



LINDEMAN
POWER EQUIPMENT COMPANY

A yellow ribbon graphic that forms a rounded rectangular frame around the text. The ribbon starts at the top, goes down the right side, loops around the bottom, and goes up the left side, ending in a tail that points towards the bottom right.

LINDEMAN

**POWER EQUIPMENT
COMPANY**



***A Review and a
Prospectus***

December 20, 1946

TO: ALL EMPLOYEES

All of us who have worked together to develop this Company from just an idea in 1923 to the organization that it is today, may take, I think, humble but justifiable pride in its growth.

Keeping our faith in the future and maintaining our enthusiasm were not easy at times. Discouraging problems buffeted us--disappointments were frequent--but through it all, working as a team, progress was made.

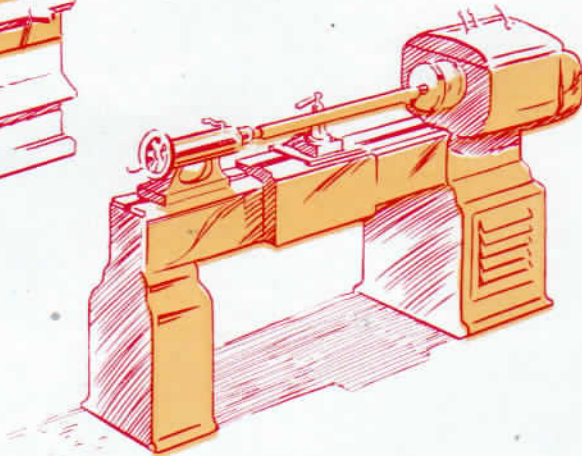
Today, we are entering a new phase of activity. One that holds, I believe, great opportunity not only for us as a Company, but for each of you as individuals. This new development is one that allows us to look forward with confidence. But lest we forget our years of work together that have made this new era possible, I would like you to have, as a memento of the past, this pictorial review of our Company.

With kindest personal regards,



JESSE LINDEMAN





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LINDEMAN
POWER EQUIPMENT COMPANY

POST OFFICE BOX 526
YAKIMA, WASHINGTON

To Our Friends:

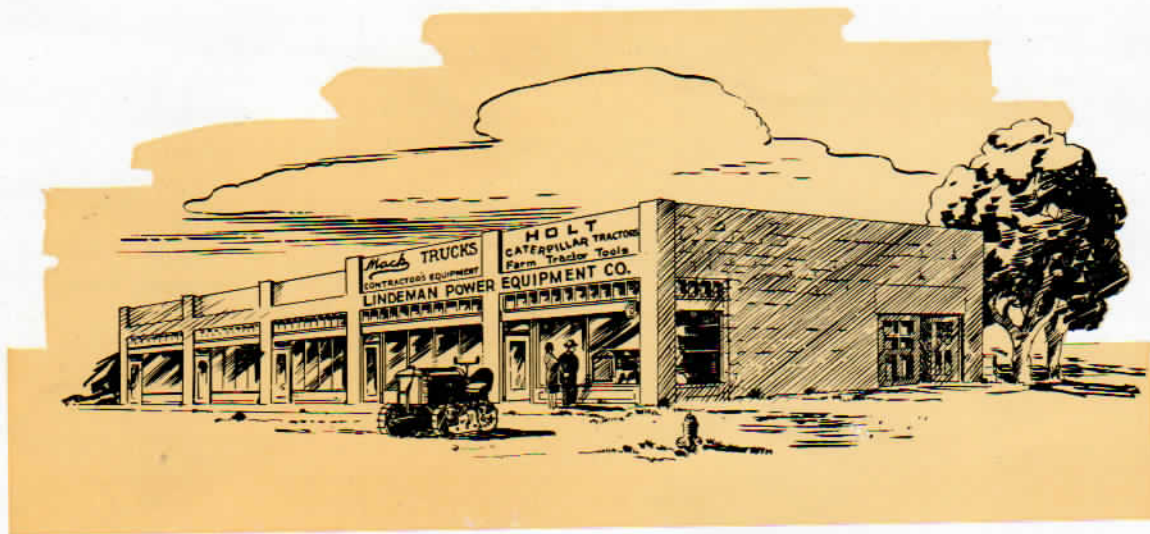
We are very pleased to present this pictorial review of the history, manufacturing facilities, and products of Lindeman Power Equipment Company as well as some indication of our plans for the immediate future.

We believe this book will also illustrate the very important place that a specialized manufacturer, like ourselves, has in the farm equipment industry. Even to those of us who have grown with this company it was gratifying to see compiled, in one book, information on various units of our farm equipment and on the scope of the facilities of our plant today in relation to what they were just a few years ago.

We trust it will be just as interesting to our new friends as we know it will to our old friends.



J. G. Lindeman
President



Need a definite and specific need—was the mother of an idea that blossomed into a practical, working program.

In 1923, Jesse G. Lindeman was a young fellow selling farm implements for a dealer in Yakima, Washington. But, in spite of the orders he brought in and his efforts to develop satisfied buyers, he felt that he was buffeted constantly by a major problem—the farm equipment available was not adaptable or flexible enough. It did not allow sufficient tillage of the land unless it were done under ordinary and favorable conditions—the implements did not seem to lend themselves to unusual situations presented by variable size and contour of land, changing methods of agriculture, and cultural requirements peculiar to different crops.

In those days, thorough disc harrowing of orchards was considered, by many, an essential operation for profitable raising of fruit trees. However, to cultivate the soil close to the trunks without damaging the trees was a slow and tedious undertaking, with the conventional disc harrow. The need for a new type disc harrow existed. An improved design with a flexibility that could be controlled by simple quick adjustments—one that was adapted to this special job for a special type of farmer should be made available. Solving these problems caused by the limitations of existing farm equipment was a project accepted by Jesse Lindeman, and his first step was to make available to the farmer the Lindeman Extension Disc Harrow.

In conjunction with his brother, Harry

Lindeman, the Lindeman Power Equipment Co. was organized as a partnership in 1923. Its purpose then, as it is today, was to manufacture and sell farm implements that would do better jobs for those farmers with special tillage problems. It was not proposed to enter this field in competition to large producers of basic equipment, but rather to augment their activities by supplying the specialized tools needed to accomplish quickly, cheaply, and efficiently unusual but essential farming jobs.

The original Lindeman Power Equipment Co. plant was a small shop for forging, machining and assembling the new Extension Disc Harrow, most of whose parts had to be purchased from other manufacturers. The job was a tough one, with many disappointments, but the reward was fine farmer acceptance for this unique implement.

Hard work coupled with ingenuity, plus a background developed on an Iowa farm, brought this new firm a growing recognition in the field of farm power equipment. Conservative expansion was in order so in 1925 the partnership was joined by another brother, Ross Lindeman, and shortly thereafter, several new orchard tools were added to the line.

