

Shingles of Glass.

A manufacturing firm in Pittsburg, says the *Brick, Tile and Metal Review*, has made a new departure in the use of glass, a patent having recently been granted for the manufacture of glass shingles. It is claimed for this material that it is more durable, stronger and more impervious to rain than slate or any other substance now used. The manufacture of these shingles will also be inexpensive, and they can be placed in position by any ordinary workman. They can be used for weather boarding or siding houses, and will be found especially serviceable for conservatories or hot houses, as they can be made of transparent as well as of opaque or translucent glass. These shingles have the advantage of slate in several particulars. In consequence of their shape they lie solid on the roof, and so can be used on comparatively flat roofs, and they will admit of persons walking on them without danger of fracture, a quality which slate does not possess. They are interlocked so as to have no interstices between them, and one rivet holds each pair of shingles so that they cannot be forced from their place by wind or other atmospheric disturbances. They are also made so as to have very little waste material. It takes 300 slates, each 8x12 inches, to cover what is technically known as a "square" of roof (a space measuring ten feet each way), but 150 of these shingles will suffice for the same space. Slats lap on the ends in the roofing, but the shingles lap on the sides. It has been proved by experiment that of two adjacent houses, one covered with slate and the other with translucent glass, the heat of a room near the roof in the former building will exceed that of one similarly situated in the latter, during summer, by 13 degrees, glass being a non-conductor of heat. Houses with glass roofs are also warmer in winter. Glass is likewise a non-conductor of electricity, and houses with these roofs will need no lightning conductors. Although the kind of glass intended to be used in these shingles is non-transparent, yet spaces for skylights may be filled with transparent glass. The exposed parts of the shingles are corrugated to increase the strength and carry off the water. The firm will construct the shingles in hand, some shapes, and they can be supplied in any color required, or of no color if preferred. A roof with colored border and opalescent body is said to be very handsome.

Skilled Labor.

Good mechanics are said to be growing scarce in America in spite of the large accession to the ranks of labor through immigration. The *Chicago Journal of Commerce* says it is asserted that the introduction of machinery and its tendency to have all kinds of manufacturing done on a large scale prevent apprentices from acquiring that thorough and complete knowledge of a trade that a skilled workman ought to have. Again it is said that the regulations of trades unions restricting the number of apprentices have reached such a point as to be a serious barrier to the free instruction of boys who desire to learn trades, and that even wealthy

men who wish their sons to learn trades, in preference to commercial business or the professions, cannot find the opportunity. On the other hand, it is claimed by employers and workmen that there is no system of apprenticeship worthy the name in this country, that parents refuse to have their boys indentured for a term of years, so that the employer or teacher, who has taken the time and pains to teach them the rudiments of the trade to his own inconvenience and loss, might receive a recompensation in their gradually increasing efficiency for the unremunerative labor during the first stages of their progress, and that as soon as apprentices have learned a smattering of their trade, they set up for themselves, or go to work for some one else. There is doubtless truth in all these assertions, and that, combined, they have a serious effect in reducing the quality and number of native skilled workmen, and the increased advantage of the foreign. That it is a serious evil there can be no dispute. In spite of the introduction of machinery, the necessity for thorough skill and knowledge in a trade is as essential for its progress and improvement as it was before, while in many branches of handiwork can never be discarded.

The remedies suggested are various. It is said that if apprentices cannot be taught in shops they must be in schools, and it is proposed that practical industrial education must be introduced into the common school system, so that the boy whose natural genius or inclination point that way, or whose parents desire it, shall be taught the rudiments of mechanics or of the art of design, so as to be ready to enter upon practical work, and sufficiently advanced to be profitable to his employer. This is a more radical remedy than many prefer, who doubt the practical utility of such instruction, or who do not desire to see the present system of education seriously changed. These favor special schools to be sustained by the trade for their own benefit, as in England, or by the public, where those who wish or are qualified to enter can be given special instruction in accordance with their desires. These have worked well where they have been tried. The trade schools in Philadelphia where courses of instruction are given in plumbing and sanitary engineering, in house, sign and decorative painting, and in the skill and practice of education are to be enlarged, and other branches are to be added as soon as practicable. The free industrial institute at Worcester has been training pupils in mechanical and other special education for a number of years, and now graduates classes of two hundred annually who have pursued a course of learning and actual labor for three years, until they are thoroughly equipped for their trades. Technical schools have been established in other States with more or less success, but as a whole the supply is far behind the demand, and it is evident that whether industrial education is supplied by a better and more liberal apprentice system in the shops, by incorporation into the public school system, or by special schools supported by the trades or by the people, it is a great need in our manufacturing interests, and cannot be neglected without the danger of serious injury to them. Under the present sharp compe-

titition between nations for the markets for manufactured products, the value of highly skilled labor cannot be over-estimated. Every reasonable inducement should be held out to mechanics to strive for the highest efficiency attainable.

Holding Produce for a Rise.

A practical farmer in Ontario writes to a paper in that Province giving his experience in marketing grain, which is well worthy of consideration. He says: The present prices are a lesson to those farmers who are always holding their produce for a rise, which nine times out of ten does not come. Wheat sold in July and August at \$1.04 to \$1.10; corn, November, 50c; December, 47c; hay, in August, \$12 to \$13 per ton, and the indications are that they will not reach the top figures before another crop. They not only lose the difference in price, but interest, shrinkage, rotage, damage from weevil and all the other ills that stored grain is heir to. They renew their notes and let their store bills run, thus not only losing themselves but discommoding others. My invariable rule is to sell my crops as soon as garnered, and my average prices for the past five years have been as follows: Wheat, \$1.04; corn, 43c; and hay, \$12; which is a very satisfactory price. The wheat weighed 108 bushels per 100 measured bushels, and the corn realized 50c dry and no cribbing.

A Trip to the Mines.

Staff Correspondence of the Commercial.

In order that our readers may be kept well posted in matters connected with the development of the mining industry in the Lake of the Woods district a representative of THE COMMERCIAL last week paid a visit to that section of the country.

On arriving at Rat Portage, within easy distance of which the mines are located, it was surprising to notice the life and stir that existed about the place. Quite a number of prospectors had recently arrived, and the hotel accommodation was pretty well taken up. Building operations promise to be carried on quite extensively as soon as the weather permits. The residents of Rat Portage are a live business people, full of hope in the future of their town.

The first mine visited was the Keewatin, situated on Hay Island. The Superintendent, Mr. J. T. Nagle, was on hand, and at once kindly undertook to show to the scribe stir that was being done. The shaft has been started on the most elevated part of the island. The island, it may be mentioned, is about four miles long, and from one to two miles wide. It contains 4,500 acres. The shaft, which runs in a slanting direction, is 9 feet x 7 feet, and at the time of writing, a depth of 32 feet had been reached. Progress was being made at the rate of about 2½ feet per week. A vein of quartz containing fine gold was being worked. The size of the vein is 9x11 inches, and was increasing in width. When a depth of about 80 feet has been reached a drift will be commenced for the shore. Six men are at present employed, but the number will be doubled shortly, when the work will be carried on night and day. The