

A CONVENIENT COTTAGE COSTING \$1,000.

These designs were prepared to meet the increasing demand for inexpensive and comfortable country houses. The question is frequently asked: "Can a dwelling be constructed for the sum of \$1,000 that will contain all the accommodations and conveniences required by an average-sized family, and withal have an appearance that shall not compromise one's self respect?" The chief difficulty in the way of a satisfactory answer lies in the arbitrary number and character of the rooms required. As a rule, there must be the conventional parlor, dining-room, kitchen, entrances, closets, etc., in the first story, and several chambers above; altogether approximating establishments costing double or treble the estimated amount. Although such demands are perplexing, their number is so large that they cannot be ignored. Several designs for cottages of this class have been already published in the *American Agriculturist* (see numbers May, 1875; May, 1876; May, 1877; and April, 1878), which may be consulted with profit by those who are considering the subject of building. The plans here given will be found to excel those referred to in many respects, especially in the amount of accommodation, having seven convenient rooms, instead of the usual five or at most six divisions. . . . **EXTERIOR** (fig. 1).—The side elevation shows the outside appearance of the house. The body is set at a convenient height from the ground, the foundation showing 2 feet above the grades. The outlines of the main building are symmetrical and well defined. The roofs are set at an angle of 45°, giving them the prominence they deserve. The gables have a touch of ornamentation, and light chamfer work is put along the frieze, and under the windows, giving a finished appearance. The front and rear porches are timber work, also chamfered. In some localities it may be desirable to have more shade in front than is afforded by this porch, in such case a veranda may take its place, crossing the entire front of the house. . . . **CELLAR**.—Height, 6½ feet. In the estimate of cost appended allowance is made for a cellar under the wing only, which is sufficient in most cases. Others, especially farmers, wanting all the store-room possible, may extend the cellar under the entire building.—[All the cellar-room should be excavated for the sake of good health, even if the room is not otherwise needed.—**ED.**—There are two windows, an outside entrance, and a flight of plain stairs leading to the kitchen above. . . . **FIRST STORY** (fig. 2).—Height of ceiling, 9 feet. The front entrance is from the porch to a vestibule, and through it to the two principal rooms. The vestibule has a small window at one side, towards which the front door swings in opening, and at the other side sufficient space is allowed for a hat-rack and stand. The parlor and dining-room are of equal dimensions, and similar in form, both being octagonal in front, and having a single chimney between them. The parlor has front and side windows, and one closet. The dining-room intended as the family living-room, is conveniently arranged, having an open fire-place, three windows, a closet, and direct communication with the front vestibule and rear entry. The kitchen opens from the rear entry, is fair sized, and well lighted. It has a large fire-place, a pump and sink, two closets, and a stairway to the cellar. The rear entry opens from a covered porch, and is lighted by a small window, and from it a boxed or cottage flight of stairs lead to the second story. It will be observed that there are no superfluous halls, or other waste room, every inch of space being devoted to purposes of real utility. . . . **SECOND STORY** (fig. 3).—Height of ceiling in the main part, 3 to 8 feet; in the wing 2 to 7 feet. The roofs, being set at an angle of 45°, are unusually steep, giving increased head-room; then the partitions surrounding the hall are set to add the height of the vertical walls where most important. There is a hall, four rooms and four closets on this floor. The two front chambers have two windows each, and the chimney between them allows for the use of stoves, if required. The two rear rooms serve acceptably as bed-rooms, the larger one having two windows, will accommodate two persons comfortably. The smaller room has a sash-door, through which light passes to the hall. . . . **CONSTRUCTION**.—The foundation and chimney are of brick-work. Frame, of sawed spruce, siding of pine, "novelty pattern." Roofs of pine shingles; floors of tongued and grooved spruce; windows, four lights each; doors, pine, panelled; plastering, three-coat work; painting, two coats. The following estimate covers the cost of building by this plan. Those requiring the increased veranda, and cellar space suggested, should add \$50. In many localities, suitable stone and sand abound, which may be had for hauling. In such cases, the foundation may be of stone, which, together with the plastering, will cost much less than here calculated.

