

**THE PRODUCTION OF AUTOMOBILES ON A LARGE SCALE.
HOW A MILLION DOLLAR AUTOMOBILE PLANT WAS
DESIGNED AND SET IN OPERATION.**

From the projecting of an automobile factory to the producing of 1,000 machines in nine months is a record that stands unparalleled in the automobile industry. Yet such is what has actually been accomplished under the management of that pioneer inventor in the field of the new locomotive—Mr. R. E. Olds. After having produced the first practical runabout for the man of average means, Mr. Olds was induced to turn his inventive ability to the production of a popular-priced, powerful touring car. The Reo Motor

Car Company was organized August 27, 1904, for this purpose, and in less than thirty days an experimental factory was in full operation, producing the first Reo touring car. This machine made its debut on the road on the afternoon of October 14, during the course of which it displayed its fleetness and covered seventy miles. During the remainder of the fall this original Reo touring car covered over 2,000 miles.

So rapidly did the work of planning the large factory and surveying the ground for the same progress, that by September 15 this was accomplished, and ground was broken on the twenty-five acre site obtained by the company. This site is directly opposite the Grand Trunk passenger station, and it faces on the main street of Lansing. The Grand Trunk tracks bound it on the north, and the Lake Shore tracks on the east. Double side tracks are provided by both railroads, and, although the company's shipping facilities are

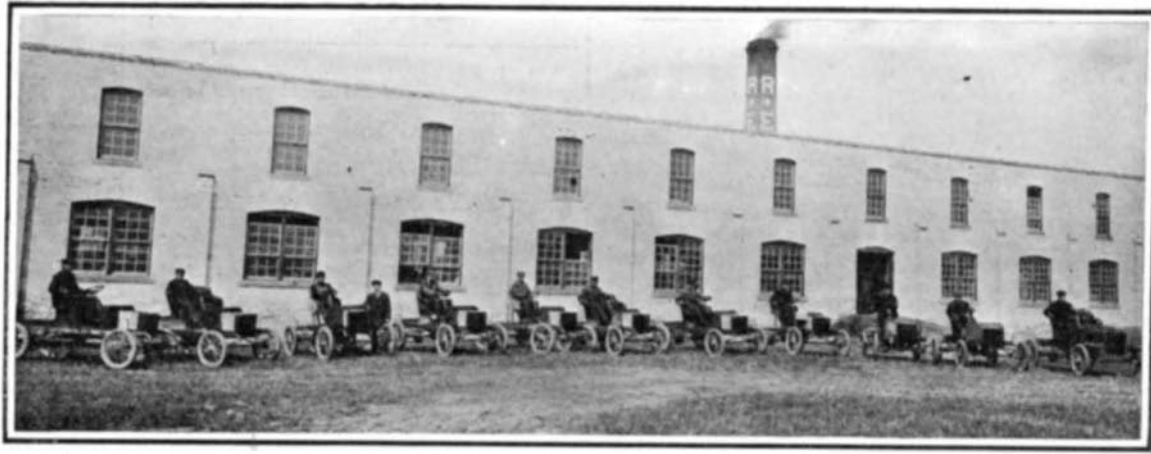
picturing the same, while the other views show the making of parts (such as flywheels, cylinders, etc.), the assembling of the chassis, and the finished chassis being tested before the boilers are mounted

on them and the finishing touches given. Not only is all the machine work done in the new factory, but the bodies, also, are built, upholstered, and painted. Thus every part of the machine is made in the huge plant, which comprises altogether four two-story buildings, arranged as shown in the cut.

Not only has the Reo Company turned out about 1,000 machines since the installation on December 15 last of the machinery in the first 75 x 800-foot building to be completed, but it recently startled the spectators at the Empire City Track Decoration Day races by defeating a 40-horse-power foreign racing car by one-fifth of a second with its "Reo Bird" racer,

having two 16-horse-power stock engines coupled together and placed on a light chassis. The three miles were covered in 3 minutes 20 4-5 seconds, or at 53 3/4 miles an hour; and although this is remarkable time for a machine of but 32 horse-power and less than 1,432 pounds weight, any stock Reo touring car can be depended upon to travel 40 miles an hour, or over, at the will of the driver. Besides the touring car at \$1,250, the company also builds a single-cylinder runabout at the price originally set by Mr. Olds—\$650. Both of these machines are constructed with great care, of the best materials obtainable, and the possessor of either of them will find he has an automobile of comparatively small first cost, greatly reduced cost of maintenance, and a large percentage of dependability, which is the most desirable feature of any self-propelling vehicle.

While the work accomplished by the Reo Motor Car Company is remarkable, it is no more than



Outside Testers at the Reo Motor Car Works.



Mr. R. E. Olds.



"Blocked on the Siding." Two Days' Shipments at the Reo Works.



