ILLUSTRATIONS.

C. A. & B. COMPETITION FOR A TOWN HOUSE AND STABLE—DESIGN SUBMITTED BY "GOTHAM" (MR. A. E. WELLS) AWARDED FIRST POSITION.

This design is for a house of frame construction on a foundation of stone. By the arrangement of the lot, light and air are obtained on three sides of the house. The dining-room is benefited by the morning sun, and the kitchen has cross ventilation. Serving pantry and bath room have abundant light; and the position of plumbing fixtures on both floors renders possible a simple and cheap system of plumbing. The detail of stair case hall indicates the general character of the interior wood-work. The exterior of the house shows walls and roofs hung with shingles. Leaded glass, such as is indicated on the front elevation, besides being a pleasing external feature, might be made to contribute to charming interior effects. The stable is in construction, similar to the house. The accommodation here required has been provided for and this adjunct of the house made as simple and unobtrusive as possible.

OLD HOUSE AT BRUNSWICK, GERMANY.

RAILWAY STATION AT DUDDSWELL JUNCTION.—STRICKLAND & SYMONS, ARCHITECTS.

BREWERY BUILDING, MONTREAL.—DUNLOP & HERIOT, ARCHITECTS.

THE CONSTRUCTION OF HARDWOOD DOORS.

In constructing the modern hardwood door, a series of operations are gone through by the joiner which are extremely interesting and of value to those who desire to know something of the method of construction employed in completing this now universal detail, writes Owen B. Maginnis in the *Building Monthly*. These operations embody a number of systems of proceeding, each aiding to a final end, and are as follows:—The first process is to glue the cores or grounds together. These generally consist of kiln-dried white or yellow pine, say 1½ inches thick for a 1¾ inch veneered door, the veneers being ⅛ of an inch thick. The cores are generally got out full enough to allow for facing and thicknessing on the jointer and in the planer. The number of pieces in the cores depends on the desired width of the stile or rail, as, for instance, a 6-inch would require a ¾ inch band of the necessary hardwood, ash, oak or walnut, as specified, and four 2¾ inch pieces of pine. In glueing these cores together they are carefully jointed with the plane and scratched, then heated in the hot box and at once glued, being pressed tightly together with large handscrews, in order to squeeze out the superfluous glue and close the joints.

In making joints in veneered work, the surface of the joint must in all cases be (a little shaving) hollow, for the purpose of allowing the outer arises to come close together. Of course, all the cores should be long enough to make the necessary height, as 7 ft. 9 in. long for a 7 ft. 4 in. door, and so on as needed, always allowing enough to round over the bottom ends, so that the veneer will not be torn off when moving the door. When the glue is set the surfaces are scraped off clean, and they are faced up perfectly out of wind of the jointer and afterwards tried up true with the try plane. This being done the stiles and rails, which are built up in the same manner, are brought to the planer or planing machine and there thicknessed. The stuff cores are then brought back to the bench, where they are surfaced as before with the try plane (to remove all lumps) and scratched with the scratch plane to form a keying for the veneer. All knot holes or flaws which might be liable to cause a defect in the veneer are carefully filled up to ensure good veneering. This being done, it is usual to prepare the veneer after it has been ripped to its necessary width and crosscut to its length—that is, the different pieces for the stiles, rails, muntins, etc. It is usually prepared by smoothing the poor side (being very careful that it is entirely free from spots or shakes, little knots or other flaws) and scratching it thoroughly to ensure a firm keying for the glue. All the pieces (which generally run from ⅛ thick up to ½) are placed between strips edgeways in the hot box, and allowed to become thoroughly impregnated with the heat, so as to keep the glue from cooling, besides opening the pores of the wood to admit it. While the veneers are in the box the cores are placed (the stiles first, in pairs) on the glueing horses and the big handscrews set ready for applying, keeping the jambs wide enough apart to take in two pairs of 2 inch stiles, or eight inches, or six inches, for one pair of 3 inch, and so on as required. When the veneers are sufficiently heated the flat faces of the cores are glued both sides and turned up on their edges (hardwood strip side up) slightly apart, and the veneers are dropped between.

Be sure, however, to have the points of the grain up, to have the grain running up, and to have the grain so that they will pair alike. This should always be done before placing the veneers in the box. Having placed the cores of the stiles on the edges to which the hardwood strips are affixed, the woodworker takes his veneer and, after carefully matching the grains, places them grain points up with the scratched side towards the glued faces of the cores resting on the horses, so that the edges of the veneers and cores will come fair. He will then place a veneer on each of the right and left outer surfaces of the cores. Having done this, he places a crawl or piece of 1¼-inch stuff on each outside to press the outer veneers against their ground, and takes the big hand screws which have been set to span the combined width of the cores and veneers. He places one at either end about two inches from the end spaces, the rest eight or ten inches apart, applying each screw from opposite sides. He screws the inner throat screw till it grips on the edge, and then turns the outer lever screw solidly down on the crawls, thus pressing the surfaces tightly together and forcing the glue into the scratches, at the same time driving out that which is superfluous. Before the screws are permanently screwed tight, the whole mass is turned up to see that the veneers completely cover the whole width of the surfaces and if they do not they must be driven to their places with a block, taking care not to bruise or break the edges. Be certain, too, that the screws are all ight and the veneers pressed to a perfectly close joint. It is best for two to veneer, for one can regulate the veneers while the other is applying the screws, and both can act together on the screws afterwards, giving more power. The glued stiles or mullions are then left in the screws about five hours to allow the glue to set. Let me here impress the fact that the stuff must in all cases be thoroughly heated, and the glue perfect glue (about one-third water and two-thirds glue) laid on quickly with a large soft brush from a large pot, also that the operation be rapidly done before the stuff has time to cool. The crawls must be only the exact width of the stuff and no wider. It is advisable that the jaws of the hand screws be also wide enough to reach across the width.

