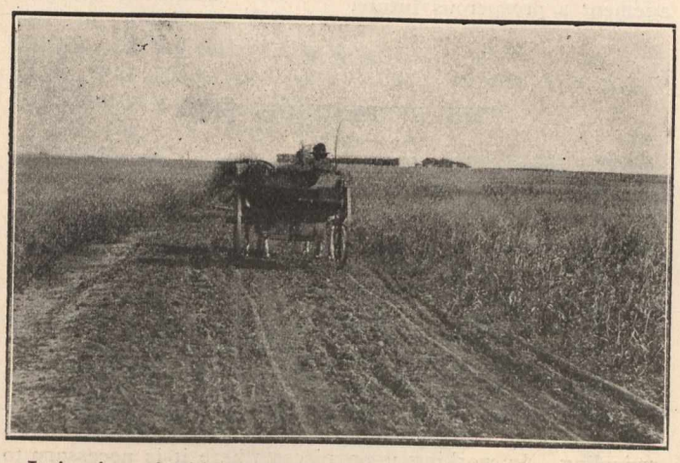
The departure made in the Canadian Pacific Railway Company's project in building the distributing ditches as part of the canal undertaking will appeal to all intending purchasers of irrigated lands.



Irrigation of This Field Would Have Doubled the Crop.

In locating and constructing the main and secondary canals and the distributing ditches, an unusual amount of care has been exercised so as to reduce the chance of break in the banks or delay in delivery of water to a minimum and the manner in which the work has been performed led to the following statement by Dr. Mead, Chief of Drainage and Irrigation Investigations, Department of Agriculture, Washington, the leading irrigation engineer authority on this continent: "The chief problem of the main canal was to build a waterway which would be free from leaks and all danger of breaks. The precautions which have been taken to insure this are greater than those usually observed, the specifications for stripping the surface soil and packing of embankments are so rigorous and are being lived up to in all the work I inspected and I have never seen more compact or uniformly solid banks than those being built."

The same care has been followed in the design and construction of the main headgates and all the other structures on the main and secondary canals and possible delays and mishaps in the delivery of water from washouts and weak structures has been overcome as far as it is possible to do so in the works connected with the Western section of the irrigation undertaking.

His First Year.

In the Western section about 350,000 acres of land will be irrigated from the canals completed or under construction. After this section is developed and colonized the work will be extended to the Central and Eastern sections, within which it is expected that about eleven hundred thousand acres can ultimately be irrigated.

The water for the irrigation of land in the Central and Eastern sections will be taken through a second main canal heading in the Bow River at or near the Horse Shoe bend on the Blackfoot Indian Reserve, as shown on the accompanying map, and will then be distributed in the districts through a complete system of secondary canals.

The ultimate expenditure on this great undertaking is estimated at about $5,000,000, and this expenditure, taken in conjunction with the area of land in the block which it is proposed to irrigate, justifies the title given this scheme, "America's Greatest Irrigation Project."

His Last Year of "Dry Farming."

A NEW CREOSOTING PLANT.

There has recently been installed at Shirley, Indiana, a new two-cylinder plant for impregnating railway ties, built for the Columbia Creosoting Company. It is probable that this plant has a greater capacity for the size and number of its retorts than any other in the country. The machinery, including retorts, tanks, pumps, piping, engine and generator, was all furnished by Allis-Chalmers Company, of Milwaukee. The plant consists of two retorts 7 feet in diameter by 130 feet long, each closed on either end with a heavy solid cast-steel door, bolted to a cast-steel flange. The retorts are capable of withstanding a pressure of 175 pounds to the square inch. Two over-head charging tanks, one large storage tank, one unloading tank for tank cars, one cylindrical underground tank for emptying retorts, one 40 kw. generator, steam-driven engine, switchboard, etc., two 100 H.P. boilers, electric locomotives, tie cars, etc., a complete equipment of pumps, piping, valves and fittings.

In the operation of this plant one of the features of great value, resulting in the saving of a great deal of time and enabling the operators to accurately keep track of oil used, etc., is the combination of an over-head charging tank and an underground receiving tank. When a retort is filled with ties and the doors closed and bolted, it is charged with creosote from one of the over-head charging tanks through two 8" pipes, the quantity of cresote already in this tank having been previously noted. The retort is filled almost in the fraction of a minute, the oil flowing in by gravity. The moment the oil comes to rest in the over-head tank the quantity remaining in it is noted and the pressure pump started, forcing in oil until the desired penetration into the tie or timber is effected. The quantity of oil being forced into the timber is carefully noted as the level drops into the over-head tank, there being no other outlet for the oil in the tank excepting into the retort. When proper penetration has been accomplished the pressure pump is stopped and the surplus oil permitted to flow from the retort into the underground tank through two 10" pipes. The time required to accomplish this operation is as short as the time required to fill the retort, it also being done by gravity. From the underground tank the oil is pumped back as desired into the charging tank during the subsequent part of the operation. The retort is now subjected to a vacuum, and the excess of oil which has been forced into the ties is withdrawn down to the proper quantity. The vacuum is then destroyed and the retort emptied. If it is desired to get an exceptionally deep and quick penetration, this process is reversed and the ties, immediately they are put into the retort, are subjected