

\$8,000 verdict was sustained by the Supreme Court of Illinois, a \$4,000 verdict by the Supreme Court of Iowa, and a \$9,119 verdict was sustained by the Supreme Court of Texas in the case of Kirkland, while the Supreme Court of Wisconsin sustained a \$10,000 verdict for the same injury in the case of Baltzer.

The loss of a hand has been variously estimated by approved verdicts ranging from \$1,250 to \$5,000 in cases reported by the various courts which I have had an opportunity to examine. The loss of fingers has been the prolific mother of many damage suits, and the verdicts have ranged all the way from a few hundred dollars to \$8,500, which was the amount of the verdict in the case of Ridenhour vs. Kansas City Cable Ry., in which case all the fingers on one hand were disabled.

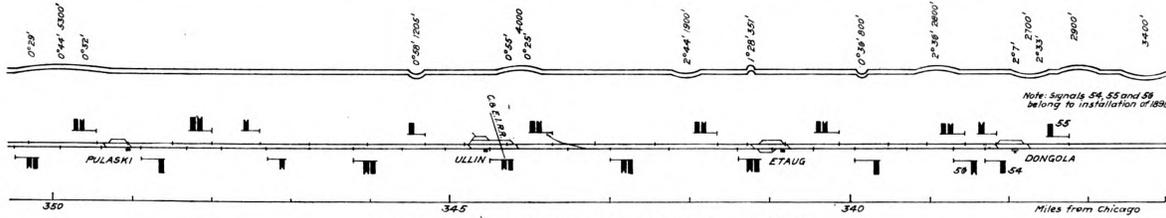
For injuries resulting in death verdicts show the great-

est possible variation. . . . The railroad attorney would ordinarily prefer to defend a case of an injury resulting in death rather than one resulting in permanent disability; perhaps because a jury has more sympathy for a permanent cripple, who appears before them, than for the heirs or representatives of a dead man, whose injuries are covered by the grave. Like all other rules this one has its exceptions, and a pretty widow and orphan children, as plaintiffs, have frequently caused ver-

The Illinois Central Improvements—Signaling.

The Illinois Central has 364 miles of its track (about 156 miles of road) equipped with automatic block signals, and there are on its lines 88 interlocking plants. The number of automatic block signals is 487. Of the 487 signals, 142 are of the disk type, 169 of the electric motor semaphore type, and 176 of the electro-gas sema-

phore type. The first automatic signals used on the road were disks (Hall, enclosed), installed on the Chicago Terminal District in 1892. The electric semaphore signal is used from Kensington to Kankakee (installed in 1900), and from Bosky Dell, Ill., to Dongola, Ill., (installed in 1898). The electro-gas signal is used from Dongola, Ill., to Fulton, Ky., with the exception of the Cairo Bridge, where the disk signal is used. The installation of the electro-gas signals between

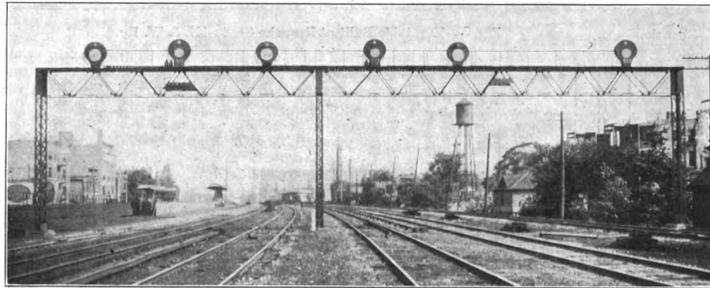


Automatic Block Signals Between Dongola and Pulaski, Illinois.

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held in reserve. Experience has shown, however, that this is very seldom necessary. Traffic through this interlocking is heavy, usually over 700 trains a day. This involves approximately 7,000 lever operations daily. The power required to do this work is obtained from storage batteries kept in the lower story of the signal tower. Here are duplicate 150 ampere-hour Willard storage batteries. One of the batteries, when fully charged, will provide power to operate the signals, derrails, and switches for a period of eight days. It will therefore be seen that the power for this purpose is obtained at a very small cost. (This interlocking was described in the Railroad Gazette July 12, 1901.)



