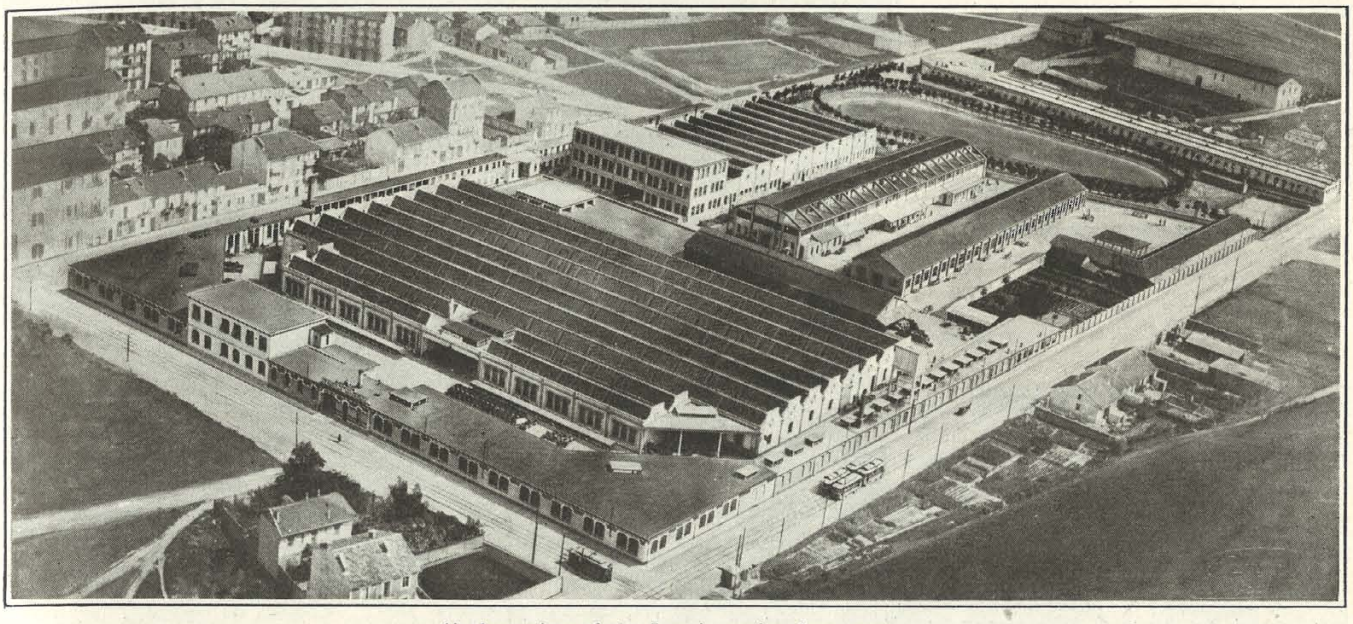


Airplane view of the Lancia engine department

Features of the Lancia Plant and Organization

By J. A. Lucas

TWENTY years ago, when the automobile industry was still young, Vincent Lancia started the factory that now bears his name. Aiming at mechanical perfection and comfort for the user, rather than at the production of cars in large quantities, each detail of construction naturally received more careful attention than is possible where a product is to be manufactured to sell at a limited price. Although building for a limited market, the growth of the plant has been steady and now covers an area of about 240,000 sq.ft. and employs 2,500 people.

In spite of his success, Mr. Lancia still retains personal control of the plant, both in technical and administrative lines. So great is his tenacity of purpose that once he conceives an idea for improvement, he clings to it until repeated tests convince him that he is on the wrong track. These tests frequently disclose ideas and devices that add much to the ingenuity of design found in the Lancia car, some of which will be described in later articles. Some of these ideas have made the Lancia car unique.

There is no complicated system of executives or management. Mr. Lancia deals directly with his shop superintendents and holds each responsible for the results obtained in his department.

