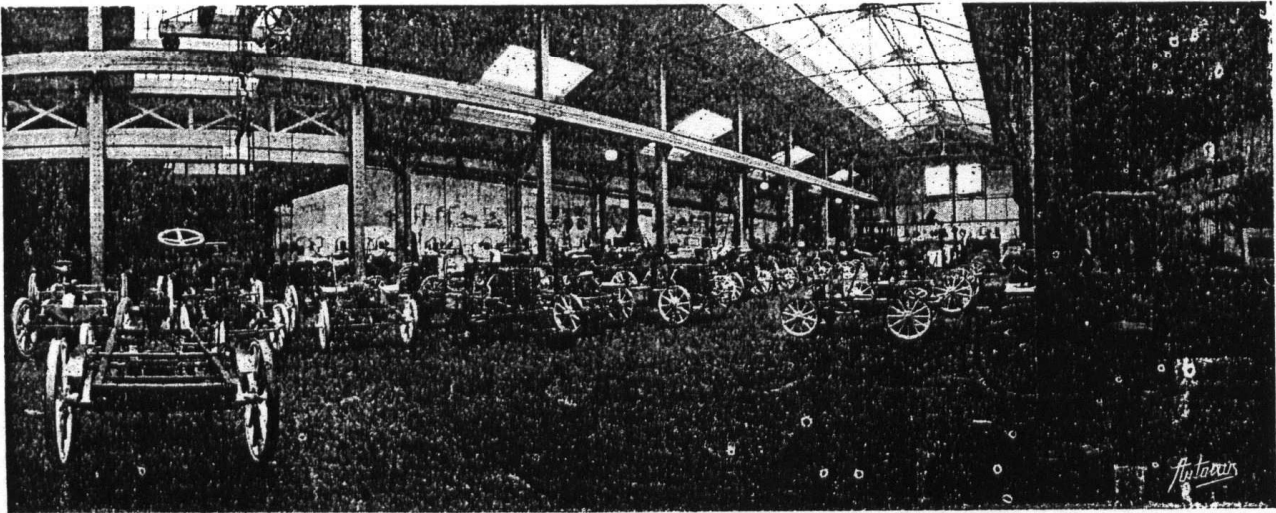


## A VISIT TO THE PANHARD WORKS.



The body fitting shop

The works of the famous French firm of Messrs. Panhard and Levassor have hitherto been a sealed book to British pressmen, so the special representative of *The Autocar* lost no time in journeying to Paris directly the *entrée* was courteously afforded him. He went with considerable expectations and no little respect for a firm whose name has so long been famous in the autocar world, and he was not disappointed in what he saw. In fact, he left with his previous high opinions of the leading French firm intensified. He has no intention of describing what he saw in detail, but merely intends to give an idea of the general impression produced from a run round the factory. It should also be understood that he is fully aware that the processes of manufacture he briefly describes are used in many other autocar factories. It is true he was shown some original methods, but as they were confided to him for his private edification alone he cannot honourably refer to them here.

The works are quite a town in themselves, cut off from the outside world, and from the very first glimpse of them the visitor is impressed with their oneness, their order, and the signs of some great but invisible controlling hand. To the right of the entrance gate are the offices, to the left the residence of Commander Krebs, and stretching before one, as far as the eye can conveniently carry, is a broad, well-surfaced road, with lofty workshops bordering it on either side. A few cars are standing on the road, dwarfed almost into *voitures* by the breadth of the highway; workmen are passing from one shop to another, but there is

#### No Hurrying, No Confusion,

hardly any sound—one might almost suppose they were idle works, and would leave with that impression if the interiors of the shops were not inspected. But, once inside, how different was the impression created!—a whirl of machinery, a regiment of men. There were 850 of them at work on the winter's day that we visited the establishment. Nearly all, as in our own autocar shops at home, were adult workmen, the merest sprinkling of boys, and no female labour being employed. We are conducted into the

machine shop, in which 350 lathes, polishing and planing machines are working away as fast as the labyrinth of overhead revolving shafting and belts can drive them. Men quietly feed the machines with steel bars, or remove the finished work, whilst the heaps of long strips of metal cut to waste by the lathes ever mounts higher and higher, and we found ourselves wandering away into a mental calculation as to how many carts it would take to remove all.

