Feb. 18, 1969 V. LUCA ET AL 3,428,288

PNEUMATIC CORE FOR CONCRETE DUCTS OR PIPES OF NONCIRCULAR SECTION

Filed Nov. 26, 1965

FIG. 1

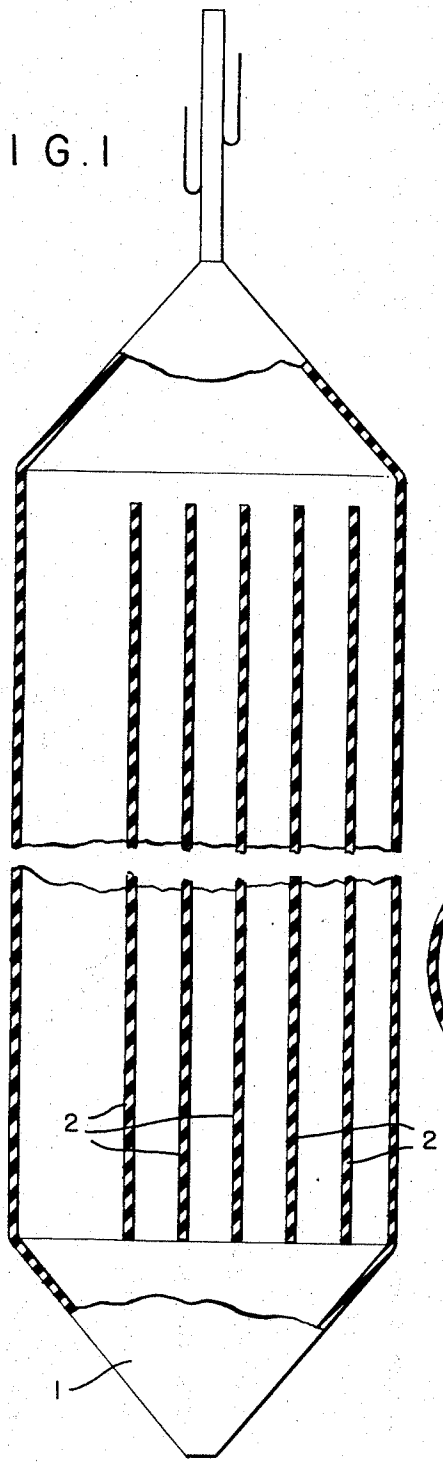
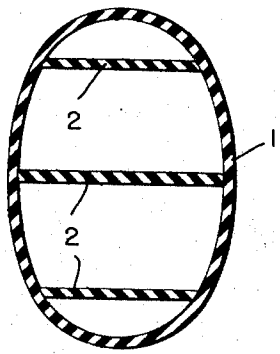


FIG. 3



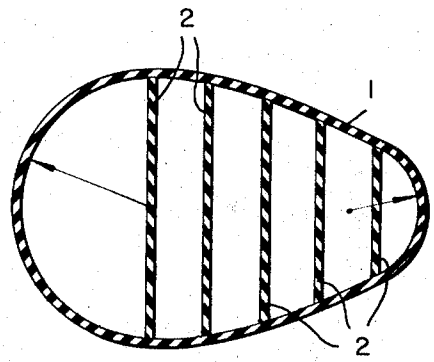


FIG. 2

VASILE LUCA ET AL
INVENTORS

BY Karl F. Ross
Attorney

United States Patent Office 3,428,288 Patented Feb. 18, 1969

3,428,288

PNEUMATIC CORE FOR CONCRETE DUCTS OR PIPES OF NONCIRCULAR SECTION

Vasile Luca, Gheorghe Runceanu, Ctin Cosmescu, and Alexandru Ionescu, Bucharest, Rumania, assignors to Ministerul Industriei Constructiilor, a ministry, Bucharest, Rumania

Filed Nov. 26, 1965, Ser. No. 509,741
U.S. Cl. 249—65 3 Claims
Int. Cl. B28b 7/32

ABSTRACT OF THE DISCLOSURE

A pneumatically inflatable rubber core for the buildup of a concrete layer therearound to form a pipe or duct, the core comprising a closed elongated elastomeric shell of closed curved cross-section and a multiplicity of transversely spaced webs of elastomeric material extending parallel to one another within the shell and spanning the latter to retain the noncircular configuration thereof.

