

# THE PALMER CORD AERO TYRE AND RIM.

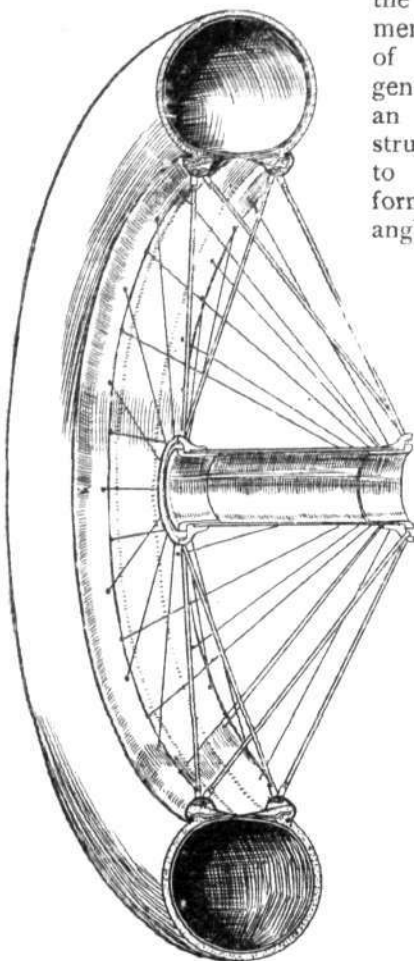
THERE has of late years been a marked tendency towards greater simplicity in aeroplane design, not only for aerodynamical reasons, but also in order to facilitate replacements. In no other part of the modern machine has this tendency probably been more pronounced than in

the under-carriage, which member has in the course of time been reduced, generally speaking, from an elaborate system of struts, skids, and wheels to four simple struts forming two V's, in the angle of which rests the

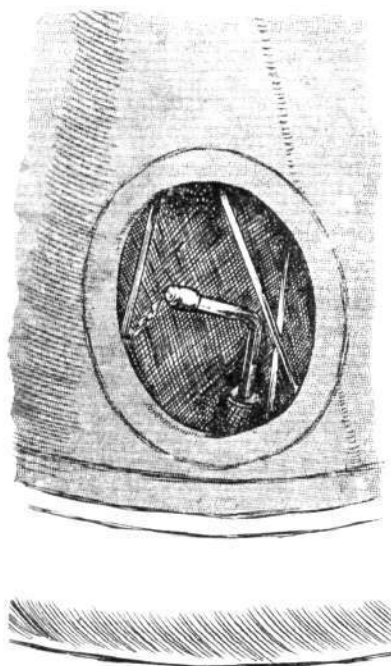
absorbing devices has naturally been that extra work is thrown on the tyres and wheels, which should therefore be proportionately strengthened, not by adding extra weight, if it is avoidable, but rather by scientific design of these parts, utilising the bulk already existing to the best possible advantage.

It has been found in practice that the ordinary type of tyres used on cycles and motor cars frequently gave trouble when fitted on an aeroplane, as the lateral stresses in the tyre due to landing in a side wind were often great enough to pull the bead out of the rim, thus allowing the air tube to blow underneath and burst. In some cases the whole tyre was wrenched bodily off the rim. In the Palmer Cord Aero Tyre and Rim this difficulty has been overcome in a very simple and ingenious way by giving the rim a particular form as seen in one of the accompanying illustrations, and by incorporating into the bead of the tyre steel staples which give rigidity to the bead and prevent it from pulling out.

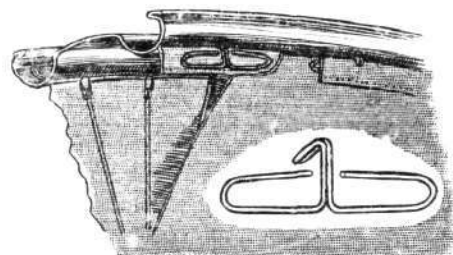
The inner ends of these staples rest on the raised centre portion of the rim, whilst their outer ends project outwards to the edge of the bead, locking the latter in position in the rim. In order to add to the resiliency of the tyres the spokes of the wheels



Section through a Palmer cord aero tyre and off-set wheel.



The tyre valve is given an angle in order to facilitate getting the pump screwed on.



Sketch showing spring hooks, by means of which side covers are attached to the wheels.

tubular axle carrying the two wheels. There was a time when most designers considered it not only desirable but practically necessary to provide some means for lessening the lateral strain imposed upon wheels and tyres when a pilot inadvertently or by force of circumstances landed his machine in a side wind—that is to say, with a greater or smaller amount of “drift.” The demand for high-speed machines has necessitated a reduction in head resistance wherever possible, and, as one of the results, devices for taking lateral strains on the wheels have in many cases disappeared, whilst shock absorbers have been either carefully stream-lined or frequently omitted entirely. The effect of this rigid economy in shock

are given a certain amount of play at the hub, so that in case of severe shocks each spoke is allowed to move inwards about  $\frac{1}{8}$ ". Side covers of “doped” fabric are provided, and the method of attaching these to the rim is highly ingenious. Small spring hooks sewn into the edge tape of the cover engage with corresponding holes in the rim, and the covers are attached or removed with great ease by means of a simple tool resembling an ordinary button hook.

A visit to the Palmer Tyre Co., the makers of this highly efficient tyre, at 119, Shaftesbury Avenue, would well repay any of our readers materially interested in this side of the industry.



## R.F.C. Officer Killed in France.

ACCORDING to a message from Paris, a Voisin biplane, while being flown over the French capital by Laporte, fell at the Pont de Grenelle, near the Eiffel Tower. The passenger, Capt. Chinnery of the Royal Flying Corps, is stated to have been killed on the spot; the pilot was dragged from the wreckage and taken to the Boucicault Hospital, where he succumbed to internal injuries. The cause of the accident is not known, but an eye-witness stated that the machine was in flames and flying very low just before it fell.



## Fatal Accident at Farnborough.

WHILE making a descent after a flight at Farnborough on Tuesday, a Maurice Farman biplane, piloted by Second Lieut. N. L. Gardner, caught fire, and the pilot was burnt to death before he could be extricated.

## Fatal Accident to Gradel.

THE French pilot Gradel was killed in an accident at Bethune last Friday. He was returning from a reconnaissance, and when attempting to land in a high wind the machine fell from a height of about sixty feet. The pilot sustained a fractured skull, and died almost immediately.