

THE OLDS HORSELESS CARRIAGE.

The horseless carriage herewith illustrated is a compact and well proportioned vehicle which has been giving good service during the past few weeks on the country roads of Michigan. It is driven by a five horse power gasoline motor which is placed underneath the box. In attaching the motor to the carriage, care has been taken to avoid any direct attachment to the box, so that when it is running the vibrations shall not be communicated to the passengers. The carriage is steered by the operator's left hand and is thoroughly under control, the front wheels turning with something of the ease of a bicycle wheel. The starting, stopping and change of speed are controlled by a lever placed conveniently to the right hand of the driver.

To throw in the back gear the lever is thrown forward; and when turned in the opposite direction one-fourth of a turn, it throws in a four mile speed suited to rough roads or hill climbing. If a higher speed is required, another quarter of a turn gives eight miles an hour, and another quarter twelve miles. Beyond this speed the power is increased at the governor of the engine, until a maximum of eighteen miles an hour is reached. The machinery is simple in construction and is practically noiseless. The fuel supply is located below the engine, and has no connection with the box, special care being taken to prevent any possibility of explosion. The carriage is fitted with $1\frac{1}{2}$ inch cushion tires, and has ball bearings throughout.

The carriage was invented by Mr. R. E. Olds, the general manager of the P. F. Olds & Son Engine Works of Lansing, Michigan.

AN ENGLISH OIL MOTOR CARRIAGE.

We present an engraving of an English oil motor carriage made by Alfred Cornell, of Tonbridge, Kent. It is known as Arnold's oil motor carriage. It is an excellent example of an all round road wagon at a moderate price—it costs £130. The carriage seats two people, but admits of a seat at the back so as to carry three people or even four people of moderate weight. The carriage is propelled by benzine, the well known Benz motor being used. The entire weight of the motor is about 500 pounds. Owing to the concentrated nature of the propelling agent, the vehicle can be run 60 or 70 miles without refilling the reservoir. The carriage itself is very pleasing in design, the wheels having rubber tires and running on ball bearings; the spokes are arranged as in bicycle wheels. The carriage is easily guided, and descends the steepest hill without using the brake,

as the engine is arranged to do its own "back pedaling," as it were. The current to work the igniter is obtained from an accumulator. The current stored is sufficient to work the carriage 300 miles. The horseless carriage has been having a hard time in

est importance to Siam. No hopes are held that the railway will pay as a commercial speculation, but hopes are entertained that, in the awakening of Siam, that fatal unsteadiness of purpose which has characterized her actions in the past may give way under better guidance to some continuity of action, and the railway, having been begun, may be finished. There is no physical reason why the railway should not be completed, and when the first engine steams into Khorat Siam will have made her best effort so far to escape from the state of semibarbarism in which she is enthralled.

The railway is 163 miles in length, and, as is well known, it is being built by Mr. Murray Campbell, one of the distinguished pioneer railway contractors of Asia, and financed by Messrs. Matheson & Company, of Lombard Street. It is designed to pierce "the center of a vast plain of magnificent soil reaching right away to the Mekong, and capable, if properly developed, of nearly doubling the present revenues of Siam." The railway is an "extremely cheap full gage line." It was to have been finished on December 12, 1895. An extension of time of one year has already been granted, and a second extension may reasonably be expected.

That the railway can be ready for traffic by December, 1897, there is no doubt, for the most difficult section of the whole line will, barring accidents, certainly be completed before the end of the current year.

There have been many difficulties to contend with—a spongy soil and the alluvial plain fever and sickness in the jungle; too much water at one season; a dearth of it at another; no roads; difficulty of transport; untrained laborers; a vacillating government, and many others. The director-general of the Siamese railways is an able German engineer, Herr Bethge, who was formerly Krupp's agent in China. He was an unsuccessful tenderer for the construction of the line, the making of which he is now superintending. Inevitable friction has resulted from this opposition of interests. Constant questions are arising as to whether, for example, the subsidence of an earthwork or the wabbling of a masonry embankment is due to faults of construction or of design. Siam is a country rejoicing in a multiplicity of advisers, culled from half the nations of Europe. In the multitude of counsel, they say, there is much wisdom. — Correspondence London Times.

