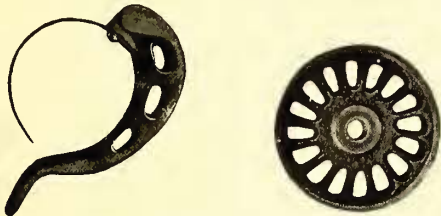


NEW SLEET SCRAPERS AND SLEET WHEELS

Two devices for freeing wires from sleet that have met with success are illustrated herewith. One is a scraper to be fastened to the regular trolley wheel by means of a spring. It can be attached in a moment, and as readily removed after it has served the purpose. It locks the wheel and effectively scrapes all sleet and ice from the wire. It is simple and inexpensive, and is preferred for use where only an occasional sleet storm may be expected. The other



SLEET SCRAPER AND SLEET WHEEL

is a wheel which takes the place of the regular wheel, and is intended for those sections where sleet storms are of frequent occurrence. If the storm comes during the night, one of these wheels on the car that makes the first morning trip is sufficient to clean the wire for the day's traffic. During heavy storms cars equipped with wheels should be run every fifteen or twenty minutes. Both devices are made by the R. D. Nuttall Company, of Pittsburg, Pa. The scrapers are made in two sizes, 4 ins. and 6 ins. The wheels are made 4 ins. in diameter, 1½ ins. through hubs, and 5¾ ins. in diameter, 1½, 2 and 3 ins. through hubs.

PLANNING FOR THE OPENING OF THE COLUMBUS, DELAWARE & MARION RAILWAY

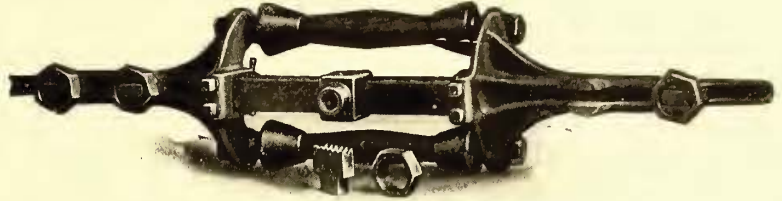
General Manager, George Whysall, of the Columbus, Delaware & Marion Railway Company, states that the officials have not given up the idea of being able to operate the line of the Columbus, Marion & Bucyrus Railway between Marion and Bucyrus by April 1, although weather conditions have not been at all inviting for construction work for some time past. There are two short stretches of grading, aggregating less than a mile, yet to do. The rails are down and the overhead work completed for a distance of nine miles, approximately half the distance between the two towns. The road will be ballasted with crushed stone, which will perhaps be secured from one of the largest crushing plants in the country. This plant is located close to the line and connected with it by a spur approximately 1500 ft. in length. This will make the work convenient and the construction men may always be sure of the quality of the ballast.

The Columbus, Marion & Bucyrus line will be supplied with power from the Columbus, Delaware & Marion Railway Company's power house at Stratford, connecting with the present transmission line carrying 20,000 volts at Marion, where the sub-station will be located. This sub-station will be operated in connection with the one now operated by the Columbus, Delaware & Marion, and a second sub-station will be located at a point eleven miles from Marion. Inasmuch as the Columbus, Delaware & Marion is using 600-volt D. C. current on the trolley, the Columbus, Marion & Bucyrus will do likewise.

The business of the Columbus, Delaware & Marion continues to show an increase from month to month, under the new operating organization.

A NEW SECTION INSULATOR

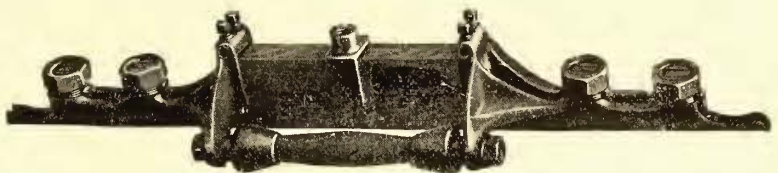
A new type of section insulator has recently been put on the market by the Ohio Brass Company, of Mansfield, Ohio, and is shown in the accompanying illustrations. Great mechanical strength is claimed from the fact that the direct pull exerted by the trolley wires is borne by two wood break strain insulators, one on each side of the suspension bar and runner piece as shown in Fig. 1. These wood break strains are similar in construction to the manu-



SECTION INSULATOR WITH TWO WOOD BREAK STRAIN INSULATORS

facturer's regular wood break strain insulator, that is, the malleable iron cap-castings are compressed over the ends of the wood member by hydraulic pressure, which distributes the stresses evenly throughout the entire piece. The malleable iron cap-castings of the wood breaks are provided with internally threaded lugs, and are fastened to the end-castings of the section insulator by machine bolts which pass through holes in the end-castings and engage the threads in the lugs. Lock washers prevent these bolts from being loosened by vibration. Since each of the wood breaks has an approximate ultimate strength in tension of 7000 lbs., it is possible to break the largest sizes of trolley wire without injury to the insulator. The wood breaks being situated in the same plane with the trolley wire they are subjected to no bending moment, being subjected to direct tension stress only.

The suspension bar and runner piece are of hard wood and are separate as seen in Fig. 2. The ends of the suspension bar, which is 1½ ins. x 1 1/16 ins. x 9¼ ins., fit into



INSULATOR WITH SUSPENSION BAR AND RUNNER PIECES OF HARD WOOD

recesses in the faces of the end-castings, and a top suspension is provided for attachment to a hanger with a 5/8-in. threaded lug. The runner bar is of the same dimensions as the suspension bar, the under edge being rounded to fit the groove in the trolley wheel. It is driven tightly into the recesses in the end-castings beneath the suspension bar and is further held in place by cotter pins as shown in Fig. 1. This runner bar may be easily renewed.

By inspection of the illustrations it will be noted that the end-castings terminate in long grooved ears for the reception of the wires. These ears are each provided on the upper edge with two threaded lugs, 1¼ ins. in diameter, the lugs being bifurcated. A wedge with a grooved and serrated edge, shown in detail in Fig. 1, fits into the bifurcations of each of the lugs and is clamped down upon the trolley wire by nuts which fit the lugs. About midway between the lugs there is a projection or lump in the bottom of the groove in the ear, so that when the wedges are clamped down the wire is given a crimp, rendering it