The exact size of this shop we do not know; it is, however, the largest and most impressive in the whole series. We entered in the middle, and, looking right or left, the end of the shop could not be clearly distinguished through the vistas of shafting and belting. One-half is devoted to machining parts for the motor proper, the other to machining parts for the gears and repairing tools.

#### The Machine Tools

in use are all modern and the best money can secure. They are mostly French—indeed, largely made by Messrs. Panhard and Levassor themselves—but America and Germany are also represented.

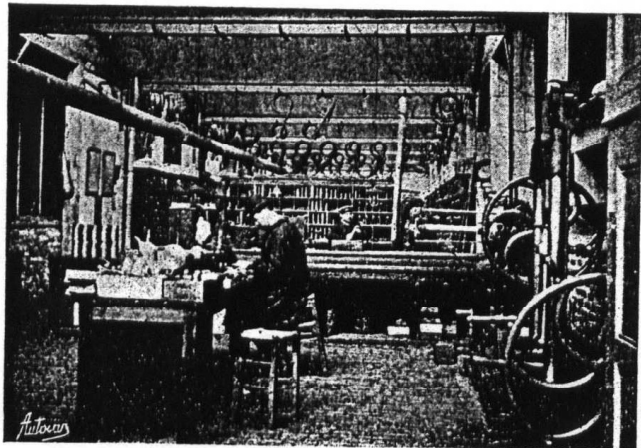
Here was a machine sawing through a piece of steel 6in. thick, and doing it very quickly, without any fuss. There was a flywheel for some big car being cut out of a solid block of steel, and near our attention was attracted to a heavy planing machine that was facing great aluminium castings.

One of the most fascinating processes to watch was the gradual creation of a crankshaft. The crankshaft arrives in the shop a massive block of steel, too heavy for a man to move. It is sawn, turned, and machined, and all its bearings polished and cut true to themselves and to one another—a very difficult and nice piece of work that has to be seen to be appreciated. Great care is taken to ensure accuracy, and Panhard and Levassor do not profess to turn out a crankshaft for a large car

#### In Less than Four Weeks.

Some of the gear cutters in the gear department of this shop are on a big scale, as can be imagined by those who are familiar with Panhard cars. The way the pattern gear wheels were racked on each

machine that could produce them was one of the many little things we noted as illustrative of the



One of the stores. A storekeeper at work.

military order and system everywhere apparent in these model works. Before leaving this shop we had one last long look at the mass of work being produced, and when we reflected what would be accomplished in that day, and that the same was being done on six days of every week of the year, we realised, as we had perhaps never done before, the extent of the motor industry in France.

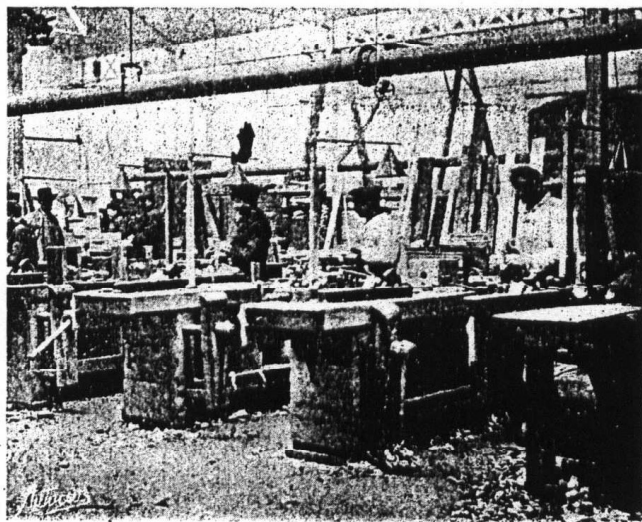
We next visited the forge, where three powerful steam hammers were being supplied with work from eight forges, men bringing the glowing metal from the hearths by means of sling tongs. Here the frames for the cars are welded together, and all the other details of construction that belong to the blacksmith's art are carried on.

