The Excursion.

The excursion of the *Σ M. E.* Society, of which mention was made in the last issue, and which promised to be a very enjoyable trip, was a complete success, according to the testimony of the excursionists, and entirely fulfilled expectations.

The excursionists, seventeen in number, left Boston at 6 p.m., on Monday evening, January 22, via the Fall River line, for New York. The boat was considerably delayed, and Jersey City was reached on the following day only in time to take the 11.15 A.M. train, by the Bound Brook route, for Philadelphia.

PORTER-ALLEN ENGINE WORKS.

After reaching that city, and disposing of a very acceptable dinner at the Girard, the first visit was made to the Southwark Foundry. Here the party was very kindly received and escorted through the works by Mr. Joseph S. Farrell, general manager, and Mr. Charles B. Richards, chief engineer.

The majority of the students were already familiar with the details of the Porter-Allen engine, which is here manufactured, and most of the afternoon was spent in examining the various machine tools of the company, and in following out the various processes by which the different parts were shaped and finished and finally put together in the engine.

The size of some of the engines in process of construction excited considerable comment. The largest cylinder then in the erecting shop was 44 x 66 inches, with a 44 780-pound bed and an immense disk crank. This engine, an employee stated, was designed for the Lackawanna Rolling Mills, and would run at about ninety revolutions per minute. Another 44 x 48 cylinder was intended to run at one hundred and twenty revolutions.

In another shop was found a number of Clerke gas engines, built in Great Britain, and here set up in order to be tested when running. These engines, it was stated, worked satisfactorily and economically. The governor was a peculiarity, the balls revolving in a vertical plane and acting on a cut-off valve independent of the main valve. By this arrangement an explosion could be produced at every revolution of the crank or omitted for as many strokes as was necessary to regulate the speed. These engines, according to the statements made to the students, are used considerably in England to drive dynamos for electric lighting purposes.

The belting used in connection with these engines was that known as “link belting,” composed of small pieces of leather an inch or so long and half as wide, set edgewise in log-house fashion, and fastened together by iron pins extending the entire width of the belt, and slightly rivet-headed at the ends. The belt was thus continuous, very strong, and sufficiently pliable to work satisfactorily. The gentleman in charge of the engines noted that it was considerably used in England, and that he preferred it to the common belt.

Among the many peculiar and interesting machine tools was a wa-her-grinder, consisting of two rather thick disks of metal, each cut away on the face, leaving half an inch at the circumference. These were placed facing each other on an arbor in a lathe and adjusted to the thickness of the washer. The latter, supplied with emery and water, was partially inserted, and the rotation of the disks caused a uniform and constant rotation of the washer, which bore against a freely revolving wheel outside. Both sides of the washer were thus ground true at one operation.

Another interesting operation was the scraping of surface plates. To obtain a true surface three plates are necessary. These are made as true as possible by using the straight-edge, and are then applied to each other and scraped in the usual manner. By these three plates all the shop face-plates were trued when it became necessary, and on the latter the surfacing of the regular shop work was done.

ENGINEERS’ CLUB.

In the evening a number of the excursionists made a visit to the rooms of the Engineers’ Club. A part of the evening was very pleasantly spent.