Each department has a superintendent, a general foreman, and several head workmen, the latter being held responsible for the quality of such important parts as crankshafts, connecting rods, cylinders, etc. Each department is practically independent and has its daily program of production. The department foreman is responsible for the machinery, material and personnel, and has full power under the superintendent. The duties of each executive are clearly outlined.

Every morning Mr. Lancia receives a short report from each superintendent and general foreman, each giving a brief account of his work and receiving his orders for the day. The superintendent and foreman confer as to facilitating the work and then return to their respective departments. All verbal statements made at the meeting are put into writing as soon as possible in order to avoid any doubt or confusion later. Instructions are made definite. Time and costs on previous jobs are always available by the statistical department for comparison purposes, so that past and present production costs can be readily compared.

The purchase and storage of materials receive careful attention. Money is saved by regulating purchase to keep pace with consumption so far as possible. Jigs and

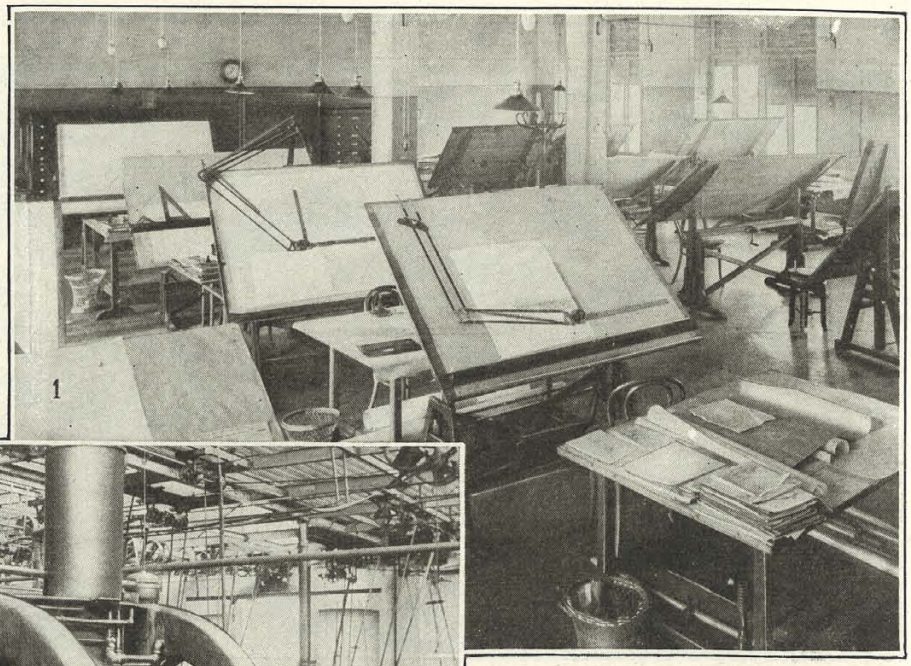


Fig. 1—Engineering department and drafting room. Drafting machines and the type of tables in use are to be seen in this view. Note the individual lights over each drawing board and the reflected illumination from the ceiling