#### The Engines

themselves having been finished are taken to the testing shop, where they are bolted on what might be described as skeleton cars, with all the usual levers and lubricating feeds fitted, and with a drum added to take the brake band for the brake horse-power test. They are put through their trials, which are, of course, searching and complete.

Every engine has to register under this brake test a greater horse-power than will be eventually claimed for it, and it does not leave this shop until it does so

register, all necessary alterations and adjustments being there carried out. Over a dozen engines were thus being treated when we visited this shop, from a comparatively small eight horse-power up to a big engine, twenty-four horse-power or more, for a racing car. In the care and thoroughness so obvious in the work of this testing shop, the visitor had a broad hint to one of the reasons why the firm occupy the high position in the motor manufacturing world that they enjoy. From this Hall of Judgment we were conducted across the broad street already alluded to—noticing on our way the stacks of castings standing in the open (a bit of bad practice) ready for the machines—to the store-rooms, where parts finished

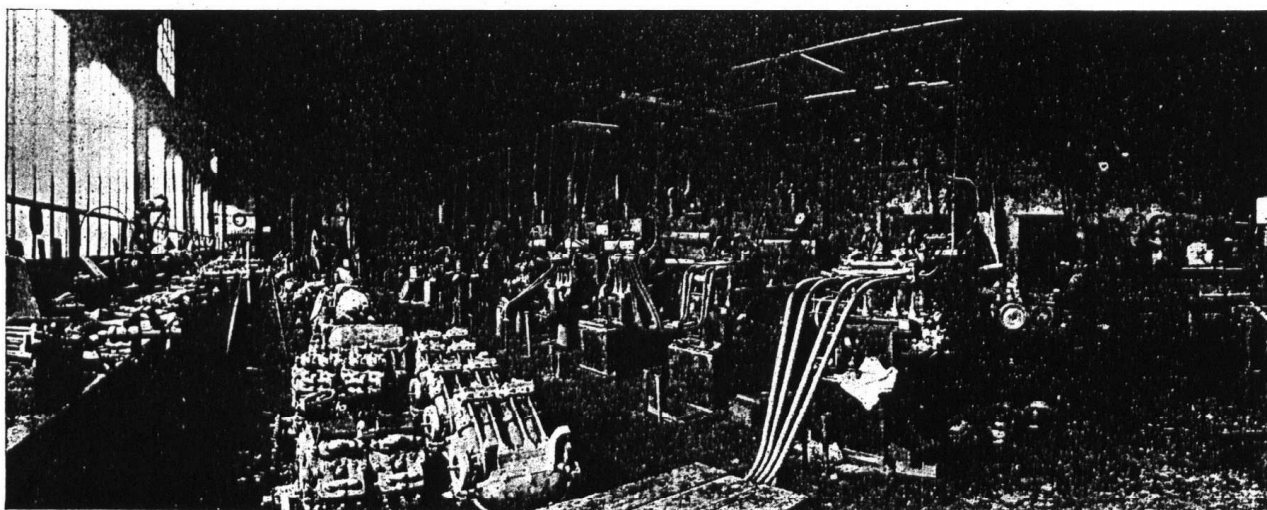


A bay in the pattern shop.

and in the rough are kept ready. The place was so quiet, so clean and orderly, and the various parts were so neatly stored in nests of pigeon-holes, that it was more like entering some museum than a store to feed a busy factory.

#### The Storekeepers,

too, by their quiet and courteous manner, gave colour to this fancy, and we were told they were a superior class of men, as they were responsible for parts and fittings that represented many thousands of pounds, and in many cases were quite portable.



The motor testing shop.

Stacked all around were cranks by the hundred, aluminium cases by the score, wooden wheels by the pile, "Loyal" radiators enough to cool Parliament on an Irish night, castings, valves, springs, brakes, tyres, piston rings, and, in short, something of everything, and plenty of everything that go to complete that vehicle of many parts—an autocar.

