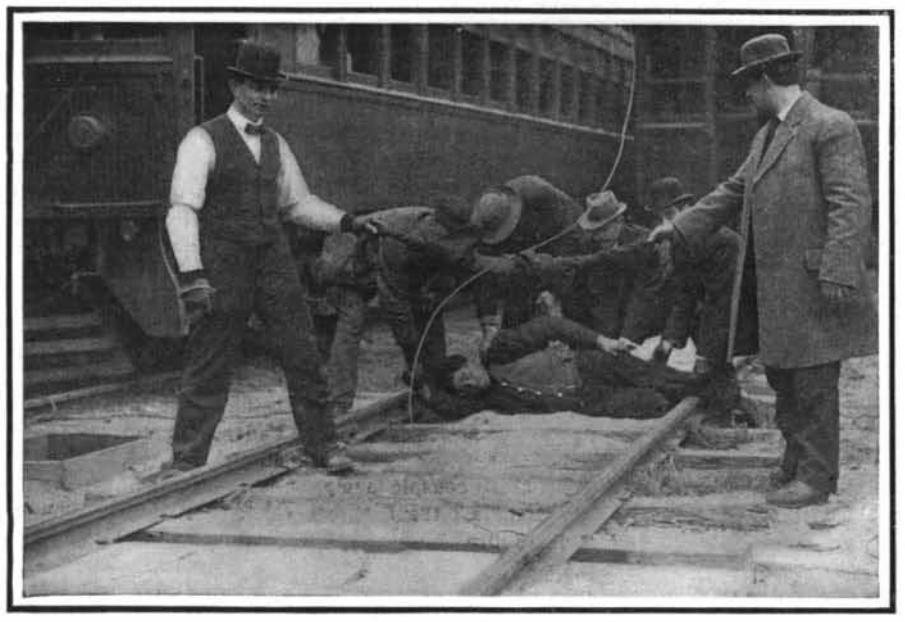
contentions of those who are trying to have the patent declared invalid is that such an arrangement of feeding air and fuel could never be practical on a vehicle, regardless of the smoothness of the roads.

To sum up, the situation with regard to the Selden patent at the present moment is about as follows: All the testimony to be presented by both of the litigants has been heard, the last having been taken early in January of the present year. This huge mass of matter, comprising many thousand typewritten folio sheets, will be printed as the record of the case, and if the thirty-odd cases that are on the Circuit Court calendar in New York for its spring sessions can be disposed of in time, the Selden case will come up for trial in May next, this consisting principally of an oral argument of the merits, *pro* and *con*, by counsel for each side. Regardless of which party the court's decision favors, it is a foregone conclusion that there will be an appeal. That will mean the lapse of about another year, before the matter again comes before the court, this time the Circuit Court of Appeals. Then some time will elapse before a decision is rendered, so that it will probably be 1911 before there is anything definite to record. A few of the customary delays will easily bring this up to the date of expiration in 1912.

The safest way of dragging a man off a live rail.



Using a coat as a rope to lift a live wire.

FIRST AID TO THOSE INJURED BY ELECTRICITY.

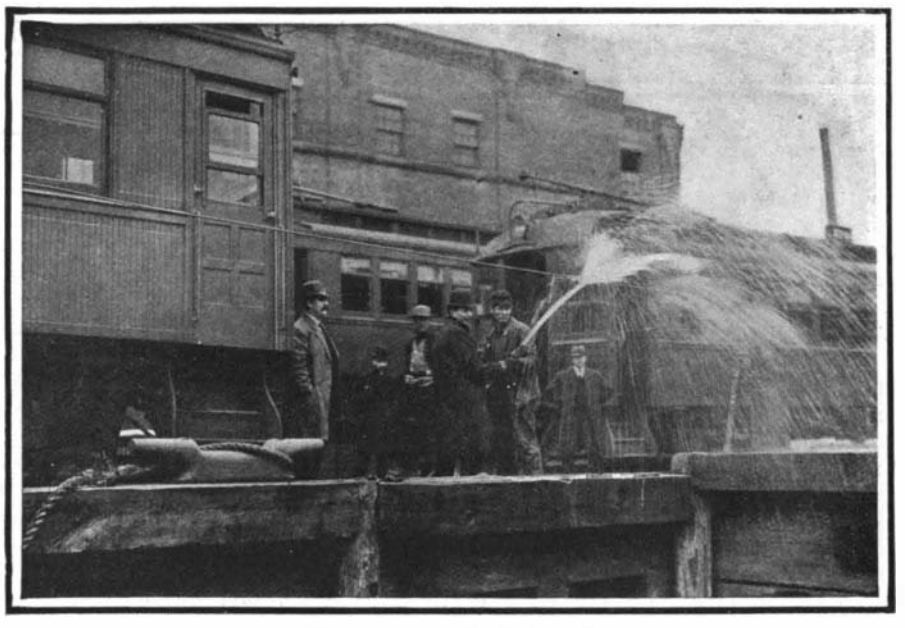
The increasing use of electricity on our large railroad systems, and the danger it offers to employees, have aroused officials to the importance of instructing their men how to act in case of accident. It frequently happens that a man who receives a shock is allowed to suffer from lack of proper immediate treatment, owing to the inherent dread of electricity among all those who are not familiar with the handling of electric circuits. Again, the victim may receive a severe shock and may appear to be dead when he is only stunned, and if properly worked over he may be resuscitated.

