PROGRESS REPORT ON THE INDUCTION STIRRER

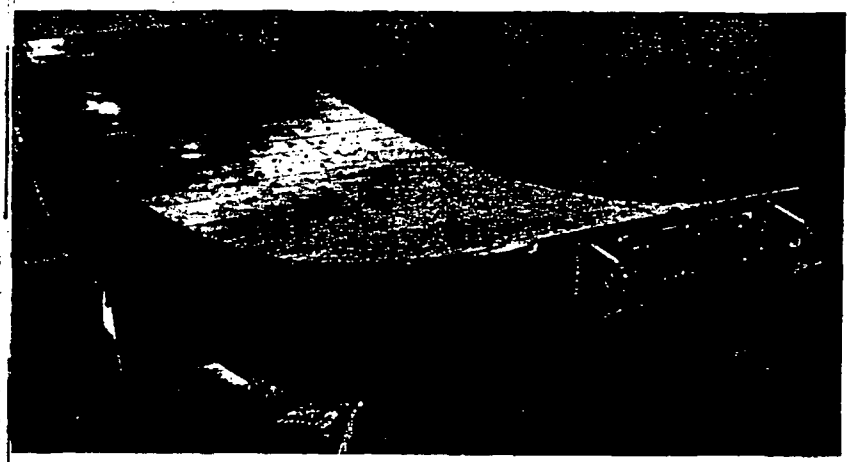


MORE than a year ago, *Powerfax* carried an article introducing a new development in the making of steel in electric furnaces—the induction stirrer.

This device, by electrically inducing a circulation or stirring action in the molten metal, was intended to improve furnace operation. In the words of the article it promised to "result in a more homogeneous melt, more uniform temperature of the bath, and better distribution of the alloying elements."

Fourteen months of actual operating experience have proved that the stirrer can achieve all these advantages and more.

This is the Elliott induction stirrer ready to be mounted on the rounded bottom of the Timken Company furnace.



THE first induction stirrer in service in this country was built by Elliott's Ridgway Division under agreement with Aros Electric, Inc., United States subsidiary of ASEA, the largest electrical company in Sweden.

The stirrer resembled a section of the stator of an enormous polyphase motor. Mounted on the external bottom of the furnace and properly energized, it induced into the molten metal a constant circulation or agitation.

It was installed on a 90-ton, 20-foot diameter electric furnace in the melt shop of the Timken Roller Bearing Company, Canton, Ohio, and first put into service in October, 1952. By December, 1953, this stirrer-equipped furnace had produced 1200 heats of steel, predominately alloy steel in a wide range of analyses.

The operating results obtained during this period were summarized in a paper presented by H. F. Walther, Superintendent of Melt Shop, Steel and Tube Division, The Timken Roller Bearing Company, at the AIME Electric Furnace Steel conference in Cincinnati. We have extracted from Mr. Walther's paper and tabulate here some of the operating advantages attributable to the induction stirrer: