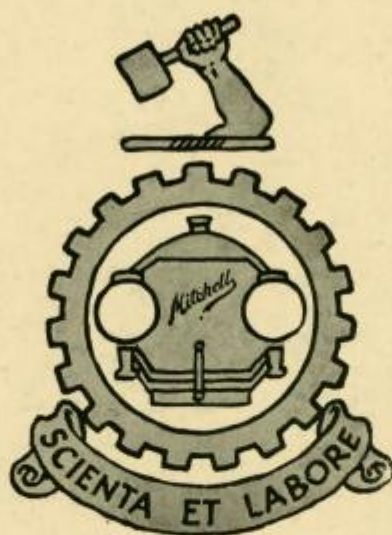


The background of the page is a light greyish-blue color. Overlaid on this is a large, faint, stylized illustration of a car and trees, as if seen through a window. The car is at the bottom, and the trees are in the middle ground. The window is represented by a grid of squares, some of which are a light tan color, creating a pattern of light and shadow.

Making  
the  
*Mitchell*  
*Car*



*Birdseye  
View of  
Plant*



# **Making the Mitchell Car**

**An Illustrated description  
of the Mitchell Plant**



**The Mitchell-Lewis Motor Co**  
**Racine Wisconsin**

# Mitchell-Lewis Motor Company

Successor to

Mitchell Motor Car Company, *and*  
Mitchell & Lewis Company, Ltd.

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## Officers *and* Directors

W. T. LEWIS, Chairman of the Directorate

WM. MITCHELL LEWIS, President and Gen. Manager

HENRY G. MITCHELL, Vice-President

GEORGE B. WILSON, Second Vice-President

G. V. ROGERS, Secretary

F. L. MITCHELL, Treasurer

H. E. REDMAN, Assistant Secretary

HENRY PLOW, Assistant Treasurer

J. W. BATE, Gen. Factory Manager

J. W. GILSON, Sales Manager

## Where Mitchell Cars Are Built

**E**XPERIENCE is the best teacher. All human history declares it. Every individual knows it. Theories are essential, for some of the noblest works of man are the product of theory; but theory must go through the crucible of experience before its utility and its usefulness can be demonstrated. Every year we have new ideas about motors and their construction, but our ideas never become an object of blind devotion. The shop is the final resting place of many a fine theory. The practicability of each must be shop demonstrated before we offer it to the public. In these tests the Mitchell-Lewis Motor Co. is essentially strong. Over a quarter of a century of experience as successful builders of vehicles is its history, its pride, and its greatest asset.

Organization is twin brother to experience. The great industrial plants of the world would never have become realities without organization. Organization may come from the outside or it may be a process of evolution, of growth. The organization of the Mitchell-Lewis Motor Co. has been a matter



*Mr. Lewis'  
Office*



of growth. It is no association of capitalists and engineers without previous experience of association. Those at the head of the organization today founded the business, and the younger men on the firing line of the organization—those who design, plan, build, and sell the output—have gained their experience under the watchful founders' eyes.

Experience and organization therefore, are the two principal factors that make Mitchell Cars what they



*Directors'  
Room*

are—cars of character, reliability, and efficiency.

The raw materials out of which an up-to-date motor car is built may be purchased by any manufacturer, but we doubt if there is in the United States another automobile manufacturer who could



*Exterior of  
Accounting  
Dept.*



*Steno-  
graphers'  
Room*



*Interior of  
Accounting  
Dept.*

produce the equal of the Mitchell Car at the same price.

On what basis is this assertion made?

On the basis of experience.

We know from practical and laboratory tests, reinforced by past experience, just what may be expected from every piece of steel, every piece of brass, every foot of seasoned lumber, every bit of upholstery, every bolt, nut, and screw in every Mitchell Car. There are



*Kitchen*



*Dining  
Room*



*Private  
Dining  
Room*

many thousands of parts in an automobile, and every part must perform its own particular function if the car is to prove satisfactory to the purchaser, and the only method by which the manufacturer can get this assurance is by making all of the parts.





Mitchell cars are entirely built out of raw material in the shops of The Mitchell-Lewis Motor Company. The steel comes to us in long rods or great bars. In this state they are as unlike motor parts as the giant tree is unlike the perfected and melodious piano. Each particular lot of steel is sold to us guaranteed to be of a certain quality—so much carbon, so much silicon, so much iron, etc. We have the greatest confidence in the analysis of the steel makers, but we take no chances. Our own chemists test the metal. We have every facility, appliance, machine, retort, and furnace, presided over by a highly educated technical and practical expert, that



*Drafting  
Room*



*Pattern  
Shop*

*Chemical  
Laboratory*



*Physical  
Testing*



science has invented for the purpose of making such tests. We *must* know if the steel is right. We *do* know that it is right before it goes into the finished car.

Every year our designers will produce some new, essential part. Experience has shown us how we can make an improvement that will benefit the car. After the designer has made his drawing, a blue print of it is sent to the pattern shop. The pattern maker makes a model. If it is satisfactory the model goes to the machine shop. The head machinist has been expecting it. He has seen the drawings. Perhaps he has discovered that he has no tool—no machine, even—that



*One of four  
Receiving  
Dep'ts*



*Giant Shear*



*Steel  
Stock Room*

*Forgings  
Stock Room*



*Detail  
Stock Room*

will make the part. He rebuilds other machines. He makes entirely new tools.

By the time the improved part is ready to be manufactured, a score or fifty automatic machines, costing thousands of dollars, with additional thousands for special tools, are ready to daily manufacture the allotted quota required for the 75 complete cars turned out every twenty-four hours.

The Mitchell-Lewis policy has been to manufacture on a large scale. Experience has proven that the best machinery cannot be produced in small shops. To

*Iron  
Foundry*



*Brass  
Foundry*



work steel, gigantic forces are required, and it is only in those plants equipped with modern devices and the

most powerful machines designed by the best engineers and guided by skilled mechanics and combined with ample capital, that dependable automobiles are produced.

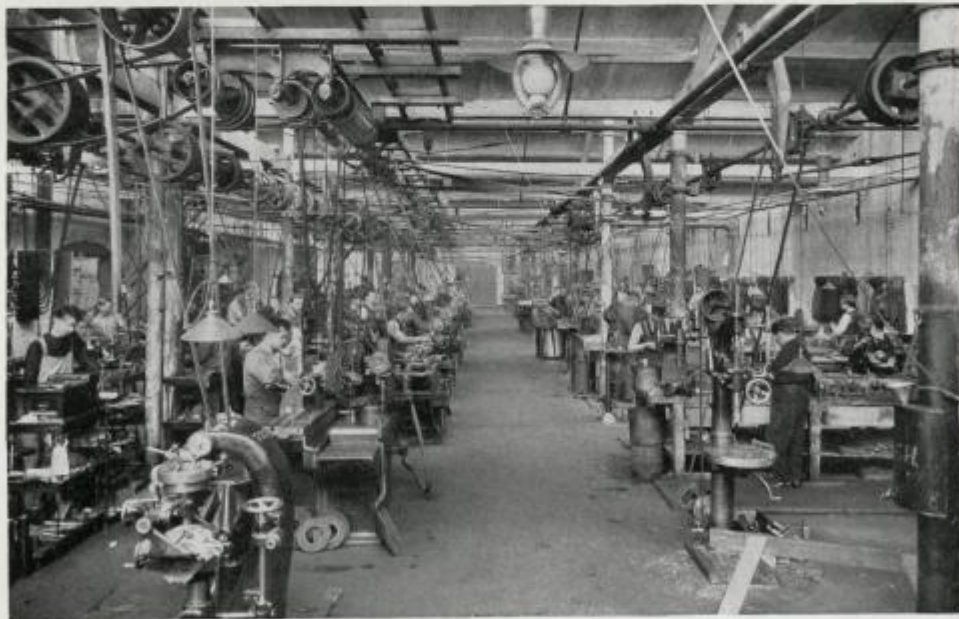
The plant of The Mitchell-Lewis Motor Co. is



*Gear  
Cutting  
Machines*

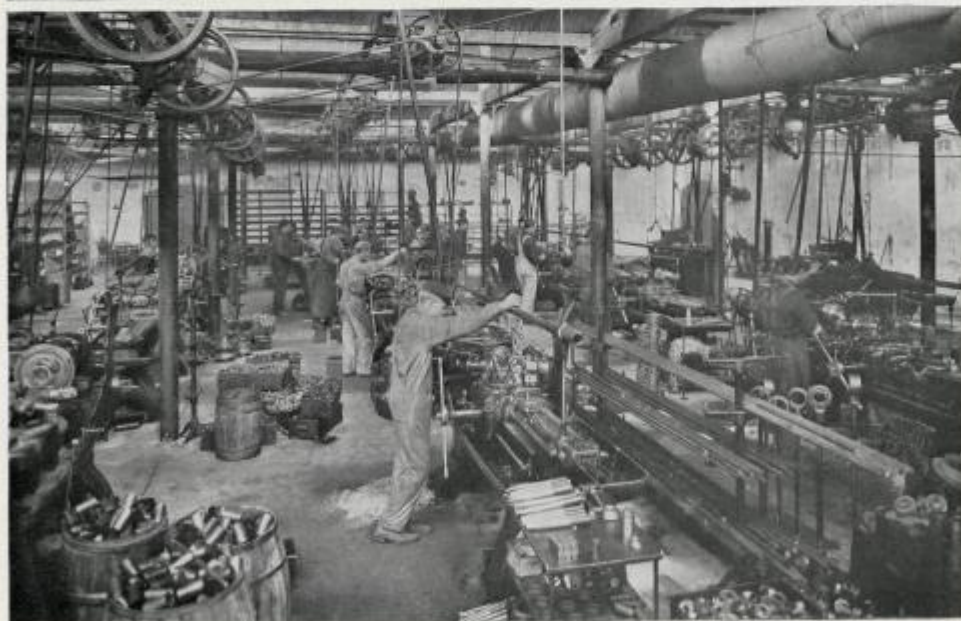


*Machine Tool  
Dept.*





*Main  
Machine  
Shop*



*Automatic  
Machines*

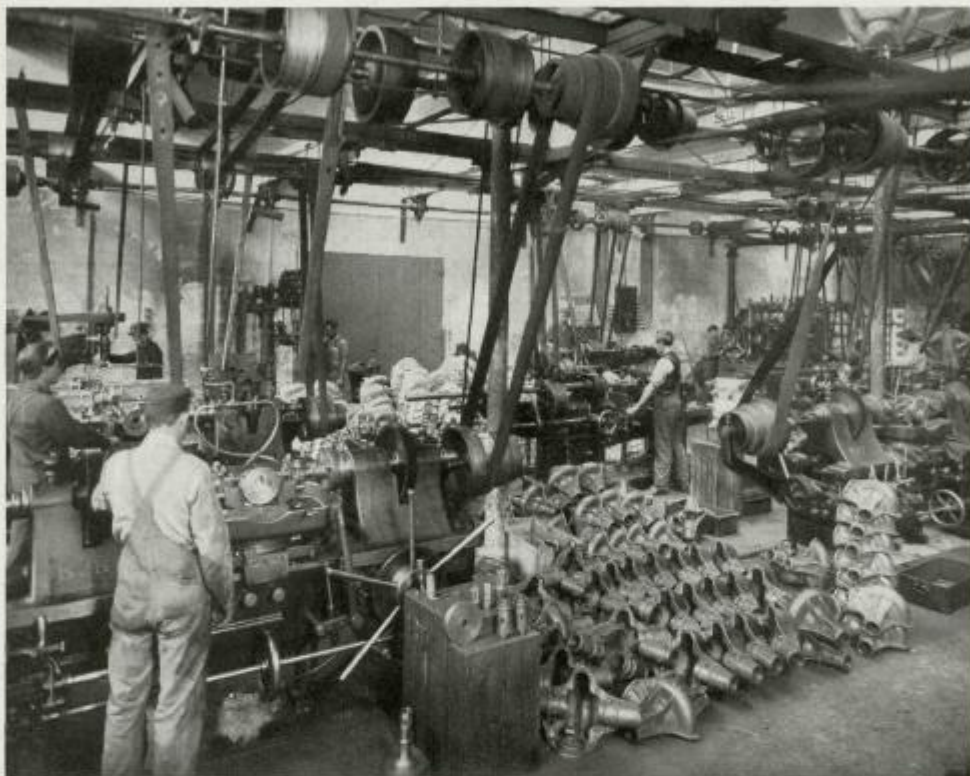
*Boring  
Machines*



*Multiple  
Drill*



*Drill  
Presses*

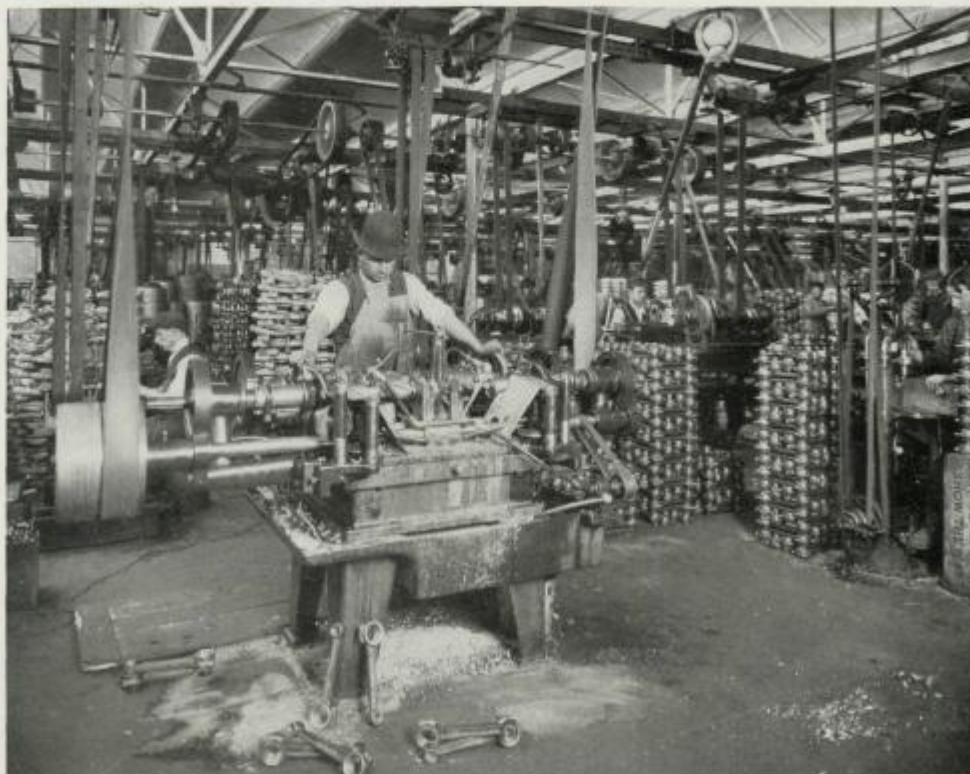


*Special  
Mitchell  
Boring  
Machine*

located just outside the city limits of Racine, where the Company owns a tract of seventy-five acres. The buildings are of a harmonious type of architecture. They are built of reinforced concrete, and are



*Boring  
Connecting  
Rods*



well lighted on both sides and from above with thousands of windows and skylights. The total floor space aggregates 2,300,000 square feet, which is practically the floor space of the gigantic State street store of Marshall Field & Company in Chicago.