Keeping in mind the Company's basic program of developing and selling power equipment designed to help the farmer with special problems, the agency for an orchard sprayer was secured in 1928. In fact the spray pumps were purchased and to these were added a Lindeman chassis and a con-

version unit to allow operation of the pump from the power take-off of the tractor. This combination, with several variations, resulted in a highly mobile and flexible unit, especially adapted for orchards in hilly country. Many of these original spray units are still in operation.

Also in this year Paul H. Austin, the present General Manager, joined the firm. His years of experience in the manufacture and sale of farm equipment, together with his knowledge of production and administrative control, continues to lend far-sighted balance to an aggressive organization.

Growing pains demanded attention. Additional manufacturing space was needed for the Lindeman Disc Harrows, Ditchers, Orchard Trailers, Sprayers, Sub-soilers and various other items in this special implement group. Even though many parts and all castings still had to be purchased from other manufacturers, a new shop, 150 feet square, was built at the present factory site in Yakima, Washington. This arrangement supplied the facilities for rather limited fabrication but complete assembly of the growing Lindeman line.

A body blow was struck in 1930. Not only were the trials of the depression felt by the Company but the death of Harry Lindeman occurred. These staggering factors caused two major changes. First—the partnership was dissolved and the firm was incorporated with Jesse and Ross Lindeman, the principal stockholders, as President and Vice President, respectively, and Paul H. Austin as Secretary-Treasurer. Second—to bolster the sales volume and to stimulate revenue, the Company acted as agents for several large manufacturers of farm implements, although the line of Lindeman special orchard tools was continued. This effort was a necessary expedient to keep in operation when the farm market was at a low ebb. The Company's energy and aggressiveness, however, paid dividends, for a reputation was further established that made possible an even wider scope of activity in the future.

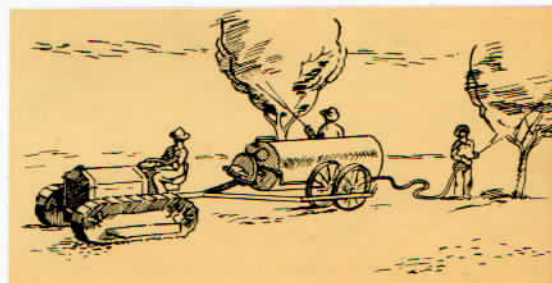
The relationship with the John Deere Plow Co., developed during this period, was one of particularly far-reaching effect. The retail volume developed by Lindeman for the John

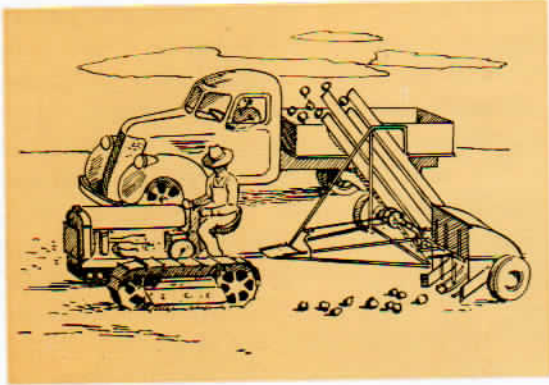
Deere orchard type wheel tractor was gratifying, but the old urge came to the front. This time the desire was to adapt the economical, efficient horsepower of this famous tractor to tougher and unusual farm jobs and resulted in the creation of the Lindeman-John Deere Crawler Tractor. The engine and transmission were purchased from John Deere, but the final drive, steering clutches, track assemblies and some of its attachments were designed, manufactured, and assembled by the Lindeman Power Equipment Co. to complete the Crawler Tractor operating unit.

The production of this tractor and the other established Lindeman farm tools was gradually absorbing the entire energies of the Company. This resulted in two important changes. First—Joe Lindeman, another brother with sound farm experience, joined the firm; and in 1939 the retail business was sold in order that the efforts of the Company could be more completely directed towards the manufacturing of farm equipment. This move was especially desirable since a natural outlet for certain Lindeman products existed through John Deere dealers who are substantial, and thoroughly cover the country's retail farm implement market.

Also that year, at the request of a dealer for Ford-Ferguson Tractor, the Company developed a special two-way plow particularly designed for contour plowing and plowing in irrigated sections. Even the first test model of this plow was so successful that in spite of straining production facilities the demand has never been met.

The following year a contract was secured with Thys and Miller of Sacramento, California, to manufacture for them portable hop picking machines. This was an expensive piece of equipment but so efficient was the design that in many cases the savings real-





ized during one hop harvest amounted to more than its purchase price. In addition to the portable hop picker for Thys and Miller, the Company has developed a much larger stationary picker especially conceived for hop ranchers with greater acreages. It may be that eventually the demand for new hop pickers will lessen, but it is known that a very substantial volume of service parts will be in demand. The nature of their design makes necessary considerable replacements after a season of intense operation.

The ever-growing beet sugar industry, through the Beet Sugar Development Foundation consisting of most of the refiners in the nation, are financially and otherwise supporting the mechanization development of sugar beet culture. In 1942 the Company was approached by the Utah-Idaho Sugar Co. of Salt Lake City, Utah, to build a mechanical beet loader, the idea for which was originated by one of their growers. The machine was engineered and put into production by Lindeman. Since this machine could be sold to others, rather than entirely through the Utah-Idaho Sugar Co., and since its worth was immediately recognized, production was limited only by the capacity of Lindeman Power Equipment Co. plant.

The success of this venture led to discussion with the sugar company concerning the creation of a precision beet planter for the newly developed segmented beet seed. The creation of this machine, with some preliminary work done by the Utah-Idaho Sugar Co., was assigned to the Lindeman designers and engineers, who brought forth the Lindeman Precision Beet Planter with units for applying fertilizer during the planting opera-

tion. After considerable testing to demonstrate its practicality for the farmer, the precision planter is definitely a member of the team of mechanized units being developed for the important field of sugar beet culture.

Pursuing further the original and basic idea of the Company to manufacture special tools for particular farm problems other phases of mechanization of agriculture were entered. After considerable experimenting, and from testing experience gained during two harvest seasons, a complete potato harvester was developed. This machine, in contrast to the conventional type, digs the potatoes, cleans them of soil, and provides for sorting and grading, all in one field operation. A modification of this machine was developed for harvesting potatoes which are to be washed before grading and sacking. This machine digs the potatoes and removes all vines, clods, and loose dirt in the field. In the same operation the potatoes are loaded by a conveyor into trailers or trucks where they are hauled in bulk to a central station for washing, grading and sacking. Information from growers indicates that a most substantial saving is realized over the old hand harvesting method and for large growers especially the lack of dependence on unstable transient labor is most attractive. The widespread and persistent inquiry concerning when and where these potato harvesters can be bought indicates a definite salability.

Another item, crucially needed, with patterns and tooling completed and testing accomplished, is a land roller designed for the heavy soil found in California and other western areas. Lack of manufacturing space and production facilities is the reason this implement, which is the only one of this size and type, is not in the hands of the farmer in appreciable numbers.