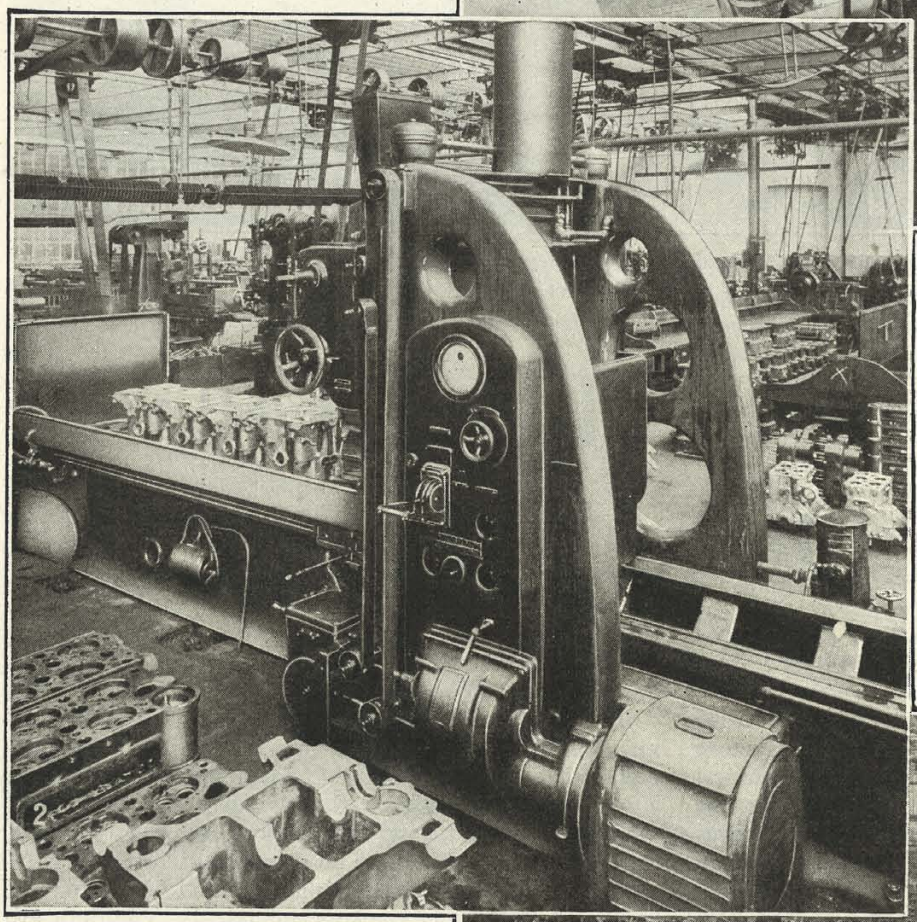


Fig 2 — Large, planer-type grinding machine for finishing the surfaces of cylinder blocks. The power consumed by this machine is indicated by a wattmeter built into the machine. The department is heated by overhead radiators having circular ribs

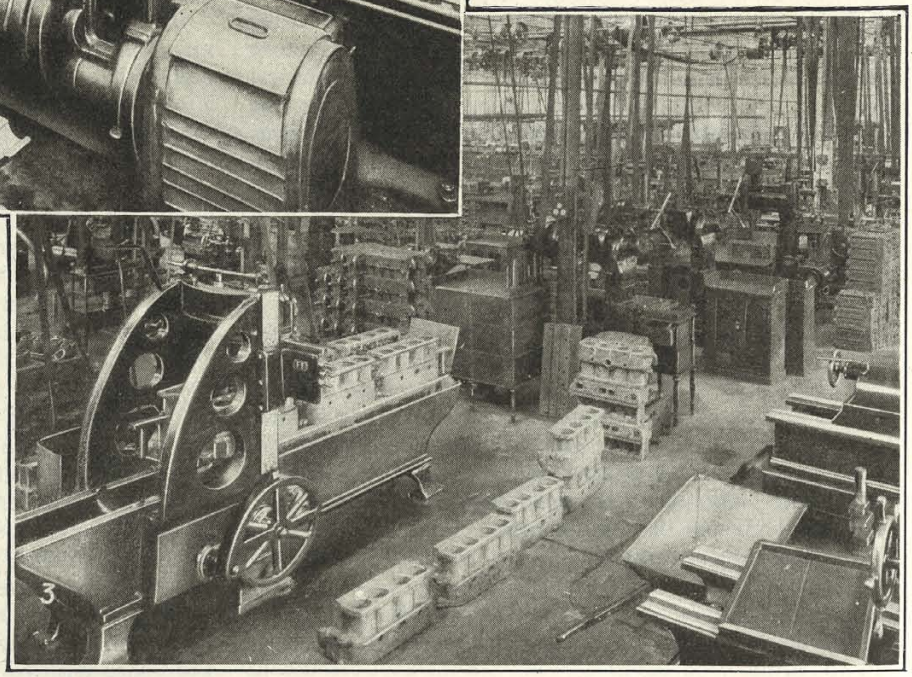


Fig. 3—Straight-line cylinders being planed on their mating surfaces. This method is in marked contrast to that employed in plants where the production is large