THE FIFTEEN SCHOOLGIRLS' PUZZLE.—This well known

puzzle has been brought out in a handy form by Mr. H. F. Bernard, and is sold by Perry and Co. In a neat box we have seven sets of names of the girls on differently-coloured counters—one colour for each day. On the other side of the counters we have the numbers one to fifteen. The puzzle is to so arrange the names that the schoolgirls while walking three abreast for seven days in succession, shall never find themselves in the same company. There are thus 35 combinations of the names, and no two may occur twice in any of the ranks of three. This is a far better puzzle than the so-called American fifteen, which is chiefly remarkable for the persistency with which would-be solvers alter the conditions to suit their solutions.

WIRE BOOK-SEWING MACHINE.—Mr. Hugo Bilgram read a paper at one of the late meetings of the Franklin Institute on this subject, in which he affirmed that the substitution of wire for thread, which these machines successfully accomplish, marks the next step forward that has lately been made in book-binding. He referred especially to a machine which had been exhibited in operation before the Institute, which acted on the principle of producing a number of U-shaped wire staples which are driven from the inside of each section of the book through the back, and through one wide or several narrow bands of a strong linen or cotton fabric, whereupon the projecting ends of the staples are clinched over, thus effecting a firm connection between the sheets of the section and the band or bands covering the back of the book. The machine fastens a section at each revolution of the main shaft, and may be run at the rate of 40 to 43 revolutions per minute, and the book sections, partly opened, being fed by the operator upon a table which carries the sheet in position to be sewed.

The speaker pointed out that the advantages of this mode of binding, as compared with hand-binding, were greater strength, flexibility, and durability, and a decided saving in labor, inasmuch as one operator, with the machine, was enabled to turn out as much work as five to eight workmen by hand-work. The rusting of the wire staples is avoided by using tinned iron.

These machines, it was affirmed, have been introduced with much success in Europe, there being at that time no less than 150 of them in use in England, Belgium, France and Germany, and elsewhere. They have been adopted by the government binders of England and the United States, with the result of considerably cheapening the cost of binding, and improving its quality. The machine binding, it was also noticed, had been found to be especially valuable in the manufacture of blank books, and the adoption of the machine-work for the branch of manufacture in Germany had already caused a reduction in the selling price of such goods. For additional details of the mechanical novelty, we refer our readers to the *Journal* of the Institute for January.

DECORATIVE "TILES" OF METAL.—London *Iron* notices as an interesting novelty the recent application of iron and steel to the manufacture of wall decorations for superseding the ordinary decorative tiles of earthenware. Referring to this new product, that paper speaks of it in very favorable terms: "An examination of the metallic wall decorations, which are termed 'metal decorative tiles,' convinces us that their inventors have devised a substitute for the ordinary tiles, which is not only quite equal to them in appearance, but which possesses many advantages, including that of lesser cost, which render them superior to the ordinary decorative tiles." They are manufactured, as we learn, from soft iron or steel rolled into thin sheets; both sides of these sheets are then well tinned and afterwards varnished by a special process, the object of which last procedure is to insure complete protection of the plates from dampness. The next process consists in enameling the surface and printing the pattern, and finally comes the glazing. The plate thus prepared is then subjected to a high heat, but not enough to cause vitrification, when the operation is complete. These metallic tiles are flexible, will not fly under heat, and will stand considerably rough usage without becoming defaced. In these respects their advantages over earthenware are obvious. They are fixed in place by pins in the wall, and are fitted to each other by the simple artifice of flanging two of the sides. They can be washed when soiled. The invention has been patented in England, elsewhere in Europe and in this country.

A survey is being made preparatory to the construction of an immense wheat elevator at Prince Arthur's Landing.

An effort is being made to establish a silk and cotton factory at Picton, Ont., to employ from fifty to seventy-five hands.