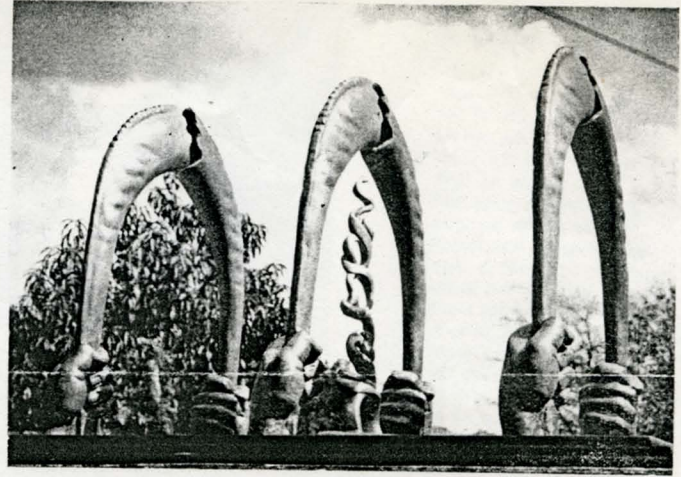




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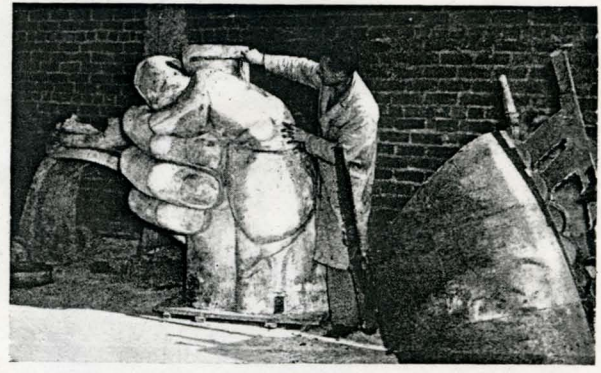


The model shown here is of the memorial to be erected in the Jewish Cemetery at Westpark, Johannesburg. The monument recalls the death of six million Jews under the Hitler regime. The bronze castings of unusual size and height presented a problem for the foundryman.

own craftsmen, Messrs. J. I. Pinker & J. F. Daschner, and using a standard flash-off mould dressing developed on the Reef.

The third attempt produced a casting remarkable (a) for the size of the section, (b) the thinness of the casting wall, (c) the smoothness of the outer surface and (d) the economy in time achieved through saving in firing and fettling time. Because of the lightness of the particular castings it was feared that they might not withstand a high wind if left unsupported. It has therefore been decided to reinforce the ram's horns with a copper rod, which, in turn, will be attached to the casting by means of a cross-bar fixed to lugs inside the horn. The base of each horn will be filled with ballast to a quarter of its depth.

The pooled experience and skill of these experts in the foundryman's craft has evolved a technique which now puts the firm in a position to undertake similar castings of large dimensions and light weight as required in secondary industry and on the mines. The CO₂ Process makes these castings highly competitive in price.



The hand alone is five foot high. One of the craftsmen at Denver Metal Works (Pty.) Ltd. is seen here examining a successful casting.

FOUNDRY DRAMA HAS HAPPY ENDING

CO₂ PROCESS USED FOR BRONZE MONUMENT CASTING

BRONZE castings of large dimensions but of light weight, produced with economy of time as well as material, have been achieved in a Johannesburg foundry. That the particular job is for art castings does not in any way detract from the interest of these successful experiments as they concern engineers in the many fields in which non-ferrous castings presenting the same problems are required.