Two railroad lines touch the factory site, and in other respects the situation is ideal for a factory where careful, painstaking work is required. The labor problem—and it is a problem in these days of high

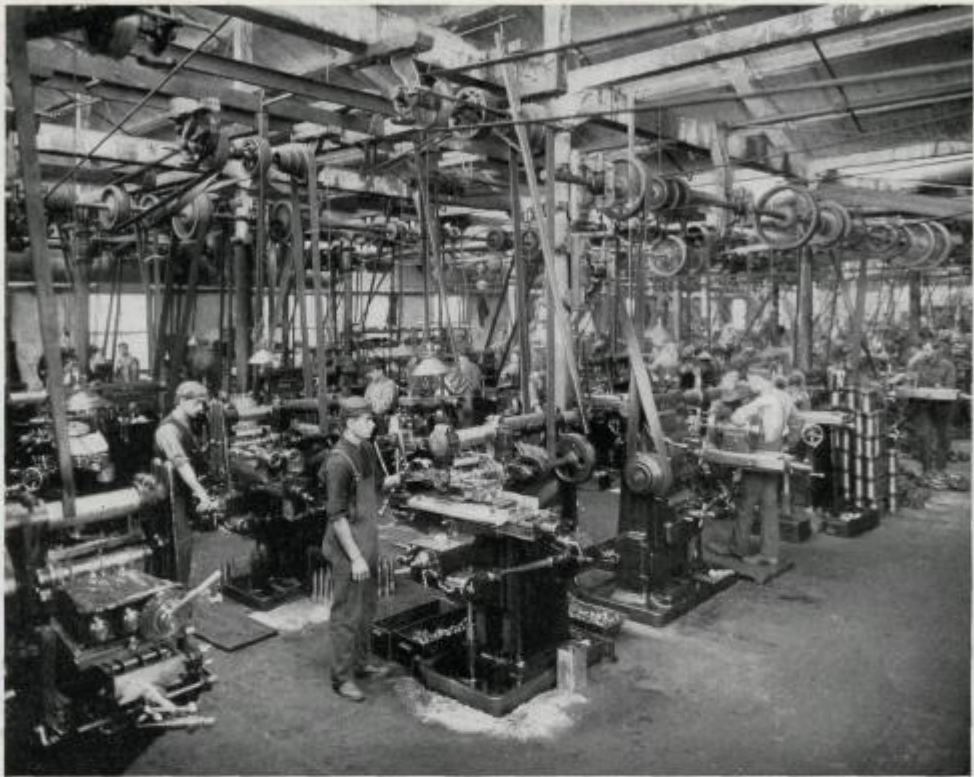


*Boring  
Transmission  
Cases*

pressure manufacturing—has been self-solved by the class of people resident in the community. Largely of German birth, or of German parentage, the young men of Racine have inherited the careful, painstaking habits of their progenitors, and with studious application have mastered the manipulation of the various machines and have learned

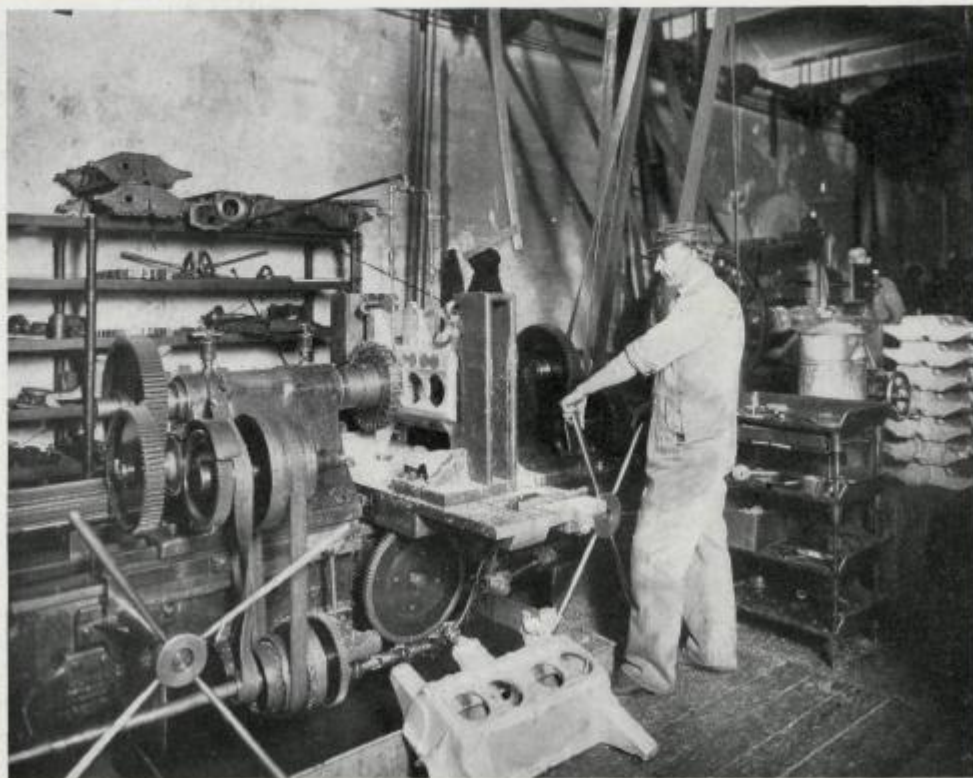


*Milling  
Department*



to perform adroitly and expeditiously all the operations necessary to the building of so finished a piece of mechanism as a Mitchell Car.

