

News of the Motoring World!

HOW THEY MAKE AUTOS TORONTO'S BIG FACTORY

An Interesting Trip to the Works
of a Canadian Firm Employ-
ing 600 People.

To the average citizen, it will undoubtedly prove an eye-opener to learn that Canada is in the front rank as a producer in a great and comparatively new industry, the building of automobiles. At the invitation of the Canada Cycle & Motor Co., a Sunday World representative was yesterday shown over the company's monster plant at Toronto Junction by Superintendent Pennal. To thoroughly appreciate commercial endeavor of this high order one must be an all-round mechanic with some knowledge of motor-car construction. The seed of initiative was sown a little more than ten years ago, and there immediately sprouted into sturdy manhood a business of enormous capacity and output, that can only be appreciated by a visit in person. The officers of the company are always pleased to show strangers over the plant. Covering 5½ acres and employing a minimum of 600 people, will convey to the reader some idea of the factory's size.

Early in the afternoon the writer boarded a Dundas car at the corner of Queen and Yonge-streets, and in due course arriving at Keele-street in the Junction changed on to a Weston car, which passes right by the factory doors. The huge scale upon which the buildings are all carried out, immediately impresses one on getting off the car. The entrance approach is lined with several hundred bicycle stalls, which are filled to capacity with wheels owned by the employees. A siding from the Grand Trunk and C. P. R. tracks, both of which run by the plant, passes through the shipping yards. From the company's offices adjoining the present garage started on a three-hour trip of revelation. Entering the automatic screw machine department, where 42 automatic and 24 hand-screw machines are all merrily clanking, one sees the first operation performed on the raw material in preparation for further treatment in other departments, and which will ultimately find its way to the finished Russell car. This is the only plant in Canada, and one of the very few on the whole continent, which makes every individual part used in building an automobile. The only thing imported is the raw steel and other metals, which must pass through various heat-treating processes

etc., before being finished. The punch presses are also located in this department; they are for pressing out the sheet steel parts.

Passing the air compressors, which operate the sand blast for cleaning the roughened steel and all brazed and tempered stuff, we enter the grinding room, where rough forgings are brought in to have the finish trimmed off. Thru an open door comes the cannonade of three 1200-pound drop-hammers thumping away at chunks of nickel-steel to be used for transmission gears. The glow from the white-hot metal lightens up the features of the perspiring workmen and brings back to memory the famous World's Fair painting of "The Blacksmith." The steel is heated in oil forges here, the oil fuel being supplied from an underground tank 200 feet away by a force pump. Another interesting feature in this department is a huge trimming press, which was kept busy clipping out sprockets, a detail of the bicycle end of the business. Over 30,000 bicycles were produced last year. There are also innumerable forgings necessary in the construction of a motor-car; crank shafts, connecting rods, valves, clutch parts, levers and a host of other pieces, the names of which have flown.

The Brazier.

The brazier is an important man in the making of a bicycle. The molten spelter, as it is called, or really molten brass, possesses a peculiar golden green tint and is very crumbly stuff to deal with. The brazier was in the midst of ladling the spelter from a monster pot, and pouring it in a mould for the night; if left in the pot, the latter would expand from the intense heat and the top not being in such close contact with the molten mass as the bottom, would remain cool, and the pot would burst in consequence. The next item is three of the newest design Brown & Sharp hardening furnaces and three oil furnaces for retreating. All heats for each operation being regulated within a degree by use of the latest make pyrometer. Across the airway is the foundry, which is claimed to be the best equipped in the Dominion. One is instantly attracted on entering by the bright, silver-looking aluminum gear cases. Many compliments have been paid the company in regard to this one product.

An engine of 165 horsepower takes care of the automobile production and three boilers of 125 horsepower each run the plant. A well-ordered draught-room upstairs, under the supervision of mechanical engineers—specialists in automobile construction—is the source of all the designs for parts and complete cars. Hundreds of work drawings, accurate to the thousandth fraction, are here produced.

Polishing the Parts.

The polishing room and milling and drilling departments must not be overlooked, the latter turns out some excellent work, including an absolutely smooth ball track for the ball bearing. This work is done by a lathe. "Threading

the bolts and screws is another phase of mechanical energy. Then there is the plating room, and the tool room, where gauges are kept for gauging work in process. The auto machine shop, where all the machines are located, which are adapted to the peculiarities of automobile construction, there is a broaching machine, for instance, the broach runs thru a round hole in any piece of forging, and, presto, having passed thru, the hole is square.

