METHOD OF CASTING CEMENT OR FIBROCEMENT UNDER PRESSURE

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METHOD OF CASTING CEMENT OR FIBRE-CEMENT UNDER PRESSURE.

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To all whom it may concern:

Be it known that EDWARD WILLIAM ROBERTS and LOUIS FREDERICK WM. LEES, subjects of the King of the United Kingdom of Great Britain and Ireland, and residents of Watford, England, and London, England, respectively, have invented a certain new and useful Improvement in Methods of Casting Cement or Fibre-cement under Pressure, of which the following is a specification.

This invention relates to an improved method of casting cement or fibre-cement under pressure adapted for hollow castings.

The improved method consists in introducing into the casing or mould provided with an extensible core or cores of the desired form of the mixture of the cement or fibre-cement containing liquid in excess to that which would produce a good setting mixture and then causing the core or cores to be expanded so as to force out excess liquid and to compress between the mould or casing and the core or cores the cement or fibre-cement mixture.

In the accompanying drawings is shown by way of example means suitable for carrying the method into effect and examples of castings which may be formed by this method. Referring to the drawings, Fig. 1 is a perspective view showing diagrammatically a collapsible casing or mould in open position for the introduction of a series of expansible core members also shown. Fig. 2 is a detail view of one of the casing or mould in closed position. Fig. 3 is a perspective view of one of the expansible core members shown in Fig. 1. Fig. 4 is a detail view showing in section the casing and one expansible core member in position wherein the core member expanded and compressing the surrounding cement or fibre-cement mixture. Fig. 5 is a detail view in perspective of an expansible liner for use as hereinafter explained. Fig. 6 shows a form of casting in perspective capable of being made of the improved method, and by the apparatus illustrated. Fig. 7 is a perspective view of another form of casting which can be made by the improved method of the present invention.

Referring to the drawings and particularly to Figs. 1 and 2, a denotes the casing or mould the top and sides of which are hinged or otherwise arranged so as to swing aside to permit the insertion of expansible cores, b suitably mounted on a carriage c, the core ends d in the form shown being arranged to form when in position one side wall of the casing or mould, the other side wall d' being formed with openings adapted to be entered by the free ends e of the cores and to be held in upright position by suitable means when the casing is closed. These expansible cores, as indicated in Figs. 3 and 4, comprise a rigid support f surrounded by a rubber or other envelope g between which and the rigid support air may be supplied under pressure through a pipe h. In the arrangement shown in Fig. 1 employing a plurality of cores all of the pipes h are connected to a common source of compressed air.

In carrying the method into effect the cores are brought into position in the casing and the casing bolted down tight by means of bolts i. The casing is then filled with an easily flowing poor setting cement or fibre-cement mixture air is supplied by the pipes h to the spaces between the rigid core members and the flexible envelopes g whereby such flexible envelopes are caused to expand so as to mould under pressure the cement or the fibre-cement mixture to the desired form. Channels are formed in the casing or mould through which the excess water may be expelled, the completed casting or moulding then containing only the amount of water requisite for a good setting cement. The channels consist of holes punched in the inner and outer mold members and are shown in the drawings by black dots in Fig. 1.

In order to permit of easy and speedy removal of the casting or moulding from the casing or mould without liability of damage to the casing we preferably provide around the exterior of the expansible envelope g a series of overlapping metal plates l (shown in Fig. 5) extending the whole length of the core which plates on expansion of the envelope g move relatively to one another and when the expansion is accomplished afford sufficient strength to the completed moulding that it can be removed and carried to the place where it is to dry and harden without danger of collapse.

We claim:

For use in casting or moulding cement or fibre-cement under pressure an expansible
core member said core member consisting of a rigid support and an expansible envelope surrounding said support and adapted to be supplied with air under pressure, and a liner said liner including overlapping lengths of sheet metal or the like shaped to correspond with the internal form of the casting to be produced substantially as and for the purpose set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

EDWARD WILLIAM ROBERTS.
LOUIS FREDK. WM. LEESE.

Witnesses:
HAROLD FAIRMATHER,
F. WREN.