Automatic Block Signals at Fifty-fourth Street, Chicago.

The interlocking plant at Stewart avenue and 21st street, Chicago (electro-pneumatic), was put into operation August 6, 1893. At this point the track layout is very complicated and the traffic is heavy; considerably over 1,000 trains a day passing through.

At 70th street, Chicago, is a large mechanical interlocking plant installed by the Johnson Signal Company in 1893. This plant has 96 working levers. About 600 trains pass through this plant daily, which involves about 5,000 lever movements.

At Edgewood, Ill., there is an all-electric interlocking plant installed in 1896, which was one of the first Taylor plants ever built. At this place regular telegraph operators attend to the interlocking machine, so that the expense of operation is very light.

At Laquette, Ill., there is a mechanical interlocking plant installed in 1898. This machine has 13 working levers and it is in the telegraph office of the station building. At this point the Chicago Division crosses the Rantoul branch of the Springfield Division, and as there are

dicts to rise very high when compared with the earnings of the "loved and lost."

The courts not only set aside verdicts which are excessive, but also such verdicts as may be inadequate. In the case of Phillips against an English railroad, reported in 29th Moak on page 177, a verdict of seven thousand

Dongola, Ill., and Fulton, Ky., has just been completed, and they are giving excellent satisfaction. The records to date show one signal failure for each 18,645 signal operations. This is a better showing than has been made with either the electric semaphore or the disk. These figures for the electro-gas signal cover a period of two months, and there is reason to believe that a better showing will be made in the future, and it is expected that signals operated by carbonic acid gas will be more economical than electric motor operated signals. (The Hall electro-gas signal was described in the Railroad Gazette of June 5, page 386.) The simplicity of construction of the electro-gas signal is an attractive feature. On the Illinois Central the signals are installed on the normally danger plan, so that power is consumed only while an approaching train occupies the clearing section of track, which is usually about 3,000 ft. long. Where battery tubs (wells) are used they are of concrete, of the Monier construction. Iron relay and bell posts are used, so that the construction throughout is of a very permanent nature. Forty-inch Weber track joints are used where insulation is required. The rail joints are bonded, two wires being used, as is the customary practice. The signal circuits are broken through switch instruments on all facing point switches, but at trailing points a double shunt of the track circuit is employed, unless the signal circuit has to be extended beyond that switch for some other purpose. "Continuous light" spectacle castings are used, and the glasses are solid color roundels. The installation was made by the Hall Signal Company, its standard equipment being used throughout. The accompanying engraving shows a plan of the signal locations on a part of the line between Dongola and Cairo Junction.

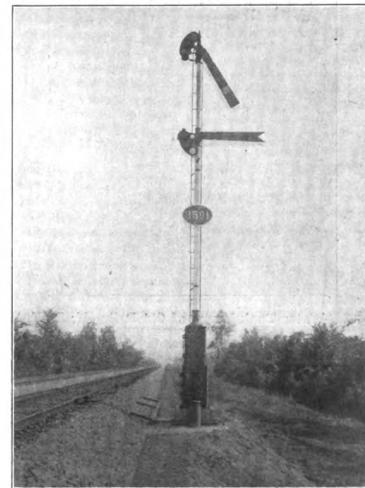
In recent installations of automatic signals the long-time lamp font has been used. With careful attention these lights give satisfactory service. It has been found that one man can look after 120 signal lights in a district embracing 42 miles of double track.