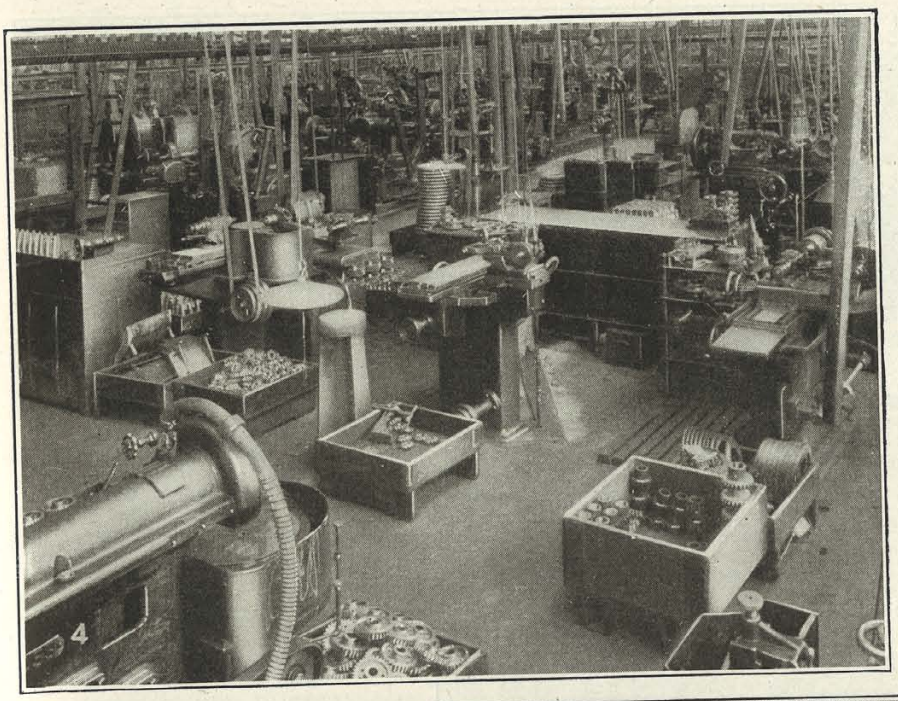
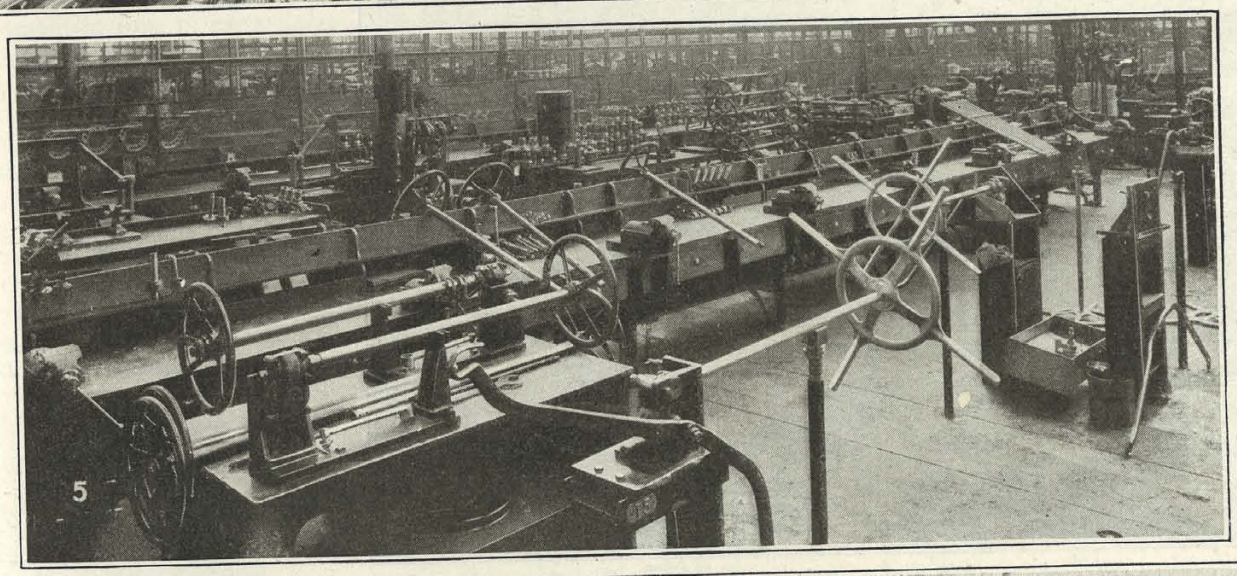