After experience gained from the successful manufacture of the Lindeman Universal Hydraulic Tool Bar for the Lindeman-John Deere Crawler Tractor, a hydraulic tool bar of a somewhat similar design is being developed for the Caterpillar line of heavier crawler tractors. This tractor attachment is for distribution through the widespread Cater-

pillar dealers, and again a potentially great market is entered.

But the sensation of the show at a recent conclave of farm equipment dealers in California was the demonstration of the new Lindeman Plantrol Transplanter. The fashion in which it correctly handled the transplanting of thousands of plants in a single day with inexperienced operators gained most favorable commendation of experts in this field. This versatile farm implement which handles any type of plant exactly as that particular plant should be transplanted and provides for the positive application of correct amounts of water or liquid fertilizer in the same operation, is scheduled for current production. The need for it in various localities for different crops makes the demand for it quite constant throughout the years which eliminates peak periods and slack periods, to a large extent, in its production.

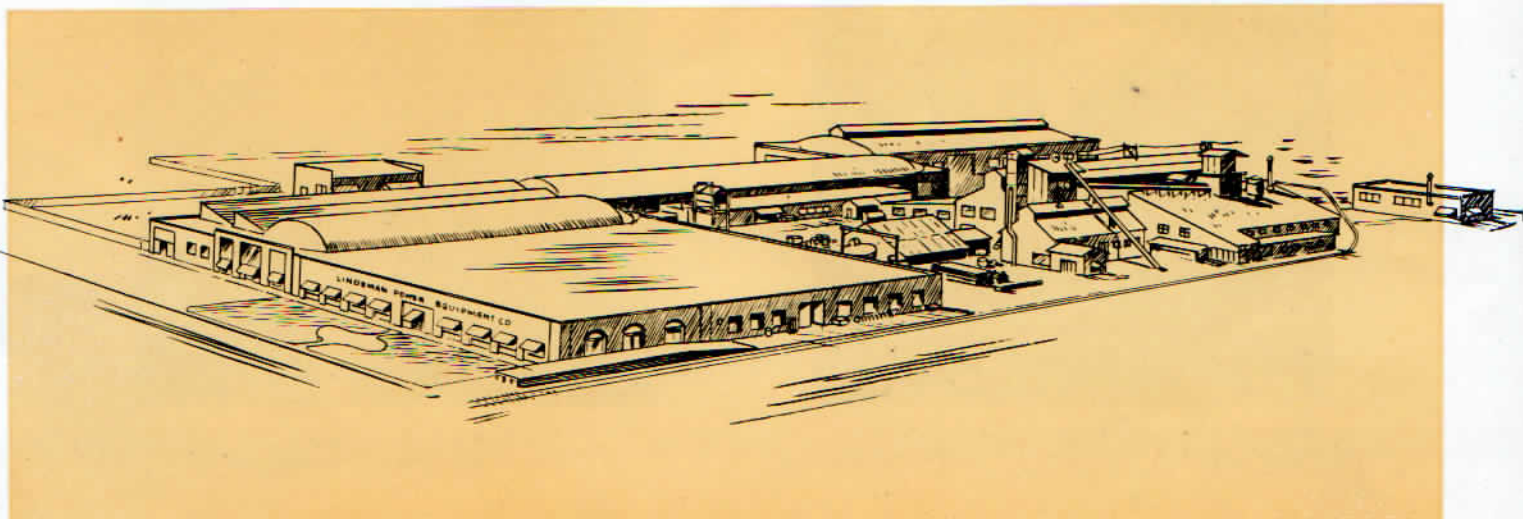
Truly the demand of the farmer for new implements to accomplish his exacting and specialized work, quickly and cheaply, seems unlimited.

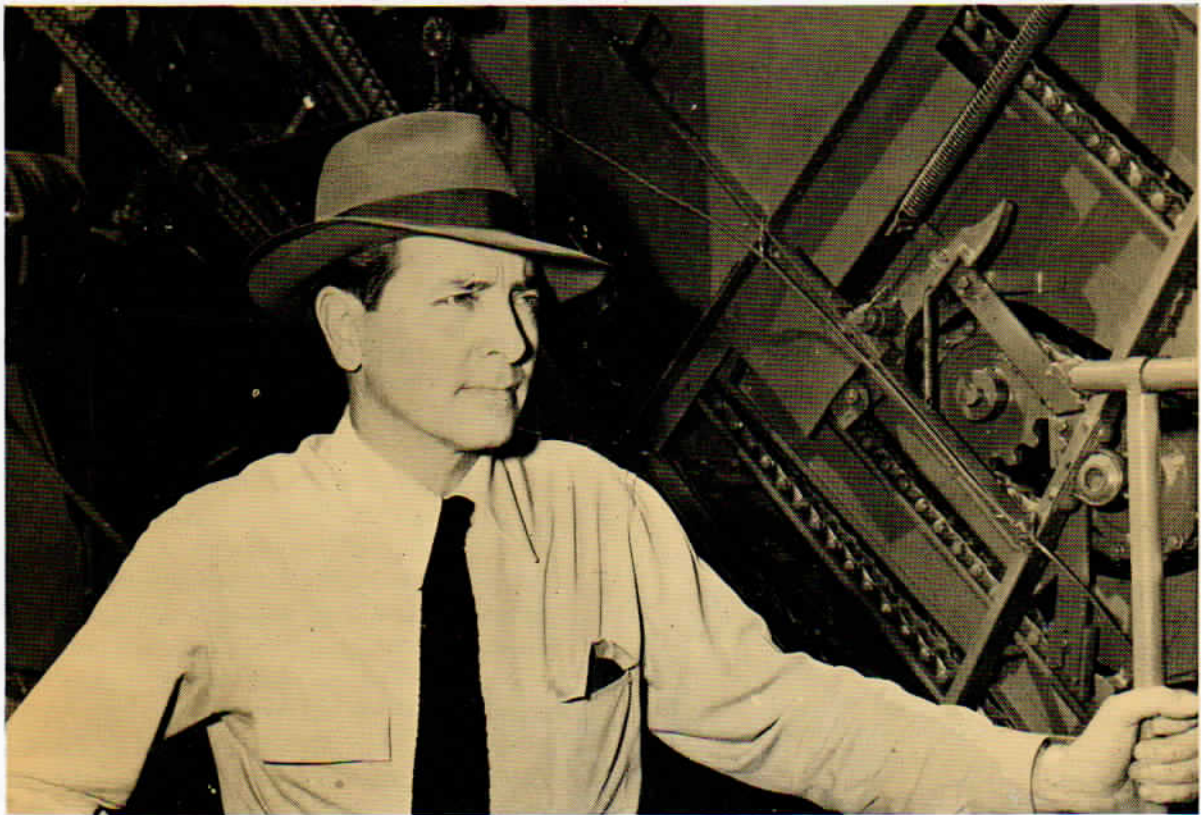
The Company was gratified that its production facilities were so well adapted to assisting in the war effort. The iron foundry, the steel foundry, the non-ferrous foundry, the machine shops, the pattern and tooling sections were substantially used for the production of various items needed by the Puget Sound Navy Yard and the Pacific Coast Shipbuilders. The production speed, efficiency demands, and the terrific output of products

to exacting specifications during this period geared the Company for intense peace-time operations.

However, the pressure of demand by farmers throughout the nation and by agricultural interests abroad for specialized farm implements is so great at the present moment that expansion of present production facilities is a sound and logical consideration. Greater production facilities are needed, right now, to properly handle firm orders in hand for those items now on production schedule. Today, it is necessary to pro-rate the requests for merchandise from dealers in areas in which the Company is now active; orders for many sections must be held in abeyance even though need for the equipment definitely exists and resale is assured; and designing, engineering, patterning, tooling, and testing of various new items are accomplished but are held from the market because of production limitations.

The program for expansion has been thoughtfully but optimistically considered. With great confidence it is believed that post-war years will usher in a higher level of mechanical farm operation with its related and resultant need for specialized farm equipment. To exploit this potential demand, to more completely serve the present market, and to capitalize on our strategic location in relation to the tremendous areas now under cultivation and which are being developed at present the Company has announced its intention to greatly expand the plants at Yakima, Washington.

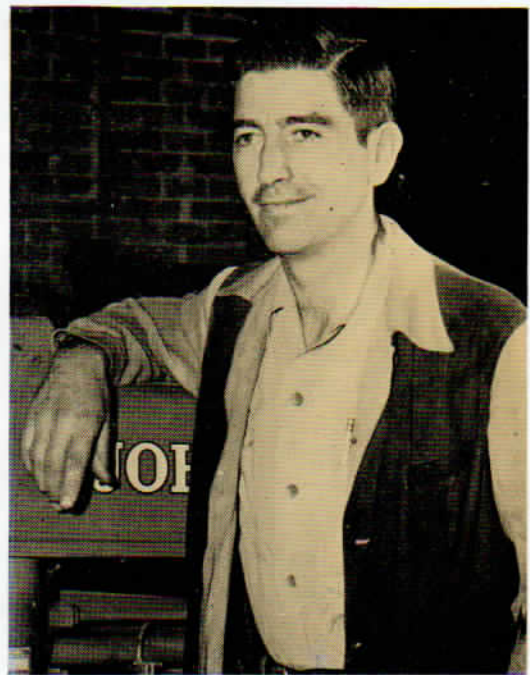




JESSE G. LINDEMAN, *President*
Jesse G. Lindeman is the active executive head of the firm.



ROSS W. LINDEMAN
Vice-President of the Company and operations assistant to the President



JOE F. LINDEMAN
Plant Superintendent in charge of production activities



PAUL H. AUSTIN, *General Manager*

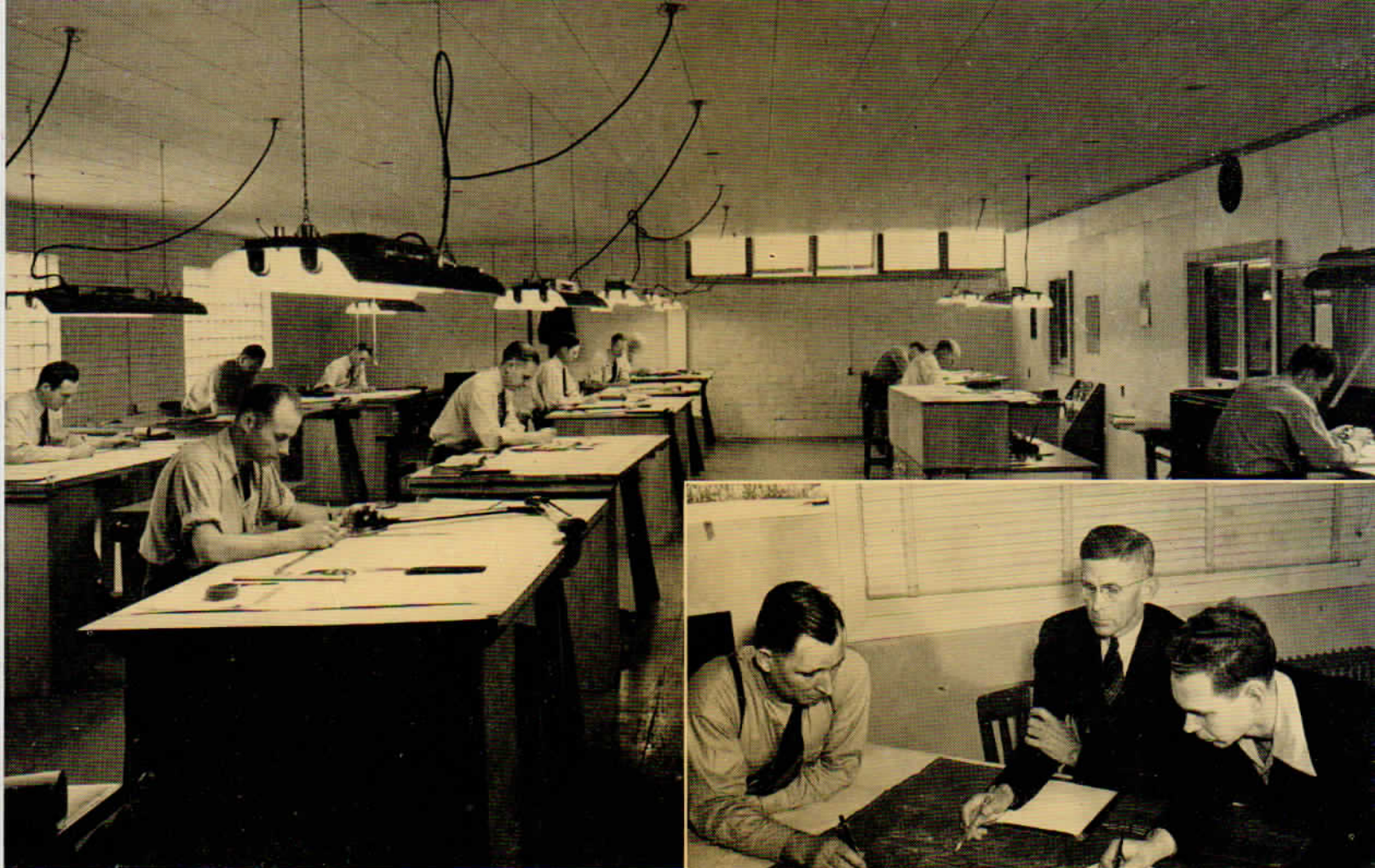
ABOUT twenty years ago Paul H. Austin joined the Lindeman organization. His early background, reflecting actual farm experience, and his later activities in the farm implement and farm supply field, supplied a natural basis for his development with this firm.

To-day, from his analysis of factors affecting each phase of Company activity from the procurement of raw materials to the actual performance of the finished product comes

the programing necessary to coordinate the entire enterprise.

