the efforts which are now being made will soon result in a preference being given to Canadian manufacturers. Messrs. Chipman & Company announce that they are now establishing in every part of the West Indies touched by our Canadian steamers, brokerage or commission agencies, to work up an exchange trade in merchandise between Canada and those countries. These agencies will impart information regarding the products of Canada, give cost at point of manufacture, rail and ocean rates of freight, address of manufacturers, etc. Wherever possible samples will also be exhibited, and arrangements made with the persons in charge to handle goods on commission. We have received a copy of the agreement which Messrs. Chipman & Company are entering into with the representatives of these agencies, one clause of which provides that they shall promote the trade as far as possible by seeking orders from importers, such orders to be collated and forwarded, by cable or otherwise, either direct to manufacturers or to Messrs. Chipman & Company. The promoters of this trade are desirous of securing the co-operation of Canadian manufacturers. Those who are catering for foreign trade are asked to communicate with the above mentioned firm, who will gladly furnish such information as is required.

Already Canada is doing a considerable trade in lumber with the West Indies, but this is capable of expansion, while furniture, woodenware, machinery, etc., may find a market there. Nevertheless, the business can only be secured by persistent effort on the part of our manufacturers, as the business with United States houses has become established, and the regular steamship line from New York affords reliable transit.

EDITORIAL NOTES.

It is the evident intention of the Dominion government that Canada shall be properly represented at the Paris Exposition. According to reports from Ottawa, the sum of $50,000 will be placed in the estimates for the purpose of making a display of Canadian products, and out of a total of 800,000 square feet allotted to Great Britain and the colonies, Canada has applied for 60,000 square feet. It is the duty of our manufacturers to assist the government as far as possible in preparing a creditable exhibit. In the matter of a forestry exhibit, it is none too early to commence preparations. The results obtained will certainly be more satisfactory if ample time is allowed for preparation.

Should the present agitation result in securing the building of railways in various parts of the Dominion, it will prove of great benefit in developing the lumber industry. It is rumored that the construction of a railway from Winnipeg to a Canadian port on Lake Superior is about to be undertaken. This, for instance, will provide a competing line with the C.P.R., which has heretofore held a monopoly of the trade of this territory, and in all probability secure such a reduction in rates as would permit our Georgian Bay manufacturers to supply the lumber demand of the Northwest, which under present circumstances goes largely into the hands of the Minnesota manufacturers. In developing the timber resources of Ontario the proposed James Bay railway will be of inestimable value. There are thousands of miles of pine and spruce timber which would be made easily accessible to Toronto by the building of this road. One estimate places the amount at seventy-five billion feet, which is perhaps a little beyond the mark. Toronto, in turn, would be benefitted by the development of these timber resources and the increased demand for supplies which would result. Two of the largest mills in the province are located at Whitney and Cache Bay, the owners of which are said to be strong advocates of direct rail connection with Toronto, where supplies can be purchased on favorable terms, and where another outlet would be afforded for their lumber.

Many lumbermen in Western Ontario will look back upon the year 1897 as one which marked the beginning of a new era of business. Particulars furnished for our annual review contain the information that several mills made their first cut for the British market. The general experience is that the business was much more satisfactory than the United States trade. The stock was sold and inspected at the mill, and the possibility of any misunderstanding as to grading thus removed. Usually the entire production for this market is sold to one dealer, which is a further advantage. The larger the share of the British trade that can be secured by Canadians, the less dependent our lumbermen will be upon our southern neighbors.

POWER AND TRANSMISSION KINKS.