The Road Testing Department.

of the best, at present a frequent sight is that shown in the middle left-hand cut, which depicts a trainload of Reo touring cars blocked on the siding. A very good idea of the general appearance of the factory, with its large testing track, can be had from the cut de-

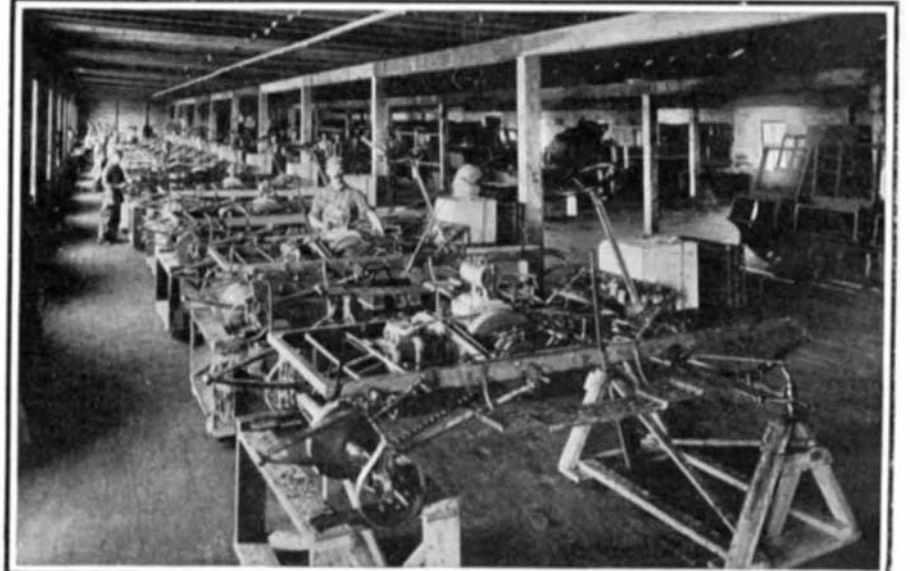


A General View of the Reo Automobile Works.

might be expected when we consider Mr. Olds' past records and experience in gas engine and automobile manufacturing. The Reo Company will soon put out a commercial car that will be so low in first cost that the horse cannot compete with it.



Main Machine Shop at Reo Works, Where 5,500 Parts Are Made Daily.



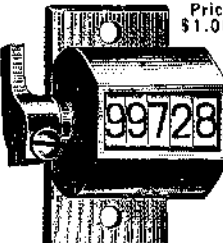
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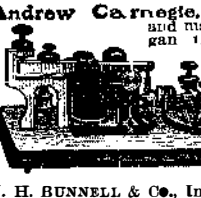
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This week it will be found on page 507.
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Watch it Carefully

set away in quiet, because the cream is lighter than the rest of the milk. Butter also, after it is worked, floats in water or milk. Our figures are taken from a government report on the subject and may be received as reliable.
2. If a train weighing 400 tons is pulled by an engine that takes it at the rate of 35 miles an hour over a level track, what must be its power? A. On a level track, at a speed of 30 miles per hour, the train resistance varies from 13 to 17 pounds per ton. This multiplied by the number of feet traveled per minute, and divided by 33,000 will give the useful power exerted by the engine in horse-power.

NEW BOOKS, ETC.

PORT ARTHUR A MONSTER HEROISM. By Richard Barry. Illustrations from photographs taken on the field by the author. New York: Moffat Yard & Co., 1905. 12mo. 18 illustrations, 344 pages.

The author of this work is a young newspaper man who, at the opening of the war, set out for the scene of conflict with a small camera, small resources, and even smaller experience. But he possessed unbounded confidence and patience—qualities that held him at Tokio, when other correspondents were leaving in disgust at the delay—and finally landed him at no less a place than the Japanese lines before Port Arthur.

With such splendid opportunities for acquiring information, the author should have come home with ample material to write a clear, concise, and connected story of the siege. His photographs and facts, as given in this book, show that he has gathered the material; but unfortunately he has failed to arrange and relate his facts in the simple, straightforward style demanded by a subject so intricate and, to the outsider, so confusing, as this siege.

We could wish that Mr. Barry had followed throughout his book the direct and lucid style of the introduction, which is in such strong contrast to the heroics and "fine writing" of the book itself, as to make us suspect that some friendly pen has come to his relief. If the author had taken this introduction as the mesh, and woven into it the simple story of the facts as he saw and photographed them, he would have written a better, because a more understandable book.

At the same time, it must be admitted that the work is genuinely interesting; and as a series of thrilling, if disconnected, word-pictures by an eye-witness of the greatest siege of modern times, it will well repay perusal.

THE AUTOMOBILE POCKETBOOK. By E. W. Roberts, M. E. Cincinnati: The Gas Engine Publishing Company, 1905. 32mo.; pp. 329. Price, \$1.50.