His experience includes a knowledge of the ramifications of the various steps of production, an understanding of the problems of personnel, the direction of accounting and office procedure, and a discerning insight into the field of sales and public relations.

It is his job to lend far-sighted balance to present operation and future planning of the Company.



Above — A section of the Engineering Department
Inset — Curtis V. Edwards, Chief Engineer, (center) and two assistants reviewing a current design.



ENGINEERING

ACTUAL farm experience of Company personnel, cooperative work with hundreds of farm equipment dealers in all sections of the country, personal contacts with farmers raising diversified crops under varying conditions, research with other enterprises vitally interested in the mechanization of agriculture are the sources of ideas for new type farm equipment that will do the farmer's job easier, cheaper, and more efficiently.

But the idea is just the starting point. Is there a real need for it,—can it be built,—is it practical—can it be made inexpensive

enough for wide acceptance? If these questions are answered favorably, proper design, necessary engineering, and the mechanics of production are considered.

Experimental machines are prepared and in conjunction with farmers, dealers, and other agencies concerned, tests are run under actual field conditions. Revisions probably are made, improvements tried, and sometimes the idea is sent back to the drafting room. But when designers, engineers, production men, and the user are agreed on the merit of the new farm implement, it is scheduled for production.

PATTERNS

WHEN a design is approved and the size, shape, and function of a casting are determined the skill of the pattern maker is used. Speed is not paramount here, for precision and accuracy are the essence of his work. From wood he makes, with infinite care, a model of the actual pattern; and after his skillful hands create the designer's intention in minute detail this wooden image is cast in metal to lend permanency to the pattern and to enable it to withstand repeated contacts with molten metal when many castings are made from it.

Again the technique of the pattern maker is used when refining the metal pattern to the degree necessary before it can be used as an element in the fabrication of interchangeable parts. A slight variation from design or a minor inaccuracy in dimension cannot be accepted. A retouch here, a refinement there, checking and rechecking with most accurate instruments, finally makes the metal pattern ready for use.

Around these patterns, molds are made again and again; each mold shaping the molten metal from the foundry furnaces into duplications of the pattern. These rough castings are then ready for the next step in the production line where they will be machined, finished or otherwise processed and prepared to eventually slip smoothly into place in the assembly of the complete machine.



Upper — Skilled pattern makers at their exacting work.

Lower — Two views of patterns that are carefully catalogued and stored.



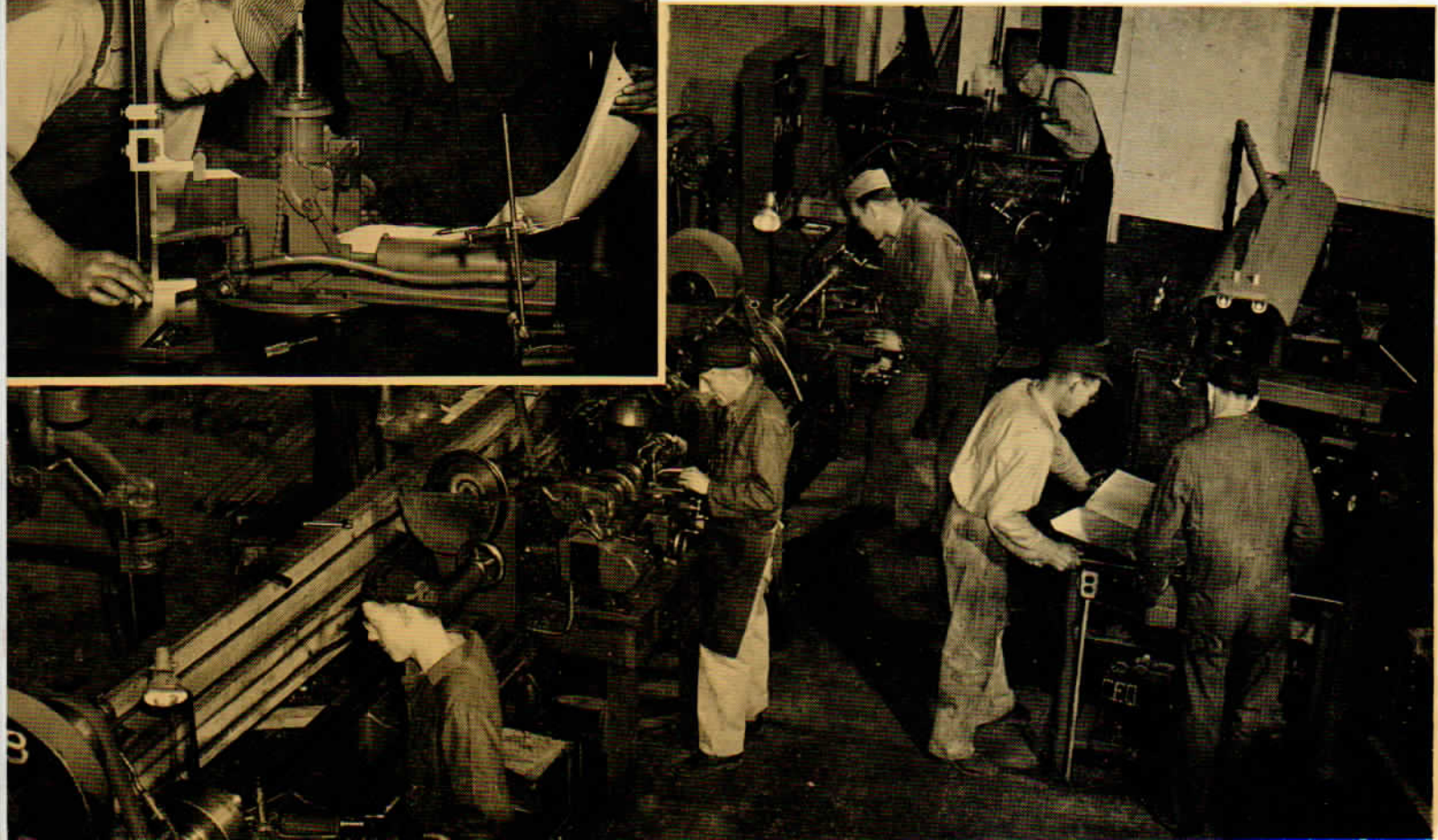
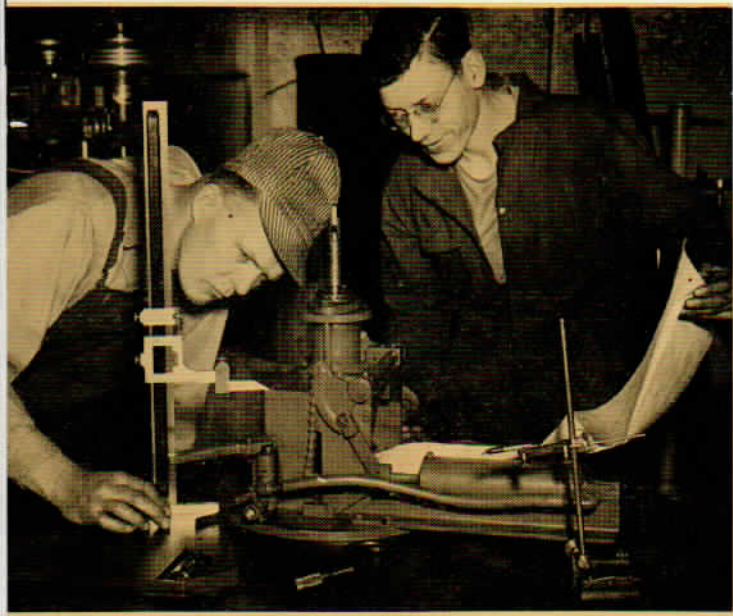
TOOLING