Of the 88 interlocking plants, one is of the electro-pneumatic type, made by the Union Switch & Signal Company; five are of the "all-electric" type, made by the Taylor Signal Company; and the remainder are simple mechanical plants. The latter have been put in by various signal companies. The more notable interlockings are at Clark street, 70th street and South Park avenue, Chicago; at Edgewood, Ill., and Laquette, Ill. The



Power House for Signals at Sixteenth and Clark Streets, Chicago.

pounds was recovered for "injuries sustained by the plaintiff, a physician, through the negligence of the defendant"; and it was set aside as inadequate on the ground that "the jury must have omitted to take into consideration some of the elements of damage." "The plaintiff, who was a physician in the prime of life, having a practice worth six or seven thousand pounds per annum, was reduced by the injury to a condition of powerless helplessness, with every enjoyment of life destroyed, and with the prospect of a speedy death."



Automatic Electro-Gas Block Signals.

no trains on the Rantoul line at night the signals are left clear for the Chicago Division, the levers being locked in the clear position. The telegraph office is securely locked while closed.

At the Illinois Northern crossing near 33d street and South Park avenue, Chicago, there is an interlocking plant of 12 working levers, installed in May, 1903, where the signals stand normally clear for the Illinois Central. When it is necessary for the infrequent trains on the Illinois Northern to pass over the crossing, the train-

men of that company operate the interlocking machine. The door of the cabin is interlocked so that it must be closed before the first lever in the interlocking machine can be moved. After the train has passed through on the Illinois Northern the levers governing the Illinois Central derrails and signals are reversed, and the last lever in the combination unlocks the cabin door. Time locks are applied to the home signal levers, so that a derail cannot be opened until a period of one and one-half minutes has expired after the home signal lever has been placed in the normal position.

The principal interlocking plants on the Chicago Division are Burnside, 133 levers; 16th and Clark streets, 128 levers; 67th street, 96 levers; Weldon, 92 levers; 43d street and Riverdale, 80 levers each; Ash street, 77 levers; Effingham, 60 levers. The largest interlocking on the St. Louis Division is that at Carbondale, 32 levers; on the Springfield Division, that at Springfield, 60 levers. On the other divisions the largest are: Freeport, at South Elmhurst, 32 levers; Dubuque, at East Dubuque, 18 levers; Omaha, at Webster City, 27 levers;

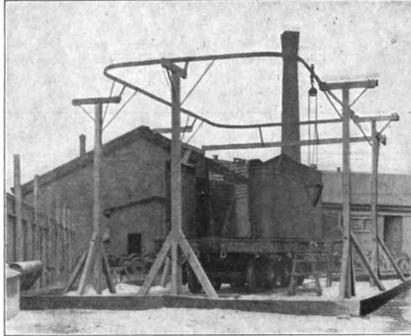


Fig. 1.—Sand Blast Apparatus for Cleaning Tender Tanks—Roanoke Shops, N. & W. Ry.

Cherokee, at Manson, 21 levers; Louisville, at Henderson, 56 levers; Tennessee, at Fort Jefferson, 36 levers; Mississippi, at Winona, 16 levers; Louisiana, at New Orleans, four levers.

Some Interesting Adaptations—Norfolk & Western.

A sand blast apparatus for cleaning tender tanks at the Roanoke shops of the Norfolk & Western is shown in Fig. 1 of the accompanying engravings. Although it has been recommended for years that the sand blast be used for cleaning iron and steel, its use in cases such as the kind mentioned is not general. The arrangement



Fig. 3.—Water Tank Frame of Old Rails—N. & W. Ry.

consists of a heavy timber framing rising about a foot above the surface of the yard and enclosing a space large enough to hold a tender and the surrounding scaffolding for the accommodation of the workmen. On this framing there are six strong uprights carrying well-braced cross arms to which a lorry track made of flat iron is attached. The lorry running on this rail has a chain hoist from which is suspended an inverted conical sand holder with a hose leading from its bottom to the blast apparatus. The latter is supplied with air from the shop system. With this apparatus the paint can be removed from a tank much more thoroughly and in a far shorter time than is possible with the old method. The surface is left smooth and bright and in good condition for the reception of the new coat of paint.

