system 370 ft. long, traversed throughout its entire length by a bar conveyor. The bars are about 7 ft. long and are spaced 24 in. apart. The chains travel about 28 in. per minute. Small parts are hung close on every bar, but large parts such as fenders are hung on alternate bars, to prevent them from touching during the enameling process. From ten to twelve fenders are put on each alternate bar. Oil-fired oven heaters arranged in two batteries supply the necessary heat to the ovens.

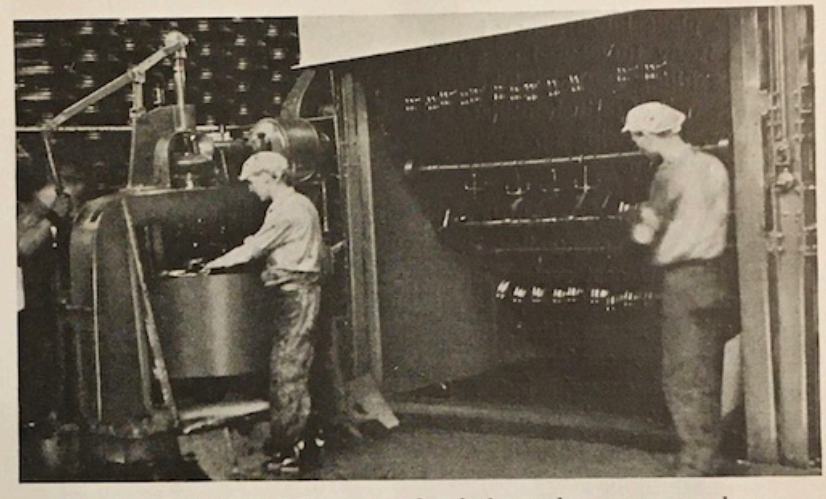
Parts first pass through a tank of what is known as No. 101 japan, black in color, and then drain over drip-pans from which excess enamel is pumped back into the dipping tank. Every 24 hours the enamel (or japan) is pumped out, strained, and clarified, the tank is cleaned, and the enamel is put back. It is tested 12 times every 24 hours for gravity, viscosity, and temperature. It requires about one hour for parts to pass through this oven, which is kept at a temperature of 250 deg. F. at the beginning, 475 deg. F. at the center, and 350 deg. F. at the end. Recording pyrometers register and regulate the temperature. The air heated is drawn in through filters, passed through the heating elements, which are cleaned twice weekly, and finally through air ducts into the oven. Fuel is piped from a central supply system.

The parts cool down in another section of the system, and then go into a second tank of No. 102 jet black japan for the finishing coat. A special cooling system is used to circulate the japan and keep its temperature low. This japan also is clarified every 24 hours and is inspected 12 times in 24 hours for gravity, viscosity, and temperature. The parts, after draining, are passed through the second drying oven where the maximum temperature is held at 450 deg. F. by eight heating units. The japanning and baking oven conveyor is composed of chain links driven at three separate points by synchronous motors, operated as one unit by a special cam device developed for the purpose by the Ford company. Slack is taken up on the chain by an idler shaft on which counterweights are hung, 16 weights of 60 lb. each, or 960 lb. total, being a normal amount. From 540,000 to 775,000 lb. of parts, chiefly of sheet steel, are enameled per day in the system.

As the parts come from the last oven of the system they are still warm. They are inspected individually and are hung upon hooks on an overhead chain conveyor system, over 2,800 ft. long, feeding the chassis and final assembly lines. These departments are in another building, into which the conveyor goes through an overhead covered bridge. At the feeding point of this conveyor, which is the discharge end of the enameling conveyor, the day's supply of larger parts, such as fenders and running-board splash plates, is stored. The quantity of stock is kept low, for storing is expensive and parts like fenders must have protecting pads placed between them, which is a costly operation. If they bump or touch they are marred and must be straightened and perhaps re-enameled.

Many chassis parts, consisting mainly of forgings, go through the enameling cycle the same as fenders and other sheet metal parts. They all are cleaned, washed, dried, and, if rusty or greasy, are sanded. The remainder of the procedure is identical with that for fenders.

Wheels are enameled by mounting them individually on the spindle of a special machine and submerging them in the enamel by operating a lever on the machine. By reversing the lever the wheel is lifted out of the enamel.



Wire wheels are dipped in the enamel tank shown, then are spun to throw off excess enamel, finally are hung upon the bar conveyor which carries them through the baking oven

The wheel is then spun to throw off the excess coating. When taken from the machine the wheels are hung from the bars of a separate oil-fired drying oven in which a temperature of about 350 deg. F. is maintained. The time of travel through the oven is about 2 hours and 20 minutes.

WHEEL hubs are enameled on a second spinning machine, a cover plate fitting over the inside portion to keep the japan out. After dipping and spinning, the hubs are hung upon the conveyor with the wheels and undergo the same drying operation.

When they come from the drying oven the hubs are delivered to the chassis assembly line, while the wheels go to a station close to the final car-assembly line, where tires and tubes are fitted and inflated. An average of about 2,500 wheels per day are turned out for the assembly, export and service requirements of this plant.

Parts for service stock are processed through japanning operations in the regular production line. The packing division of the service department is traversed by the overhead chain conveyor leading from the japanning department to the assembly lines. Parts required for service are removed from the conveyor and packed for shipment. If the service department removes material that the production line may need later, it can be replaced readily on the line so that assembly operations, which are the more important, may go on without interruption.

In a later article the operations performed in assembling the Ford chassis and mounting the body upon it will be described and illustrated.