5, according to the subject, as we cannot be expected to spend time and labor to obtain such information without remuneration.

Any numbers of the SCIENTIFIC AMERICAN SUPPLEMENT referred to in these columns may be had at this office. Price 10 cents each.

(1) H. M. G. asks: 1. Where can I obtain lead foil for making a secondary battery? A. Any maker of tin foil can roll it for you. 2. Who first invented the link motion of the locomotive? A. Robert Stephenson is generally credited with it, as he introduced it in 1843; but a Mr. Howe, one of his employes, is said to have invented it in 1842.

(2) H. E. K. writes: My cistern water does not smell pure, owing undoubtedly, to the top being tightly closed and the only air reaching the water being through the filling and overflow pipes. I have raised the lid now so that it can have air. Is there anything I can put into the water to purify it, or will it purify itself by contact with what air reaches it through an opening at the lid 1 foot by 3 feet? A. Put into the water a few bushels of freshly burned charcoal in granular powder (free from fine dust). Stir up the water and let it settle. If this does not remedy the evil it is better to clean out the cistern. Surface contact with air will be of little use.

(3) M. W. C. asks: 1. Are the black rubber combs so much in use injurious to the hair or beard? I have somewhere read so. A. We think not 2. Does the decomposition of white rubber corks by nitric acid render the latter unfit for use as a caustic? A. Yes; nitric acid should always be kept in glass stoppered bottles.

(4) C. W. W. asks: Can you furnish me with any information in regard to cleaning stone work (cut) in front of buildings? Is there any process, and where and how can it be obtained? A. Use short, stiff wire scratch brushes, and a dressing hammer, if necessary, with plenty of water. If the stone is granite, traprock, or sandstone, dilute muriatic or sulphuric acid may prove useful; but it is better to do without them if possible.

(5) N. R. B. asks: Are there any nickel mines now worked in the United States? How is it taken from the ore: by smelting or by chemicals? I send you a specimen of mineral, marked as above, found here in large quantities. Please inform me what it is through your columns. A. There are several nickel mines in the United States. The metal is usually obtained from the ore by solution and precipitation, and is finally reduced in a furnace. Consult Percy's Metallurgy. The minerals are noticed under appropriate heading.

(6) W. K. P. asks for a plain and not expensive mode of bleaching wax; but the bees feed nearly exclusively here on vine and fruit, which, according to my experience, makes a difference in the process. A. One of the best methods of bleaching beeswax is that of exposure to sunlight under glass. The wax is cut in very fine shavings, and spread out so that all parts of it are acted upon alike. Another good method is to melt the wax and stir it about for some time with a mixture of fine granular charcoal (free from dust) and bisulphite of lime—1 of sulphite, 3 of charcoal, and 30 of wax. The charcoal and salt are separated by straining.

(7) H. C. asks: What is best for making a waterproof joint on a flagstone sidewalk? Stones are all iron matched. Is lead good? A. Lead does very well. Pack the lower part of the joint with oakum.

(8) D. W. O. asks: What materials are used in the preparation of cement or asphaltum for walks? What should be their condition, their proportion, and the best manner of laying? A. See Footwalk Pavements, SUPPLEMENT, No. 83, and Street Pavements and Sidewalks, SUPPLEMENT, No. 33.

(9) E. S. writes: I wish to separate the pulp of cooked apples from the rinds and cores. It can be thrown out by putting them in a perforated cylinder. Please let me know which you think would be best: a perpendicular or horizontal motion. Would not there be less danger of it clogging if the motion was irregular? How many revolutions ought it have per minute? A. You might use with advantage for this purpose a centrifugal machine. The horizontal is preferable to the perpendicular motion. The motion should be as regular as possible. Such machines are usually run at from 500 to 1,000 revolutions per minute.

(10) H. P. H. asks: 1. Is the dirt or any foreign substance in water taken up in the steam to any appreciable extent? A. Yes, if dirty water be used, containing much vegetable matter. 3. Can you give me the ratio of speed to power required? For instance, if I run an emery wheel, 18x3, 500 revolutions per minute, how much more power will it take to run it 1,000 revolutions? A. It depends upon the kind of work you wish to do on the wheel. It could not be determined except by direct experiment.

(11) W. L. D. and W. T. T., who ask about a process for producing a large number of copies of manuscripts, etc., by the gelatin process, are referred to article on Stencil Copying Process, page 65, current volume.

(12) I. M. asks how to render wood waterproof. A composition not containing alum would be preferable. A. Dry and saturate the wood as far as possible with hot paraffine oil or melted paraffine.

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

S. A.—The clay contains too much iron and sand for porcelain or white ware. It might make good bricks.—J. McF.—The rock is trap. The brassy crystals are pyrite—sulphide of iron; the white crystals calcite—lime carbonate.—F. E. C., Jr.—The red stone is jasper; the white is quartz. The ore marked B would require an assay to determine its value.—E. W. W.—The limestone contains a small quantity of galena—lead sulphide—hardly rich enough to work profitably. The lead probably carries a trace of silver.—B. B. P.—The supposed sulphur is pine pollen.—T. R.—1. Sandstone with a small quantity of lignite—not black lead. It is of little practical value. 2. Fossiliferous limestone. 3. Argillaceous limestone. 4. Missing.—G. M. M.—1. Arsenical sulphide of iron. 2. Mica schist. 3. A micaceous sand containing a little sulphide of iron. 4. The rock contains a small quantity of chalcopyrite.—E. P.—The pebble is a fragment of clear quartz, with a little free gold adhering to it—rich ore.—H. J. C.—A piece of coal shale.—J. S. R.—1. Sulphide of iron with a little galena—lead sulphide. Probably argentiferous. 2. Copper and iron sulphides. 3. Quartz and pyrrhotine—magnetic iron pyrites—probably contains traces of nickel. 5. Altered ferruginous feldspathic quartz—possibly slightly auriperty. 4. Chalcopyrite—copper iron sulphide. 6. Chiefly sulphide and phosphate of copper and sulphide of iron.—J. W. M.—Quartz and feldspar containing much graphite. If the sample correctly represents a large body of rock the property is valuable.—A. B. B.—No. 1. Gypsum—used for making plaster—(plaster of Paris). Nos. 2 and 4. Silicious lime carbonate. 3. A ferruginous clay—could be used for making bricks and cheap pottery.—J. C.—1. Silicious and ferruginous limestone. 2. Limestone containing traces of copper and iron sulphides.—N. G. & Co.—Galena—sulphide of lead—a valuable lead ore. It probably contains a trace of silver.

