ing ready access to the interior. The head piece is hinged at one end to the end of the body, the sides of the head section forming a longitudinal continuation of the sides of the body when swung downward on its hinged connection.

SCREEN DOOR.—Albert Schreiner, South Evanston, Ill. This door has a panel attached to its free vertical edge and located at an angle to the door, the panel extending from top to bottom of the door, and a horizontal panel connecting the door and vertical panel at the top, a caster being carried by the vertical panel whereby it may be opened and closed. This screen door is designed to prevent the entrance of insects into the room when the door is opened.

INVALID'S TABLE.—Max Lesser, Duncansby, Miss. This is a simple form of table arranged for convenient attachment to a bed, to permit an invalid to use the table when eating, drinking, reading, etc., without the assistance of a nurse or others. Projecting from a support are vertical rods on which slides an adjustable bracket carrying the table, there being an adjusting mechanism for raising and lowering the bracket and table.

BED.—Alonzo R. Turner, Sprague ville, N. Y. According to this improvement the bed bottom comprises two similar series of spring wire sections that cross at right angles, each section having parallel side members and two upright undulating bow springs formed on each end. Supports for each spring section project inwardly from the side rails of the bedstead frame and engage the upper ends of the bow springs for the support of the spring bed bottom.

NEW BOOKS AND PUBLICATIONS.

THEORETICAL AND PRACTICAL AMMONIA REFRIGERATION. By Iltyd I. Redwood. With 25 pages of tables. New York: Spon & Chamberlain. London: E. & F. N. Spon. 1895. Pp. v, 146. Price $1.

Every day the importance of a knowledge of the laws of ammonia ice plants is increasing, and this acceptable little manual is to be recommended as appearing at a good time. It seems to be written throughout in a very practical way, and to be decidedly to the point. Its compact size and moderate price will insure it wide appreciation.

SCIENTIFIC AMERICAN BUILDING EDITION.

MAY, 1895.—(No. 115.)

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1. Plate in colors, showing a residence at Glen Ridge, N. J., recently erected for W. T. Taliaferro, Esq. Perspective elevation and floor plans. A fine example in the Colonial style. Mr. Chas. E. Miller, architect, New York.
2. Perspective elevation and floor plans of a cottage at Tenafly, N. J., erected for Chas. Vogt, Esq., at a cost of $5,800 complete. Mr. W. L. Stoddart, architect, New York. An attractive design.
3. A dwelling at Kennebunkport, Me. Three perspective elevations and floor plans. A most picturesque residence, with many artistic features. Mr. Henry P. Clark, architect, Boston, Mass.
4. A log cabin chapel recently erected at Black Rock, Conn. Perspective elevation and ground plan. Mr. Bruce Price, architect, New York.
5. A cottage at Park-Hill-on-Hudson, N. Y., recently erected for Geo. L. Rose, Esq., at a cost of $12,000 complete. Two perspective elevations and floor plans. Mr. A. F. Leicht, architect, New York. A well executed design, showing many excellent features.
6. A house at Orange, N. J., recently completed for Thomas L. Smith, Esq. Messrs. Child & De Goll, architects, New York. A pleasing design in the Colonial style.
7. The Yonkers Public School, No. 8, at Bronxville, N. Y. A good example of school architecture.
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Notes & Queries

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Names and Address must accompany all letters, or no attention will be paid thereto. This is for our information and not for publication.

References to former articles or answers should give date of paper and page or number of question.

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(6523) A. H. P. writes: Please answer in SCIENTIFIC AMERICAN if there is an improved paddle which can be used on a stern or side wheel steamboat. I mean some paddle that can go in the water and come out with less resistance than old style stationary paddle on a wheel. I remember a good while ago, in the SCIENTIFIC AMERICAN, of a cut of a sound steamer that was so equipped. A. The feathering paddle wheel is an old device now brought into use in our large sound steamers.

(6524) H. C. P. asks: What is the weight (avoirdupois) of a box 5×8×4 inches of pure gold. Also of the same size, of pure gold dust? Also the length over all of the new steamship St. Louis? A. The weight of the box of gold as stated, 111·44 pounds avoirdupois, of gold dust about ⅔ that amount. The St. Louis is 554 feet over all. See SCIENTIFIC AMERICAN, August 21, 1894, for illustrated description.

(6525) C. S. writes: 1. I have a private telephone line about 2¾ miles long, on which are four instruments or stations; the transmitters are of my own make, as described in the SCIENTIFIC AMERICAN some years ago, called the bipolar telephone; the receivers and magnetic call bells I bought of an electric company. I first put up the line only one mile long, and since adding two more instruments and lengthening the line, the call bells do not respond so readily. Yet the transmission of speech is about as good as before, which is quite satisfactory if talked close into the transmitter. Do you think the instruments would work as well if the line were lengthened one or more miles, and another instrument added? A. The telephones probably would; the bells would not. 2 Would it improve the working of the telephones if the ground wire at the terminals were connected to good ground plates instead of lightning rods as they now are? A. It might, especially as regards the bells. It all depends on how good a ground the lightning rods have. 3. The line comes in contact with a good many branches from trees. Would it improve by trimming the trees so as to leave the wire perfectly free? A. This would tend to improve the service. 4. Would it transmit the sound louder and clearer to add stronger, larger, horseshoe magnets or batteries? A. Not necessarily; it might or might not. The best conditions can only be found by experiment.

(6526) W. M. B. asks: 1. Please mention a good book (late as possible) giving rules for size and length of wire, amount of iron in fields and armature, etc., in constructing a motor or dynamo to be run by given current, or to furnish given current? A. We recommend and can supply Sloane's "Arithmetic of Electricity," $1 by mail. 2. Can two small motors in series, 15 volts 10 amperes each, be run with direct current of 114 volts, and how must I connect same? A. You will require about 7 ohms resistance in circuit with the dynamos. 3. How must I put the red oxide of lead on storage battery plates? What good book treats of subjects? Is there any solution into which I might put the plates to harden the red lead without injuring its efficiency? A. Make it into a paste with dilute sulphuric acid. Roughen well the surface of the plate. There is no such solution. For storage battery management, we recommend and can supply, "The Management of Accumulators," by Salomons, price $1.50; Reynier's "Voltaic Accumulator," price $3.

(6527) D. J. S. asks if there is any rule by which weight can be ascertained according to the height, viz., if a drop hammer on a derrick weighed 3600 pounds, and has a drop of 15 feet, what would be the weight of the blow? A. There is a definite rule for finding the force of the fall of a weight, as a pile hammer by gravity, or the force of a blow, as with a hand or steam hammer. See SCIENTIFIC AMERICAN SUPPLEMENT, No. 862, on "Impact or the Force of a Blow," in which the details of computation for various percussive forces are described, 10 cents by mail; 3,600 pounds×15 feet= 54,000 foot pounds, and if the fall of the weight is arrested within three inches after contact, the impact force equals 54,000×½=216,000 pounds static load, less the loss by friction of air and slides on the falling weight.

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Sharpener, scissors, J. G. Hermes ... 538,964
Shawl strap, B. B. Ussher ... 538,988
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