Two turntables were built on the premises a good many years ago have always attracted attention because of their unique design. One of them is shown in Fig. 2. It has a shallow floor braced by a truss girder built up of angles and channels and is driven by an engine in a cab at one end. A short time ago it was decided to replace one of these tables with another of more modern design capable of carrying the very heavy locomotives

that are to be used. The old one was kept in service during the preliminary work of preparing the new foundation, and then when the new one was to be put in place, a temporary track was built across the pit and the new table run out over its position. With a wrecking crane at each end, it was lifted from its supports, and after the false-work had been removed, was lowered into place, the whole work taking less than two hours and a half.

An economical scheme practiced by the road is the use of old rails as supports for water tanks. A tank so supported is shown in Fig. 3. The rails are arranged to form 12 columns. Four of these, of two rails each, are placed in a square beneath the central part. The other eight are out at the edge, in line with the four at the center, the outer columns being of one rail each. The floor beams of the tank rest on cross pieces also made of old rails so that the larger part of the lower framing and supports is of this material.

The method of fastening and bracing these rails is shown in Fig. 4. The end of the rail itself is cut off square and rests on a steel plate 10 in. x 16 in. x 1/2 in. to which it is fastened by the angles, A, A, that are riveted to its web. The plate

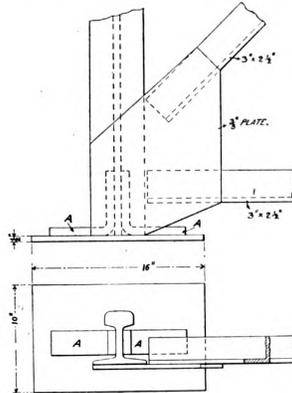


Fig. 4.—Foot of Rail Column for Carrying Water Tank. N. & W. Ry.

is in turn bolted to pier foundations. A broad gusset 3/8 in. thick is riveted to the flange of the rail and to this the diagonal and horizontal braces of 3-in. x 2 1/2-in. angles are attached.

TECHNICAL.

Manufacturing and Business.

Mr. Stephen F. Sullivan, hitherto Sales Agent at Chicago for the Ewald Iron Company of St. Louis, has been appointed General Sales Agent.

The Ohio Machinery Company, Cincinnati, Ohio, has been incorporated with a capital of \$5,000, by J. A. Trautman, Geo. E. Palmer, Jr., and others.

The Federal Roll & River Company, of Washington, D. C., has been incorporated with a capital of \$1,000,000, by Edwin E. Crook, P. J. Kennedy and others.

The H. C. Doman Company, Oshkosh, Wis., has been incorporated, with a capital of \$50,000, to make engines and machinery, by Edgar P. Sawyer, H. C. Doman and others.

Mr. E. H. Bowser has been appointed General Manager of the Southern Creosoting Company, Slidell, La., taking the place of Mr. C. B. Lowry, who has resigned to engage in other business.

The Phenix Iron Works Co., Meadville, Pa., has appointed J. D. Lyon & Co., of Pittsburg, its representative for western Pennsylvania, eastern Ohio and West Virginia for the sale of engines, boilers, etc.

The American Electric Brake Co., Newark, has been incorporated in New Jersey with a capital of \$100,000, to make electric machinery. Incorporators, Adrian I. Tichenor, Thomas L. Nixon and Lester W. Cokefair.

The Miller Plantation Company, 349 West 26th street,

New York, N. Y., is in the market for the entire equipment of a railroad to be built in the State of Vera Cruz, Mexico. Second-hand material is preferred for both narrow and standard gage.

The South Texas Concrete Manufacturing Company, Galveston, Texas, has been incorporated with a capital of \$10,000, to make hollow cement machinery and hollow concrete stone, by Thomas H. Phillips, Wm. Farr and others.

The Ryan-Parker Construction Company has been incorporated in New Jersey with a capital stock of \$700,000, to do a general construction business, by James F. Fielder, James E. Pyle and Joseph E. Finn, Jr., all of Jersey City.

The M. Mitskun Company, Detroit, is building new shops at Isabella and E streets, adjacent to the Michigan Central. A repair shop 100 ft. x 48 ft. is already finished and a frame office building, blacksmith shop, etc., will soon be finished.

