

material or of leather. The divided skirt can be strapped round the ankles, giving a perfectly free movement when in the aeroplane, whilst when on the ground the skirt has the usual appearance. Amongst the instruments shown were a full range of the Alexander Gross specialities, including the "Anti-drift" compass, bearing finder, aviation maps and map-holders.

### Garuda Propellers.

Garuda propellers and tractors, which are manufactured by Garuda Propeller-Bau, G.M.B.H., Naumburgerstrasse, 42-45, Berlin, Neukolln, are comparatively unknown in this country. They have, nevertheless, achieved numerous successes in their country of origin. Their design is both unusual and interesting, being the result of several years' scientific research. They are of the laminated type, but the blades are bent by a special process, so that the latter slope forwards, *i.e.*, the tips are slightly in advance of the boss. This dihedral setting of the blades has the following effect:—Owing to the centrifugal force of the blade tips, a tendency on the part of the latter to "flatten out" is produced, which is not only resisted by the natural "spring" of the blades, but by the thrust of the blades as well. In this manner, it is claimed, propeller flutter is entirely eliminated.

### General Aviation Contractors, Ltd.

We do not think there were many accessories of any importance that could not be found on this firm's stand, which, by the way, was most tastefully arranged. It is not proposed, therefore, to give an account of all articles seen, but to describe a few of the most interesting, some of which are included in the accompanying illustrations. The "Roold" specialities consist of the safety helmet, of which

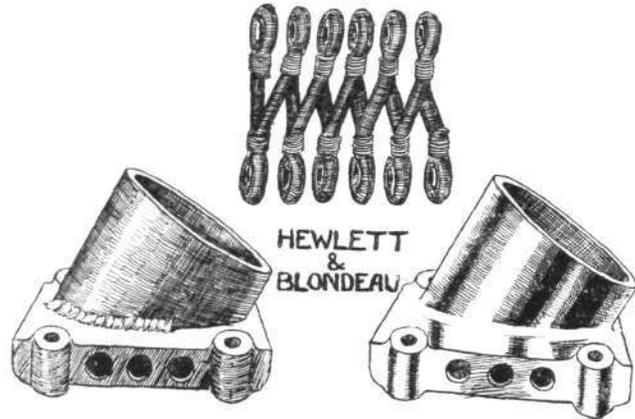
there are several varieties (the latest pattern, with neck protector, is shown in our sketch), "pilot caps" in leather and wool, suits in leather, "papier du japon" (an exceedingly light rubber-like material) and "papier kani," chest and leg protectors, safety belts, the "Audiphone" speaking tube attachment to helmets, and map cases. A new safety jacket was also shown, which will keep an aviator afloat should he fall into the water. It is in the form of a waistcoat and has an inner lining of a felt-like cork composition. The G.A.C. fleece-lined black leather combination suits struck us as being of exceptionally good value for the price charged. Instruments were represented by the Hue altimeters, barographs, and watches. We give an illustration of one of the latest models of altimeters, which only came over from France during the Show. It is exceedingly small, and can be strapped on to one's arm.

Another article that made its first appearance during the show is the G.W.T. engine starter, which we hope to describe in detail on another occasion. The "Monodep" compass and the "G.A.C." watches are also important accessories, the former enabling one to keep a correct course by observing the movement of two pointers on the compass. Although hardly to be considered as accessories, the "Tellier" floats were there just the same, their construction and design being exceptionally good. Specimens of "Emaillite" dope were shown as well as the successful "Gnomol" castor oil. The former is obtainable in various colours, which, we are told, will not run. Last, but by no means least, are the Rapid propellers. The success achieved by these propellers at home and abroad renders it unnecessary for us to deal at any length with them here, suffice it to say that the latest pattern is particularly suitable for use on hydro-aeroplanes, as the tips are reinforced by a covering of copper. Breakage due to contact with the water whilst revolving is thus minimised.

