

RECENTLY PATENTED INVENTIONS.

The inventions described in this Department were patented through the Scientific American Patent Agency.

Of Interest to Farmers.

WEED BURNER.—A. ITEN, Mountainview, Hawaii Ty. The apparatus is adapted to be used between rows of growing crops to destroy weeds by burning without injuring the crops. A number of liquid fuel burners are used whose flames are directed downwardly to burn the weeds together with any insects thereon, and to destroy any obnoxious animal or vegetable life among the crops.

Of General Interest.

MOUNTING FOR PRECIOUS STONES.—W. R. ELLIOTT, New York, N. Y. The invention consists in so constructing a finger ring or scarf pin that it will be in two hinged sections which are locked together by the act of applying the stone in the mount, thus enabling the ring to be fitted to the finger at a point below the knuckle over which it could not otherwise be passed.

MANUFACTURE OF SULPHURIC ACID AND SODIUM SULPHATE.—U. F. BENKER, 129 Rue Martre, Clichy, Seine, France. This is a process of making free sulphuric acid and neutral sulphate of soda by the decomposition of bisulphate of soda, consisting in heating a mixture of bisulphate of soda and of silica in substantially equal proportions, thus preventing the fusion of the bisulphate.

GLASS HOLDER.—J. W. BRICKER, Wilmerding, Pa. This holder is adapted particularly for use in dispensing soda water. Its principal advantage lies in the fact that it has substantially no corners or crevices for the collection of dirt so that it may easily be cleaned and kept in a sanitary condition.

BUILT-UP POST.—C. F. STEIBER, New York, N. Y. The object of the invention is to produce a post which is built up of a number of pieces set together, and it relates especially to the construction of the base, the capital, and the collar which connects the upper part of the post with the lower section. The form of these parts is such as to facilitate their being stamped from sheet metal.

FRAME.—L. SBORIGI, New York, N. Y. The frame is made up of sheet metal members which are bent upon themselves to form side walls and bent further upon themselves to form inner walls parallel with the side walls and separated therefrom by slots. The side members are connected at the corners by angle members which are fitted in the said slots of the adjacent side members.

Hardware.

WRENCH.—A. L. SHAW, Corinne, Utah. The invention provides a simple wrench by means of which vehicle wheels may be removed easily and expeditiously and which will prevent marring or other injury of the wheel. The device is provided with two pairs of jaws of which one pair may be clamped upon the axle nut, and the other pair on the vehicle wheel hub.

DOOR FASTENER.—F. E. RICHARDSON, Manchester, Iowa. The fastener is arranged to act automatically when the door is closed, to hold the same resiliently in closed position. A further object of the invention is to provide a fastener consisting of a catch and a retainer for the catch, the latter resiliently engaging the retainer and being adjustable so that its resistance to disengagement from the retainer can be regulated.

Pertaining to Recreation.

CAR FOR OBSERVATION WHEELS.—A. F. BIAVATI, Freeport, N. Y. The cars are self-balancing so that they will remain in an upright position as the observation wheel revolves. This is accomplished by making the cars in the form of drums with heavy weights at the lower ends and mounting them on rollers in annular tracks in the wheel.

Pertaining to Vehicles.

VEHICLE WHEEL.—I. C. SCUDDER, New York, N. Y. This construction is arranged to permit a tire to be attached to or detached from a wheel while inflated. A detachable rim is provided which carries the inflated tire and this rim may be quickly and easily attached without requiring the use of special tools.

Designs.

DESIGN FOR A FRONT MEMBER FOR RACKS OR DRAWERS.—D'A. B. PLUNKETT, New York, N. Y. The design is in the form of a panel, provided with a handle at the center and a series of bosses are formed on the panel with projecting cubes marked with stars.

DESIGN FOR A SUPPORTING BRACKET.—J. KISER, Katalla, Dist. of Alaska. The bracket has the general form of an inverted A and a figure standing on the cross bar of the A holds a slanting bar which extends upward and supports the outer end of the upper cross bar of the bracket.

NOTE.—Copies of any of these patents will be furnished by Munn & Co. for ten cents each. Please state the name of the patentee, title of the invention, and date of this paper.



Full hints to correspondents were printed at the head of this column in the issue of August 5th, or will be sent by mail on request.

(10883) E. E. B. writes: Under your heading, p. 139, I read that the "Lusitania" beats all records. Do I understand that she has won her record back from the "Indomitable," which you spoke of in your paper a few weeks ago? A. The "Lusitania" holds the Atlantic record for any type of ship with an average speed of 25.05 knots.

