

## PORT ARTHUR AND FORT WILLIAM INDEPENDENT TELEPHONE SYSTEMS.

References have been made in past issues to the new independent systems of telephone exchanges in the twin towns of Port Arthur and Fort William, Ont., and as these systems are now in successful operation a description of the equipment will prove interesting since they are among the first important independent telephone exchanges established in opposition to the old Bell Company in Canada. The possession by these towns of progressive, public-spirited business men, and their practical isolation from other large cities have been the main incentives that have spurred them to establish the large public utilities under the control of the municipalities. Port Arthur owns and operates about seven miles of electric street railway, running through and connecting both towns. It has its own shop where the electric cars are built. The Current River Falls are being utilized by the town for generating electricity for the street railway system, electric lighting, heating and manufacturing purposes. Both towns own their respective electric lighting plants, water



Fig. 1.

systems, and now have just completed their own telephone plants for public service.

In establishing these exchanges, it was the aim of the officials of the towns to place the plants upon such a basis that the cost of maintenance and operation together with payment of interest on the investment would be covered, allowing a fair percentage for depreciation. This was done to leave tax-payers who were not subscribers, free from any cost or expense of the plants, and to avoid taxing subscribers for the benefit of non-users. Taking into consideration the saving in the cost of construction and operation in connection with their other allied systems, the rates were fixed at \$1 per month for residence service, and \$2 per month for business service.

The proposition was submitted to the ratepayers at an election in April last. The old company having, for a number of years past, neglected to give any attention to the repeated requests from the towns and subscribers to improve their system, and give efficient service, the proposition for a new plant of a modern system at reasonable rates, was adopted almost unanimously and sufficient funds appropriated to construct and equip the exchanges.

The Fort William plant is constructed with the lines entirely independent from the other electric systems, while the Port Arthur exchange is built with its lines occupying poles in conjunction with the electric lighting plant and

street railway system. Both exchanges are with an immediate capacity for 600 lines with provision for increasing above this number at any time, as required. Both towns having in view to secure the best possible plants that money could buy, all known makes of equipment and construction material were thoroughly investigated and tenders were received from the principal foreign firms as well as the home companies. A large part of the outside construction material was secured from home companies, the principal line wire from Germany, and the telephones and central office equipment from the United States.

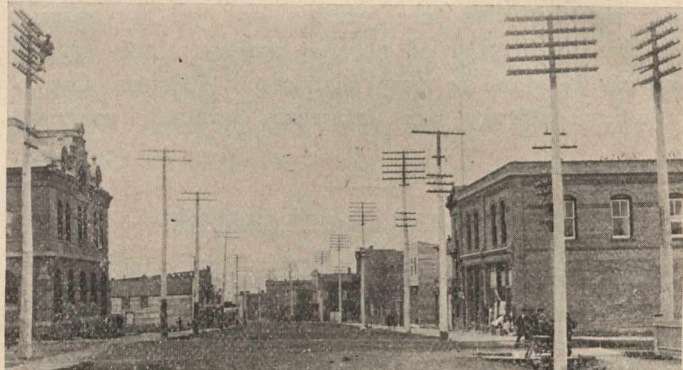


Fig. 2.

The line construction work and the connecting of the instruments with the central office, was done by the towns under the supervision of the Electric Light and Power Commissions. The telephones, switchboards and central office apparatus were manufactured, and the central offices installed by the International Telephone Mfg. Co., of Chicago.

Fig. 1 shows the town hall at Fort William in which is located the central office of that plant.

The central office at Port Arthur is in the second floor of the building shown on the corner in front at the right, in Fig. 2. This building is in the exact centre of distribution. Four leads of wires of equal number of circuits run in each direction from this point along both streets. The municipal plant's lead is shown at the right side of the street. The telephone wires are placed at the top of the pole lines and the 2,000 volt alternating current electric light circuits are attached about 8 feet below the lower telephone wires.

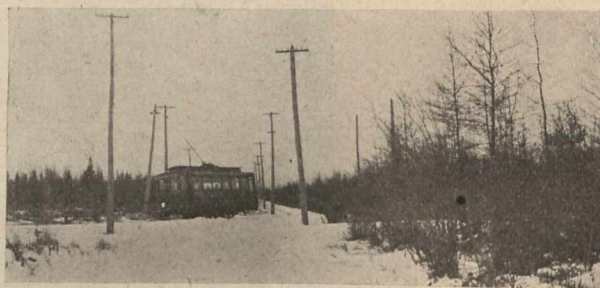


Fig. 3.

Fig. 3 shows the trunk lines between the two towns. The telephone wires are placed on the same poles with the 500 volt direct current street railway feeders. They are about 6 feet above the feeders, and are properly transposed to avoid induction.

The switchboard (shown in Fig. 4) is a strictly central energy lamp signal trunking board with double supervisory clearing-out signals, pilot lamps, etc. It is built in a regular multiple switchboard frame and cabinet, and so arranged that when the number of subscribers increase and extensions are required above the number that two operators can handle, necessary multiple jacks may be installed and the board readily made into a full multiple switchboard without discarding the original installation. The board shown is equipped with 280 subscribers' lines, with one hundred and forty (140) to each position. It is arranged so that 60 lines, or even more, may be added to each operator's position and additional positions or sections added at any time. The key-shelves