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SCIENTIFIC AMERICAN BUILDING EDITION.

APRIL, 1895.—(No. 114.)

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1. An elegant plate in colors, showing a Colonial cottage recently completed for Frank L. Purdy, Esq., at Glen Ridge, N. J. Two perspective elevations and floor plans. An attractive design. Architect, Charles P. Baldwin, Esq., Newark, N. J.
2. Two perspective elevations and floor plans, showing a residence recently completed for George N. Tyner, Esq., at Holyoke, Mass. An elegant design in the Romanesque style of architecture. Mr. H. H. Gridley, Springfield, Mass., architect.
3. A cottage at Nutley, N. J., erected at a cost of about $4,000. Perspective elevation and floor plans. Architect, Mr. E. R. Silton, N. Y. A simple but tasteful design.
4. A Colonial residence at Orange, N. J., recently erected for John Hammond Bradshaw, M.D. A pure example of modern Colonial architecture. Two perspective elevations and floor plans. Messrs. Rossiter & Wright, New York City, N. Y., architects.
5. An attractive residence at Indiana, Pa., recently erected for Mr. Harry McCreary, at a cost of $4,350 complete. Perspective elevation and floor plans. Architect and builder, Mr. E. M. Lockard, Indiana, Pa.
6. Two perspective elevations and floor plans of a handsome residence erected for Samuel S. McClure, at Armour Villa Park, Bronxville, N. Y. A good example of a square rigged house. Cost $8,000 complete. Mr. Henry S. Rapelyea, architect, Mount Vernon, New York.
7. A cottage at Glen Ridge, N. J. An attractive residence in the Elizabethan style. Two perspective elevations and floor plans.
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9. An elegant residence at Flatbush, L. I., recently erected at a cost of $11,000 complete. Two perspective elevations and floor plans. Architect, J. G. Richardson, Esq.; builder, J. C. Sawkins, Esq., both of Flatbush, L. I. An attractive design.
10. A house at Park Hill, N. Y., recently erected for Messrs. Loremi & Morrow, at a cost of $6,500 complete. Perspective elevation and floor plans. Mr. Edmund J. Maurer, architect, New York.
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Notes & Queries

HINTS TO CORRESPONDENTS.

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 This is for our information and not for publication.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.

Inquiries not answered in reasonable time should be repeated; correspondents will bear in mind that some answers require not a little research, and, though we endeavor to reply to all either by letter or in this department, each must take his turn.

Buyers wishing to purchase any article not advertised in our columns will be furnished with addresses of houses manufacturing or carrying the same.

Special Written Information on matters of personal rather than general interest cannot be expected without remuneration.

Scientific American Supplements referred to may be had at the office. Price 10 cents each.

Books referred to promptly supplied on receipt of price.

Minerals sent for examination should be distinctly marked or labeled.

(6496) G. H. G. says: 1. Do you know of any substance which could be substituted for the mica burnt away in a commutator when short-circuited, so that when armature is connected it may be replaced in a car at once without having to take commutator to pieces and putting in new section of mica? A. There is no substance that can be used to repair the burnt-out mica. The correct way is to take the commutator apart and insert mica slips. 2. Could a water motor driven by water at 50 to 60 pounds supplied through a ½ inch pipe drive a ⅛ horse power dynamo at 2,700 revolutions, if so could you name the make and price? A. The ⅛ horse power dynamo will require an 8 inch motor, using a ¼ inch jet, using 12 gallons of water per minute and running at 1200 revolutions per minute. The dynamo may be driven at required speed by band or belt. The ½ inch pipe is too small for full effect, the friction of the water will lessen the head. If not over 50 feet long, it should be ¾ inch pipe. If 100 feet or over, 1 inch pipe.

(6497) W. F. C. writes: Will you please explain why the blocks in locomotive wheels are necessary? How can the upward or downward thrust of the drivingshafts produce pounding on the rails unless the contact of the wheels with the rails is broken? Would not the weight of the locomotive prevent this? As the whole machine is independent of the rails, beyond the fact that they have its weight to bear, how can the application of power to the perfectly circular driving wheels have any tendency to break their contact with the rails or produce pounding thereon? If there is anything in this theory, a man ought to be able to get into a basket and lift himself. A. The counterweighting of the driving wheels of locomotives is for the purpose of neutralizing the centrifugal force of the pin hubs, pins, connecting rods and pistons. The pin hubs, pins, link bars, and part of the connecting rods have a continuous centrifugal force which causes compression of the rail or pounding, which is not of the nature of a blow from a hammer, but has the same effect by varying the pressure and thus vibrating the rail. The counterweight is also further increased to partially neutralize the longitudinal motion of the crosshead, piston rod, and piston. Pounding is only a technical name for variation of rail pressure by the revolution of unbalanced driving wheels. The comparison of the man in the basket is not applicable to this case.

(6498) H. W. E. writes: Quite a discussion has arisen here of late regarding as to how the ice in Moosehead and other lakes in Maine disappears in the spring. Some claim that it gradually melts away, and others that after a little it sinks into the lake. A. The ice in the spring seems to become crystalline in vertical needles by the action of the sun and warmth, the condition when it is called rotten ice; the water is drawn into the crystalline structure by capillary attraction, when it is ready to fall apart by the least agitation of wind or wave.

(6499) J. B. says: Would you kindly inform me how to make the composition that is used on insulating tape? A. Pure gum rubber dissolved in turpentine, with the addition of 5 per cent of raw linseed oil. 2. Yellow pitch, 8 parts; beeswax, 2 parts; tallow, 1 part.

(6500) P. A. K. asks how to treat sheep and goat skins to make them soft. A. To tan or taw skins with the hair on for rugs and other uses, first thoroughly wash the skin and remove all fleshy matter from the inner surface, then clean the hair or wool with warm water and soft soap, and rinse well. Take ¼ pound each common salt and ground alum and ½ ounce borax; dissolve in hot water and add sufficient rye meal to make a thick paste, which spread on the flesh side of the skin. Fold it lengthwise, the flesh side in, the skin being quite moist, and let it remain for ten days or two weeks in an airy and shady place, then shake out and remove the paste from the surface, and wash and dry. For a heavy skin a second similar application of the salt and alum may be made. Afterward pull and stretch the skin with the hands or over a beam and work on the flesh side with a blunt knife.

(6501) L. McH. asks why a single cell of primary or secondary battery cannot be constructed to give over two volts or thereabout. A. Because no available reaction involving higher potential has been discovered. None is likely to be. No general reason can be given.

(6502) F. S. says: I would like to ask a question in regard to the mineral rod or dip needle. Is there any such thing that will work? A. The mineral rod is of no practical value. See the SCIENTIFIC AMERICAN for August 20, 1892, for an article on "Unscientific and Scientific Divining Rods," or "Experimental Science," page 801.

(6503) A. J. asks: What can I coat steel with in brazing it that will prevent the solder or brass from flowing where I do not want it? Have tried lampblack and Spanish whiting, but they burn off. A. Try a wash of clay and black lead.

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April 16, 1895,

AND EACH BEARING THAT DATE.

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