After each and all operations the parts are gathered together and closely scrutinized by a large staff of inspectors, whose duty it is to see that everything is in strict accordance with the engineer's design. The No. 1 assembling and fitting department, where all the engines and axles are assembled, the pattern room and the sheet metal department, where radiators, goods and mudguards are built, are all interesting from the news point of view. The engines are afterwards set on stands and run the same as they would be on a car. This test reveals any possible inaccuracy in the assembling work, and pony brake test is applied to prove the horsepower.

The skeleton or assembled mechanical parts, technically called the chassis, also has an assembling room, and there first meets the engine. They are made part and one of each other, and then follows a 200 to 300-mile road test. Take a trip to Hamilton, or Oakville, or any outlying town, and it is ten to one that you will pass a motor flying along on a new chassis.

After the heavy road ordeal, the chassis comes home to the paint shop, to be attired in its final dress. The luxuriously upholstered body already stands finished in twenty or more coats of priming, colors, rubbing and finishing varnishes. Then takes place the all-important final assembling of an up-to-date motor car with all its equipment, including the brass lamps, headlights, canopy top, glass front, luggage carrier, tire holders, speed indicator and horn. After viewing the completed car, one may well take place in the coach and say to his ladyship: "Madam, the coach is waiting."

PERTINENT SUBJECTS FOR MOTOR THOUGHT

Themes of Public Importance Must
Be Threshed Out by
the Motorists.

Automobilists are at present in great need of protection at grade crossings. A great many fatalities are caused by unprotected crossings, where motorists have no chance to ascertain the whereabouts of approaching trains.

When the tracks are hidden by buildings and trees or high banks the noise of the motor-car engine usually prevents the train being heard by the driver. This is a matter of vital importance to motorists, and should bear careful consideration. There is no doubt but that if motorists throughout the country would take proper steps in this direction laws could soon be had requiring watchmen and gates at all crossings.

The Subject of Lights.

Another matter of considerable importance and one well worth careful consideration, is that of lights for all vehicles. Why should not the horse-drawn vehicle carry lights as well as the motor-car? A great many accidents would thus be avoided, and, at least, the blame would be placed in the proper place.

As it is now, the motorist is generally blamed if he happens to have a collision with a horse-drawn vehicle, when in reality the other party is oftentimes to blame, as he had no light whatever, nothing to warn the motorist. What is fair for one certainly should be fair for the other, and a benefit to both.

The Roads.

A great deal has already been said; a great deal will continue to be said, concerning the matter of good roads. However, too little has been done along this line.

True it is that a great many experiments are being made with material of different sorts, in the endeavor to ascertain the best materials for roads. The motoring public certainly are not doing everything possible in this line. Too many are simply sitting by waiting for the other fellow to make the first move. Every individual as well as every motor club should do all in his power to further the cause of good roads. Let each one do a little hustling along this way and there is no reason why they should not accomplish a great deal in a surprisingly short time.

Repairing Disabled Batteries.

In using dry batteries, the motorist as a rule has little or no trouble from the time they are installed until the time they are "run out," at which time there is a possibility of stimulating them for a short time by boring a hole in the wax and then putting in a little water.

Occasionally, however, it happens that the motorist is disgusted to find one of the posts broken off, so that he has nothing to which he can attach the terminal wires. Such a condition need not necessarily make the cell entirely useless, especially if the driver has a knife and a little patience.

In case the broken terminal is a negative one, the best way to do is to bore a small hole in the side of the broken post, and then to break the twist it tightly so there is no chance for it to jar loose. When it happens that it is the positive post that goes wrong, it is generally possible to notch the carbon all around or bore a hole thru it if one is careful. Should the hole be broken off too near the wax, a common wire nail may be driven thru the wax, care being taken not to split the wax, nor to break the carbon. The nail should just touch the carbon and be left protruding far enough so that the wire can be twisted securely about it and thus complete the connection.



