DETAILS OF LOCOMOTIVES EXHIBITED AT THE WORLD'S COLUMBIAN EXPOSITION.—SECOND ARTICLE.

Illustrations and principal dimensions of these locomotives are shown on preceding pages.

Explanation of Table.—The first line of the heading in each column refers to the first line of data for each engine; the second line for the second line of data, and so for the four or five lines of heading in each column.

Boiler, type. Boiler, material in barrel. Boiler, thickness of barrel. Boiler, kind of horizontal seams. Boiler, kind of circumferential seams.	Tubes, material. Tubes, number. Tubes, diameter outside. Tubes, length over tube plate. Firebox, length.	Firebox, width. Firebox, depth. Water space, width. Material of outside shell of firebox. Thickness of outside shell of firebox.	Material, inside of firebox. Thickness of firebox. Material, firebox tube sheet. Material, smokebox tube sheet. Thickness of tube sheets.	Crown plate stayed with— Diameter and height of dome. Working steam pressure per square inch. Kind of grate.	Tender, weight empty. Journals, tender axles, size. Blast nozzle, kind. Blast nozzles, diameters.	Tender, fuel capacity. Tank, water capacity. Wheel base, total, engine and tender. Total length of engine and tender over all.
Extended wagon top Steel ⅜ in. Triple riveted butt Double riveted lap	Charcoal iron 246 2 in. O. D. 13 ft. 8 in. 108⅛ in.	33¼ in. 70¼ in. F.; 62⅜ in. B. 3½ in. Steel ⅜ in.	Steel All ⅜ in. Steel Steel ½ in.	Radial stays, 1⅛ in. diam. 30 in. diam.; 24 in. high 180 lbs. Rocking	33,000 lbs. 4 × 7 in. Single 5 × 5¼ in.	7 tons 3,800 galls. 49 ft. 10¾ in. 59 ft. 4¾ in. .....
Extended wagon top Steel ⅝ in. Triple riveted butt Double riveted lap	Steel 250 2 in. O. D. 10 ft. 9 in. 120⅛ in.	41¼ in. 69 in. F.; 60 in. B. 3½ in. Steel ⅝ in.	Steel All ⅜ in. Steel Steel ½ in.	Radial stays, 1⅛ in. diam. 30 in. diam.; 16 in. high 200 lbs. Water tubes with pull-out bars	34,000 lbs. 4½ × 8 in. Variable	5 tons 4 000 galls. 47 ft. 6¾ in. 58 ft. 6 in. .....
Extended wagon top Steel ⅝ in. Triple riveted butt Double riveted lap	Charcoal iron 272 2 in. O. D. 12 ft. 8⅝ in. 120⅛ in.	33¼ in. 82¾ in. F.; 72¾ in. B. 3½ in. Steel ⅝ in.	Steel Sides, ⅞ in.; Crown and B., ⅜ in. Steel Steel ½ in.	Radial stays, 1⅛ in. diam. 30 in. diam.; 20 in. high 200 lbs. Rocking	34,000 lbs. 4½ × 8 in. Variable	6 tons 4,000 galls. 50 ft. 6¾ in. 63 ft. ¼ in. .....
Wagon top Steel ⅜ in. Butt, with straps in. and out. Double riveted lap	Iron 227 2¼ in. 12 w. g. 13 ft. 6 in. 120 in.	33⅜ in. 75⅜ in. F.; 61⅝ in. B. 3 in. S.; 3½ in. B.; 4 in. F. Steel ⅜ in.	Steel ⅜ in. S.; ⅝ in. B. and Crown Steel Steel ½ in.	With bars and 1 in. bolts 29 in. diam.; 24 in. high 160 lbs. Cast-iron rocking	37,000 lbs. 4½ in. diam. × 8 in. Single 4¾ in.	6½ tons. 3,700 galls. 49 ft. 5½ in. 59 ft. 10½ in. .....