This small volume gives very concisely a great deal of information essential to the automobilist. It is intended as a pocket handbook and, therefore, has been made small in size—3 1/2 x 5 1/4 inches—and bound in flexible leather covers. Besides describing all the main parts of a gasoline automobile, and telling how to make repairs when anything about it breaks down, Mr. Roberts gives hints on how to operate a car, and a chapter of "Don'ts," which tells what to avoid. There are many useful points regarding automobile designing which are discussed in the book. One chapter in particular that will be of interest is that telling how to make a brake test of a gasoline motor. The book is completed with an index. It is the best small volume on the automobile which we have seen thus far.

INDEX OF INVENTIONS

For which Letters Patent of the United States were issued for the Week Ending June 13, 1905

AND EACH BEARING THAT DATE [See note at end of list about copies of these patents.]

- Adding machine, C. W. Horn..... 792,041
- Advertising device, G. F. Bagby..... 791,997
- Aeronautic apparatus, G. McMullen..... 792,154
- Air brake angle cock holder and pipe clamp, railway car, R. R. Jones..... 792,137
- Air mixer, T. M. Dudgeon..... 792,323
- Alarm and controller for sprinkler tanks, etc., automatic, H. E. Reeve..... 792,237
- Animal dipping tank, A. A. Kramer..... 792,139
- Antimony, electrodepositing, A. G. Betts..... 792,307
- Ash or garbage can, L. A. Harker..... 792,027
- Automatic sprinkler, C. E. Buehl..... 792,310
- Automatic sprinkler, E. W. Newton..... 792,343
- Automobile dray, W. G. Thompson..... 792,561
- Automobile folding top, W. N. Beecher..... 792,112
- Baker's peel, R. L. Corby..... 792,400
- Baling press, P. C. Southwick..... 792,359
- Baling press, J. H. Pitkin..... 792,448
- Basket or crate, Morley & McAtee..... 792,061
- Battery. See Galvanic battery.
- Bearing and ladder support, upper tumbler, Knox & Ferris..... 792,522
- Bearing for motor vehicles, wheel, A. Stechbarth..... 792,559
- Bed rail locking device, A. R. Hampton..... 792,329
- Bed spring bottom, B. Jungnickel..... 792,520
- Bedstead clothes rack attachment, W. J. Dick..... 792,405
- Bedstead construction, A. Taylor..... 792,306
- Boiler, H. Molendo..... 792,535
- Boiler cleaning compound, C. & E. H. Salazar..... 792,462
- Boiler tube blotter, G. E. Averill..... 791,996
- Boiler tube cleaner, E. M. Adams, reissue.. 12,355

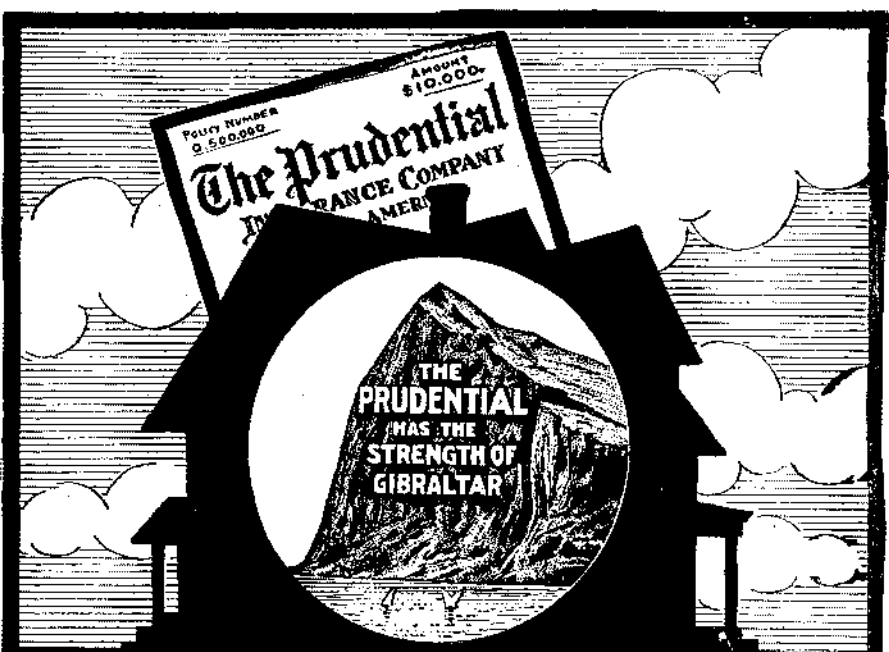
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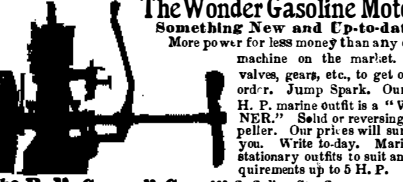
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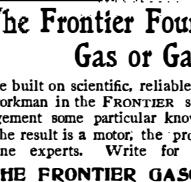


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