(10884) A. P. McK. says: In your issue of September 12th you call the attention of the public to the fact that there is a growing demand for a noiseless rail joint. Will you kindly answer in your Notes and Queries column if it is a fact that when trains are traveling, say all in east or west direction, that the rails have a tendency to creep in opposite direction to which the train is moving, or do they creep in the same direction that the train is moving, or do they creep at all, for any other reason than contraction or expansion? A. Rails tend to creep in the direction of the traffic. The amount of movement depends upon certain local conditions which are not as yet well understood.

(10885) F. H. says: Please advise me if the word *cheeses* is correct; also state in what way it would be used if correct. Give several different ways. A. The plural of cheese is cheeses. The Century Dictionary has this: "Soft cheeses, such as cream cheese, bath, and Yorkshire cheese, do not keep long." If we should buy five we should not say five cheese but five cheeses. This usage satisfies us.

(10886) A. H. W. says: It is stated that the first suspension bridge ever in existence was in the city of Budapest, and that the Brooklyn bridge was modeled after same. That Budapest had the first subway, and the same was used as a model for the New York Subway. That Budapest has a telegraphic newspaper, viz., that telegraphic messages are at once connected by the instrument with the one bringing the message, printed in newspaper form. A. It would be difficult to determine which was the first suspension bridge; for it is a fact that from time immemorial, in some parts of Asia, suspension bridges have been formed of rope fiber. Those bridges are across comparatively short streams and are very crude, it is true, but they contain the principle. The Brooklyn bridge is by no means the first metal suspension bridge. Early in the nineteenth century a chain suspension bridge was constructed across the Menai Straits in England, which had a span of 580 feet; and the bridge over the river Avon at Clifton, England, also a chain bridge which originally spanned the Thames, are probably as old. Budapest had the first subway, and many of its good points are embodied in our present New York Subway, particularly the kiosks at the top of the stations. For a long time Budapest has had a telegraphic newspaper and also telephonic concerts. The inhabitants of Budapest are very advanced.

(10887) B. F. M. asks for information concerning sunstroke. A. Sunstroke is caused by excessive heat, and especially if the weather is muggy. It is more apt to occur on the second, third, or fourth of a series of hot days than on the first. Loss of sleep, worry, excitement, close sleeping rooms, debility, abuse of stimulants, predispose to it. It is more apt to attack those working in the sun, and especially between the hours of eleven o'clock in the morning and four o'clock in the afternoon. On hot days wear thin clothing. Have as cool sleeping rooms as possible. Avoid loss of sleep and all unnecessary fatigue. If working indoors and where there is artificial heat (laundries, etc.), see that the room is well ventilated. If working in the sun, wear a straw light hat (not black, as it absorbs the heat), etc., and put inside of it, on the head, a wet cloth or a large green leaf; frequently lift the hat from the head and see that the cloth is wet. Do not check perspiration; but drink what water you need to keep it up, as perspiration prevents the body from being overheated. Have, whenever possible, an additional shade, as a thin umbrella when walking, a canvas or board cover when working in the sun. If a feeling of fatigue, dizziness, headache, or exhaustion occurs, cease work immediately, lie down in a shady and cool place, apply cold cloths to and pour cold water over head and neck. If any one is overcome by the heat, send immediately for the nearest good physician. While waiting for the physician, give the person cool drinks of water or cold black tea, or cold coffee, if able to swallow. If the skin is hot and dry, sponge with or pour cold water over the body and limbs, and apply to the head pounded ice wrapped in a towel or other cloth. If there is no ice at hand, keep a cold cloth on the head and pour cold water on it, as well as on the body. If the person is pale, very faint, and pulse feeble, let him inhale ammonia for a few seconds, or give him a teaspoonful of aromatic spirits of ammonia in two tablespoonfuls of water with a little sugar.

NEW BOOKS, ETC.

THE AIR AND VENTILATION OF SUBWAYS. By George A. Soper, Ph.D. New York: John Wiley & Sons, 1908. 12mo.; pp. 244. Price, \$2.50.

This volume is the outcome of studies carried on for two and one-half years for the Board of Rapid Transit Railroad Commissioners for the city of New York and, after that Board went out of existence, for the Interborough Rapid Transit Company, to whom the first New York subway is leased. The work was begun in the summer of 1905 and concluded in 1907. The original data covering about 2,000 pages have never been published, although reports summarizing many of the facts have appeared in the official transactions of the Rapid Transit Commissioners. It has seemed desirable to preface the description of the investigation by a few facts concerning the scientific groundwork upon which the solution of problems of ventilation should be based, and to this end the composition of good and bad air, some mechanical principles of the atmosphere and other matters have been included. The object throughout has been to make available in convenient form an account of the essential features of the investigation, in the hope that the information may be of service to persons not necessarily trained in sanitary science, but interested in knowing what good and bad air consists in and how to deal with it in subways and other inclosed spaces.