Straight Steel ⅝ in. Butt, strips in. and out. Double riveted lap	Iron 272 2 in. 12 w. g. 12 ft. 1 in. 126 in.	41½ in. 68½ in. F.; 56 in. B. 3½ in S. and B.; 4 in. F. Steel ⅜ in.	Steel ⅜ in. S.; ⅝ in. B. and Crown Steel Steel ½ in.	Radial stays 29 in. I. diam; 24 in. high 180 lbs. Water tube and pull bar	37,000 lbs. 4¼ in. diam. × 8 in. Double 3¼ in.	6¼ tons 3,700 galls. 48 ft. 11½ in. 60 ft. 4½ in. .....
Extended wagon top Steel ⅛ and ⅜ in. Butt, with double covering strips Double riveted lap	Iron 242 2 in. 14 ft. 4 in. 107⅝ in.	42 in. F., 64 in.; B., 55 in. 3½ in. B. and S.; 4 in. F. Steel	Steel ⅜ in. Steel Steel ½ in.	Radial stays, 1 in. diam, 29 in. I. diam. × 26 in. high 170 lbs. Rocking	34,000 lbs. 4¼ × 8 in. Single 5 in.	7 tons 3,500 galls. 52 ft. 2 in. 59 ft. 6 in. .....
Belpaire Steel ⅛ and ⅜ in. Butt, with double covering strips Double riveted lap	Iron 217 2 in. 11 ft. 6½ in. 84 in.	42 in. F., 60 in.; B., 43 in. 3 in. Steel	Steel ⅜ in. Steel Steel ½ in.	Stays, 1⅛ in. diam. 27¼ in. inside; 27⅛ in. high 165 lbs. Rocking	30,000 lbs. 4½ × 8 in. Single 4½ in.	7 tons 3,480 galls. 48 ft. 3 in. 57 ft. 5 in. .....
Belpaire Steel ⅜ and 5/16 in. Butt, with double covering strips Double riveted lap	Iron 236 2 in. 11 ft. 10½ in. 121⅝ in.	33⅜ in. F., 71¼ in.; B., 62¼ in. 3½ in. B. and S.; 4 in. F. Steel	Steel S. and B., ⅜ in.; Crown, ⅝ in. Steel Steel F., ½ in.; B., ⅜ in.	Stays, 1 in. diam. 29 in. inside; 28 in. high 165 lbs. Rocking	32,000 lbs. 4¼ × 8 in. Single 5 in.	7 tons 3,850 galls. 47 ft. 9½ in. 58 ft. 6 in. .....
Belpaire Steel ⅝ in. Quadruple riveted Double riveted	Iron, No. 11 W. G. 250 2¼ in. 13 ft. 10 in. 114 in.	32 in. 76½ in. F.; 73½ in. B. 3½ in. S. and B.; 4 in. F. Steel ½ in.	Steel S. and B., ⅜ in.; C., ⅝ in. Steel Steel ⅝ in.	Belpaire stays, 1 in. dia. 21 × 34 in. 180 lbs. Rocking	35,400 lbs. 4¼ × 8 in. Single 4¾ in., 5 in., 5¼ in.	8 tons 4,000 galls. 52 ft. ¾ in. 61 ft. 8 in. .....
Belpaire Steel ⅜ in. Quadruple riveted Double riveted	Iron, No. 11 W. G. 208 2¼ in. 11 ft. 7⅛ in. 114 in.	32 in. 71 in. F.; 68 in. B. 3½ in. S. and B.; 4 in. F. Steel ½ in.	Steel S. and B., ⅜ in.; C., ⅝ in. Steel Steel ⅝ in.	Belpaire stays, 1 in. dia. 31 × 34 in. 180 lbs. Rocking	35,400 lbs. 4¼ × 8 in. Single 4¾ in., 4⅛ in., 5½ in.	8 tons 4,000 galls. 49 ft. 11¾ in. 60 ft. ¼ in. .....