### Hewlett and Blondeau.

Some very fine examples of oxy-acetylene welding executed by this firm were displayed on their stand. Not only are the joints clean and well moulded, but, judging from an inspection of a scrapped socket which had been cut in half, they are perfectly homogeneous. But, as an example showing the various uses to

which this form of welding can be put, one could not do better than examine the control-lever shown on this stand. Practically speaking, it was built up of numerous parts welded together—and so welded that it was difficult to see where one part ended and another began. One point in favour of this welding is that extra strength is given to the joint, owing to the additional metal at this part necessary in the welding process. This is clearly shown by one of our sketches showing one of the previously mentioned sockets



Hewlett and Blondeau's welded steel sockets, and elastic shock absorbers.

before the blow-pipe is applied, and another sketch showing the finished job. It will be seen that little bits of metal are placed along the join, which, when a part of the adjoining metal after the application of the blow-lamp, forms an extra wall of metal all around the joint. The welded-tube work, *fuselage*, &c., done by this firm is equally good, if not even more meritorious, considering the greater difficulties met with in connection with tubular work. In addition to the welded work, a large selection of smaller, but equally important, fittings, such as eyebolts, wirestrainers, angle plates, &c., were shown, while tanks and engine-plates (also bearing specimens of welding) formed two other specialities of this firm. Instruments formed a part of the display, and included an interesting type of engine-revolution counter and an inclinometer. The latter instrument has the advantage of being able to be fitted in an upright position, thus avoiding the necessity of looking downwards to ascertain the machine's attitude, as is the case with some types.

### Hoyt Metal Co., Ltd.

Stacks of what appeared to a youthful visitor to be bars of chocolate wrapped up in silver paper formed the exhibit of this firm. Hoyt metal is a carefully prepared babbitt metal having high anti-friction qualities that has given every success in bearings for internal-combustion motors. Numerous examples of die-cast bearings made from this metal were also shown. These bearings are produced by a special pressure and vacuum system perfected by this firm, and are guaranteed true to .001 in. They require no machinery of any description, and are ready for fitting in their housings.

### Integral Propeller Co., Ltd.

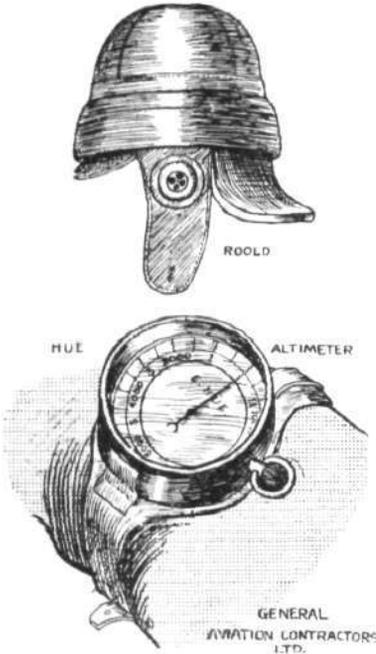
Few propellers can claim so many successes as can the Integral, or, as it is better known this side, the "Chauvière." One of the earliest in the field of aviation, its characteristic rounded blades are now familiar in all parts of the world where aircraft exist. And its reputation is well deserved, for, as any who examined these propellers exhibited at the Show could see for themselves, the design and workmanship leave little to be desired. A conclusive demonstration of their soundness in construction was the placing of one of the "hydro" models in a glass tank of water, a procedure which did not show any deleterious effect on the propeller. The latest Chauvière propeller for hydro-aeroplane work has half its blades sheathed with copper, so as to withstand the action of waves or spray. Various sizes of these propellers were shown as well as some beautifully made model propellers.

### A. Marquer.

Besides some "helicopting" butterflies, which were really very fascinating to watch, and various types of "Al-Ma" model aeroplanes, an ingenious automatic spanner was shown. The "Plattina" spanner or grip is of the self-adjusting type, and the range in sizes of nuts and tubes which can be operated upon with one tool is remarkable.

### Richard Melhuish, Ltd.

The most comprehensive exhibit in the Show was undoubtedly Richard Melhuish's display of machinery and tools. Apart from the actual construction of aeroplanes, the repairs and upkeep alone



Two G.A.C. exhibits—the Roold helmet and the latest Hue altimeter.