The superintendents and shop foremen are largely the product of the spirit of civil service which obtains throughout the plant. As every native-born citizen of the United States is a Presidential possibility, so the office boy or the furnace stoker of The Mitchell-Lewis Motor plant has a chance to rise by

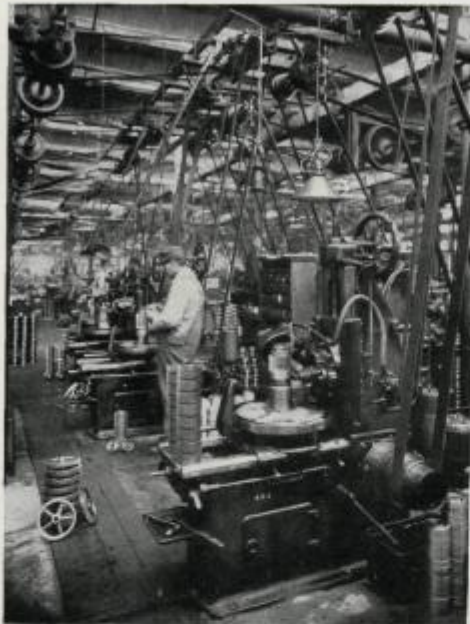


*Milling  
Crank  
Cases*

merit. Those who show the greatest aptitude are advanced to the best positions, and the youth of yesterday may become the superintendent of tomorrow, if he has it in him to "make good."



*Imported  
Helical  
Gear Cutters*



*Cutting  
Differential  
Gears*



In point of numbers, the employees of the Mitchell-Lewis Motor Company would make an army of two full regiments. Two thousand five hundred persons is the average number on the payroll.

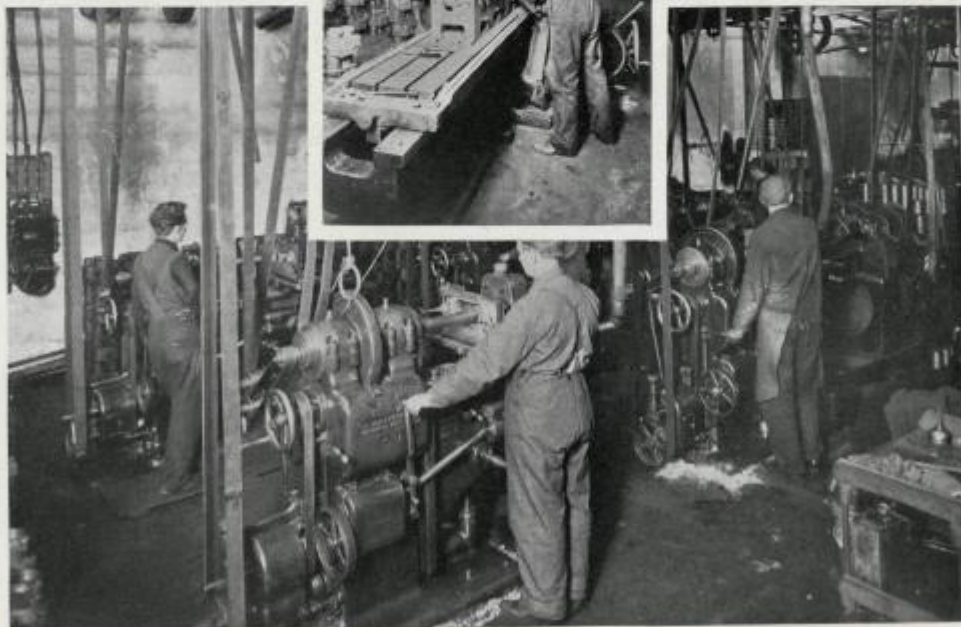
To be able to meet competition it is necessary to manufacture in large quantities. Output is essential. Many manufacturers are proud when their output reaches the point of occasional carload shipments. The output of the Mitchell-Lewis Motor Company is almost always shipped in carload lots, and three miles of private sidings are required to handle the daily output of 75 finished and completed Mitchell Cars.