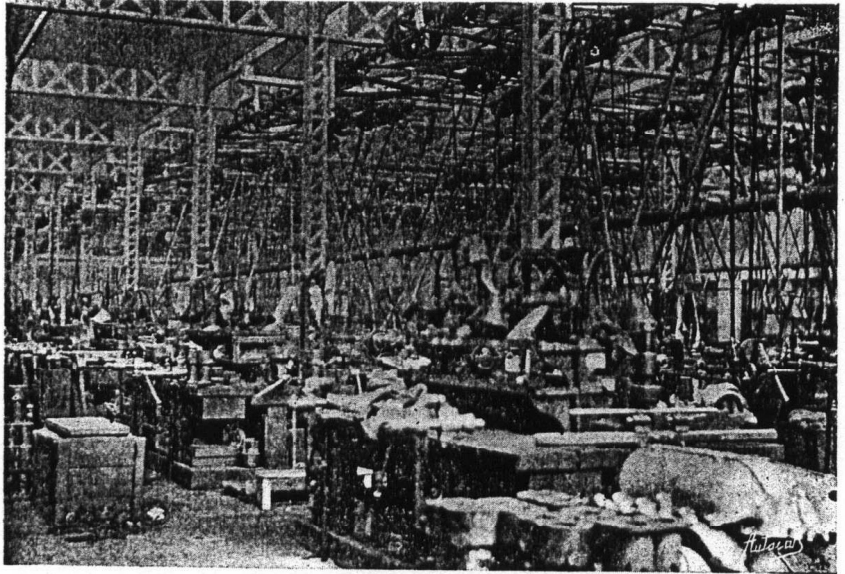
The sweet scent of wood, and the sound of steam saws, and the swish of many carpenters' planes, told us we were approaching the shop where the woodwork was done even before we actually entered the building. Like all the shops at these fine works, one was at first impressed with the size, secondly with the order and almost military system, and lastly with the character and quantity of the work being turned out. Where does it all go to? one constantly asks, and it is difficult for an Englishman, with his small home-formed ideas of the extent of the motor industry, to provide the answer to his own query.

In this shop they were making wooden wheels from well-seasoned wood of French growth. We saw the timber yard afterwards where the wood in the tree and sawn up was maturing. The spokes were being shaped by a machine invented and made on the premises—indeed, every single machine used in this shop had the same origin. Twenty carpenters' benches were being used, we noticed, the work chiefly in hand at the hour of our visit being wheels, body fittings, and patterns for the foundry. The fitting-shop is another large place. We had the curiosity to ask the actual dimensions, and our courteous conductor went away to get the exact figures. They worked out in English at 167ft. long, 155ft. broad. To this shop comes the frame, naked and unadorned, and here the channel steel is fitted in with wood, the engine hauled up by chains suspended from the roof, and fitted in its appointed place on the frame, the gearing, wheels, steering all fitted, so that it will be appreciated that this is a very animated shop indeed, as well as one of the most interesting, for here the motor car first assumes shape, and many parts can be conveniently studied that are not so easy of inspection after the body is once fitted on. We counted

#### Eighty-seven Engines

of various horse-power on the floor of this shop waiting their turn to be hoisted by the chains and dropped down upon the frames that they were destined to give life and movement to. In another corner were rows of heavy machinery unused, waiting until wanted to take the place of a worn machine. Every one of these was made entirely on the premises.

One of the oldest shops in the works is now used for body fitting, and is interesting because of the great variety of patterns of bodies fitted. When we were conducted over the shop forty-three frames were having their bodies fitted on, and hardly two were quite alike. The selection included such dissimilar vehicles as a twelve horse-power brougham



A part of the great machine shop.

for the King of the Belgians, with very big pneumatic tyres (120 mm.), evidently intended to be equal to ignoring the worst of even Belgian roads; a twenty-four horse-power racing car that may be a starter in the Gordon-Bennett race; a huge omnibus for military purposes; and a motor car to run on rails in Algiers. All the speed cars had electric ignition, as well as the usual Panhard tube, and we were informed that before long every Panhard car would be sent out provided with both forms of ignition. From this department the cars are sent on to the finishing shop, where they receive their final artistic touches previous to being despatched. There we found

#### Fourteen Motor Vehicles

just on the point of leaving the works, and we were particularly taken with a very smart brougham finished in black and green, with red lines, the motor of which was so cleverly hidden away that it could easily be mistaken for an electric vehicle intended for short trips only.