R. M. Jaffray, Manager Automobile and Sportsman's Exhibition.

Mr. R. M. Jaffray was one of the firm of Jaffray Bros., founders of The Canadian-American in Chicago in the eighties, in '89 to '97, and with S. A. Miles, conducted The Referee in Chicago, and The American Referee in London, two of the most prominent bicycle trade journals in the world. In '97-'99 he was president of The Cycle

Age, and managed the auto show, Mutual-street rink, Toronto, 1906, and the same year in Montreal, conducted the Automobile and Sportsman's Show in Montreal last spring, and is now managing the Automobile & Sportsman's Show to be held in Toronto in March, and Montreal in April. Mr. Miles is manager of the great automobile show in Chicago.

FEDERAL BILL WOULD RELIEVE STATES OF AUTOS

Automobilists Want to Get a General Law Passed in United States—Reasons.

Automobilists in the United States are keenly interested just now in the federal bill now before congress, which is designed to do away with state registration and licensing of automobiles and substitute for same a federal or national license tag, good in any state in the Union.

The following are some of the reasons given why the bill should be passed: First—It is unquestionably unfair that automobilists, in the use of the interstate highways, should be obliged to submit to the diverse state regulations as to registration and identification, when such state requirements result in the imposition of as many different

taxes as there are states thru which the automobilist passes, and in the constant necessity of procuring new numbers for the machine, and in some cases adding these numbers to those already on the machine, and in other cases removing all those except the number of the particular state thru which the automobilist is passing at the time, in some states carrying one number, in others two numbers, in some states painting the number on the front of the machine, and in others having the number hanging loosely to front or rear or both, and so on.

Second—There should be some system of identification which shall be uniform, and which shall be effective. The varying requirements above referred to defeat the very object of the different state statutes because they result in confusion and uncertainty. Such uniform system of identification will be absolutely secured by the federal bill referred to.

Third—It is to be noticed that this federal bill seeks to do nothing with regard to the regulation or limitation or restriction of automobiles or automobilists, except in respect of registration and identification. Fourth—The enactment of this bill into law would result in a revenue of at least \$250,000 to the federal government annually, and

Fifth—The bill does not involve the government in any expense except for the clerical work of the registration bureau, and it does not call for any federal police or other machinery to enforce it, and

Sixth—An examination of its provisions will disclose the fact that the bill is self-enforcing, because a federal registration number will be a great boon to automobilists, no less than to the public, to whom protection is secured, and the suspension or loss of the federal registration (as provided in the bill) will be the greatest punishment which could be inflicted upon the automobilist.

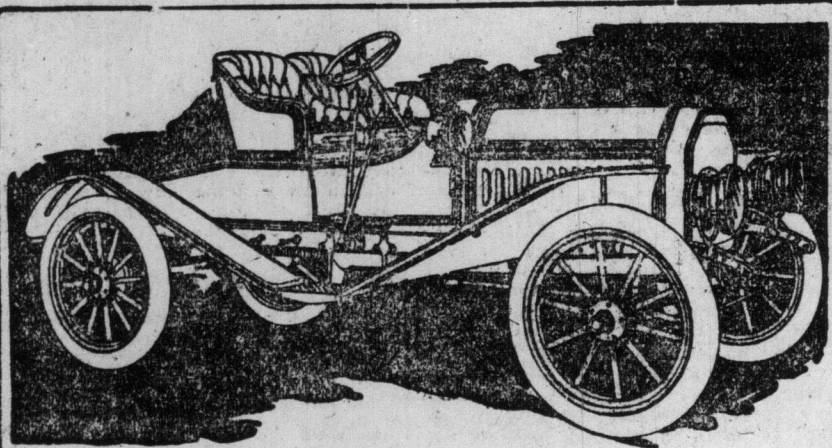
Automobilists generally in the United States believe so strongly in the new bill that they are urging their congressional representatives to support the bill, which is expected to pass with a large majority.

The provision for suspension of license

for infraction of the regulations is one that should be more effective than a fine, as it would absolutely prevent a recurrence of the offense for a time at least, since the owner could not use the car, and while the payment of a fine is a small matter to a wealthy and enthusiastic auto owner, the depriving him of the use of it would not be, and we commend the thought to our legislators who are looking for a practicable way to control over-speeding.

GLIDDEN TOUR SUGGESTED.

A suggestion has been made that the next Glidden tour take place in the Pyramids of the Peraz Treaty of Washington to Boston, winding up at a week of climbs, tests and one day runs, either in the White Mountains or at some New England seashore resort. A start from Buffalo, so as to reach Washington by way of Pittsburg, has been proposed.



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