

THE INDUSTRY

Bearing Output

MR. MICHAEL DEWAR, Chairman of British Timken, Ltd., and Fischer Bearings Co., Ltd., speaking at the recent annual meeting of British Timken: "We realised that, if war came, the demands upon the company were likely to be very high. On the outbreak of war, we conceived it to be our duty to use a large portion of our accumulated cash resources in the immediate purchase of additional plant. Some of this plant may be redundant after the war, but we feel it was the only thing we could do, bearing in mind the country's needs. Practically all this plant is now at work and the company's output is greatly in excess of anything we have achieved before."

Champion Generators

LIGHTWEIGHT wind driven generators, at prices within reach of light plane owners, have been introduced by Champion Aviation Products Company, of Los Angeles, California. These generators are specially designed for aircraft use, are of streamline shape and are built of duralumin wherever possible. They are equipped with voltage control and relay to prevent overcharging of the battery and on the larger models the propeller pitch can be adjusted to give maximum output at any cruising speed.

Both six- and twelve-volt models are available, the six-volt models being of 6, 12 and 20 ampere capacity and weigh 6, 9 and 13 pounds each, respectively, while the twelve-volt types are to be had in 4, 8 and 15 ampere size weighing the same as the six-volt generators.

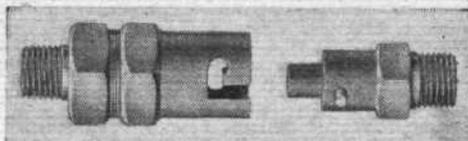


The Sternopal dilution tester.

Instantair Plugs

THE new B.E.N. "Instantair" Coupling is of particular interest in these days when every minute saved is a contribution to the all-important step of speeding up production.

Essentially, the "Instantair" consists of a plug and a socket, the latter incorporating an automatic non-return valve. Whilst the coupling is disconnected this valve remains closed, but as soon as the plug portion is connected to its socket member, by a quick-acting bayonet connection, a slight turn of the



A typical Instantair coupling.

wrist instantly locks the coupling and simultaneously opens the air valve. The removal of the plug automatically closes the valve. The valve seatings are unaffected by oil.

One great economy effected by the use of these couplings is the elimination of wheel valves at each connecting point and the time spent in operating them. It is a simple matter to plug in or interchange such items as spray guns, lubricators, inflators and blow guns at will.

The "Instantair" Coupling is available in $\frac{1}{4}$ in. by $\frac{1}{4}$ in. and $\frac{3}{8}$ in. by $\frac{3}{8}$ in. gas thread with male or female ends from B.E.N. Patents, Ltd., Hughenden Avenue, High Wycombe, Bucks.

Sternopal Dilutometer

MODERN cutting fluids are designed to give optimum performance when used in accordance with instructions laid down by the manufacturers, who are naturally anxious to avoid complaints which may be due, directly or indirectly, to improper use. This is particularly so with water-soluble oils which are used at varying strengths for specific purposes and where difficulties may arise when the solution is either too strong or too weak. In connection with their Sternopal cutting fluid, Sternol, Ltd., stress the importance of correct mixing and correct proportioning. Sternopal is based on entirely new principles and forms an intimate transparent solution with water in contrast to the older and conventional white-emulsions. It is economical in use because of the high dilution with water which may be used, and the correct strength is vitally important. Because of the stability of Sternopal solution water is lost at a greater rate than the oil, so that there is a tendency for the solution to concentrate in use rather than weaken.

The transparent appearance of the solution makes it look thin and there is a distinct temptation to add more fluid to strengthen it up. This is not only wasteful, but may prove unsatisfactory for the job in hand. Accidental dilution by water is another possibility which cannot be overlooked, so that maximum benefit can only be derived by exercising proper control of the concentration both in the mixing tank and at the machines. Whilst Sternol, Ltd., have always extended the services of their Research Laboratory to customers for the examination of samples, this procedure necessarily involved delay. It was decided to develop an instrument which could be used by customers for routine control. The instrument, known as the Sternopal Dilutometer, consists essentially of a conical flask with a long graduated neck, the graduations being marked off to indicate dilutions: 80 to 1, 60 to 1, 40 to 1, 30 to 1, 20 to 1. The principle of the test is the liberation of oil from the solution by the action of acid. The solution for test is poured into the flask and hydrochloric acid is added up to a predetermined mark.

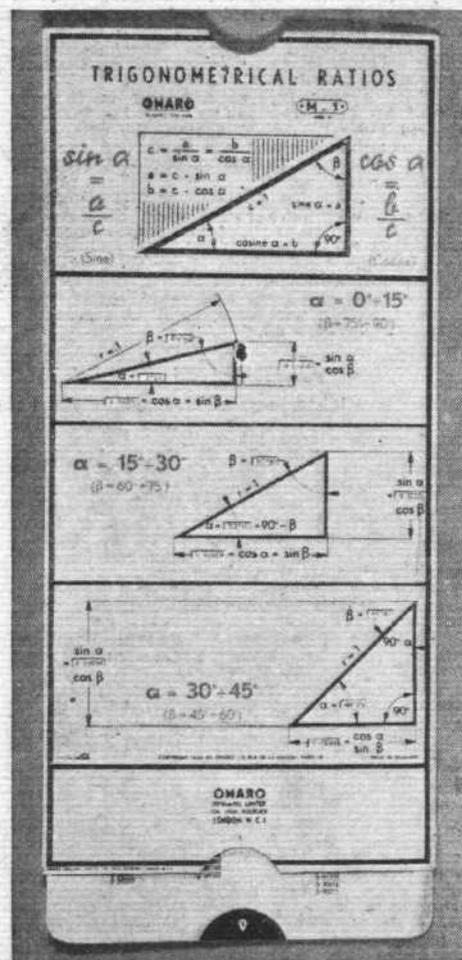
After a period of time the oil rises to the top, leaving a relatively clear solution below, and the proportions of cutting oil to water are clearly indicated.

Information as to price and other particulars is to be had from the Technical Dept., Sternol, Ltd., Royal London House, Finsbury Square, London, E.C.2.

Omaro Slide Rules

MUCH time is spent in design offices in looking up technical data in tables. The Omaro slide rule has been designed to save much of this time and also to eliminate the chance of reading an incorrect value. By the arrangement of a slide inside an outer case in which "windows" are cut, the setting of one figure at a window automatically ensures that all other related figures appear at other "windows."

This principle has been applied to numerous purposes, including weights



One side of an Omaro Slide Rule.

and properties of steel and alloy sections, dimensions of screw threads, nuts and bolts, hardness scales, welding data and discharge of pumps. The only two designs which are at present available in England are for trigonometrical functions (as illustrated) and for arcs, chords and segments of circles. Several others will soon be available.

By arranging the "windows" suitably, each value appears at its corresponding place on the sketch, so virtually eliminating any chance of error. The slides are a handy size for office work, being $10\frac{1}{2}$ in. by $4\frac{1}{2}$ in., and are produced in attractive colours on a durable varnished cardboard which, unless abused, will ensure permanent legibility of the figures. The two rules now available are priced at 3s. each (3s. 3d. posted), and may be obtained from Omaro (England), Ltd., 104, High Holborn, London, W.C.1.