This account of the Panhard works does not aspire to be technical or exhaustive, but mention must be made of the important department where most of the machine tools used in the shops are manufactured. As many of these tools are very heavy, the machinery to make them has to be proportionately large, and specially impressive in this particular is a huge planing machine. A travelling crane lifts the massive tools from one part of the shop to the other, and we watched the operation of swinging away a big metal saw that had just been completed. The engine that drives all the machinery throughout the works has a 23ft. 4in. flywheel, and develops five hundred horse-power. The engine and its room are as spic and span as on a warship.

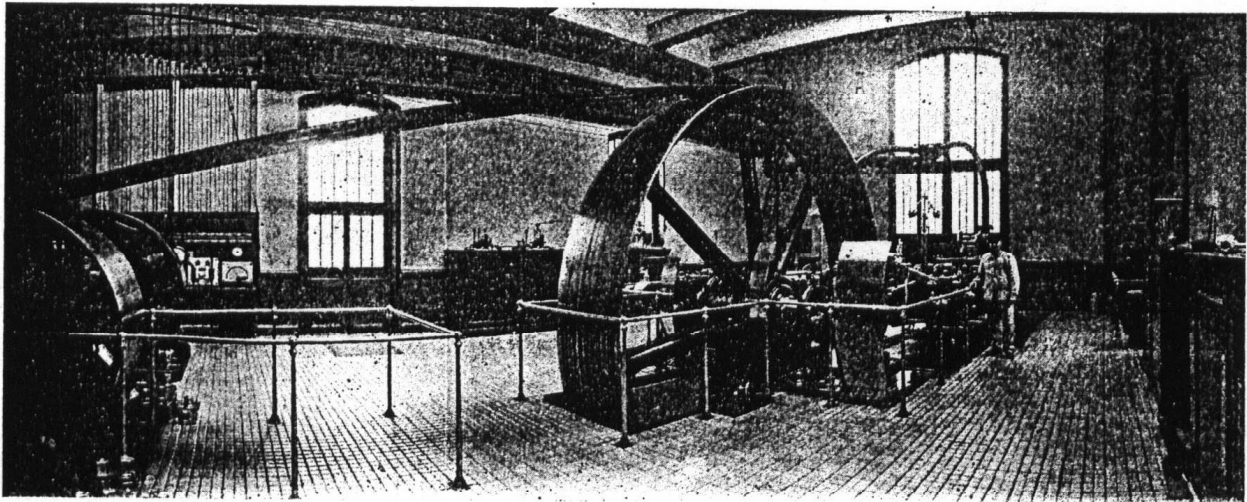
#### When a Car is Completely Finished,

it is tested for three days before being allowed to leave for its owner. During this period of probation the cars stand in a garage, and are taken out one after the other for runs into the country, fourteen expert drivers being employed solely for this purpose. There were waiting their turn for a spin when

we walked through the garage, two twelve horse-power *char-à-bancs*, one being intended for England; one six horse-power omnibus, to carry six people; one waggonette, eight horse-power, and another twelve horse-power; one phaeton, six horse-power, and another with a spider seat; one twelve horse-power, four-seated car, to the special design of an English gentleman, very handsomely finished; one tonneau, six horse-power, and three eight horse-power. We give the list in full, as again showing how great is the variety of motor vehicles that come through these works.

To go over such extensive and well-appointed works as these was a great pleasure, but it also induced regret that British engineers should have been

so long kept out of their inheritance by their folly in allowing the laws of their country to stifle an industry which would have provided work for thousands of them, and which will yet do so, but years later than would have been the case if the roads of free England had been free to autocars as were those of France ten or more years ago. It must not be imagined that we despair of the English industry; far from it, as there are firms at home turning out work which is at least equal to that of Panhard and Levassor, but there is no firm comparable with it for magnitude. The home industry is making great strides, but it is at present little and good. It ought to have been, and might have been but for shortsightedness, what it will be—great and good.



The engine room and 500 h.p. main engine.

Now that King Edward VII.—*vide* daily press—has been placed in some risk owing to an uneducated horse shying at an autocar, surely an Equine Education Bill should at once be brought forward for the establishment of a little gentle compulsion.

