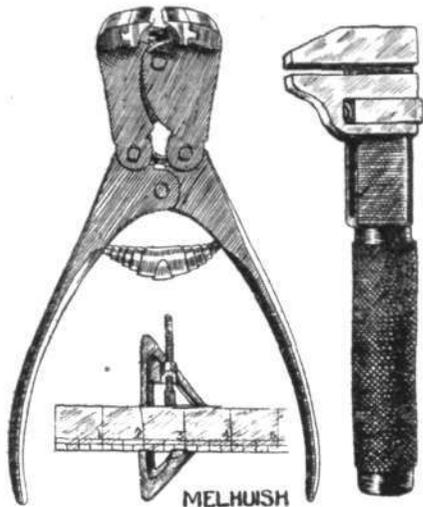


call for careful consideration in the equipment of a workshop. In fact the successful running of an aeroplane, whether for military, exhibition, or school work depends very largely on the ability to effect quick and sound repairs, alterations, &c. Everything necessary for fitting up such a workshop to meet the above requirements was shown by this firm. It would be quite impossible to describe, or give a list even of, all these machines and tools, in the short space we have at our disposal. A remarkably powerful wire bender and cutter is illustrated in one of the accompanying sketches, along with a quick-adjusting spanner, and a useful rule-gauge. The very complete catalogue

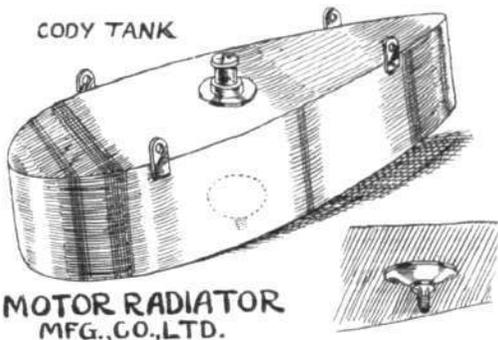


MELHUISH
Melhuish steel-wire cutters, quick adjusting spanner, and rule angle-gauge.

of all their machines and tools is a revelation, and we strongly advise any of our readers interested in this matter to apply for one of them.

Motor Radiator Manufacturing Co.

Two types of aeroplane and airship radiators were shown by this company—the well-known Zimmermann honey-comb, which has been considerably improved constructionally, and a flat-tube type. This latter type of radiator is made up of a number of solid drawn brass tubes, stream-lined in section and of remarkable strength and lightness. The Zimmermann radiator has been described before in these columns from time to time, so only a brief explanation of its construction is necessary at the present moment. It is a honey-comb pure and simple, being built up of layers of exceedingly thin, circular brass tubes having a narrow water space between them. This water space is obtained by expanding the ends of the tubes, so that each tube is separated from the other when stacked together. The ends of the tubes are soldered together by a special process, thus forming a wall at each end of the stack of tubes. Some neat



The Motor Radiator Manufacturing Co.'s stream-line tank, designed for Col. Cody.

stream-lined tanks were also shown, one of which—built to the order of Col. Cody—we show in the accompanying sketch. Another neat piece of work, also for Col. Cody, was a combined tank and radiator, the tank being stream-line in form and, of course, at the top of the radiator.

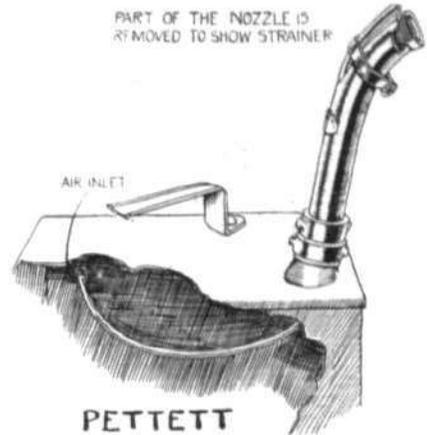
Navaltum, Ltd.