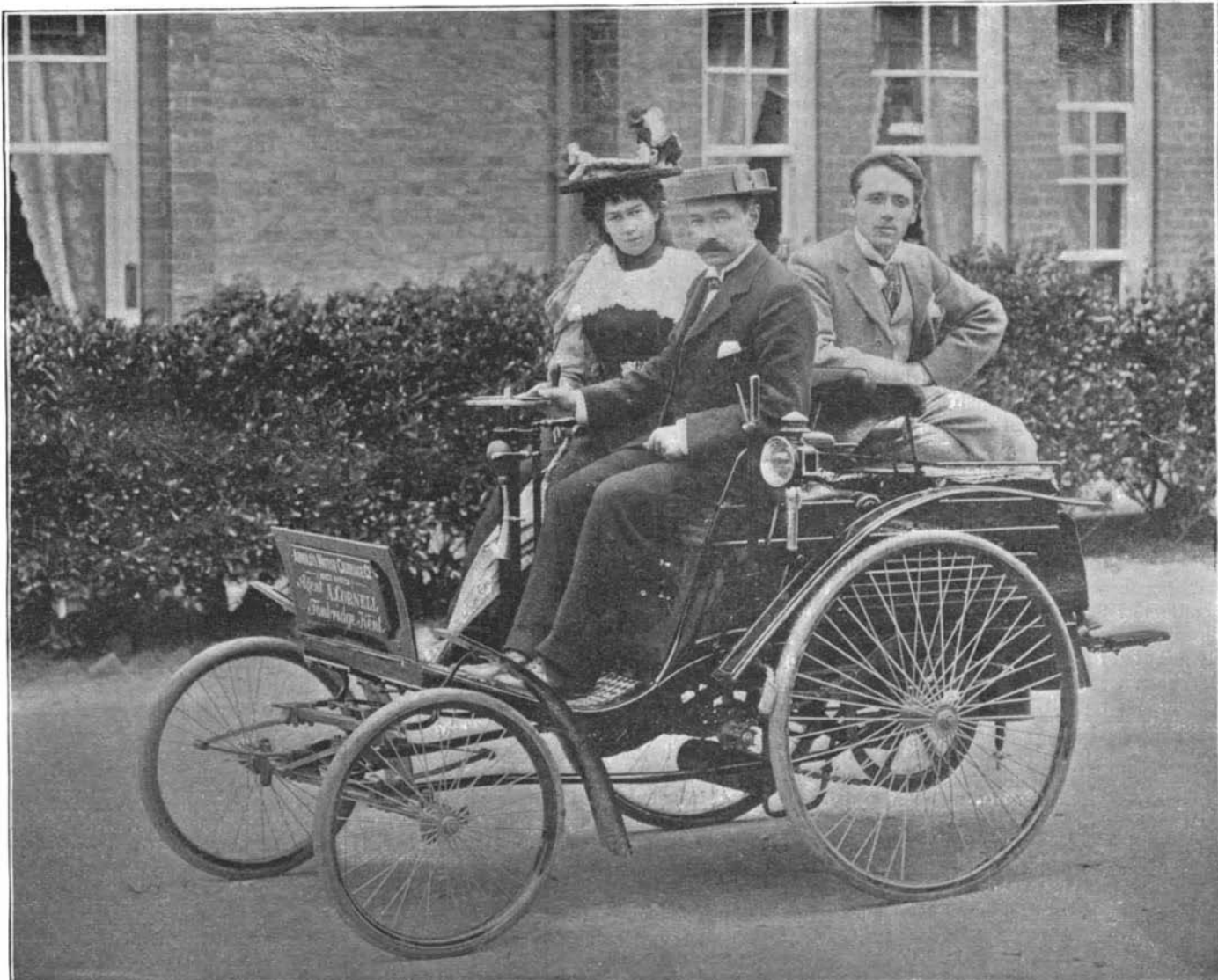
BOOKS bound in the skin of departed friends are said by the London Figaro to be the fashion now in Paris. So are cigarette cases, tobacco pouches, pocketbooks, and prayer books made of the skin of notorious criminals.

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England owing to antiquated laws, but thanks to sensible legislation, the industry will probably now develop rapidly. England, with its superb roads, is a splendid field for the utilization of the horseless carriage.

Siam's New Railway.

With the exception of the short narrow gage line to Paknam, the railway now under construction from Bangkok to Khorat is the only railway in Siam. It is to be the first of a vast ramification of lines designed to distribute civilization to the most distant portions of the kingdom. That the construction of the railway to Khorat should be persisted in is a matter of the high-

**THE ARNOLD OIL CARRIAGE.**