Fig. 4 — Gear-cutting department for spur, straight-bevel and helical gears. There are some grinding machines in this department, on which the faces of gears are ground

Fig. 5—One of the fitting departments showing the type of benches and the equipment in use. The steering gears in the foreground are being worked in. The running condition of the worms and gears is indicated by feeling



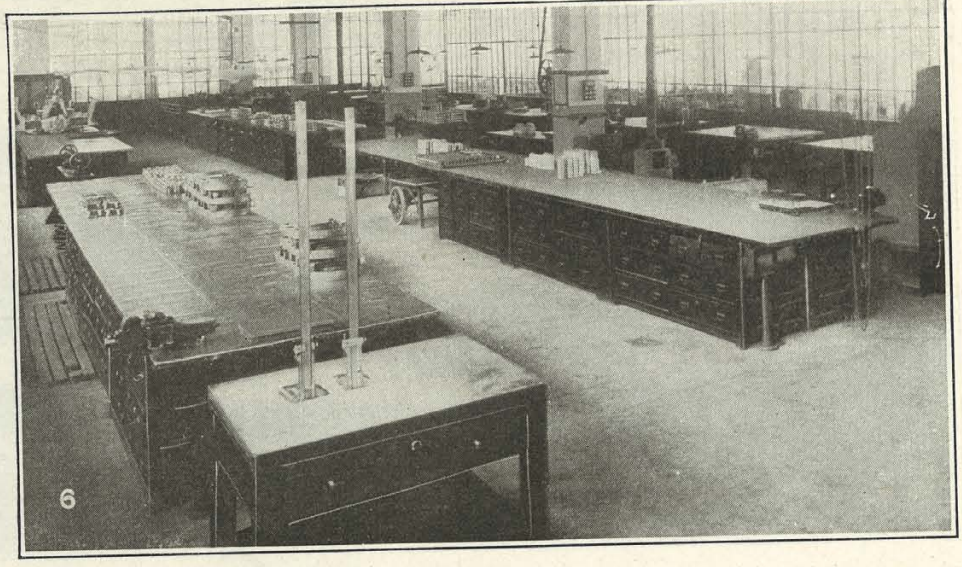


Fig. 6 — The final inspection room for finished products. A very complete equipment for inspecting and checking all finished parts is contained in this department