Not long ago the Pennsylvania Railroad assembled at Altoona, Pa., two hundred officials and employees from the various sections of its system, and gave them practical instructions in the various first-aid treatments which would be applicable to those injured by electricity. When a man is injured by coming in contact with a fallen live wire, it is a dangerous matter to attempt to move the wire away, or drag the victim out of contact with it, but by taking a coat by the sleeves and twisting it into a rope, as shown in one of the illustrations, two men on either side of the wire may lift it safely with the improvised rope. This experiment was tried even with a damp coat, and high-tension conductors were lifted without the operators' feeling the slightest shock. In case of a victim falling across a live rail, he may be removed either by seizing the twisted end of his coat and dragging him off, or by using a wooden pole; as dry wood is a very good non-conductor.

At the meeting in Altoona, a new type of pliers was tried out, and found to be just the thing for cutting live wires. The pliers were provided with wooden handles, so that the hand did not come in contact with any of the metal parts. The handles were boiled in paraffine, rendering them such good insulators that they withstood a pressure of 8,000 volts. With these pliers a line carrying 2,300 volts was repeatedly cut by a man standing on the ground, without his experiencing any unpleasant shock.

A very interesting series of experiments was undertaken, to determine what measure of danger there would be to a fireman who was obliged to direct a stream of water against a live wire. For this purpose several circuits were provided, one a 525-volt direct-current circuit. One side of this circuit was grounded, and a ⅝-inch stream of water was played against the other side. A voltmeter placed between the hose nozzle and the ground showed a potential of 20 volts when the nozzle was held at a distance of 7 feet 5 inches from the wire. At 3 feet 7½ inches the potential was 60 volts, and at 2 feet 2 inches 70 volts, while at 7½ inches it amounted to 210 volts. This showed that the firemen need not fear to operate the hose at a distance of 3 or 4 feet from the wire, and if standing on a ladder, they may hold the nozzle within a few inches of the wire. The same experiment tried with an alternating-current line of 2,050 volts produced no reading at all in the voltmeter when the nozzle was held within 3½ and 6½ feet of the line, and the only effect noticeable was a slight static discharge when the nozzle was touched with the hand. A similar result was observed when playing the hose at the same distances on a 4,100-volt alternating-current line. These experiments then show that a fireman need have little fear of injury to himself when operating in the vicinity of high-tension circuits. The experiment of using salt water in the hose line was not tried. No doubt, as salt water is a far better conductor than fresh water, the firemen might have found it quite hazardous to use the hose so close to the high-tension wires. Chemical extinguishers were found to be very dangerous. A voltmeter was connected between the ground and an extinguisher, and a stream from the latter played on a line carrying 2,500 volts. At a distance of 9 inches from the line, the voltmeter showed a reading of 1,500 volts. This is a very important matter to bring to the attention of the public, for the reason that passenger trains are usually equipped with chemical extinguishers, and in case of a wreck on an electrified line, serious consequences might result from the promiscuous use of these extinguishers.

Prying a victim off a live rail with a wooden pole.



Playing the hose on a high-tension conductor.

FIRST AID TO THOSE INJURED BY ELECTRICITY.

Official Meteorological Summary, New York, N. Y., February, 1909.

Atmospheric pressure: Highest, 30.41; lowest, 29.24; mean, 29.95. Temperature: Highest, 58; date, 10th; lowest, 5; date, 1st; mean of warmest day, 47; date, 24th; coolest day, 12; date, 1st; mean of maximum for the month, 43.7; mean of minimum, 30.9; absolute mean, 37.3; normal, 30.7; excess compared with mean of 39 years, 6.6. Warmest mean temperature of February, 40, in 1890. Coldest mean, 23, in 1875 and 1885. Absolute maximum and minimum for this month for 39 years, 69 and —6. Average daily excess since January 1, 4.5. Precipitation: 4.31; greatest in 24 hours, 1.56; date, 23rd and 24th; average of this month for 39 years, 3.80. Excess, 0.51. Accumulated excess since January 1st, 0.08. Greatest February precipitation, 7.81, in 1893; least, 0.82, in 1895. Snowfall, 1.4. Wind: Prevailing direction, west; total movement, 11,012 miles; average hourly velocity, 16.4 miles; maximum velocity, 73 miles per hour. Weather: Clear days, 3; partly cloudy, 11; cloudy, 14; on which 0.01 inch or more of precipitation occurred, 12. Sleet, 9th, 23rd. Fogs (dense), 15th, 16th, 24th. Mean temperature of the past winter, 35.23; normal, 31.80. Precipitation of the past winter, 10.85; normal, 10.94. Deficiency, 0.9. Snowfall of the past winter, 16.