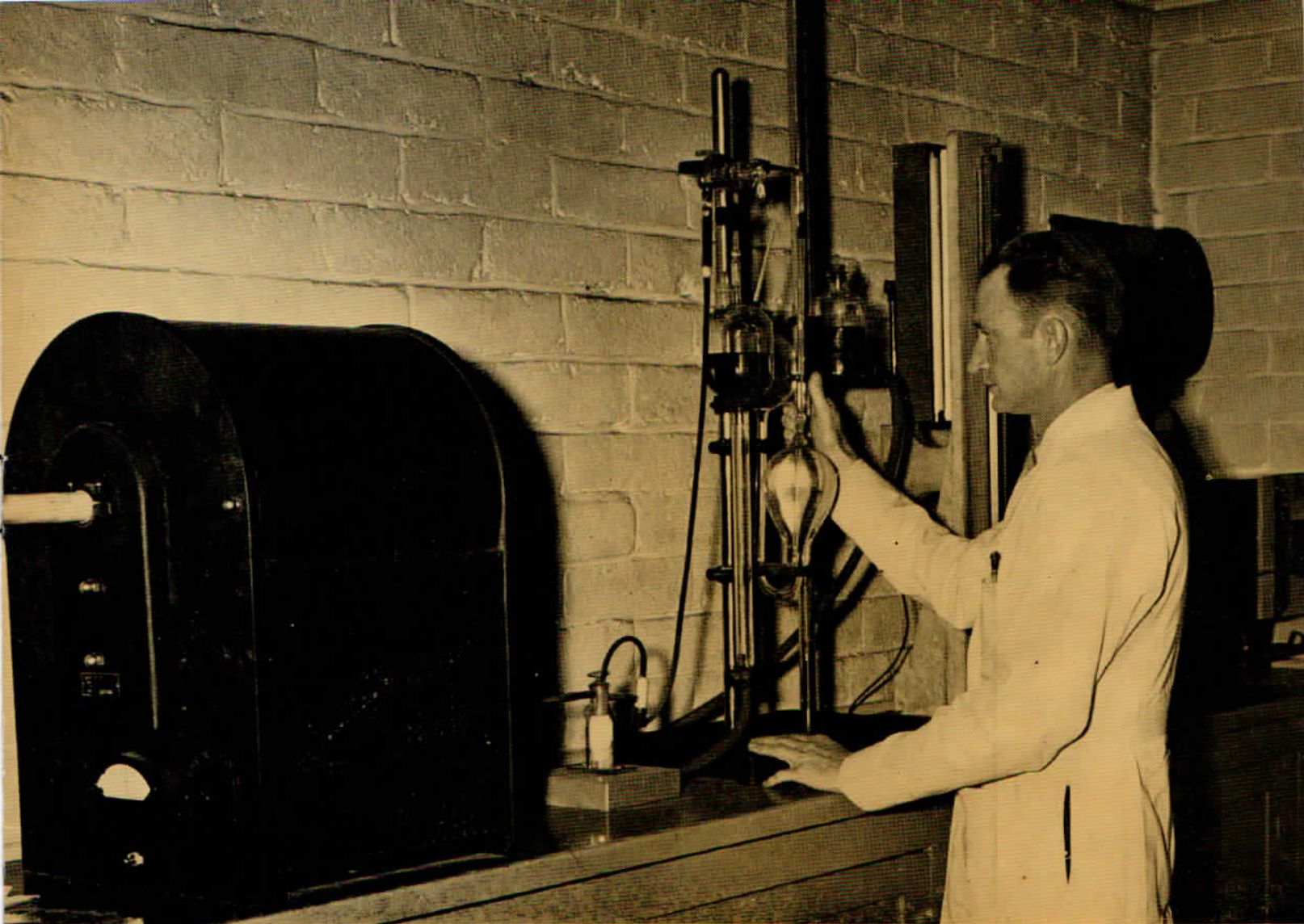
TO ACCOMPLISH the uniform accuracy so essential to successful mass production special tools are required for each operation. The production of a new farm implement or the revision or an improvement on a current model requires, in most cases, new tooling. Jigs, templates, and gauges must be made to assist the plant technician in the fabrication of his portion of the farm implement.

New tools are developed directly from blue prints. The accuracy of the draftsman and the intent of the designer and engineer are raised from paper and transposed into a tangible device to direct the hand of the production craftsman. After the accuracy and precision of each tool is determined from

actual tests it is used in the continued duplication of the part for which it was designed as long as that part is needed. The use of this special tool assures the exact centering of drilled holes, the maintaining of correct tolerances of machined or polished surfaces, the proper positioning of sections for welds, or the correct shape for pressed metal parts. Dependence on special production tools is a precautionary measure that provides for the rolling of part after part to the assembly line correct in every detail. These production aids are used wherever the factor of human error may cause a lack of uniformity that will reflect in the smoothness of assembly or in the ultimate performance of the farm implement.

From the blueprints tools are made to assist in the production of each part exactly according to specifications.





The carbon content of a particular lot of steel is determined by analysis.

LABORATORY

The Lindeman foundries form an important phase in the production of Lindeman specialized farm equipment, but controlling the quality of the material from which these castings are made is the job of the foundry laboratory.