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Mr. J. Ernest Hutton, who recently described his run from Northallerton to Cannes, has had a most pleasing return trip from Nice to Paris on his twelve horse-power Panhard. He drove from Nice to Paris, a distance of 1,100 kiloms., in two and a half days, and from Paris to Boulogne in six hours. We hear he has sold this twelve horse-power Panhard to Mr. Frank Lazenby, and has ordered a still later pattern for delivery the first week in May.

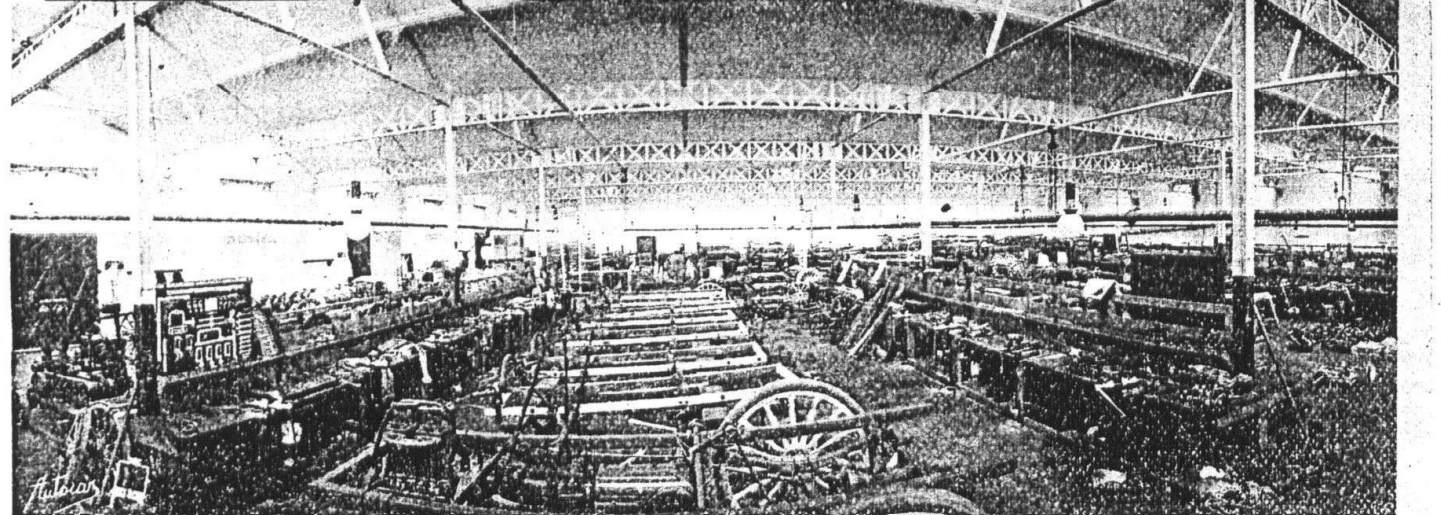
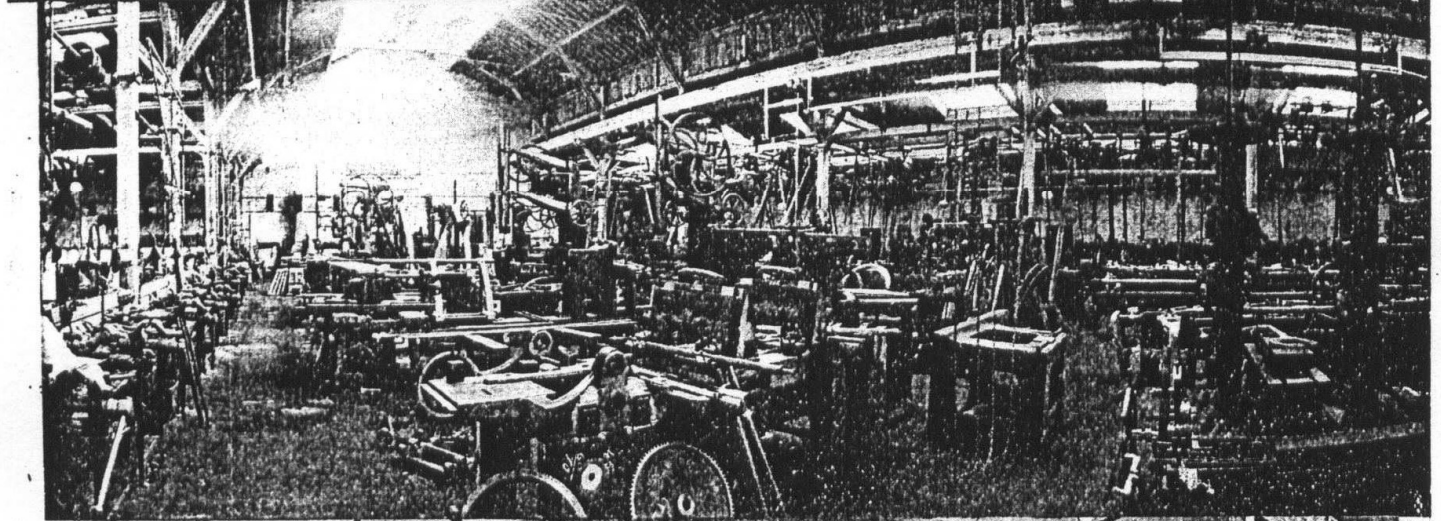
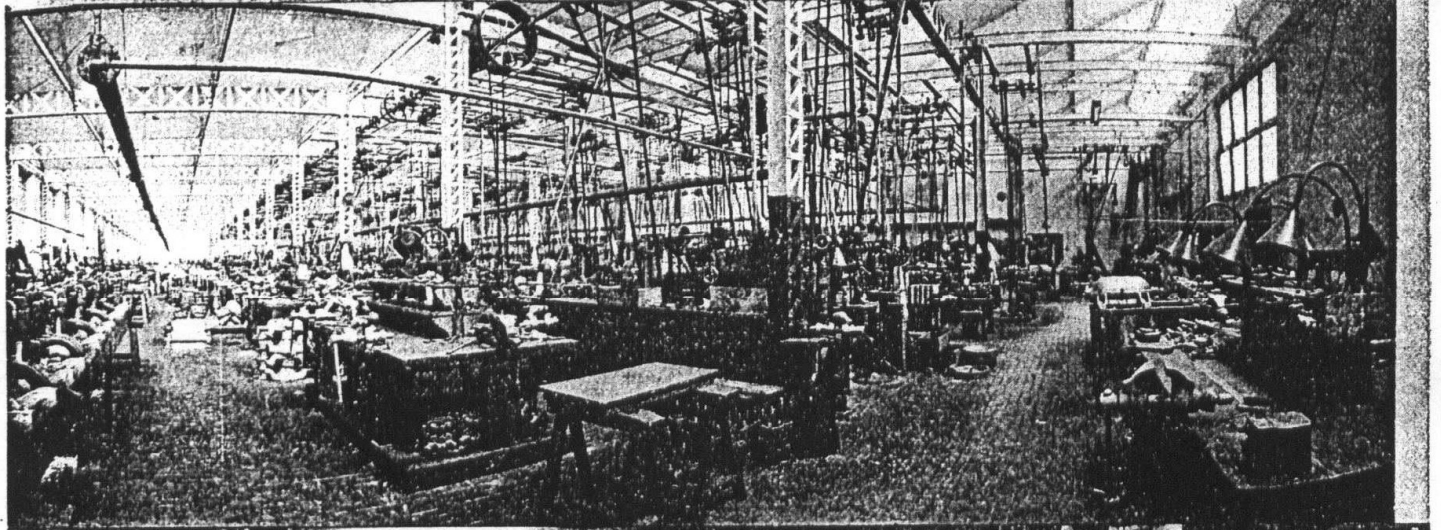
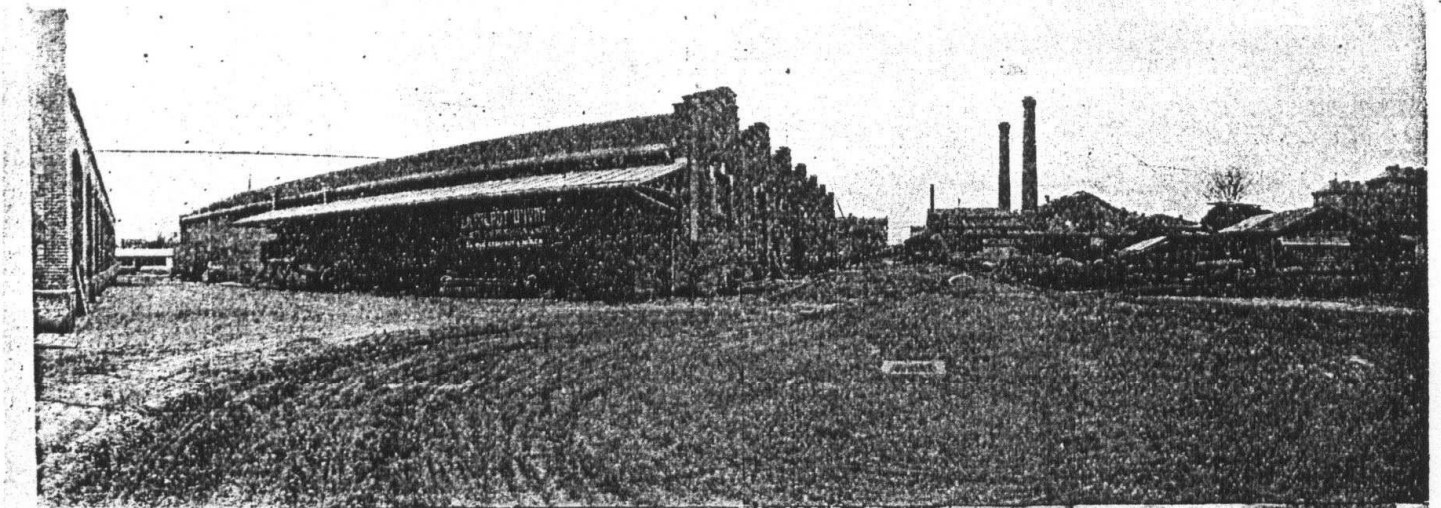
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Last week we referred briefly to the proposed motor service to be started between Enniscrone and Ballina. We omitted to mention that the towns are eight miles apart, and that two roads are available, the road by the river being considered the prettier. One of the promoters has made rather a good suggestion to the effect that till the local cattle become used to the cars, they (the cars) should always take one road, so that those who had nerves themselves, or imagined their horses similarly afflicted, could make a point of keeping on the other road. The Ballina Co. would like to receive prices for motor sundries, etc., and if addressed to Messrs. Timlins, Ballina, these will reach the right quarter.