*Boring  
Cylinders*

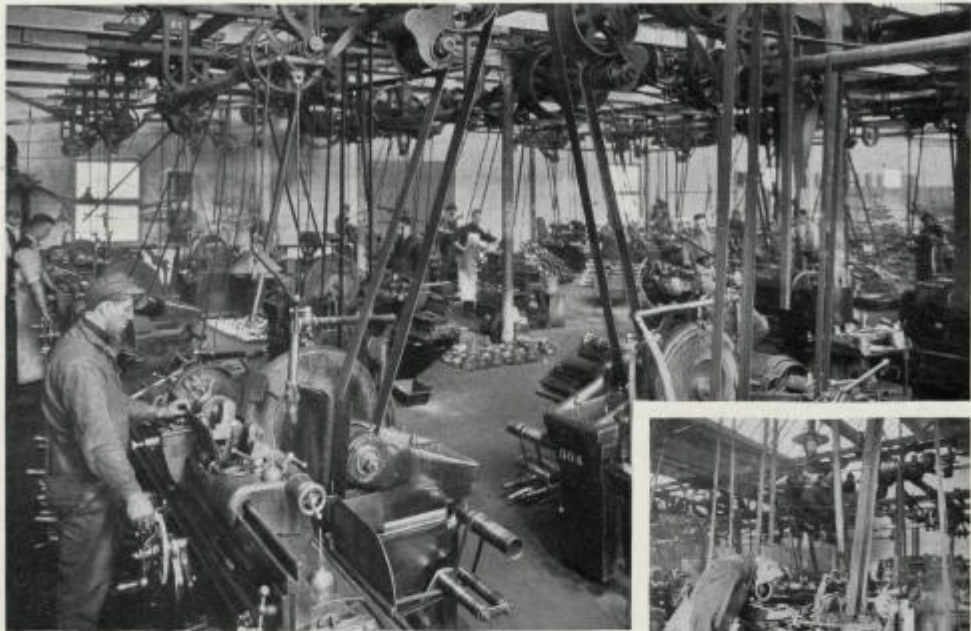


*Facing off  
Cylinders*



*Grinding  
Cylinders*

*Crank Shaft  
Grinding  
Dep't*



The automobile has more quickly reached the cosmopolitan stage than any other production of the hand of man. With few exceptions, all the great inventions have been adopted slowly outside the country where they originated. Gas progressed like a snail, electricity a little more rapidly, and the telephone is to-day unknown in many parts of the world. Not so with the automobile: As soon as its practicability was demonstrated, devotees drove it in all parts of the earth, and now it can



*Grinding  
Cam Shafts*



*Piston Ring  
Grinding  
Dep't*



*Grinding  
Pistons*

truthfully be said that the automobile knows neither country nor clime. This is certainly true of the Mitchell for they are in

use in almost every civilized country, as will be noted from the following list of places to which we ship cars:

Halifax, Montreal, Toronto, Winnipeg, and Vancouver, in Canada.



*Bulldozers  
Making  
Frames and  
Clutches*



City of Mexico, Saltillo, Pachuca, Merida, and  
Vera Cruz, in Mexico.

Arecibo, Ponce, and San Juan, in Porto Rico.

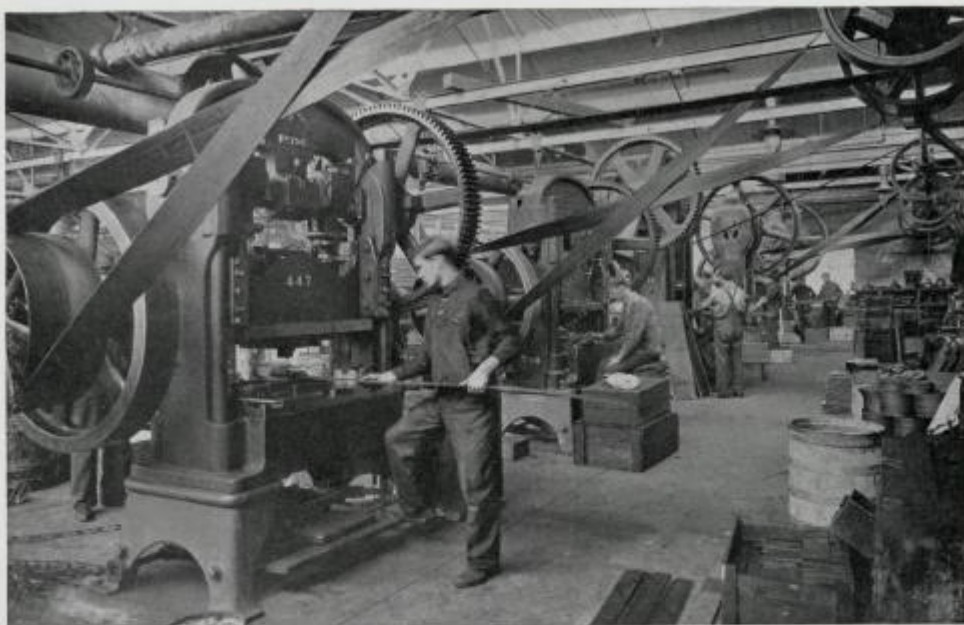
Havana, in Cuba.

Guatemala City, in Guatemala.

Manaos, and Rio de Janeiro, in Brazil.

Quito, in Ecuador.

Santiago and Valparaiso, in Chile.