The desired chemical analysis of the metal needed in a certain group of castings is determined before the castings are made. Preliminary tests indicate the chemical content of the raw material, and scrap and ingot are selected that lends itself to the building of

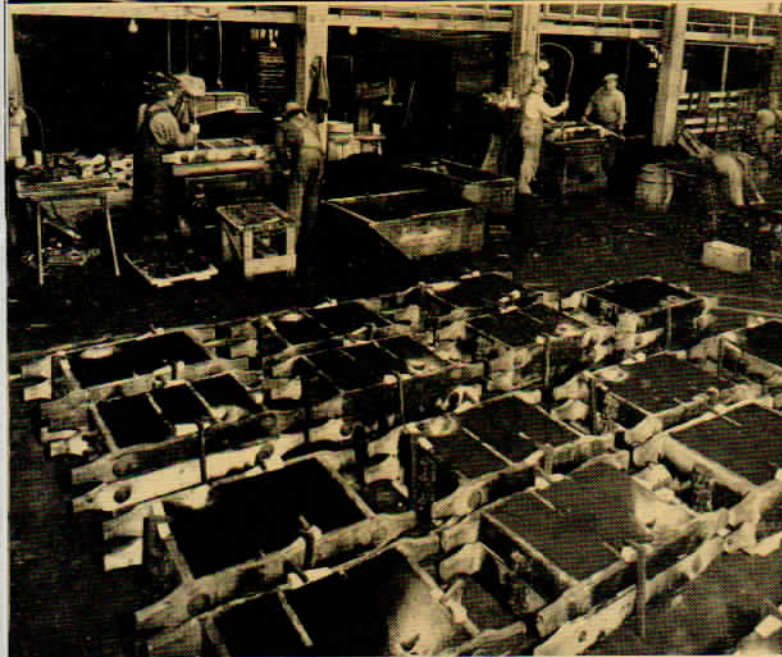
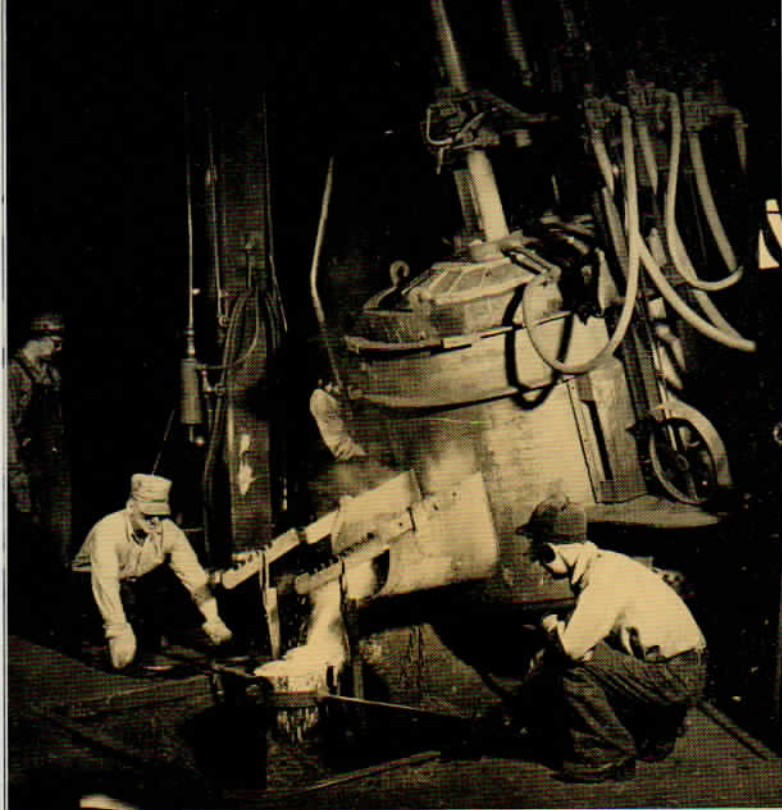
the required formula—then the melt-down is started. As the metal is being processed in the furnace tests are made and the chemical content of the charge is calculated. With allowance made for loss by oxidation under intense heat, exact quantities of the alloying elements are added to develop the formula desired. Just before pouring, the melt-down is again tested to be sure the molten metal, when it cools in the molds, has the qualities necessary for the job it is intended to do.

FOUNDRY

LACK of dependence on others for a supply of the specialized castings needed in the fabrication of Lindeman farm implements is a factor which gives full regulation over factory production schedules as well as a positive control over the ability of the implement to perform on the farm.

A highly mechanized iron foundry, a steel foundry, and a non-ferrous foundry have long been integral units of the Lindeman plant. All molds are made by numerous molding machines with the sand being handled mechanically from the shake-out back through the reconditioning to the storage bins. From the storage bins back to the hoppers, over each molding machine, the sand is carried by belt conveyors. The handling of scrap or ingot through the melting processes, the delivery of the cooled castings for final preparations before delivery to the assembly line reflect modern mechanical production methods.

From the making of the molds around the Company's own patterns to the finishing of the castings, the foundry output is made to the specifications of the designers and engineers for size, shape, weight, and material, and these special cast parts are available when they are needed. The capacity of each cast part to do the job for which it is intended is built into it by the men who feel their responsibility for the finished implement throughout its working days.



Upper — Drawing molten steel from an electric furnace.

Center — Making molds for castings around the patterns.

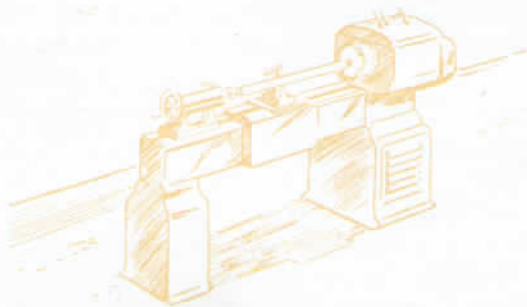
Lower — A sample of the melt-down is taken for the laboratory.

MACHINING

LATHES, presses, grinders, shapers, polishers, drills and a maze of other necessary tools for complete machining work have their place in the preparation of implement parts on their way to the assembly line.

In addition to the finishing of castings, the fabrication of parts from other materials is accomplished in this production department. Shafting is machined; special bolts and screws are made; tracks, pads and frames are pressed; bars, tubes and rods are cut and formed; and a myriad of other particular metal working jobs needed for the final assembly of Lindeman farm equipment are carefully developed here.