Belpaire Steel ⅜ in. Quadruple riveted Double riveted	Iron, No. 11 W. G. 212 2 in. 11 ft. 1 in. 98 in.	32 in. 67 in. F.; 50 in. B. 3½ in. S. and B.; 4 in F. Steel ½ in.	Steel S. and B., ⅜ in.; C., ⅝ in. Steel Steel ⅝ in.	Belpaire stays, 1 in. dia. 31 × 34 in. 180 lbs. Rocking	35,400 lbs. 4¼ × 8 in. Single 4¾ in., 5 in., 5¼ in.	8 tons 4,000 galls. 48 ft. 1¾ in. 58 ft. ¼ in. .....
Belpaire Steel ⅜ in. Quadruple riveted Double riveted	Iron, No. 11 W. G. 174 2¼ in. 11 ft. 1⅛ in. 98 in.	32 in. 68 in F.; 65 in. B. 3½ in. S. and B.; 4 in F. Steel ½ in.	Steel S. and B., ⅜ in.; C., ⅝ in. Steel Steel ⅝ in.	Belpaire stays, 1 in. dia. 31 × 34 in. 180 lbs. Rocking	34,000 lbs. 4¼ × 8 in. Single 4¾ in., 4⅛ in., 5½ in.	5 tons 3,100 galls. 40 ft. 7¾ in. 51 ft. 8½ in. .....
Belpaire Steel ⅜ in. Quadruple riveted Double riveted	Iron, No. 11 W. G. 202 2¼ in. 13 ft. 10 in. 114 in.	32 in. 69 in F.; 55 in. B. 3½ in. S. and B.; 4 in. F. Steel ½ in.	Steel S., 5/16 in.; B., ⅜ in.; C., ⅜ in. Steel Steel ⅝ in.	Belpaire stays, 1 in. dia. 31 × 34 in. 180 lbs. Rocking	35,400 lbs. 4¼ × 8 in. Single 4¾ in., 4⅛ in., 5½ in.	8 tons 4,000 galls. 52 ft. 3¾ in. 62 ft. 2¼ in. .....
Belpaire Steel ½ in. Quadruple riveted Double riveted	Iron, No. 12 W. G. 226 2 in. 11 ft. 7⅛ in. 102 in.	32 in. 67 in F.; 54 in. B. 3½ in. S. and B.; 4 in F. Steel ½ in.	Steel S., 5/16 in.; B., ⅜ in.; C., ⅜ in. Steel Steel ⅝ in.	Belpaire stays, 1 in. dia. 31 × 34 in. 180 lbs. Rocking	34,800 lbs. 4¼ × 8 in. Single 4½ in., 4¾ in., 5 in.	8 tons 4,200 galls. 46 ft. 8 in. 57 ft. 5 in. .....
Wagon Top Steel ½ in. Quadruple riveted Double riveted	Iron, No. 13 W. G. 250 2 in. 11 ft. 1½ in. 102 in.	32 in. 68½ in. F.; 54½ in. B. 3½ in. S. and B.; 4 in. F. Steel 5/16 in.	Steel S., 5/16 in.; B., ⅜ in.; C., ⅜ in. Steel Steel ⅝ in.	Crown bar stays 31 × 25 in. 180 lbs. Rocking	No Tender None Single 4½ in., 4¾ in., 5 in.	4½ tons 2,600 galls. 35 ft. 9 in. 46 ft. 10 in. .....
Wagon Top Steel ⅜ in. Quadruple riveted Double riveted	Iron, No. 13 W. G. 202 2 in. 13 ft. 10½ in. 96 in.	42 in. 64 in. F.; 50 in B. 3½ in. S.; 3 in. B.; 4 in. F. Steel 5/16 in.	Steel ⅝ in. S. and B.; ⅜ in. C. Steel Steel ¾ in.	Crown bar stays 31 × 25 in. 180 lbs. Rocking	33,500 lbs. 4¾ × 8 in. Double 3 in., 3½ in., 3¼ in.	6 tons 3,700 galls. 47 ft. 7¼ in. 58 ft. ¾ in. .....
Wagon Top Steel 5/16 in. Quadruple riveted Double riveted	Iron, No. 13 W. G. 186 2 in. 12 ft. 1/16 in. 96 in.	34½ in. 64 in. F.; 50 in. B. 3 in. S. and B.; 4 in. F. Steel 5/16 in.	Steel ⅝ in. S. and B.; ⅜ in C. Steel Steel ¾ in.	Crown bar stays 31 × 27 in. 180 lbs. Rocking	33,500 lbs. 4¾ × 8 in. Single 5 in.. 5¼ in.	6 tons 3,700 galls. 45 ft. 6½ in. 54 ft. 11 in. .....