Will any dealer in Kilmarnock or Clyr who supplies petrol kindly advise Mr. E. J. Thompson, Glen Tower, Great Western Road, Glasgow, to that effect? Or if any of our readers have purchased petrol in either of these places, they will oblige us and Mr. Thompson by giving him the address.

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Mr. Guy Lewin, of the Kingston Motor Co., Kingston-on-Thames, mentions as a good proof of the increasing reliability of autocars that whilst a large number passed his premises during the holidays he had no call for repairs or adjustments. There is undoubtedly something in this theory, although we think he will agree with us that the change is partly due to the fact that owners know their machines better, as a number of the so-called "troubles" are due entirely to lack of acquaintance with the machine, or to absolute neglect and carelessness. This reminds us that the Kingston Motor Co. always have a stock of accumulators fully charged, besides a big supply of petrol and the best-known brands of lubricating oils. They also have a pit over which the car can be driven straight from the road, and storage for from twenty to twenty-five cars, and to complete the up-to-date arrangements of the firm they are prepared always to send a mechanic at any hour of the day or night on receipt of a wire. They also supply drivers when required, and, in addition to their cars, are starting a motor launch on the river hard by.



1. Looking down the main street between the workshops towards the entrance gates. Wood maturing on right of roadway. 2. A part of the great machine shop. This view gives rather an inadequate idea of the actual size of the building. 3. Tool shop where the tools and machine tools are manufactured. 4. The erecting and fitting shop.