materials to be ground; cast iron, steel, brass glass, bone, leather, wood and other substances demand wheels of special grade which must be duplicated to make the grinding operation continuously efficient.

It is for this most important reason that great stress is placed on evenness in quality of the abrasive itself. Grades cannot be duplicated accurately without having a known and dependable factor in the uniformity of the material composing the wheel and this requisite is to the highest degree found in alundum.

The last step in the process of manufacturing the Norton wheel, is testing for safety, shown in cut.

Then a record of each wheel is entered on a prepared form with description on wheel, number of revolutions, order number, and for whom the wheel is intended. This record is signed and sworn to by the tester of the wheels each day before a Justice of the Peace, and carefully filed by the Norton Co. A record is preserved of each order so that it can be duplicated exactly as to composition, cutting quality, shape and size.

Very few people realize the many uses for which grinding wheels are employed. They are used in the machine shop for sharpening all kinds of tools, cutters, reamers, taps, dies, etc In the foundry for grinding castings. The sawyer gums and files his saws with an alundum wheel with no danger of drawing the temper of the tool. The leather manufacturer finishes the leather for Suede gloves on a grinding wheel. The manufacturing optician grinds the edges of lenses for eye glasses. In the great glass works beading fluting, edge grinding of tumblers, checkering fine stars, and fine work of all character calls for grinding wheels and abrasive stones.

Canadian manufacturers or other users of grinding wheels desiring more detailed information regarding alundum should apply for same to the Canadian Fairbanks Co., Limited, the Canadian selling agents for the Norton Co. As large stocks are carried in their warehouses at Montreal, Toronto, St. John, Winnipeg, Calgary and Vancouver, and as catalogues and booklets fully describing the product will be sent for the asking, full information can readily be secured by any buyer.

Steel Belting in Germany.

U S. Consul F. S. Hannah, at Magdeburg, Germany, writes that in a recent issue of a German technical paper, the use of steel bands to take the place of leather belting for the transmission of power, is stated to have proved practicable after repeated tests by a firm in Charlottenburg, its advantages being given as follows:

The points of superiority claimed for this new method for the transmission of power are the following: On account of its solidity, a much narrower band can be used, one-sixth of the width of the usual leather band being sufficient; as a result of this the steel band is not so heavy as the usual leather band, and, as it can be very tightly adjusted, the distance between the engine and the machine is not a matter of importance, as is the case with the leather belting, where the transmission of power is dependent upon the weight of the hanging belt; by a unique contact the slipping is much reduced, experiments having shown that this does not exceed one-tenth of 1 per cent Careful and repeated experiments have shown that the entire loss of power is very small, and as far as can be ascertained, will not exceed 1 per cent. Further, owing to the lightness of weight of the steel belting, it is claimed, the influence of the centrifugal force is not so great and allows of much increased velocity.

FIG. 4.—THE MANUFACTURE OF ABRASIVES.

LOCKERBY & McCOMB.

The various methods of using tarpaper and tarred felt in roofing were well illustrated in the exhibit of Lockerby & McComb, of Montreal, at the Canadian Builders' Show. Models of four common types of roof were shown.

The various stages in the construction of the hopper tar felt roof were shown. The hopper roof is growing in favor because, draining to the centre it dispenses with the need of gutters, and all danger from icicles.

A hip or slanting roof covered with 3 ply ready roofing was shown. This roofing is recommended for work of a temporary nature and is good ordinarily from five to ten years.

The dead air space roof shown in another model, is one that is growing in favor. This is really a double roof, the air space serving to make it cooler in summer and warmer in winter, and the double layer is an additional insurance against leaks.

During the ten years that they have been in business in Montreal, Lockerby & McComb have built up a large connection. Previous to the formation of the present partnership, they were for many years connected with one of the largest roofing firms in Canada. A serious fire completely destroyed their plant last January, but with characteristic energy they proceeded to rebuild, and it is now fully equipped again with the most up-to-date machinery.