

COMPONENTS FROM CREDENDA WORKS

**A recent visit to one of
the world's largest
component factories, at
Smethwick**

SOME five years ago in the Credenda Works at Smethwick, Birmingham, where J. A. Phillips and Co. Ltd. were operating, one of the largest and most modern plating plants in Europe was established. They had come a long way from the day in 1892 when J. A. Phillips and E. W. Bohle started making cycle pedals in Newhall Street, Birmingham.

Now, within the aegis of the Raleigh Industries group, the Credenda Works almost without question ranks as the world's principal suppliers of components.

It is a magnificent factory, in itself a living testimony to cycling and cyclists throughout the world, a triumph of mechanisation and work study.

And what a fantastic range of components and the various types of each! Bells, bottom bracket axles and cups, cable brakes and pull-up varieties, including the cables and levers, head fittings, handlebar bends of varying types and extensions, fixed and adjustable, with expander bolts, all-metal pedals and rubbered types, hubs and hub spindles, wide-flange or small, spokes, nipples and washers, mudguards, seat pillars, spanners and many other items.

Raw Metals

In a recent visit to Credenda Works I started off by viewing the raw metals as they arrived, then witnessed the first operation, the cutting of various blanks—flat shapes—by the many blanking machines. These blanks moved on to the press shop where some 300 different machines, some quite small, others as large as a lorry, in ranks like soldiers—all with the

ultimate in safety precautions—stamped, drilled, pressed and in other ways gave the metal the basic shape of one or other of the components, or a part thereof. Commented expert guide, Harry Badham, to the effect that some three million items pass through each week! One machine was taking "half-crown" blanks and with six consecutive steps whilst passing them from left to right was turning them into small-flange hub caps in a matter of seconds—the machine could have been geared to do 11 such operations!

Electrically Welded

In the polishing shop the parts were then polished and otherwise prepared for plating. Handlebar bends were "surfaced" in a few seconds by machine as against minutes by old-fashioned hand polishing. And another machine was observed carrying out four operations at once—roughing, finishing, greasing and polishing—on the 3in. domed Celtonia hammer-type bell.

The handlebar building department was full of interest. After the appropriate lengths of tubing had been polished the centre lug was electrically welded on (in some cases the separately prepared centre lug being incorporated in the non-adjustable stem). A process of brazing and annealing, lasting up to 65 minutes, comes next. Cold bending to the familiar designs follows, preceding the plating process.

Chromium-plating is of an exceptionally high standard. The many conveyor-belt plants in effect do the work; racks are loaded with parts of all shapes and sizes, "seen" into the plant

and "taken out" at the end of the process. The real supervisors, however, are the laboratory staff who see to it that the various mixtures used are according to certain specifications in order that a high standard of plating is maintained.

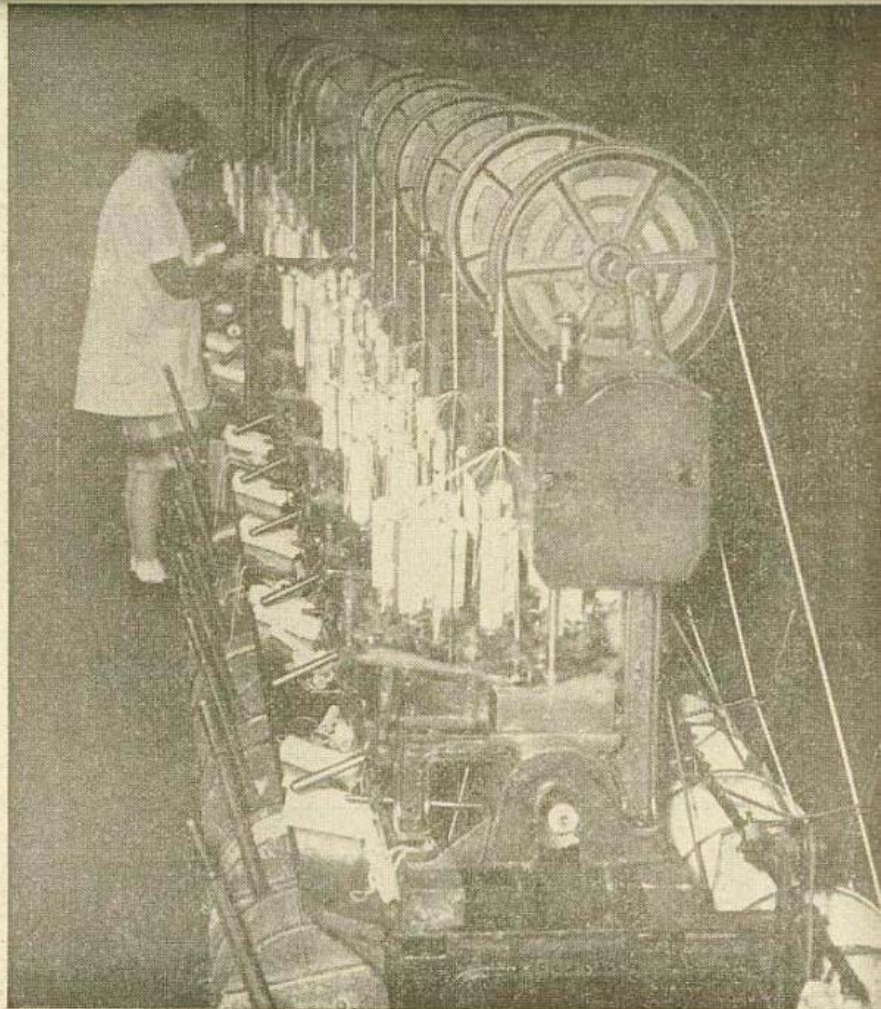
Handlebars to be fitted with pull-up brakes have an assembly line of their own. Screw-in stud units are fitted, levers, springs, plunger-arms and rods attached. Front and rear brake assemblies are completed separately.

The manufacture of cable brakes was both intriguing and enlightening. I first watched the cables being made. Seven strands of fine wire are woven into one, then that one run through another machine which adds a further six strands; a third machine takes the 13-strand wire and adds another half a dozen strands. A cat has nine lives they say; this brake cable gives a cyclist 19 chances! The outer covering is produced by coiling section wire to form a flexible tube, which receives a "cotton jacket," involving threads from 16 bobbins, before it is finally covered with a waterproofing material.

Brake Assembly

In the cable brake assembly section this completed product is cut to the appropriate length—for the Vox Populi (the most widely used cable brake), Grand Vitesse, Grand Prix and other models—and nipples and other end fittings added, before assembly with the remainder of the brake for packing.

Hubs, their spindles, cones, locking nuts, cups, closure washers and lubricators, seemed



Brake cables receiving their cotton jackets.