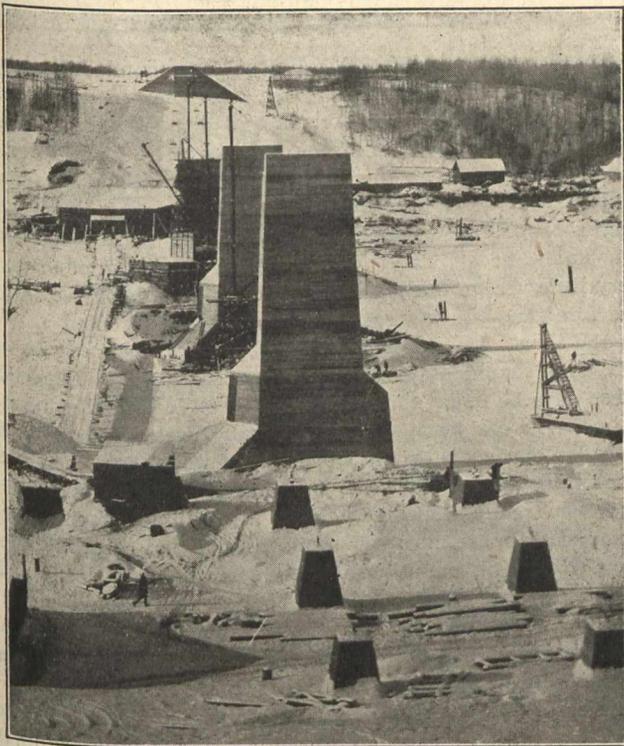


the site of the bridge a spur line is now being constructed to the Canadian Northern Railway. Meantime work on the bridge has been suspended, everything being in readiness for placing the steel into position. The bridge

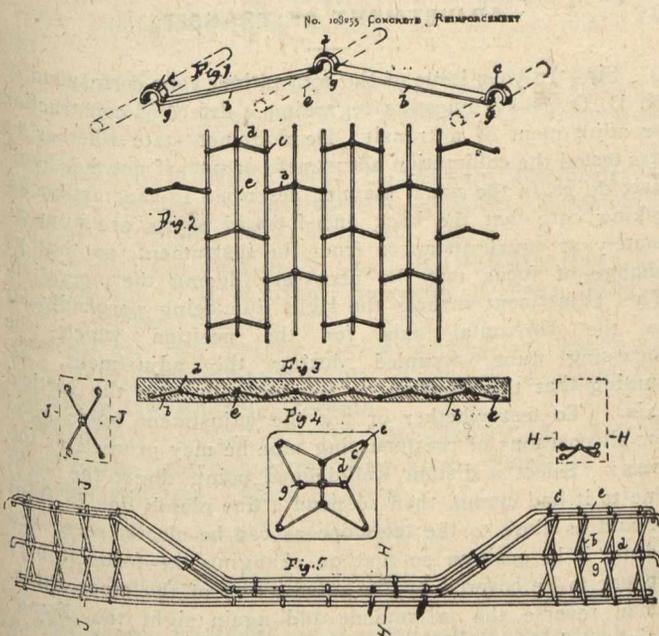


Piers Nos. 1 and 2, completed, Clover Bar Bridge, Alta.

will cross the Saskatchewan River, and will have a total length of about 1,560 feet. It is estimated that its cost will be in the vicinity of a quarter of a million dollars.

**CLIP FOR CONCRETE REINFORCEMENT.**

The accompanying cut illustrates a new clip to be used in reinforced concrete work, invented by Mr. F. H. Marsden, of Montreal. This clip is made out of mild steel half an inch wide, one-eighth thick and one foot long, and is so constructed as to be readily attached at both ends and in the centre to the rods used in concrete



reinforcement work. The cut shows, first, the manner in which the bars are attached to the rods; next, the bars attached to rods and ready for the concrete. Fig. 3 shows a cross section of the floor after the concrete is laid, while the remaining figures show the reinforcement in beams and columns. One of the claims made in favor of this reinforcement is that only plain,

round rods need be used, just as they come from the mills. No special manufacture is required, thus reducing the cost of the reinforcement. Each bar has three loops, by means of which the bar is snapped onto the rods, and binds them firmly together. This of itself adds greatly to the strength of the reinforcement, further strength being added by the regularity of the construction, each loop or bar necessarily retaining its position with relation to the other loops. The use of the bars also lends itself to the minimizing of carelessness on the part of the contractor or the men employed on the work, the loose rod system lacking any feature requiring regularity and symmetry in construction. Hence, it is claimed, the chances of failure are lessened and the use of less reinforcement is made possible. The use of the bars also does away with the necessity of wiring, which, in many instances, is a costly feature of concrete reinforcement work. It is also claimed that, inasmuch as the network of bars and rods is of such a regular nature, any carelessness or failure to place them in position properly can be detected at a glance, thus reducing greatly the cost of inspection and the chances of improper construction.

**NOTES ON IRRIGATION.**

Mr. L. G. Carpenter, I.E., speaking to delegates at the Irrigation Convention of Western Canada, concluded by saying:

1st. "Irrigation may be practiced either as a matter of necessity, as a matter of insurance, or as a matter of increase of crops. In any of these cases it is found that the area devoted to irrigation constantly increases and never lessens. Where the rainfall is relatively large the practice spreads more slowly. In the valley of the Po, where the rainfall is nearly 36 inches per annum, the land given to irrigation has more than doubled in the last thirty years. The average rainfall is as much as that of an extreme year in Alberta. While you have had for a few years back more than the usual rainfall, the average is not far from that of Colorado, namely, 14 inches per annum, and, hence, there will be many years in which irrigation in Alberta is an absolute necessity. Aside from this fact, the increase in the growth of crops, the certainty of greater yield and the freedom from failure is such that I would by all means select land that could be irrigated either for my own use or as an investment.

2nd. "Notwithstanding the various reports concerning dry farming in Colorado, it cannot be said to be a success. There are areas near the foothills, and near the irrigation ditches, that have given large yields of winter wheat, especially during the past few years when the rainfall has been excessive in Colorado, as it has been in Alberta. Experiences of old settlers, extending over nearly fifty years, have shown these variations in rainfall extend back to the earliest times. There have been some years when the grass on the plains has been good, and other years when there was not enough rainfall for it to start. On the plains proper the crop production by dry farming is small. If the dry farming is used as an adjunct to stock-raising little can be said against it, but when used to induce settlers to settle on the plains, with the idea that they can make a living on a quarter-section of land by dry farming, it is an injury to the plains and means ruin to the settler. The old settlers do not take any stock in dry farming, and where it is practiced it is because water cannot be obtained.

3rd. "By your question as to what extent irrigable lands have increased in value since this system of farming was first introduced, I presume you mean dry farming. The irrigable lands have been steadily increasing in value during the past twelve years, having more than doubled in value in that time. That is, they have increased from \$50 to \$100 or more. A great deal of this land cannot be had for less than \$150 to \$200 per acre. The lands above ditches bring from \$7 to \$10 to \$15 per acre. This has been effected by the general desire for land, and it is about the prices which these lands would bring for purely grazing purposes."