

In the above table the comparison at Cincinnati takes account only of a single clock, whose error happened to be known exactly. The time of beginning in that city is also known with exceptional certainty and accuracy. It will not differ more than eight or ten seconds from 9h. 16m. (Cincinnati local mean time or 9h. 53m. 41s.). If we consider Cincinnati and suburban towns within fifteen miles of the city which are supplied with local time from the Cincinnati observatory, we have no less than twenty-two time reports, of which nine are stopped clocks. Two personal observations giving 9:15 local have been rejected because they are multiples of five. One report giving 9:17:45 has been rejected because its author, besides indicating that it refers to an advanced phase, throws doubt on his own observation. Of the remaining ten personal observations one gives 9:15:40, eight give 9:16, and one gives 9:16:30. Of the stopped clocks, three were in the central office of the Western Union Telegraph Co. They kept standard time and were read only to the nearest minute. All three are reported to have stopped at 9:54. The clock in the fire tower is the one whose error was known. Its corrected reading was 9:16:40. The remaining clocks gave (9:15), (9:16), (9:17), (9:17:20), and (9:19). Four of the latter were from the suburban town of Lockland. Reducing to standard time and taking their mean, the ratio of the time-interval by stopped clocks to that by personal observation is 1.26, a result identical with that derived from the clock in the fire tower alone and nearly the same as that in the table. There is reason to believe, however, that this ratio is a little too great for the mean of stopped clocks throughout the entire country, and especially so for those of very distant localities; for if the ratio were uniform, the absolute differences between the two kinds of data would be very wide in remote regions and small near the centrum. This is not the case. The absolute differences at very remote localities are very little, if any, greater than those at the middle distances. This difficulty prevents us from assigning any specific value to the correction and from determining its probable error. Nevertheless the comparisons just made indicate that the systematic error is probably of such magnitude that, if due allowance were made for it, the corrected result for the stopped clocks would not differ much from those of the preceding groups. While this group furnishes evidence which strongly supports the approximate correctness of the results of the other three it cannot be a source of greater precision nor can it furnish the means of reducing the final probable error.

Ratios.	Weights.
1.29	2
1.52	1
1.26	2
1.34	1
1.15	1
1.22	2
1.28	