The present invention deals with a pneumatic internal core used in the construction of concrete ducts or pipes cast in situ or assembled from pre-cast parts, the cross section having a curved form, such as egg-shaped, elliptical and like noncircular forms.

Pneumatic cores, composed of flexible fabric, for instance rubber cloth which when inflated have sufficient stiffness to form the internal falsework, are well known. They are use for the formation of ducts and pipes of concrete or other similar materials. When inflated, these cores have a circular cross section so that they can be used only in the construction of ducts or pipes with a circular cross section.

This drawback has been avoided by using pneumatic internal falsework having the form of a jacket with double walls; between these walls was introduced the compressed air which inflates the jacket, set on stiff cores which have the profile of the cross section to be obtained. These pneumatic cores, which, in fact, allow only on enlargement of the cross section by size increase of the stiff cores, have the disadvantage of requiring a series of stiff internal cores, so that the buildup of the forms becomes more expensive and renders more difficult the operation of forming the pipes.

The present invention removes the above mentioned disadvantages, i.e. for the formation of concrete ducts or pipes with a noncircular but closed cross section, the pneumatic internal falsework is provided all along its internal surface with a series of transverse ties or webs, horizontal and continuous, which, by means of their width, establish the distance up to which the walls may extend when inflated, thus ensuring and maintaining the special noncircular profile (elliptical, egg-shaped, or the like).

An example of forming a falsework will be shown below, in accordance with the present invention reference being made to the drawing in which:

FIG. 1 is a longitudinal section of the falsework, taken in a vertical plane;

FIG. 2 is a cross section of the core taken in a horizontal plane; and

FIG. 3 is another cross-section according to the invention.

The pneumatic internal core for the formation of ducts or pipes made of concrete or other similar materials, cast in situ or obtained by mounting precast parts, having a cross section of noncircular outline, as for instance egg-shaped, consists of a tubular jacket or shell manufactured from flexible fabric, such as rubber cloth, in two layers, of about 2–8 mm. thickness, on which are fastened, on the inner surface, all along the jacket length, a series of ties or webs **2** also of rubber cloth, horizontally spaced and transverse to the major axis of its ovoid profile. These webs, upon inflation of the jacket **1** with compressed air at a pressure of 2–3 atmospheres determine the distance up to which the jacket walls may be spread, thus ensuring and maintaining the egg-shaped cross section of the core.

Depending upon the width, the position and the number of ties **2**, the required noncircular cross sections of the pneumatic core, are obtained. FIG. 3 shows the insertion applied to an elliptical core.

This core presents the advantage of extending the field of application of pneumatic cores also to falsework with continuous noncircular outlines without requiring stiff cores, ensuring thus an easy handling.

We claim:

1. In a falsework wherein concrete is built up about a pneumatically inflatable core to form a tubular duct or pipe, the improvement in which said core comprises a closed elongated air-retentive flexible shell with tapering ends inflatable to a noncircular closed curved cross-section with a major axis of symmetry; a plurality of internal partitions of flexible sheet material extending transversely to said axis over the major part of the length of said shell while terminating short of said tapering ends, thereby forming a plurality of longitudinal compartments communicating with one another at said ends; and air-admission means at one of said ends for inflating said shell.

2. The improvement defined in claim **1** wherein said shell is of egg-shaped section, said partitions being composed of rubberized fabric.

3. The improvement defined in claim **1** wherein said shell is elliptical, said partitions being composed of rubberized fabric.

References Cited

UNITED STATES PATENTS

1,600,353	9/1926	Nose	249—65 X
1,964,386	6/1934	Nose	249—65 X
2,343,005	2/1944	Gardner	25—128 X

J. HOWARD FLINT, JR., *Primary Examiner.*