Mr. J. Steinlauf, managing director of Denver Metal Works (Pty.) Ltd., was approached by the Jewish Monument Committee recently to accept a contract for the casting of a design in bronze to serve as a memorial to the six million Jews killed by Hitler. The design and sculpture, by Hermann Wald, will be mounted on a marble slab in the Jewish Cemetery at Westpark, Johannesburg, early next year, a reminder to more than the Jewish community of the crime of genocide on a scale unmatched since the time of Genghis Khan. No doubt it will be the subject of much comment because of its interest as a work of art and for its symbolic significance; but few of the admirers of the monument

will consider it as a group of castings involving special difficulties for the foundryman.

The South African craftsman in this field has already won a name for himself abroad for his ingenuity and tenacity. The job described here is a fresh reminder of the local foundryman's high standards and his flair for improvisation.

The Design

The design shows six hands clasping six rams' horns, traditionally used to summon the faithful at New Year and on the Day of Atonement. The letters of the Hebrew alphabet which are the initial letters in the words of the commandment: "Thou shalt not kill" are placed one on top of the other to form a central design. Each of the six bronze castings is 20 ft. high, to be cast in four sections. One hand alone measures five ft. in height and in diameter. The centre-piece is 15 ft. high, cast in five sections.

By ordinary casting methods the metal would weight anything above 20 tons. By the method finally adopted the total weight will be about 7 tons.

Several foundries were by the contractor to ter castings of the Monume could not be persuaded this work, which up to th: only be cast in the Lost as practised for generati The Lost Wax Process is one because of the time quired to prepare the pl: moulds, to handle the casts and to maintain a anything up to three wee the wax.

Denver Metal Works 4 to three Italian craftsm to operate in the firm's as sub-contractors, using Process. Heavy rejects, ling and high firing costs them to throw in their job was almost back a point.

In desperation differer sand casting were then until the CO₂ Proc gested and tried in cor leading Reef foundryme credit must go to Mr. J. Mr. Ben Haigh, working



The large centre piece of the design composed of Hebrew letters placed one on top of the other. The Jewish religion does not permit the inclusion of human figures in the design.

GIANT PRESS

A British-built press for shaping heavy steel plates, believed to be the largest and most powerful of its type in Europe and perhaps in the world, was demonstrated recently to visitors from the Commonwealth Welding Conference in Britain.

It was seen forming one of the plates for the spherical pressure vessels which will contain the reactors at London's first nuclear power station, now under construction at Bradwell, Essex.

The press, designed and built by a Gloucester engineering firm, has been installed at the Darlington works of one of the member companies of the group building the Bradwell station.

Nuclear power stations call for curved plates of exceptional size, thickness and strength. The new press will be able to shape the largest plates which the British steel industry can now produce while still having a substantial margin for future development. The plates for the two spherical pressure vessels at Bradwell, which will be 66 feet 6 inches in internal diameter, will vary in thickness from 3 inches to 4 inches and will weigh up to eight tons each.

The press has an unusually long upward stroke exerting a pressure of 4,500 tons. It is operated hydraulically and has automatic controls. Associated with it are a plate-heating furnace capable of heating 20-ton plates to 1,000 degrees centigrade and a specially designed charging machine. The charging ma-

chine passes the plates, which may measure anything up to 250 square feet, across the press into the furnace, where they remain until they have reached the correct temperature. They are then withdrawn and pressed between blocks carried on a water-cooled table weighing 150 tons.

Building the foundations for the whole installation, in difficult water-logged land, constituted a major civil engineering operation, involving the removal of 2,400 tons of clay and silt from an excavation 45 feet deep.

TO SPEED BUILDING

A new device enabling hollow clay blocks — used in the floor construction of blocks of flats and offices — to be unloaded by crane straight from lorries to each respective floor at a rate of 1,000 an hour has been developed by a U.K. firm of building and civil engineering constructors, in conjunction with a London brick company. It consists of a detachable fork, which is slid through the bottom course of blocks and surrounded by a safety cage. It is capable of lifting six dozen 12 inch by 12 inch blocks at a time. It provides a great saving in man-hours — not to mention physical effort — and in particular eliminates the second handling of the blocks from the ground to where they are to be laid.