

Liquid-brazing the frame (left); An aerial view of the new Rudge plant (centre); The ultra-modern enamelling plant (right)

SEVENTY YEARS

IT was seventy years ago when Dan Rudge built the first Rudge bicycle and laid the foundations of the famous house of Rudge-Whitworth as we know it to-day.

From the very first the Rudge was always a favourite with the racing man, and, in those early days, racing successes were perhaps even more important as a sales stimulant than they are to-day. The firm soon made a name for itself, a name for quality that it was never to lose.

The untimely death of Dan Rudge, in 1880, was followed by an amalgamation of the firm with Haynes and Jefferis and Smith and Starley, but such was its power that the Rudge name was still continued as "D. Rudge and Co. and the Coventry Tricycle Company." That the products of the combined firms still maintained a reputation for quality is shown by the fact that gold medals were obtained at international exhibitions in London, 1872; Philadelphia, 1876; Brussels, 1877; and Paris, 1878. One of the firm's most renowned products at this time was the Coventry Rotary tricycle, which had the largest sale of any tricycle ever sold, for which the firm was honoured in 1895 by an order from H.R.H. the Princess of Wales (later, Queen Alexandra), the first of many royal orders.

Variations on "Rudge"

IN the ensuing decade the firm changed its title no fewer than three times, but it always retained the famous Rudge name in some form or other. Finally came the amalgamation with the Whitworth Cycle Company, Ltd., in 1894, under the now famous name of Rudge-Whitworth, Ltd.

This amalgamation was followed by a move to Birmingham on the part of the offices and staff, but in the following year they were again in Coventry, where they remained until December, 1938.

AFTER . . . a visit to the new Rudge - Whitworth factory at Hayes, Middlesex

In 1896 came two startling marketing developments—the introduction of a guarantee and a reduction in price to £12 12s.—the latter at a time when the "basic price" of a bicycle was in the neighbourhood of £20.

Two years later another bold move was made in the marketing field. Prices of the 1898 model Rudge-Whitworths were reduced to ten guineas, and the first easy payment system evolved.

The Sloping Crown

EVERY cyclist knows the famous Rudge sloping fork crown—it is probably an even more distinctive trade mark than the human hand which appears in headplate and chain-wheel. This sloping crown was first introduced in 1901.

Two years later came another Rudge development—the cotterless crank. (I rode a pre-war Rudge fitted with these back in 1924, and can recall the pleasure of gazing at those clean cotterless lines.)

Many other innovations in the world of cycling are due to Ridges—remember the all-rubber pedal (1931), the built-in dynamo set (1933), the coupled brakes (1926)?

While, as for racing successes, Karel Kaers rode a mile in 1 min. 50 3-5 sec.—a world's record—on his Rudge at Wembley, and Harry Hill set up the British hour record of 28 miles 863 yards on a Rudge at Paddington.

"Spare No Expense"

ENOUGH of history. Now come with me to the brand new Rudge factory at Hayes. When the company decided to

move from Coventry, the various executives were told to plan—sparing no expense—the finest cycle factory in the world.

What a thrill they must have had preparing those plans and watching the factory take shape before their eyes!

At Hayes, a few miles from the centre of London, stands the new factory, the last word in modern methods of cycle production.

Dominated by a tall water-tower, carrying a huge version of the familiar Rudge trade mark on its side, the new buildings are severely practical and yet beautiful by reason of that severity. The main buildings are two in number and lie side by side, covering an area of no less than 270,000 square feet.

"... Don't Trudge It"

CHAIN conveyors are the keynote of the Rudge works—I couldn't help recalling the slogan "Rudge it—don't trudge it," for here nothing is carried by hand—Rudge parts march on endlessly by conveyor chains.)

All assembly and sub-assembly work is carried out with the aid of cunningly-routed conveyors. A frame starts its life as a set of lugs and lengths of tubing in the frame stores. Down the conveyor track it goes until, clamped rigidly into a jig, the tubes are spot welded to the lugs—a far quicker method than the old-fashioned drilling and pinning—and it is off again on its way to the brazing shop. Here is the place to spend a cold winter's day! All around you are flaring gas torches and baths of molten brass, and yet there is not the slightest trace of fumes,

so perfect is the ventilation. Frames are liquid brazed by dipping them into a bath of molten metal; other parts (forks and handlebars, etc.) are brazed by open hearths, fired by powerful gas torches mounted on adjustable stands, leaving the operator free to use both hands. After brazing, the parts pass on a conveyor through a series of baths which remove surplus brass and scale as if by magic.

Unique Plating Plant

THE plating plant is unique, for to it come the parts already highly polished. Thus, when the nickel and chromium coatings have been applied, there is no further abrasive process between the nickel and chrome plating, and so the thickness of the plating is maintained everywhere. And what a plating plant it is! No less than 138 ft. in length, with no fewer than fourteen different baths, and designed to give one complete set of bright nickel and chrome-plated bicycle component parts per minute.