COMMUNICATIONS RECEIVED.

On a Celestial Phenomenon. By H. P. B.
On Brilliant Parhelia. By S. G. I.
On the Ring-Necked Snake. By C. F. S.

[OFFICIAL.]

INDEX OF INVENTIONS

FOR WHICH

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

July 26, 1881,

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., 37 Park Row, 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.

Animal shears, N. L. King 244,810
Apple and grape crusher, etc., G. L. Wenzel 244,961
Axle lubricator, J. R. Anderson 244,782
Bag holder and weigher, grain, J. J. Dunan 244,868
Bag machine, W. C. Cross 244,861
Baling press, A. S. Robinson 244,822
Ball trap, C. B. Holden 244,897
Bar. See Locomotive side bar.
Barrel platform, swinging, W. F. Veber 244,836
Battery. See Galvanic battery.
Bedstead, invalid, E. Henn 244,896
Berth, sleeping car, S. Shaw 244,772
Bicycle, W. Rennyson 244,931
Bolt clipper, A. Breth 244,789
Boring machine, Hammond & Holman 244,749
Bottle cap, open, T. W. Brown 244,740
Bottle stopper, W. F. Wade 244,956
Box. See Core box. Fare box. Lunch box.
Box machine, G. Munro 244,919
Brake. See Car brake. Wagon brake.
Bread iron, A. Messmer 244,913
Burner. See Petroleum burner.
Butter worker, G. W. Cunningham 244,862
Button, W. P. Dolloff 244,867
Button, separable, C. A. Gilchrist 244,885
Can. See Paint can.
Caoutchouc with hydrocarbon oils, treating, L. Beckers 244,788
Car brake, J. Augspurger 244,889
Car brake, C. C. Cook 244,858
Car brake, railway, G. H. Lippmann 244,913
Car coupling, F. Frear 244,890
Car coupling, E. W. Grant 244,888
Car coupling, P. Hien 244,895
Car coupling, R. Holbon 244,896
Car coupling, R. Hosford 244,751
Car coupling, H. A. Laws 244,812
Car coupling, D. B. Smith 244,827
Car door, grain, J. R. Sprague 244,941
Car, dumping, J. T. Crowther 244,795
Car, dumping, M. Van Wormer 244,954
Cars, apparatus for delivering articles from railway, J. A. Burnap 244,966
Card, game, C. P. Goldey 244,745
Carding engine, Emerson & Hobbs 244,743
Carpets, etc., converting wood fiber into flexible, N. W. Nutting 244,820
Carriage spring, A. B. Webster 244,960
Case. See Lock case. Surgical instrument case.
Chair. See Folding chair. Window cleaning chair. Tilting chair.
Chair seat, J. Rowe, Jr 244,769
Churn, J. G. Munroe 244,920
Cigar machine, O. Hammerstein 244,748
Cigar mould, Miller & Peters 244,914, 244,915
Clip. See Whiffletree clip.
Cloth shearing machines, attachment for, D. McColl 244,817
Clothes drier, R. W. Trude 244,835
Clothes, washer, S. Rea 244,930
Coloring matter from tetranitro-naphthol, E. Labhardt 244,757
Core box, D. M. Springer 244,943
Corset, D. H. Fanning 244,744
Corset, T. P. Taylor 244,834
Cotton gatherer, W. Goodwin 244,887
Cotton packer, R. C. Moore 244,917
Coupling. See Car coupling. Hose coupling. Thill coupling.
Crank or wrist pin, A. W. Wolf 244,780
Crusher. See Apple and grape crusher.
Cultivator, P. Sinnhold 244,773
Curtain fixture, C. E. Bates 244,844
Cutter. See Rotary cutter. Stalk cutter.
Cutting and punching press, Stevenson & Solter 244,945
Ditching machine, S. C. Robinson 244,934
Door hanger, W. D. Smith 244,775
Door securer, J. W. Trussell 244,951
Drier. See Clothes drier.
Drill. See Grain drill.
Dropper. See Seed dropper.
Earth digging and rock drilling apparatus, H. K. Needham 244,819
Eaves trough hanger, G. M. Vedder 244,955
Electric circuit switch board, F. Blake 244,781
Electric wire and cable, D. Brooks, Jr 244,790
Electric wires, laying underground, Hunter & Du Bois 244,752
Electrical signal transmitter, G. S. Mott 244,918
Embroidery frame, M. A. Maxwell 244,816
End gate fastener, W. Hahn 244,889
Engine. See Carding engine. Traction engine. Steam engine.
Eye, hook, etc., for the ends of ropes, belts, etc., J. Gibbons 244,884