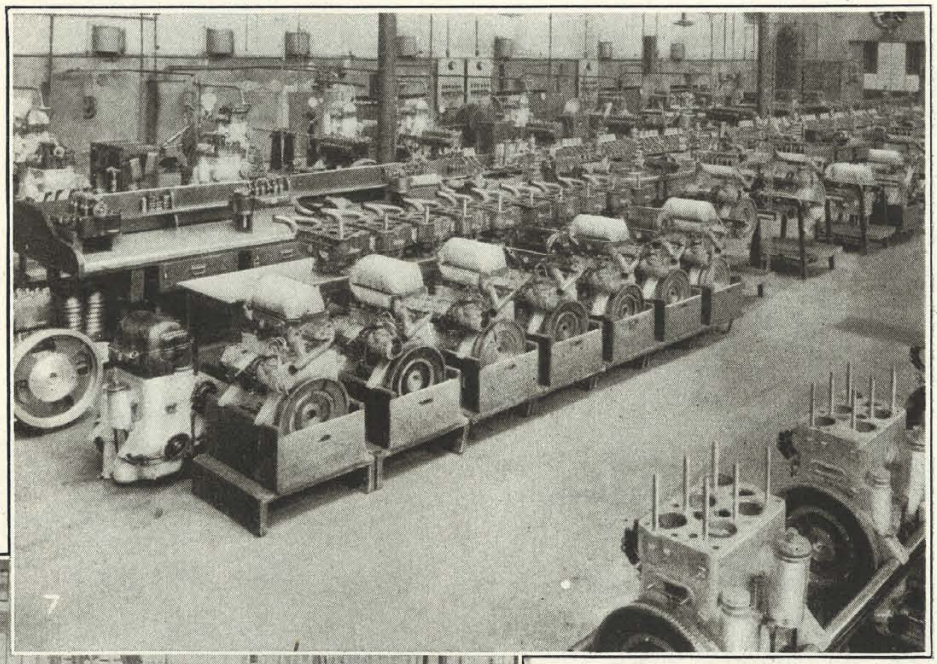
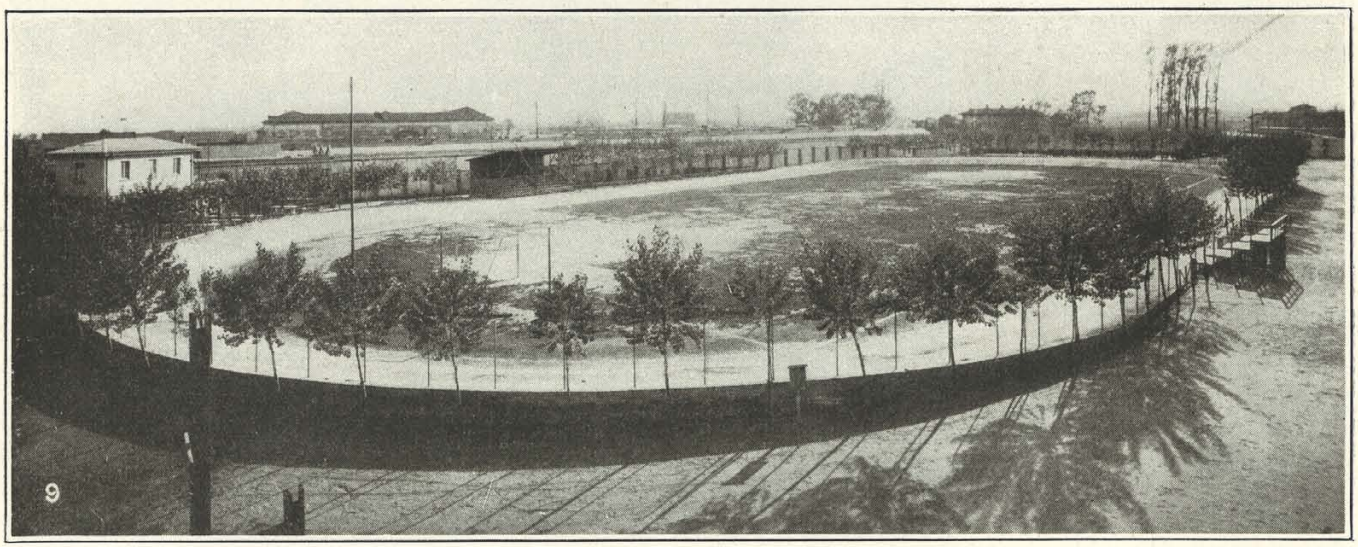


Fig. 7 — Assembly and test room. The engines in the foreground are ready to receive the cylinder heads. Those in the center are ready to be tested, while the ones against the wall, at the left, are undergoing the running test

Fig. 8—Parts gathered for assembly. Beginning with the connecting rods, at the left, there are crankcases, cylinder blocks and other parts ready to be assembled in the aisles at the right

Fig. 9—Workmen's club house and athletic field. Every day after working hours and on holidays, the attendance at this place of recreation is very large



fixtures are designed, built, inspected and delivered to the foremen ready for use.