CYCLOPEDIA OF CIVIL ENGINEERING. Editor-in-Chief Prof. F. E. Turneaure, C.E., Dr. Eng., Dean of the College of Engineering, University of Wisconsin. Eight volumes. Chicago: American School of Correspondence, 1908. 8vo.; pp. 3200, 3,000 illustrations. Price, \$24.

This is a general reference work, and the first of its kind covering the entire field of modern engineering practice. It is particularly suited for the civil, structural, railroad, sanitary, irrigation, hydraulic, and hydro-electric engineer. The different departments have been prepared by a staff of practical experts of the highest professional standing in their particular lines of work. For this reason, the matter is up-to-date and representative of the best engineering methods, and should be of great value to the practical engineer, although primarily intended for the use of students. The work is prepared in the characteristic style of the American School of Correspondence, the subjects being taken up in very simple and clear language, so that they can be thoroughly understood by the student who is studying at home and hence is unable to clear up difficult points by directly questioning his instructor. For this reason abstruse formulae are avoided, and the text is very fully illustrated with diagrams and half-tone engravings. Among the staff who have assisted Prof. Turneaure in the preparation of this work are such men as Prof. A. E. Phillips of the Armour Institute of Technology, author of "Plane Surveying and Irrigation Engineering," and joint author of "Highway Construction"; Walter Loring Webb, author of "Masonry and Reinforced Concrete," "Railroad Engineering," and "Plotting and Topography"; H. P. Gillette, joint author of "Cost-Analysis Engineering"; E. A. Tucker, author of "Steel Construction"; Prof. F. O. Dufour of the University of Illinois, author of "Bridge Engineering and Roof Trusses"; Prof. A. Black of Columbia University, author of "Water-Power Development"; Prof. C. E. Morrison of Columbia University, author of "River and Harbor Improvement"; Prof. A. Marston of Iowa State College, author of "Sewers and Drains"; and Charles B. Ball, chief sanitary inspector of the city of Chicago, joint author of "Plumbing and House Sanitation." Other important sections are those on Statics, Strength of Materials, Mechanical Drawing, and Practical Problems in Construction in Steel and Concrete.

POLK'S LUMBER DIRECTORY OF THE UNITED STATES FOR 1907-8. Detroit, Mich.: R. L. Polk & Co., 1907. 8vo.; pp. 1614. Price, \$10.

This immensely valuable trade directory is very comprehensive, much more so than its title would lead one to suppose. It comprises lists of manufacturers of agricultural implements, boat builders, box manufacturers, car builders, carriage and wagon builders, chair manufacturers, cooperage stock, furniture manufacturers, hub and spoke manufacturers, logging railroads, lumber and lumber-mill machinery of all descriptions, piano and organ manufacturers, planing mills, saw mills, ties, posts and poles, veneer manufacturers, woodenware manufacturers, and a host of other allied interests together with laws affecting the lumber interests. This is the third revised edition. We have used the book, and have found it to be reliable.

THE FUNDAMENTAL CONCEPTIONS OF CHEMISTRY. By Dr. S. M. Jørgensen, Professor of Chemistry at the University of Copenhagen. Translated by M. P. Appleby, B.A. London: Society for Promoting Christian Knowledge; Brighton, New York: E. S. Gorman, 1908. 32mo.; cloth; 175 pages; illustrated.

Prof. Jørgensen's book belongs to a series of manuals of Elementary Science, and it discusses the more important of the theories forming the basis of modern chemistry. In its divisions into the weight and volume relations of chemi-

cal compounds, the atmosphere, acids, brass, salts, aqueous solutions, oxidation, and reduction and chemical action, the advance and collapse of theories of chemistry are treated in a scientific, historic and biographical manner. The work is intended to accustom a student to the methods of chemical thinking, and in the process he is given the aid of the necessary figures and experiments.

INDEX OF INVENTIONS

For which Letters Patent of the United States were Issued for the Week Ending

September 29, 1908,

AND EACH BEARING THAT DATE

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

Adding machine, H. L. Fisher.....	899,965
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Adjustable table, Marrero & Helwig.....	899,548
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