

Edge setting or burnishing machine, R. Ashe... 267,787
Electric machine regulator, dynamo, J. R. Finney... 267,859
Electric signaling apparatus, H. W. Southworth... 267,945
Electrical apparatus, commutator for, Peck & Chapman... 267,711
Electrical switch board, J. F. Gilliland... 267,747
Elevator guard, automatic, R. P. Rankin... 267,757
Engine. See Hydrocarbon engine. Locomotive engine. Rotary engine.

Ore crusher, W. P. Hammond... 267,687
Packing, metallic rod, L. Katzenstein... 267,750
Paper making machines, method of and apparatus for cleaning the web of, J. J. Manning... 267,704
Paper perforating machine, W. C. Utley... 267,790
Paper scoring machine, A. E. Elmer... 267,849
Paper trimming apparatus for the use of paper hangers, P. C. N. Pederson... 267,925
Permutation lock, J. Forsier... 267,977
Permutation lock, O. E. Pillard (r)... 10,246
Photographer's dry plates, drying rack for, J. E. Beebe... 267,663
Photographic plaques, device for producing, H. Roher... 267,720
Photographic shield, E. B. Barker... 267,821
Picture exhibitor and receptacle, G. L. Jaeger... 267,895
Picture frame picture holder, M. W. Allen... 267,964
Pipe rings, machine for cutting sewer, R. W. Lyle... 267,700
Planer, splint, B. F. Firman... 267,990
Planers, feed roller gear for wood, P. Stoerger... 267,947
Planter, hand corn, L. B. Chipman... 267,775
Planter, potato, E. P. & J. M. Karr... 267,899
Plow, L. Schmidt... 267,724
Plows, etc., adjustable and detachable handle for, J. M. Clark... 267,837
Pocket watch, I. Samuels... 267,942
Polarized ink writer, F. Anderson... 267,967
Polishing device, rotary, W. P. Whittemore... 267,735
Post. See Fence post.

Trains, apparatus for controlling the movement of, E. N. Dickerson, Jr... 267,681
Trap. See Animal trap. Steam trap.
Trap, R. Clarke... 267,973
Tree. See Gig tree.
Truck, W. Z. Brown... 267,669
Truck, A. B. Reeves... 267,801
Type case cabinet, J. S. Hoerner... 267,690
Universal angular knuckle joint, E. Mignault... 267,706
Universal joint, Deyo & Carman... 267,844
Valve. See Float valve.
Valve, balanced, M. M. Sanders... 267,802
Valve, balanced steam, S. E. Jarvis... 267,791
Valve gear for oscillating engines, H. F. Shaw... 267,725
Vehicle, side bar, J. A. Snell... 267,944
Vehicle spring, C. W. Saladee... 267,983
Ventilator, M. H. Dorgan... 267,741
Ventilator or chimney cap, L. F. Betts... 267,829
Vise, bench, T. Reno... 267,986
Wagon brake, A. D. Bertier... 267,828
Washing machine, boiler, L. S. Betzer... 267,969
Watch hands, J. W. Bell... 267,824
Water closet, M. Hogan... 267,786
Water cooler ice bumper, J. J. Savage... 267,722
Water gauge and alarm, P. V. Dwyer... 267,780
Water motor, J. Coates... 267,672
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Water wheel, H. Van De Water (r)... 10,247
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Wax from paraffine oil, separating, S. W. Kirk... 267,752
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Wells and tanks, safety attachment for oil, M. A. Lanagan... 267,903
Wells between the flows of oil, preventing the escape of gas from oil, C. H. McKee... 267,796
Wheel. See Car wheel. Water wheel.
Winding shell for calico, etc., A. M. Ackerman... 267,817
Window, U. H. Balcom... 267,820
Yeast, preparing bakers', Goll & Spinner... 267,686

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.
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.
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 fire 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 = (D^2 P) / (2c) or P = 2Tc / D^2; 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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DESIGNS.

Billiard table, R. Herman... 13,440
Carpet, H. Horan... 13,442, 13,443
Carpet, J. Pegel... 13,452
Chain swivel watch, J. J. Horton... 13,444
Corset, J. Hiborn... 13,441
Embroidery, H. Bosshardt... 13,438
Fireplace, W. C. Peet... 13,445 to 13,451
Type, printing, H. H. Thorp... 13,453
Wall ornament, L. G. Collins... 13,439

TRADE MARKS.

Beverages, such as lager, weiss beer, and all carbonated drinks, Eazie Bottling Works... 9,817
Brandy, Martell & Co... 9,836
Candy, Puck Manufacturing Company... 9,833
Cards, playing, New York Consolidated Card Company... 9,825
Cigars, Wiggenhorn Bros... 9,832
Lard and butter substitute, W. Butcher's Sons... 9,815, 9,816
Lard substitute, W. Butcher's Sons... 9,814
Malt extract, Kepler Malt Extract Company (Limited)... 9,835
Medical compounds, Kepler Malt Extract Company (Limited)... 9,834
Medicated preparation of cinnamon, B. L. Livingston... 9,823
Needles, Wolff & Knippenberg... 9,833
Paints and painters' supplies, A. W. Strauss & Co... 9,830
Pens, steel and other, Turner & Harrison... 9,822
Pianofortes and parts thereof, Steinway & Sons... 9,820, 9,821
Pistols, revolving cylinder, Merwin, Hulbert & Co... 9,824
Soap, Procter & Gamble... 9,826 to 9,828
Soaps, candles, oils, and lard, Procter & Gamble... 9,829
Tobacco and cigarettes, chewing and smoking, J. Hancock... 9,818
Wine, champagne, G. H. Mumm & Co... 9,837

English Patents Issued to Americans.

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. Chapleau & 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-TECHNIK (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