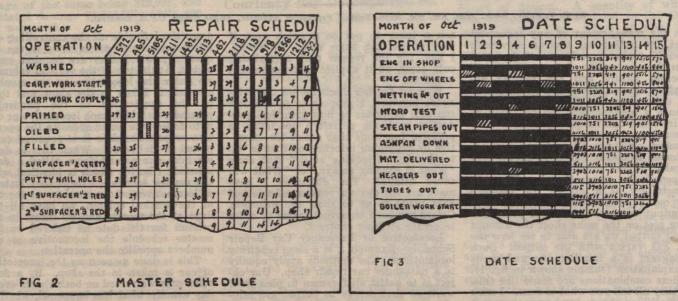
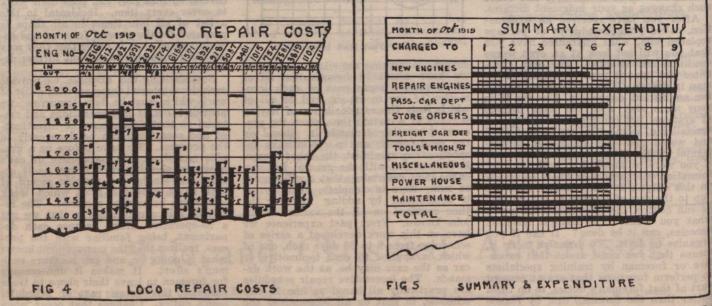
continuation of the first example in that it concerns costs. It is important that we know certain detail costs at current periods. Costs do the shop little good if they come when the job is complete and away from us. Our proposition then is to keep track of locomotive repair expenditure in order to keep the cost right. The method is suitable for all classes of In each locomotive cost column, a red cross line is drawn at a point opposite the estimated cost of the job. An estimate is made for each locomotive based on an average in the case of straight repairs, as soon as inspection is complete, and which includes extra allowances in the case of extra or special repairs. Now, when an executive looks at the chart, he lyzed and acted upon before the question is asked.

Cost of Manufactured Material—Example 3 concerns the efficiency and cost of detail manufactured material. Our desire is to know the efficiency and cost of each order up to date, during its progress through the shops. The method described is used by manufacturing con-



work where average costs are maintained and used as a base for expenditure. It is not recommended in this form for manufacturing of a small, multitudinous, or varied nature.

The chart shown in fig. 4 is a graphic representation of current locomotive repair costs. The method here also would apply to passenger equipment costs. On the left is a scale of dollars large enough to cover the anticipated range. Each vertical column is headed with the locomotive number, the date it came in the notes particularly those that have gone past the red mark and by consultation with the locomotive master schedule (similar to chart 2) he sees what has happened, when it happened and the progress of that particular locomotive. He is then in a position to act if his judgment indicates the cost is abnormal. It will be noted that short thin black lines extend from each locomotive cost line, at more or less irregular intervals, with a number close at hand. These lines are to indicate the amount added each day, cerns which have found that the way to control costs is in the shop while the job is in progress. It is applicable, in a form adapted to railway back shop manufacturing, and is a real way to keep these costs right. It consists of a job cost sheet, and is kept and entered up in the shop office. These sheets are kept in loose leaf book form, and the duties of the cost clerk are to enter in the proper column, from the daily time cards, the costs incurred the previous day. Thus by noon the cost of each order, up to the



shop, and the class of repair it is getting is also inserted small for reference. By arrangements with the cost department these daily costs are given a preference, and are supplied the second day after they are incurred, on a special form for the purpose, and on the cost chart a black line is extended under each locomotive daily, to show total cost to date. and the number represents the date. We can thus see whether the labor expended has been irregular, or whether it is a steady growth. This is a clear indication of good or bad organization in the shops. Very great use can be made of this chart. It shows poor distribution of labor in detail and enables conditions that bring about high costs to be thoroughly anaprevious evening, should be entered. On each sheet is detailed the standard method of doing the job and the standard time allowed for each operation. This information is obtained from the production department, which develops the correct method, in conjunction with the shop engineer and foreman of the department, who, at the same time, recommend such