The subjects for which committees were appointed to report at the next convention were: Bridge Inspection; Depressed Cinder Pits and Other Kinds; Best Foundations for Track Scales; Boilers and Pumps for Water Stations; Construction and Maintenance of Pile and Trestle Bridges; Interlocking Signals.

Representatives of the Chesapeake & Ohio, Baltimore & Ohio, Philadelphia & Reading and New York, Philadelphia & Norfolk offered the members present, with their families, the courtesies of their respective roads. The Convention adjourned at 4 p. m., Thursday, Oct. 19, to meet on the third Tuesday of October next year at Kansas City, Mo.

Chicago Meeting of Superintendents' Society.

Two of the papers read at the Chicago meeting of th American Society of Railroad Superintendents did not appear in our report last week, and are crowded out for lack of room; they are those of Mr. Royce, of the Chicago, Rock Island & Pacific, and Mr. Derr, of the Erie. Mr. Royce gave a very interesting sketch of the history of electricity and of the principal inventions connected with it. He said little, however, about the present state of the electric arts as connected with railroads except to describe a telephone exchange which the Rock Island has lately established in Chicago.

The new terminal freight yard of this road is at Blue Island, 17 miles from the general office in the city, and the numerous offices at headquarters are connected with the principal offices at the yards and with the other yards between the termini of the line, by a metallic circuit of copper wire. Long distance telephones are used, and there is an exchange in the general office building. The whole plant is rented from the telephone company at about $4,000 a year, and gives complete satisfaction. The services of several telegraph operators were dispensed with when the telephone line was established.

Mr. Derr's paper was a brief sketch of some of the principal signal exhibits at the World's Fair. A large

part of the information that he gives is familiar to readers who have followed the descriptions of signaling appliances published in the *Railroad Gazette*, but we quote a few extracts from the paper referring to devices not so well known:

"Among the Pennsylvania exhibits is found the Union Switch & Signal Co.'s pneumatic interlocking system. The use of electrically controlled valves at switch movements, the application of storage batteries instead of gravity cells for furnishing electric currents, and the application of the Saxby & Farmer improved locking (one-half the usual size) are some of the newer and more interesting features of the pneumatic machine. The use of storage batteries permits a closer regulation of quantity and pressure of current, and results in a considerable economy in expense of operation. The application of the Saxby & Farmer improved locking to the pneumatic machine permits close and accurate interlocking of levers and dispenses with a large amount of costly electrical work in the machine.

"The Johnson Railroad Signal Co. shows a light commutator, in which electricity is employed, to indicate to the signalman that a signal light is 'in' or 'out.' The contraction of certain rods in the machine caused by the light being out breaks a circuit, thereby releasing the armature of a magnet located in the signal station. This causes a bell to ring, and also gives visual notice by showing the word 'out' on the miniature signal.