Suggestions for the betterment of either the plant, the production or the product are encouraged. All such suggestions are forwarded to a special department and all are answered, with comments as to their utility or lack of it, and the reasons given. When found useful, the reply is accompanied by a cash bonus or prize. The suggestion system has proved very successful, not only with direct reference to production, but also in disclosing those who have ideas and initiative. One department controls the movement of material to all other departments. Its schedules are based on sales requirements and on the morning conferences of department heads. Its function is to see that the necessary material reaches each department in time to meet its schedule. This control extends to all units and to sub-assemblies. Inspection begins with rough material and is carried on throughout the entire manufacture. Units are also inspected before sub-assembly and again when the assembled units are mounted in the chassis. Parts that are affected by changes in temperature are inspected in rooms heated to a standard temperature. The inspectors are especially trained for their work by a superintendent, and their inspection is very rigid. Anything that does not come within the limits set by Mr. Lancia must be discarded, whether it be a single piece or an assembled unit. Tolerances are set very carefully and are strictly adhered to. As an example of the close touch Mr. Lancia keeps on the output, he makes it part of his daily duties to drive a newly assembled car on the road, and in this way keeps a personal contact with the product being turned out day by day. A decided novelty found in the Lancia shops is the 6-page daily newspaper. It contains news and information relating to all departments, and is delivered to the desk or locker of each employee one hour before starting time. The paper contains an outline of the production problems of the plant. It points out the needs of each department, gives the surplus material if any, tells about new machinery, changes in shop personnel or methods, and keeps every worker in the plant posted as to his department and also as to the whole plant.

Vincent Lancia
Founder and President

F. Pallavicini
General Superintendent

And the paper is read. For each employee is questioned frequently concerning various articles or statements that have appeared in it. These questions are not confined to the news, but are also asked regarding different phases of the work in the plant. This necessitates each man reading the paper regularly. The whole plan has worked out well, both as to securing the interest of the men and as an aid to efficiency.

Special loose-leaf bulletins are issued to the foremen and to the workers, by the department superintendent's secretary. The bulletins cover rules of various kinds that are enforced in the shop. They include discipline, length of service, rules of a technical nature, and also general rules. All are more or less ironclad and of a military nature that must be obeyed without comment.

Workers are divided into several classes. Men who prove themselves more proficient than the average are given a higher grade of work and better pay. They naturally strive to get into the higher classes, thus developing initiative and, at times, executive ability. Draftsmen, tracers, layout men, inspectors, and operators on highly specialized machines are in the higher classes. Before a worker can get into one of the higher classes, he must be recommended by the shop superintendent. And before advancement can finally be made, he must have proved his worth by four successive weeks on the work of a higher grade. Neither a foreman nor a head worker can offer or suggest advancement of a worker, this being the sole prerogative of the superintendent. Should a worker in the upper class fail to perform his work satisfactorily, he may be either demoted or laid off.

A bonus, or premium, is also given to workers who are particularly worthy. It may be given for good conduct and dependability, increased production, better quality of work, or for other reasons. Bonus, for whatever cause, is paid monthly.

Shop bulletins are circulated frequently. They are clear in tone and leave no doubt as to their meaning. It is felt that they aid in maintaining discipline and in increasing production. Naturally all try for the bonus, because it means an increase in compensation that may be used for any purpose desired.

New Automotive Developments

THE automotive industry, owing both to its development as a new industry and the large demand for its product, has had a tremendous influence on all manufacturing. Not being handicapped by tradition or by old plants, it picked the best machining methods available, improved them in many ways, and gave them every opportunity to develop in new plants designed especially for automobile production.

Demand for large outputs made possible the development of new machinery, as well as methods that have increased accuracy and decreased costs to a degree that would have seemed impossible even a decade ago.

Another important development is taking place at present. It is a combination of real vision with new machines, new gaging methods and new ideas as to close tolerances that are possible in mass production. Tolerances that were almost unknown ten years ago, even in toolroom work, are now being demanded of production machines. The result is easier assembly, better running and longer life for the mechanism.