*Two Views  
Punch Press  
Dep't*



*Running in  
Bearings*

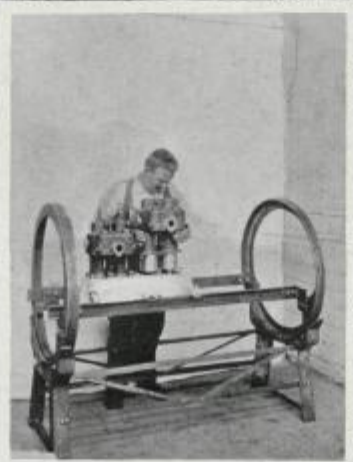


*Engine  
Testing  
Room*





*Transmission  
Assembling  
Room*

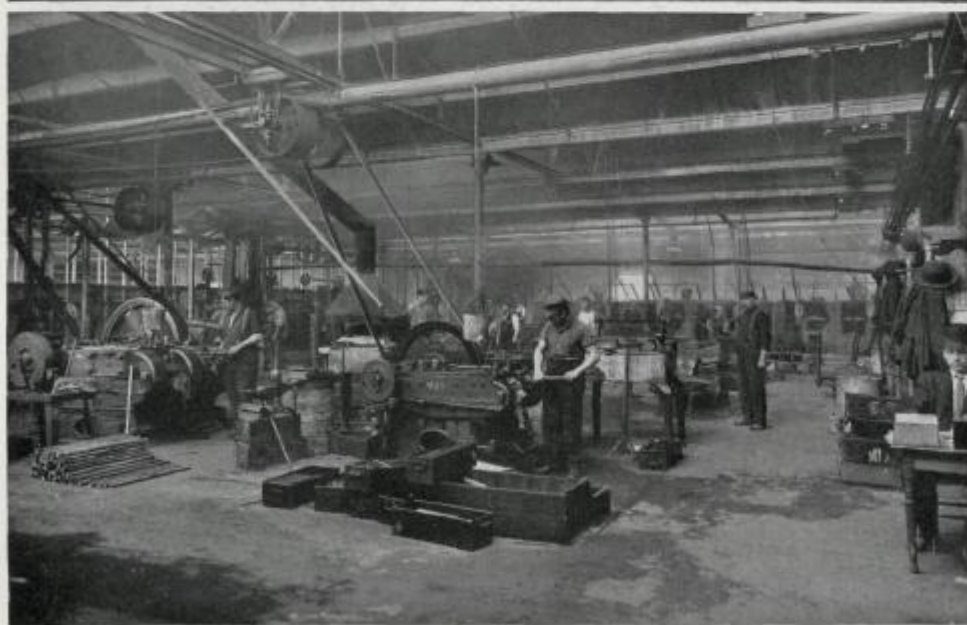


*Assembling  
4-Cylinder  
Motors*



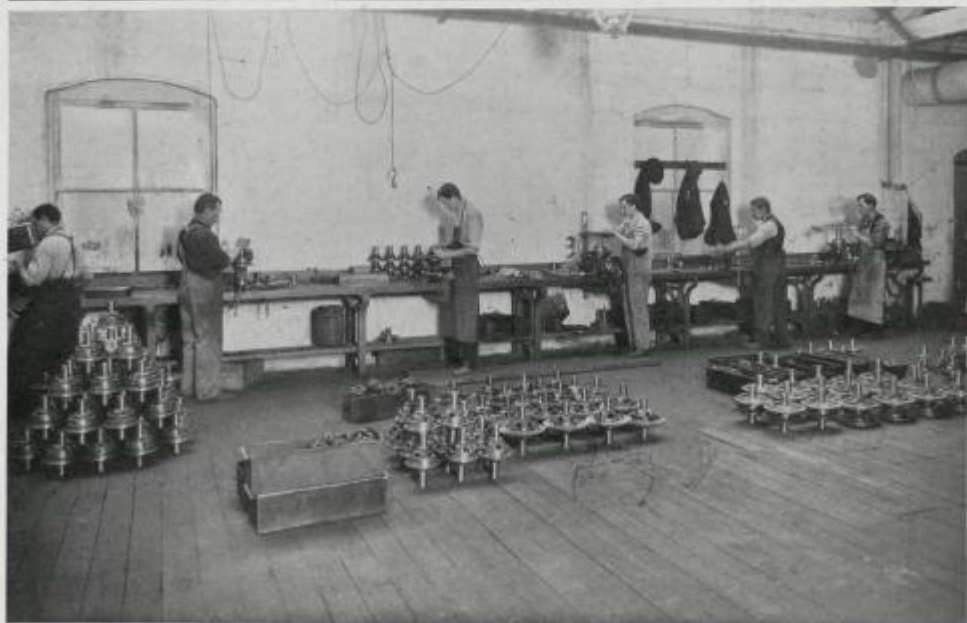
*Engine  
Assembling  
Room*

*Two Views  
Steel  
Hardening  
Dep't*





*Axle  
Assembling*



*Differential  
Assembling*



Montevideo and Salto, in Uruguay.

Buenos Ayres and Cordoba, in Argentine. Paris, Millau (Aveyron), Montpellier, and Roubaix, in France.

London, Christchurch, Briggate, Bradford, Leamington, Spa, and Edinburgh, in Great Britain.

Copenhagen, in Denmark.

Christiania, in Norway.

Stockholm, in Sweden.

St. Petersburg, Odessa, and Rosted-sur-Don in Russia.

Beyrouth, in Turkey.

Palermo and Catania, in Italy.



*One-half  
Mile Testing  
Track*



*Chassis  
Testing  
Dept.*



*Chassis  
Painting  
Dept.*



*Enameling  
Dept.*

Barcelona, in Spain.  
Lisbon and Porto, in Portugal.  
Antwerp and Brussels, in Belgium.  
Galatz, in Roumania.  
Algiers and Mauritius Island, in French Africa.  
Cape Town, Port Elizabeth, East London,  
Johannesburg, in British Africa.  
Honolulu, in Honolulu Island.



*Wheel  
Painting  
Dept.*

Manila, in Philippine Islands.  
Christchurch, in New Zealand.

Brisbane, Melbourne, and  
Sydney, in Australia.

Among the "Mitchell" owners  
abroad we find the United States  
Government (Bureau of Lands),  
Charles B. Elliott, United States





*Exterior  
View of  
Frame  
Dept.*



*Warehouse in  
Construction*

Philippine Commission,  
and Congressman Hon. A.  
Encarnacion Singson, in  
the Philippine Islands; the

Minister of Finance in Guatemala; the Minister of  
Agriculture; the Director of the Botanical Garden in  
Rio de Janeiro; the Secretary of Agriculture in the  
Estate of Minas, in Brazil.