"The London & Northwestern Railway exhibits a Webb & Thompson staff machine so arranged that more than one train can be sent into a block in the same direction consecutively. This machine has a special staff contained in a separate slot. The special staff is used in connection with six metal train tickets, providing for the movement of seven trains. It is a key to unlock a box containing the train tickets, and is withdrawn from the machine in the same manner as the ordinary staves. After unlocking the box and taking out all the tickets the box is again locked. The tickets are given out to trains, permitting them to enter the block. The last train takes the staff and any remaining tickets. After all the tickets and the special staff are delivered at either end of the block the tickets are locked up and the staff placed in the machine. The line is then again clear. The machine is so arranged that the special staff cannot be restored until all the tickets have been locked up in one box. When the special staff is withdrawn no other staff can be removed, and vice versa. There is but one special staff and set of tickets for each block, and they must always be in one machine. Both the ordinary and special staves are keys to unlock switches, and are so arranged that they cannot be withdrawn from the switchlock without locking switch for main track."

"Chicago Day" Transportation.

The Chicago day celebration at Jackson Park on Oct. 9, the 22d anniversary of the fire, brought out a crowd which taxed to the utmost the capacity of the various transportation lines of the vicinity. The influx of passengers from outside points was of course unprecedented and drove the managers of the various railroad companies to their wits' end to devise means of transportation. As for the lines leaving from various parts of the city to Jackson Park, they were fairly swamped.

The Alley Elevated Road had in service its full equipment of 180 cars and ran its trains at intervals of three minutes the entire day. The number of passengers carried as shown by cash sales reached a total of 294,800. This does not represent the entire number carried as many of the patrons of the road buy 50 cents or a dollar's worth of tickets at a time and are thus prepared to avoid the crowds at the ticket offices on busy days. During the early part of the day and in the late afternoon trains from Congress street were packed to their utmost capacity. Travel in the other direction was heavy all day, especially so during the late afternoon and evening. At the Congress street station passengers were admitted to the platform both on Congress street and Harrison street and both streets were filled the greater part of the forenoon with people trying to get to the trains. Trains leaving the Congress street station were so crowded that it was impossible to take passengers on at the intermediate stations, and in order to handle them it was found necessary to run occasional empty trains up the line from the Sixty-first street yards for their benefit. The rush was practically over at 11 o'clock p. m., though trains were run at frequent intervals until midnight.

On the Chicago City Railway Company's cable roads the traffic was particularly heavy and trains were run at short intervals on the Cottage Grove avenue line, and on the State street line which transfers at Sixty-first street to the electric road running to the Fair grounds. The cars gave evidence of good construction, as scarcely a train on the Cottage Grove avenue line left the city without a number of passengers on the roof of the cars. The total number of passengers carried on the lines of this company for the 24 hours was 757,660. It is estimated that of this number 500,000 were handled by the cable lines, 90,000 by the electric and the remainder by the horse car lines.

The Illinois Central had all of its 300 World's Fair cars in service between Van Buren street and the Fair grounds and ran trains from early morning until midnight. Trains were run from Van Buren street over two terminal tracks, at intervals as short as their block signal system would allow. The exact number of passengers carried on this line cannot be determined until the count of tickets is finished. It is known, however, that the traffic ran considerably over 260,000. In addition to this the company had in service all day 166 suburban coaches, and during the crowded part of the day 60 through passenger coaches and 40 excursion coaches, making a total of 566 coaches in use on this road. A careful estimate shows a total number carried of 541,312.

The facilities of the World's Fair Steamship Company for handling passengers seemed to be overlooked by the crowd, as but 50,000 to 60,000 were carried by their boats, a number considerably below their capacity.

The Chicago & Northern Pacific ran trains as often as possible and handled a total of about 30,600, most of whom came from the western part of the city. But four trains were run from the Grand Central station to the Fair grounds.

Probably the greater part of those reaching the Fair grounds from points south and southwest were handled by the Calumet Electric Street Railway Company, whose lines practically cover this territory. The total number of passengers carried was about 78,000.

The north and west side cable companies, which on the night of July 4 caused so much unfavorable comment by their action in furnishing only the usual number of trains, and discontinuing the cable service at the usual hour, redeemed themselves on this occasion by furnishing ample facilities for the transportation of their passengers from the center of the city.