Mr. G. DeWitt Smith, formerly Purchasing Agent of the Central Railroad of New Jersey, and afterwards Assistant Purchasing Agent of the Philadelphia & Reading,

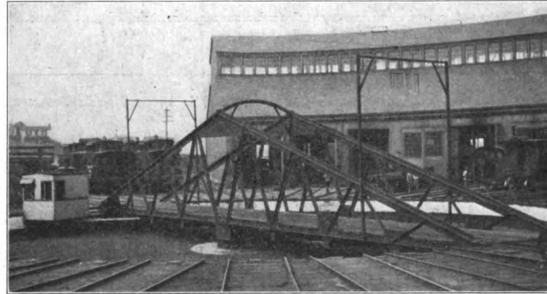


Fig. 2.—Turntable Built at Roanoke Shops—N. & W. Ry.

has taken a position with the Protectus Company, 45 Broadway, N. Y.

The Universal Pneumatic Transmission Co., Jersey City, has been incorporated in New Jersey to engage in conveying merchandise, grain and other commodities through tubes, by Joseph J. Stoezel, Siegfried Melohn and Harry P. Simonton.

The Stanley Electric Mfg. Co., of Pittsfield, Mass., announces the opening of two new sales offices, one in the Perin Building, Cincinnati, in charge of Mr. O. H. P. Fant, and the other in the Century Building, St. Louis, Mo., in charge of Mr. F. Johnson.

Mr. Albert J. Oliver has opened an office in Chicago as the representative of the E. L. Marbury Lumber Company, Cordele, Ga.; the Minnesota Lumber Company, Cordele, Ga., and the Allen-Wadley Lumber Company, Ltd., St. Louis, Mo. Mr. Oliver sells both long leaf and short leaf pine.

At a meeting of the board of directors of the Wm. Cramp & Sons Ship & Engine Building Company, Oct. 2, Mr. Chas. H. Cramp resigned and Mr. Henry S. Grove was elected his successor. Edwin S. Cramp was made Vice-President, and R. W. Davenport, General Manager and also a director.

A petition in involuntary bankruptcy against the New York Car Wheel Works, of Buffalo, was filed in the United States District Court Oct. 6, the petitioners being the Rochester Car Wheel Works, of Rochester; the Keystone Car Wheel Company, of Pittsburg; and Timothy J. Murphy, of New Jersey. The claims of the three petitioners aggregate about \$30,000. It is set forth in the petition that the aggregate amount of the liabilities of the New York Car Wheel Works is about \$800,000, and assets about \$250,000.

The American Bureau of Inspection and Tests, Monadnock Block, Chicago, has been incorporated with J. Grunewald, President and Treasurer, and M. T. Jones, Inspecting Engineer. Mr. Grunewald has been credit man for the Block-Pollak Iron Company, Chicago, for 16 years, and Mr. Jones has been Inspecting Engineer for R. W. Hunt & Company for over 10 years. The new company will do a general business in inspecting and testing railroad materials, including rails, angle bars, cars and locomotives, bridge material, plates, cast iron pipe, etc., as well as chemical and physical tests whenever required.

A new plate mill, said to be the largest of its kind in the country, has just been completed by Worth Brothers Company, Philadelphia. It has been made thoroughly modern in every respect with all the latest improved machinery and labor-saving devices, including large guillotine shears, straightening rolls, etc. The longest rolls are 152 in., giving a capacity far in excess of present demands. A list of the maximum sizes of plates the mill is capable of turning out shows thicknesses up to 2 in. and widths up to 140 in. for the 2-in. gage, and up to 144 in. for the 7/8-in. gage and under. The lengths vary from 140 in. for the 2-in., 140-in. wide plate, to 600 in. for the 3/4-in. by 30-in. plates. The capacity of the plant is from 4,500 to 5,000 tons of plates a week.

Iron and Steel.

The Dover Iron Company will rebuild its furnace at Bear Springs, Tenn., recently damaged by fire.