Often a picture will tell a story better than pages  
of description. For that reason this book is four-fifths  
pictures and one-fifth text. The pictures are exact  
reproductions of good photographs made while the  
plant was in full operation.

*Lumber  
Yards*



On page 16 are illustrations of gear cutting and tool-making machines. Gears must be cut to the fraction of an inch, and to perform this operation, automatic machines and tools of the finest steel are required. The gears in





*Building  
Bodies*



*Trimming  
Bodies*

*Trimming  
and Body  
Inspecting*

Mitchell Cars are absolutely perfect. On page 18 are shown boring machines, multiple drills, and drill presses. If a rod must pass through an opening, or if a bolt must hold together two pieces of polished steel, the opening must be perfectly smooth and exact. The greatest care is given to the boring and all drilled parts in Mitchell Cars are noted for their exactitude.

But it is the "bulldozers" (page 28) that do the impossible. If a piece of steel needs straightening,



or bending, or shaping, the "bulldozer" does it with neatness and dispatch. It saves all the formerly necessary heating and hammering.

On page 35 is shown the pleasantest work in all automobile building. In the lower picture the testers are



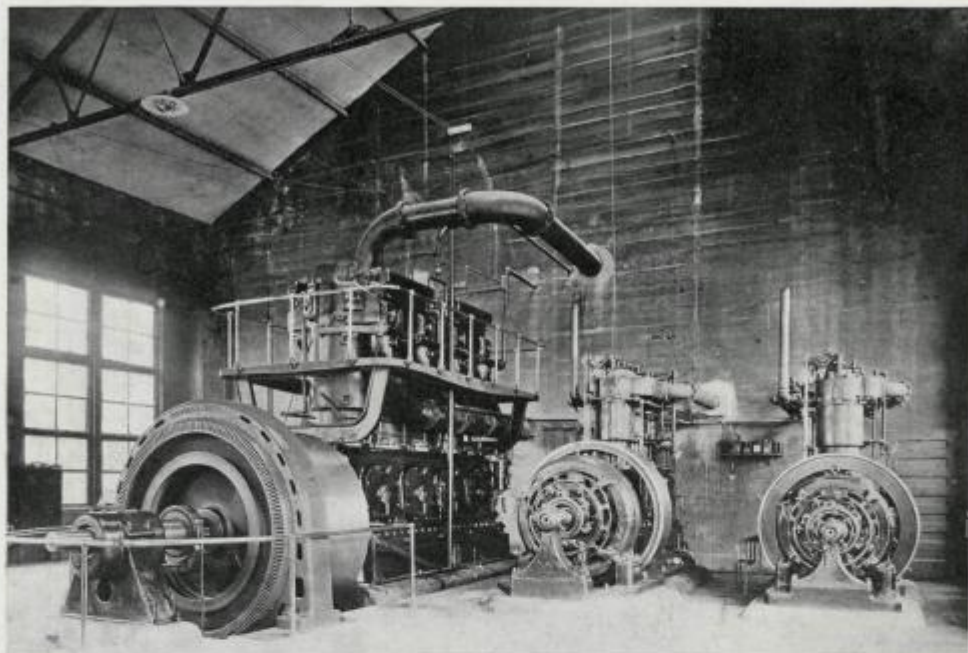


*Repair Parts  
Stock Room*



*Portion of  
One-Half  
Million  
Dollar  
Tire  
Stock*

ready to start out with the mere mechanism of a car. In the upper picture they are going around a half-mile track, at varying speeds, determined to find flaws or imperfections if any exist. Pleasant work in pleasant weather, but as The Mitchell-Lewis Motor Co. must make 75 cars every working day in order to be able to fill its orders, outdoor testing must go on regardless of weather. It is only by such close



*Gas Engines  
Producing  
1000 H.P.*



*Gas  
Producers*



*Power  
Plant*

*Chicago,  
Milwaukee  
& St. Paul  
Loading  
Platform*



*Chicago &  
Northwestern  
Loading  
Platform*





*Restaurant  
Before Lunch*



*Restaurant  
Exterior*



*Employees  
at Lunch*

*Laundry*



attention to the details of car building that we can be positive that the Mitchell is as represented.



*Emergency  
Hospital*

These few illustrations are cited merely to draw the attention of the reader back to a closer study of the picture side of this book, because "the pictures tell the story." Those wishing information should write to The Mitchell-Lewis Motor Co., Racine, Wis., or any local agent.

| POSTAL TELEGRAPH - COMMERCIAL CABLES                                                                                                                                        |          |       |
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13 RC D G E1

Paris, Dec. 8th, 1910.

Mitchell

Paris, Via.

Russian Government awards Mitchell Grand Silver

Medal as most perfect popular priced car.

Lewis.

7:03 PM.



P. S.—This book was just going to press when the above cablegram was received (fac-simile of which is shown), from our Mr. W. T. Lewis, who is touring continental Europe investigating conditions in the foreign market.

The award was made at the Grand Industrial Exposition, held during the past year at St. Petersburg. The Grand Silver Medal was awarded the Mitchell in recognition of its superiority as a motor car and is all the more gratifying when you consider that it was in competition with the best cars from all parts of the world. Every owner of a Mitchell Car will, we are sure, be glad to know that international honors have been accorded his favorite car.