Taken all in all, the handling of the 761,942 people present at the Exposition on Chicago Day was well done, and the management of the various roads contributing to its success deserve unlimited credit for their performance.

Railroad Receiverships in 1893.

We give below a list of the railroads which have been put into the hands of Receivers since July 1, 1893, amounting to 16,751 miles. Adding the list of receiverships from Jan. 1 to July 1, 5,282 miles, the total is 22,033 miles.

July 1 to Oct. 24.

	Miles.		Miles.
Louisville Southern	123	Chicago & No. Pac.	26
No. Gal., Houston & Kan. City	35	Cleve., Canton & So.	210
N. Y., L. E. & W.	1,948	Tex., Sabine V. & N. W.*	40
Pittsb., Akron & W.	165	Nyack & Northern	4
Rio Grande & So.	172	*Union Pacific	7,573
Louisv., St. L. & Tex.	166	Sioux City Terminal	16
Hutchinson & So.	82	Ky. & Ind. Bridge	10
Northern Pacific	4,438	Detroit, Bay City & Alpena	224
Phila., Read. & N. E.	179	Middlesborough Belt	18
Jacksonville S. E.	398	*Railway Age* list to July 1	5,282
Lancaster & Hamden	14		
Wheeling Bridge & Ter.	6	Total	22,033
Wisconsin Central	808		
Sioux City & Northern	93		

* Does not include Central Branch or joint operated mileage, nor 108 miles on U. P., D. & G. operated under trackage contract.

Meeting of the American Street Railway Association.

The twelfth annual meeting of the American Street Railway Association was held in Milwaukee, Oct. 18 and 20, 1893. The President introduced Mayor Koch, of Milwaukee, who delivered an address of welcome. President Longstreet then delivered his annual address, a few extracts from which follow:

"This has been a busy year in the great work of consolidation, reorganization and active progression; the financial cloud perhaps has affected our business in a less degree than any other branch employing so large a capital. The hundreds of millions of dollars interested in urban and suburban transportation will always be a safe investment. . . . In my experience, covering a period of nearly thirty years, I have found it better to keep up the quality of service at such times even at the expense of dividends for the time being."

The report of the Executive Committee was read and showed that, after numerous consolidations among members, the present membership is 200 companies.

The committee considered at some length the formation of the American Street Railway Industrial Institute, and submitted a proposed Act of Incorporation. Later in the report, however, the committee reports: "This year has not been one in which to float new enterprises, and hence while the committee has had under consideration the subject of the formation of an Industrial Institute, we believe the time has not yet arrived to do more than commend to all the serious consideration of this important question."

The first report read was on "Power House Engines," The vertical type of engine is recommended; and the compound condensing engine is recommended for large size plants. . . . The vertical type takes less floor space than the horizontal, and in the horizontal type one is liable to have trouble with the piston; in the vertical type this is not so liable to happen.

Mr. Connette, of the committee, discussing the report spoke of the 1,500-H. P. vertical compound condensing engine of the Intramural Railroad at the World's Fair, which has never been shut down an hour for repairs to the engine proper. It has hauled 13 trains of four cars heavily loaded, constantly, all day, while the other engines, those of the horizontal type, have required repairs. The committee appointed to examine the engines in order to award premiums sat for 23 hours watching the engine work. It constantly pulled the whole load for 23 hours, with possibly not over one per cent. variation in the speed. The engine makes about 100 revolutions per minute, and it is said did not vary one revolution when the load was increased from, say, 50 per cent. to full load.

Mr. Arnold, of Chicago: I believe in the vertical engine because it occupies less floor space. The greatest drawback is the first cost. An electric railroad engine, as we have heretofore installed them, is normally an underloaded engine, for we have believed that we should have the large engine behind the generator in order to respond promptly to the overload which is liable to occur at any moment. As these overloads are intermittent and of short duration, we run our engines below their normal capacity the most of the time in order to be ready for the short excessive loads, and as these overloads are of short duration I believe it to be better engineering to allow the engine to work uneconomically during those periods by allowing the steam to follow the pistons a longer time, even to full stroke if necessary, for a few revolutions, until the overload ceases, then dropping back to its normal point of cut-off and operating at this point during the long intervals between overloads. If the generator is properly designed it is capable of standing a short overload of 40 per cent., and by strengthening the frames and main working parts of the engine it will easily give 50 per cent. more than its rated capacity, thus being able to stand the shocks of short circuits and overloads without damage.