Meanwhile, the frame and other about-to-be-enamelled parts are spray-bonderised—a chemical priming process which prevents rust—and this process is carried out at Hayes on the most modern spray-bonderising plant in the country. It has a capacity of 16,000 sets of parts per week.

Cream Tiles

FOR cleanliness and efficiency all other enamelling plants must give pride of place to the equipment in the new Rudge factory. Here the dipping baths stand on ramps surfaced with cream-glazed tiles, down which surplus enamel runs into troughs, whence it returns through filters to the main tanks. Cream tiles in an enamelling plant are a practical novelty, since the surface is such that they can be cleaned down instantly.

For colour work—where cellulose lacquer is used—there is a battery of spraying booths. From

here the parts are taken by conveyor through a special low-temperature drying oven, whilst for the black parts there are two high-temperature ovens also equipped with conveyor systems. Thermostatic control of the ovens and accurate timing of the conveyor mean exact control of the drying operation here.

From the machine shop, from the plating plant, from the enamelling ovens, and from "outside" suppliers the various parts in their finished state converge on the cycle assembly stores.

Hawk-eyed inspectors have examined them for possible flaws and ruthlessly turned down any which have been found wanting, and now the remainder are put in bins ready for issue to the assembly lines.

Moving Bench

THE main assembly lines run the length of their respective shops. The moving bench starts in the stores. As the order cards, bearing the complete specification, come in, girls select the appropriate frame, bars, wheels, tyres, etc.—everything down to the last nut and bolt—from the storage bins, and put them in place on the moving bench.

As the bench moves on, so various operatives fulfil their allotted tasks, and, bit by bit, the pile of parts grows into a finished bicycle.

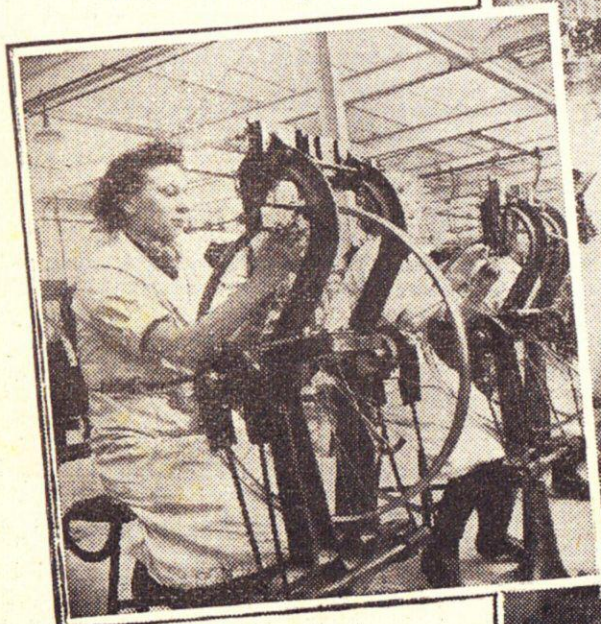
Complete at last, the bicycle undergoes a final—and how thorough!—inspection; then it is off on another conveyor to be wrapped and labelled in transit, ready for the dispatch department.

1869-1939

YES, if Dan Rudge could see it, how he would rub his eyes! Modern materials, modern methods, these would be new to him; but there is one thing he would find in the Rudge bicycle of to-day that he would recognise as one of its original 1869 features, and that is—quality.

—W. J. Mills

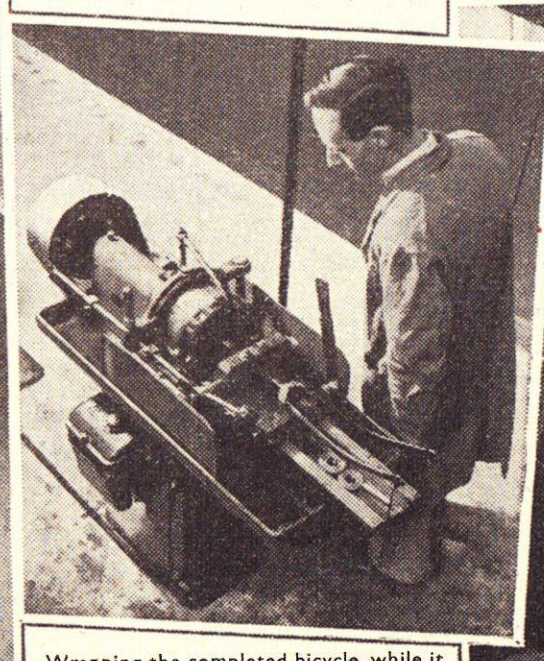
Wheels being trued in a special machine which reveals the most minute deviation from a true circle (below)



The main assembly line (right)



The special electrical machine which cuts the thread on the fork stem (below)



Wrapping the completed bicycle, while it is still travelling on the conveyor (right)