The metal bearing the above name was one of the most interesting exhibits in the Show, for many have been the attempts to produce a metal having the lightness of aluminium but with a higher tensile strength and freedom from atmospheric attack. Although these attempts have met with more or less success, certain drawbacks still remained to be overcome. Foremost amongst these were the difficulty of obtaining perfect castings and a slight susceptibility to corrosion—this latter point being much less in evidence in the alloys of aluminium than with that metal itself. Special interest attached itself to this new aluminium alloy, Navaltum, for the makers claim that these two drawbacks have been entirely eliminated. Navaltum

has a specific gravity varying from 2.2 to 2.8, and a tensile strength of from 9 up to 25 tons, according to the different grades. The castings are clean and have stood tests up to a tensile strength of 14 tons per sq. in., whilst the drawn bars have a tensile strength of 14 tons per sq. in. Having merits such as those given above, Navaltum should receive the most careful trials by all users of the heavier metals such as copper, brass, gunmetal, &c., with which it compares very favourably, and has, we understand, already displaced in certain Government work.

Pettett's Patent Safety Filler Co.

Filling up the petrol tank, as many of our readers must have realised before now, is not without its inconveniences. The funnel, when used, is a clumsy affair at all times, and has a peculiar knack of wobbling over to one side of the tank away from the mouth of the can, so that no small amount of petrol is wasted. When the job is done—and this generally takes some time—the funnel is more often than not thrown on the ground—to collect various particles of "foreign matter." We made a close inspection of the device shown by William Pettett (illustrated by one of the accompanying sketches) which does away with the above troubles. It consists of a neck or spout, of convenient length, which screws on to the mouth of the can; any size of can may be so fitted by the use of various adapters. This neck not only makes it easy to pour into a tank, however awkwardly placed, but the petrol can is emptied in half the time it takes in the ordinary way. We saw an actual demonstration of this with water, and timed the emptying of a two-gallon can, with and without the filler. In the first case, the can was emptied in 20 secs., without any mess; the second trial, with the filler removed, took 40 secs., and was accompanied by the usual splashing. Another feature of this device is that, as soon as the level in the tank being filled reaches the nozzle of the filler, all flow ceases owing to the air-lock produced. A very fine filter is fitted to the nozzle of the spout, so that no water or dirt should enter the tank with the petrol.



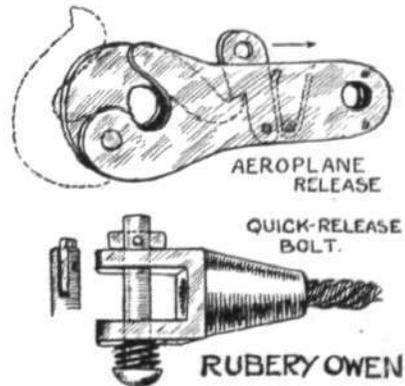
The Pettett safety filler fitted to ordinary petrol tin.

Ruberoid Co., Ltd.

Nothing further can be added to our remarks on this firm's exhibit, made in our first Show number, other than with its 21 years of successful application as a roofing material, and the fact that it is waterproof, unaffected by weather or time, and is flexible, we see no reason why it should not be universally employed for hangars, airship sheds, &c.

Rubery Owen and Co.

The special feature of this firm's exhibit was the variety of welded steel work used in the construction of aircraft. The pressed and welded steel engine housings and supports—designed for well-known makes of aeroplanes—were excellent examples of the work turned out by this firm. Other notable examples were some specimens of solid, cold drawn steel tubes, bent and welded together at different angles. The bends of these tubes were made by a special machine, which maintains the true circular section of the tube throughout. Eye-bolts, cable-ends, and wire-strainers made from high tensile steel, nickel steel, and chrome vanadium steel, also formed special features of this firm's exhibit. Two other specialities, illustrated herewith, consisted of a quick release bolt, and an aeroplane release gear, which has been actually used with great success. The action of both these devices is clearly seen in the illustrations. Numerous



Rubery Owen aeroplane release device and a simple quick-release bolt.