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 From November 7, 1882, to November 10, 1882, inclusive.
 Bottling machine, J. Mills, Terre Haute, Ind.
 Cocks for casks, etc., J. Schaefer, New York city.
 Coupling for hose, E. Nunan, San Francisco, Cal.
 Electric signal apparatus (2) Standard Time Company, New Haven, Conn.
 Envelopes, manufacture of, A. C. Fletcher, New York city.
 Grain cleaning machine, L. Gathman, Chicago, Ill.
 Insulating compound for electric wires, R. G. Waring et al., Pittsburg, Pa.
 Paper boxes, manufacture of, H. H. Rogers, Brooklyn, N. Y.
 Printing press, W. G. Walker, Madison, Wis.
 Reeling silk, etc., J. M. Grant, Hartford, Conn.
 Tellurian, J. Spicer, Taylor's Island, Md.
 Tool holder, J. F. Allen, Brooklyn, N. Y.
 Wire for fastening bottle stoppers, manufacture of, O. R. Chapin, Boston, Mass.

NEW BOOKS AND PUBLICATIONS.
 LEXIQUE DE LA LANGUE IROQUOISE. Par J. A. Cuq. Montreal: J. Chaplean & Fils. \$2.
 For thirty years the venerable author has been in active service as missionary among the Iroquois and Algonquins of Oka, on the Lake of the Two Mountains, near Montreal. His knowledge of these tongues is full and intimate. The present work embraces; I. Iroquois roots; II. Derivatives and compounds; III. Supplementary notes; IV. Appendices, and many curious and interesting foot notes. It is to be hoped that the author's life may be spared for the completion of a corresponding dictionary of the Algonquin tongue, which he has in hand.

REPERTORIUM DER JOURNAL-LITERATUR DER EISENBahn TECHNİK (REPATORY OF THE TECHNICAL LITERATURE OF RAILWAYS). By Franz Woas. Years 1880 and 1881. Berlin: Julius Springer, 1882. 260 pages.
 Consists of a general index or reference book to the English, American, French, and German technical periodical literature relating to railways. It is divided into five chapters, named respectively: "The Railway Systems;" "The Building of Railways;" "The Rolling Stock;" "The Repair of Railways;" and "The Running of Railways." Each chapter is divided into sections, and each section into certain subdivisions; so that, for instance, if a person is desirous of finding the current literature on tunnels, he will find all the references thereto in Chapter II., Section B, which contains

a complete list of all the articles relating to tunnels in the several technical periodical publications for the years 1880 and 1881, as the repertory comprises only these two years. In the same manner, articles relating to any other subject matter in the railway line can be found in this repertory. This work is of great service to engineers, builders, publishers, and others, as it saves much time in searching reading matter in regard to certain subjects, and facilitates obtaining a thorough knowledge of all that has been published in relation to the said subject.

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.
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 Correspondents sending samples of minerals, etc., for examination, should be careful to distinctly mark or label their specimens so as to avoid error in their identification.

(1) S. M. B. writes: A common year consists of 365 days 5 hours 48 minutes and 49 seconds. Now, as every fourth year contains 366 days, which is leap year, it is supposed, of course, that the extra day takes up the surplus time over 365 days, which it does, and 44 minutes and 44 seconds over. Now, in a certain number of years this shortage of time would make a day. How is that loss of time accounted for? A. One day is dropped every 400 years. All even centuries are divisible by 4, and would naturally be "leap years;" but to correct the deficiency mentioned the centuries divisible by 400 are not leap years, i. e., 1800 and 1900 are leap years, but the year 2000 will not be a leap year.

(2) W. M. B. asks: 1. Is not the violent ejection of sparks from a locomotive caused by the excessive force of the exhaust across the face of the fue sheet? A. Yes. 2. Would not the draught be the same if there were no stack; the stack only serving to carry the steam and smoke above the line of sight? A. No, for very little pressure of air would be produced on the fuel in the furnace.

(3) W. L. H. asks: How many horse power is an engine 18x24, 110 revolutions per minute, pressure in cylinder 60 pounds? I say 164 horse power; am I right? A. It is 163 horse power after deducting 20 per cent for losses by friction, etc.; 60 pounds pressure in the boiler does not give 60 pounds pressure in the cylinder; this pressure you must ascertain by the indicator.

(4) H. D. C. asks: 1. What is the exact formula for calculating the strength of steam boilers, the tensile strength being known? A. P=pounds pressure per square inch; D=diameter of boiler in inches; T=thickness of plates in inches; c=tensile strength of plates in pounds per square inch; then the formula is $T = \frac{D^2 P}{2c}$ or $P = 2Tc$; but if the tensile strength of the iron is taken in the body of the plate or sheet, it must be borne in mind that the single riveted seams are only 0.50 and the double riveted seams 0.70 of the strength of the solid plate. 2. Also are steel boilers preferable to iron boilers, and why? I find it hard to learn anything about boilers in that important direction, as I have not the facilities for getting the information, nor do I know where to seek for it. A. Yes because they are stronger in proportion to thickness of plates, and the plates more homogeneous in their character. Obtain "Wilson on Steam Boilers," or "Nichols's Practical Boiler Maker," for information, or consult the rules of government inspectors.

PATENTS.

MESSRS. MUNN & CO., in connection with the publication of the SCIENTIFIC AMERICAN, continue to examine Improvements, and to act as Solicitors of Patents for Inventors.
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