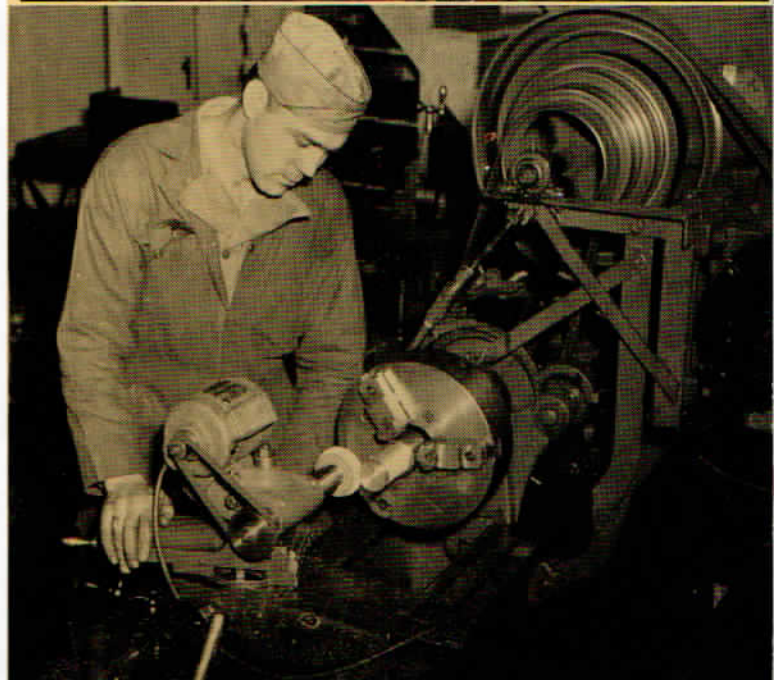
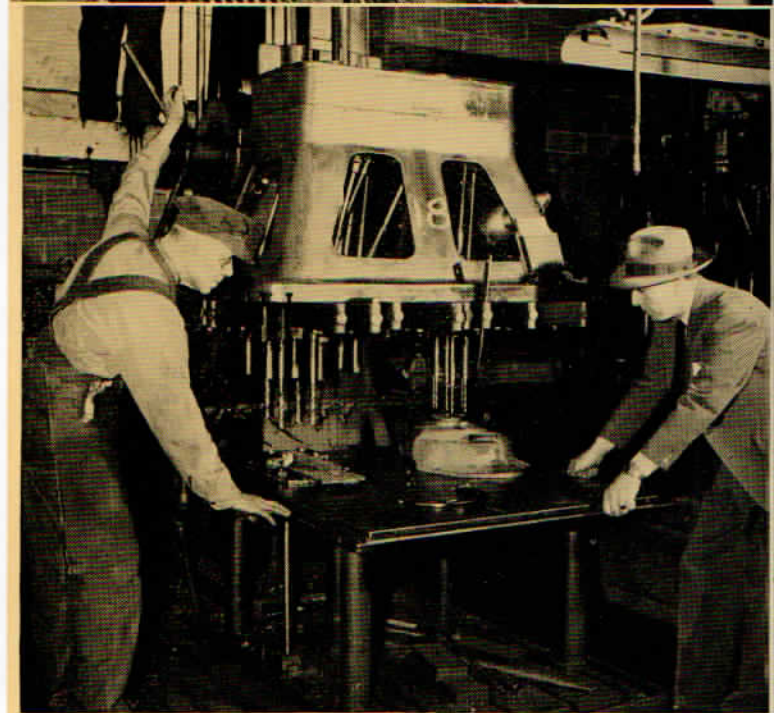
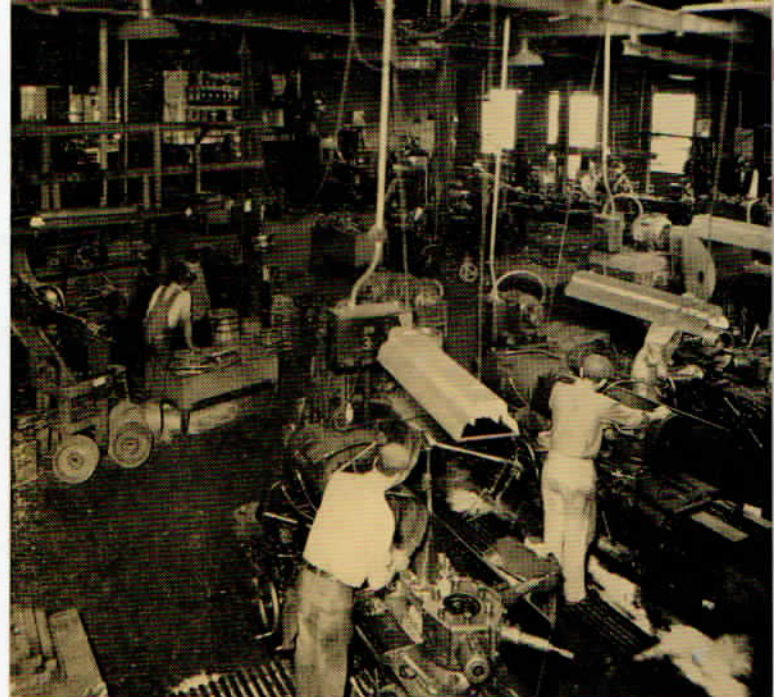
Just because a certain thing has not been done before is no recognized obstacle to the machine shop men. Making equipment for the farmer that is more practical and efficient but with features that lend to its appearance and enhance its salability is the accepted responsibility of the Company. If a new design, a different arrangement, a unique alteration, or an improved finish will make the product more adaptable, workable and saleable, the technique for making these changes will be realized.



Upper—A portion of the busy machine shop.

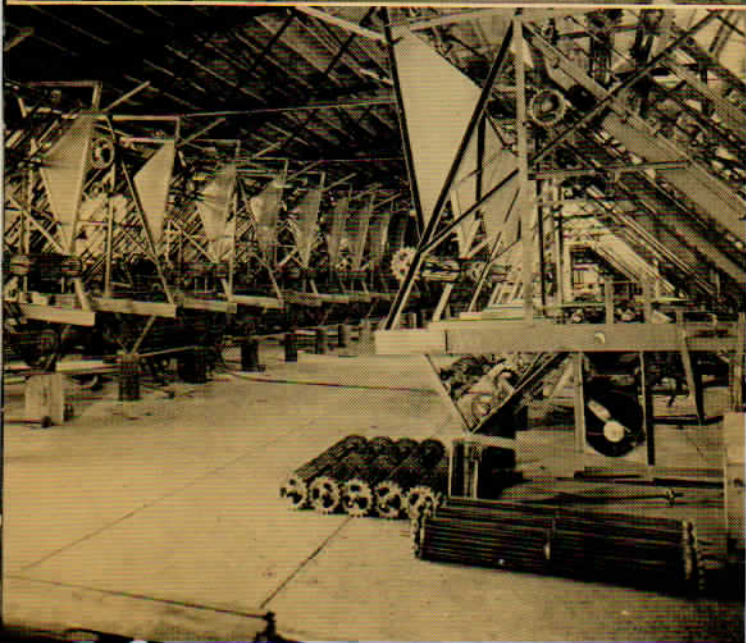
Center—Checking a machine before a drilling operation.

Lower—Finishing a shafting to exacting specifications.



ASSEMBLY

Where the Lindeman-John Deere Crawler Tractor is made ready for the farm.



Thys portable hop-pickers partially assembled.

THE INDIVIDUAL parts and sub-assemblies that are the component elements of a tractor, precision planter, a hop-picker or any other unit of the Lindeman family of specialized farm equipment is an imposing array. It stretches the imagination of the uninitiated to visualize from this conglomeration the finished, productive, and easily operated machine.

The assembly of equipment is a specialized job. Each step of the procedure is analyzed in order that unproductive effort and unnecessary motion may be minimized and also to allow the utilization of the particular talents of individual men on each phase of the operation. The exact placing of a part or sub-assembly, the fineness of its adjustment, the comprehensive testing of the finished unit must be done with practiced skill if desired performance is to be realized.

In this department the vision of the designer and engineer, the craftsmanship of pattern and tool maker, the productive strength and durability of the output of the foundry, and the ability of the production man is made tangible. It is the assemblers who make from the stream of finished material flowing to their hands the highly practical and efficient Lindeman equipment which has been given such gratifying acceptance by the farmer.

