In operation and under construction, Jan., 1890.

Name of System.	In operation.		Under construction.	
	No. of Roads.	No. of Cars.	No. of Roads.	No. of Cars.
1 Thomson-Houston	47	490	37	509
2 Sprague	35	408	33	218
3 Daft	10	66	5	15
4 Van de Poele	8	57	"	"
5 Short	3	17	1	5
6 Bentley-Knight	1	6	1	20
7 National Electric Ry. Co.	1	1	5	not given
8 Julien	1	10	"	"
9 Fisher	1	4	2	not given
10 Henry	1	4	"	"
11 Rae	"	"	1	4

STREET WIRING FOR ELECTRIC LIGHTING.

First, on account of the dangers of break down from heavy sleet storms, and the variation in tension of wire caused by the extremes of temperature experienced in Canada, poles should be placed not more than 135 feet apart, or say 40 to the mile. They should all be good, sound, straight cedar, 7 inches diameter at the top end and not less than 35 feet long, and should be set in the ground to a minimum depth of 6 feet and securely tamped. The cross arms should be of sound timber 4½" ×3½", well painted, and fixed in gains cut in the poles and secured thereto by lag screws 8" long, which would thus enter into the pole about 4½ inches. They should never be attached by spikes only. Wherever telephone or telegraph wires run in the same streets, the poles should be of sufficient height to carry the electric light wires at least four feet above them. Bare wire for carrying either high or low tension currents in towns should be strictly prohibited.

None but the best double petticoat glass insulators should be used. The insulation of the wire should be both fire-proof and weather-proof, and be of such tough texture as to withstand abrasion should other wires by any means fall across the electric light wires.

For outside construction some of the English Board of Trade Regulations, which might be adopted with advantage in this country, are as follows, the numbers given being those of the Regulations:

1. An aerial conductor in any street shall not in any part thereof be at a less height from the ground than 20 feet, or when it crosses a street, 30 feet, or within six feet of any building for the purposes of supply.

2. Every support of aerial conductors shall be of durable material, and properly stayed against forces due to wind pressure, change of direction of the conductors or unequal lengths of span, and the conductors and suspending wires (if any) must be securely attached to insulators fixed to the supports. The factor of safety shall be at least 6, and for all other parts of the structure at least 12, taking the maximum possible wind pressure at 50 lbs. per square foot.

5. Every aerial conductor shall be protected by efficient lighting protectors.

6. Where any conductor crosses a street, the angle between such conductor and the direction of the street at the place of such crossing shall not be less than 60 degrees, and the spans shall be as short as possible.

7. Where any aerial conductor is erected so as to cross any other aerial conductor, or any suspended wire used, for purposes other than the supply of energy, precautions shall be taken by the owners of such crossing conductors against the possibility of that conductor coming into contact with the other conductors or wire, or of such other conductor or wire coming into contact with such crossing conductor by breakage or otherwise.

11. The insulation resistance of any circuit using high pressure aerial conductors, including all devices for producing, consuming or measuring energy connected to such circuit, shall be such that should any part of the circuit be put to earth the leakage current shall not exceed $\frac{1}{15}$ of an ampere in the case of alternating currents. Every such circuit containing high pressure conductors shall be fitted with an indicating device which shall continuously indicate if the insulation