SHAVINGS.

In wrought iron, such as railings, grilles, etc., perhaps no paint is so effective as a perfectly dull black.

It is reported that the Stanstead Granite Company have disposed of nearly $40,000 of stock, under their new charter.

The Record Foundry and Machine Company, of Moncton, N. B., are about to engage in the manufacture of iron and steel bridges.

Messrs. Edmund Burke and S. H. Townsend have been appointed to represent the Toronto Architectural Guild on the Toronto Technical School Board.

The Sanitary Association of Hamilton, Ont., is urging upon the Mayor and Council of that city, the necessity of employing an inspector of plumbing.

On the 21st of January, the new First Presbyterian church lately erected at the corner of Dufferin and Park avenues, London, Ont., was opened with appropriate ceremonies. The building is of red pressed brick, and cost about $25,000.

Mr. John Sykes, of Oshawa, is handling largely British Columbia shingles, and expresses the opinion that an increased trade can be done in the manufacture of doors, sash and blinds.

Mr. R. J. Davidson, upon severing his connection, extending over a period of twenty years, with Thackery's plaining mill at Ottawa, was waited on by a number of contractors, builders and employees of the mill, and presented with an engrossed address and a handsome gold watch.

We learn from the Metal Worker, that Messrs. Merchant & Co., of Philadelphia, have recovered heavy damages against a contractor for having used ventilators which were claimed to be infringements on their Star patents, in the Lincoln, Neb., Hospital for the Insane, where it was specified that the Star ventilator should be used.

The new building of the Toronto Athletic Club was formally opened last month, and was visited by several thousand citizens. It is excellently adapted in all its appointments, for the purposes of recreation and physical improvement. The cost of the building approaches $100,000. Mr. E. J. Lennox was the architect.

In an action brought against the city of Toronto recently, by one Harman, for injuries received in falling from a scaffold while working at the city swimming baths, the defence entered by the City was, that as the plaintiff had built the scaffold himself, he alone was responsible for his injuries. The defence was upheld by the court, and a verdict given in favor of the city.

The British Columbia Shingle Mannfacturers' Association has been formed to regulate prices, and otherwise promote the interests of its members. A local paper states that shingle bolts cost $4.00 to $4.50 per cord, that it costs $1.30 per thousand to produce shingles, and that the very lowest price at which shingles can be put on board cars at Vancouver, is $1.50 per thousand.

Mr. Peter Redpath, the well-known philanthropist, of Montreal, died in that city, on the 2nd inst., at the age of 73 years. Mr. Redpath donated to McGill University, in 1880, the Peter Redpath Museum, and in 1891, the Peter Redpath Library Building. He also gave $20,000 as an endowment to a chair of natural philosophy, and $10,000 for expenses and improvements to the Museum, besides over three thousand volumes, comprising the Peter Redpath collection of historical books.

Mr. Chas. Baillargé, City Engineer of Quebec, has an interesting article in a recent number of the Engineering Record, on the "Fall of the Louisville and Jeffersonville Bridge," a subject which has largely engaged attention of late in the columns of the American engineering press. In the article reference is made to the circumstances connected with the landslide at Quebec several years ago, an illustration of which was kindly furnished to this journal by Mr. Baillargé, at the time of the occurrence.

Alexander Potter, C.E., Assoc. M. Can. Soc. C. E., 137 Broadway, New York city, has been awarded second prize of $500 for the best design of a new system of waterworks for Evansville, Ind., a city of 80,000 inhabitants. Twenty-two plans were submitted by engineers from all parts of the United States. Mr. Potter, who is a Canadian, began his engineering studies under City Engineer Keating at Halifax in 1883, and was the youngest competitor, having graduated at Lehigh University in 1890 at the age of 24.

A great deal of interest has been aroused by the discovery in Toronto of what is alleged to be a picture painted in oil by Raphael when twelve years of age. The subject of the picture is the Mosque Della Grande. On the back of the canvas there are three inscriptions, which read as follows:—"Painted at Urbino by Raphael, when aged twelve years, being the interior of the Mosque Della Grande." "Taken from Holyrood in 1688 by Lord Russell." "To the Lady Arabella Russell in the year of our Lord 1739 (or 1789)." Below the last inscription is the single word "Raphael." The existence of the inscriptions was revealed by the picture falling out of its frame, the frame having previously covered the writing. The picture is 22 inches wide and 26 inches deep, and is owned by Miss Annie Lackie, 58 Shaftesbury ave.