Invitations were read from The E. P. Allis Company, of Milwaukee, the Pabst Brewing Company of Milwaukee, and the Intramural Railway Company at the Fair, to the delegates to visit their respective works. It was announced that the afternoon would be devoted to visiting the Allis works and the Pabst brewery and some of the depots and power stations of the Milwaukee Street Railway Company. The convention then adjourned until 8 o'clock.

At the Wednesday evening session Mr. O. T. Crosby was called upon to give his opinion of the relative conditions of the power required in generator and the engines. Mr. Crosby said that there had been a development of conservatism, and to-day when one speaks of a 500 H. P. engine and a 500 H. P. dynamo we may be pretty sure that he is talking about the same things. Mr. Crosby believes that the best practice is that an engine should be at least no greater in capacity than the dynamo to which it is attached, or perhaps the engine slightly lower in capacity. As between vertical and horizontal engines he thinks that it is in any one case a matter of special conditions, and he would not say, generally speaking, that direct connected generators are better than belt connections.

The next paper read was the Report of the Committee on Heating and Lighting of Street Railway Cars. The report considered the various methods of heating and lighting street cars. The conclusion was, considering all elements, that the best method of heating is by a primary heater fired with anthracite coal, operated from the inside of the car; that the best method of lighting is with electricity for electric roads, and gas, for example the Pintsch, for cables.

The Committee on the Use of T-Rails in Paved Streets had no report ready, but there was considerable discussion on the subject, and the great weight of evidence was in favor of such a rail. A number of speakers from various cities of the country spoke from their own experience as to the advantages of the T-rail, and there was little objection to it.

A very careful paper on the use of storage batteries in connection with central stations for utilizing surplus energy for lighting or power was read by Mr. Mailloux. The result of a very thorough consideration of the subject is summed up in ten "conclusions," which we shall further summarize as follows: Great progress has been made in Europe during the last two or three years in storage batteries; they have been introduced in central lighting stations on a large commercial working scale for reserve and regulation, with satisfactory financial results, as a rule. The benefits derived in lighting stations, from a judicious use of storage batteries, are so great that the matter should be carefully investigated for power stations. Indications point to the possibility of realizing an economy in all stations operating 200 cars and less when coal is worth $2 a ton and over. The question of the use of storage batteries is one to be decided by investigation of each special case.

Mr. O. T. Crosby introduced John Fritz, of Bethlehem, but Mr. Fritz asked to be excused from making a speech.

On Thursday afternoon the first paper read was that on Direct Driven Generators, a considerable portion of which appeared in the *Railroad Gazette* last week.

The following officers were elected for the coming year: President, H. C. Payne, Milwaukee; Vice-Presidents, W. J. Stephenson, Washington; J. R. Chapman, Grand Rapids; Lewis Perrins, Trenton; Secretary and Treasurer, W. J. Richardson, New York.

Atlanta was selected as the place for the next annual meeting.

Later Mr. Herbert Claude, of Washington, D. C., was introduced and described the underground conduit system which has been introduced in that city.

The convention closed with a banquet on Thursday evening, at which 250 guests were present, and altogether the meeting appears to have been an important and a jolly affair.

Twenty-eight Passengers Killed on the Chicago & Grand Trunk.

A butting collision of passenger trains on the Chicago & Grand Trunk at Nichols, one mile east of Battle Creek, Mich., on the morning of Oct. 20, resulted in the death of 26 passengers, the fatal injury of two others and the serious injury of 24 others. The wreck took fire and