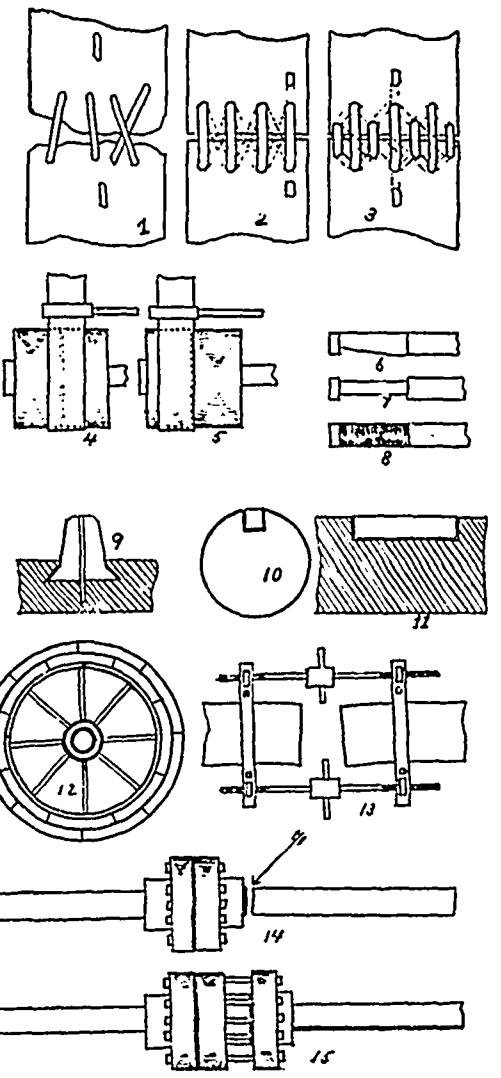
In order to get the most out of any power transmission, the belting and all mechanical parts must be run to best advantage. If belted with a loosely laced belt like that shown in Fig. 1, the system will not run well, as the splice, being open, will slip upon the pulleys. The samples given in Figs. 2 and 3 show the plan of procedure which may be followed by the crosses on the back which are represented by the dotted lines. By thus making good, substantial unions that draw the butts of the belt together evenly and securely, less trouble will be had regarding the driving mechanism.

Do not run the belt too tight, as it will strain the bearings, cause friction, and consequently there will be loss of power. If too loose it will be likely to slip on the pulleys and cause loss of time as well as uneven work. It should be slack enough to be readily transferred from the tight to the loose pulley without excessive strain on the shipper. I have often found a machine doing poor work owing to the belt shipper being set as in Fig. 4, in which the belt runs only partly on the tight pulley. Set it to run clear over on the pulley as in Fig. 5.

When a shaft it worn down as shown in Fig. 6, take it to the shop and turn it down like Fig. 7, then wind with steel wire as represented in Fig. 8, and a fairly good job will result.

When a cog breaks off of a gear, shape a new cog and dovetail it in, in the manner shown in Fig. 9, and insert a steel pin to prevent the cog from working sidewise. When a bearing throws oil in a place where it is desired that no drippings shall fall, cut a key-way in the centre of the bearing, about half the width of the box, and put in a felt pad as shown in Figs. 10 and 11; the pad absorbs the oily matter.

A lag pulley with wood is shown in Fig. 12, by bolting on sections of pieces cut to correct size to form a smooth surfacing. On the surface put a cement composed of two pounds of black pitch, two pounds glue, one pound linseed oil. I have often travelled far to some mill or shop in response to a call from the proprietor, who has written to the makers of his new machines to the effect that the same do not work right, and upon arrival at the factory have discovered the cause, not in the machines themselves, but through some defect of setting up or starting. The pulleys, for instance, are sometimes the whole source of the trouble through being too small. The builders of the machines cannot tell just what size pulley to furnish always, consequently the selection of the driving pulley often falls to someone at the mill. High speed is the aim nowadays, and yet pulleys of but six or seven inches too small in diameter are frequently used to drive machines. This has many bad effects on both machine and belt. If the pulleys were larger in diameter, the results would be



much better. The writer has often proved this to manufacturers by lagging up the driving pulleys on the shaft in the manner shown.

A good belt tightener for large belts is shown in Fig. 13, consisting of the two double end bolts at either side, arranged in the ordinary way, but threaded right and left, so that when turning the centre pivots, both ends of the belt are drawn toward each other simultaneously.

A shaft recently broke short off near a coupling, as shown in sample 14. We desired to run the mill until Saturday night, and as the shaft would not bear shortening, we put another coupling on the broken end, keyed it firmly, and inserted bolts clear through from the former couplings, as shown in Fig. 15, and the mill was kept running.—Power and Transmission.