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(72) Inventor : **Virtanen, Olli**
Isoniityntie 35
SF-21600 Parainen (FI)

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(74) Representative : **Örtenblad, Bertil Tore**
Noréns Patentbyra AB Box 27034
S-102 51 Stockholm (SE)

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(71) Applicant : **PARTEK CONCRETE OY AB**
PL 61
SF-00501 Helsinki (FI)

(54) **Casting mold for a concrete column or beam.**

(57) A casting mold for a concrete column or beam, made up either of a horizontally oriented elongated trough having a bottom (1) and side walls (2) or of a vertically oriented elongated tubular mantle (5). The ends of the mold are closed by means of end flanges (3) having the shape of the cross section of the mold, through which there is installed a jig tube (4) with the help of which the cast piece can be treated further in various devices such as sawing, grinding, and polishing devices.

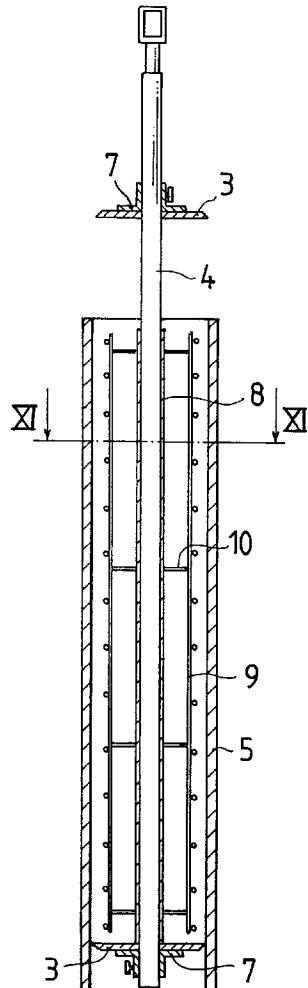


Fig.10

The present invention relates to a casting mold for a concrete column or beam, the mold being made up of either a horizontally oriented elongated trough having a bottom and side walls, or of a vertically oriented elongated tubular mantle.

Owing to the weight of cast concrete elements, their handling has always caused difficulties in their further treatment after the casting. Cast pieces in general require after-treatment, such as sawing, grinding, and even polishing. The object of the invention is, by means of a casting mold of a new type, to facilitate the after-treatment of a concrete piece. A mold according to the invention is characterized in that the ends of the mold are closed by means of end flanges having the shape of the cross section of the mold, through which end flanges there is installed a jig tube with the help of which the after-treatments of the cast piece can be carried out in different devices, such as sawing, grinding, and polishing devices. After the hardening of a cast element, for example, the element can be lifted and transferred to the desired after-treatment site by means of a gantry crane. At the vertical-grinding site, the lower end of the jig tube will engage the rotating or angular-turning axle, and its upper end the bearing-locking device, whereupon the grinding device can start working immediately, and the grinding will be minimized owing to the good centering.

The horizontal-grinding site has corresponding coupling devices with which the jig mates. At the horizontal-grinding site an element can first be sawn into its shape, for example, polygonal or conical columns. By means of the jig and the angular-turning device, a precise and regular shape will be achieved. After the sawing, a grinding device subject to the same control will polish the surfaces without separate setting. After the completion of the element, it is easy to remove the jig tube by detaching the end flanges, whereafter the jig tube can be pulled out. The completed element thus has a hole in the center, which can be made use of in joints and pipe installations. The advantage of the invention is at its greatest in the manufacture of a round column, since with the help of the jig and the rotating axle the element to be ground can be made to rotate under reliable control.

The invention is described below with the help of examples, with reference to the accompanying drawings, in which

Figure 1 depicts the reinforcement of a concrete element, equipped with a jig tube,

Figures 2-5 depict various shapes of end flanges, Figures 6-7 depict the concrete-element reinforcement bars, as seen from the end,

Figure 8 depicts the reinforcement of a concrete element, installed in a horizontal mold and equipped with a jig tube and end flanges,

Figure 9 depicts the same as Figure 8, but as seen from the end,

Figure 10 depicts a vertical mold before the casting of concrete and the installation of the second end flange, and

Figure 11 depicts a section through XI-XI in Figure 10.

A casting mold for a concrete column or beam is made up of a trough, shown in a horizontal orientation in Figures 8 and 9, having a bottom 1 and side walls 2. Through the end flanges 3 there is installed a jig tube 4, with the help of which the further treatment of a cast piece can be carried out in sawing, grinding, and polishing devices.

In Figure 10, the casting mold is made up of a vertically oriented elongated tubular mantle 5, which can be opened by means of the joint 6 shown in Figure 11. The jig tube 4 is shaped so that it fits in all grinding and sawing devices for further treatment. By means of metal flanges 7 adjacent to the end flanges 3, a blank is tightened to the jig tube 4. The blank is a metal sheet tube 8 having the length of the element and fitting over the jig tube 4. The steel reinforcement 9 of the element is fastened to the metal sheet tube 8 by means of spacer-reinforcement bars 10.

The jig tube 4 need not necessarily be one elongated rod passing through the entire element; it can just as well be made up of two lengths of tubing, located at the ends of the elements.

30 Claims

1. A casting mold for a concrete column or beam, made up either of a horizontally oriented elongated trough having a bottom (1) and side walls (2) or of a vertically oriented elongated tubular mantle (5), **characterized** in that the ends of the mold are closed by means of end flanges (3) having the shape of the cross section of the mold, through which there is installed a jig tube (4) with the help of which the cast piece can be treated further in various devices such as sawing, grinding, and polishing devices.

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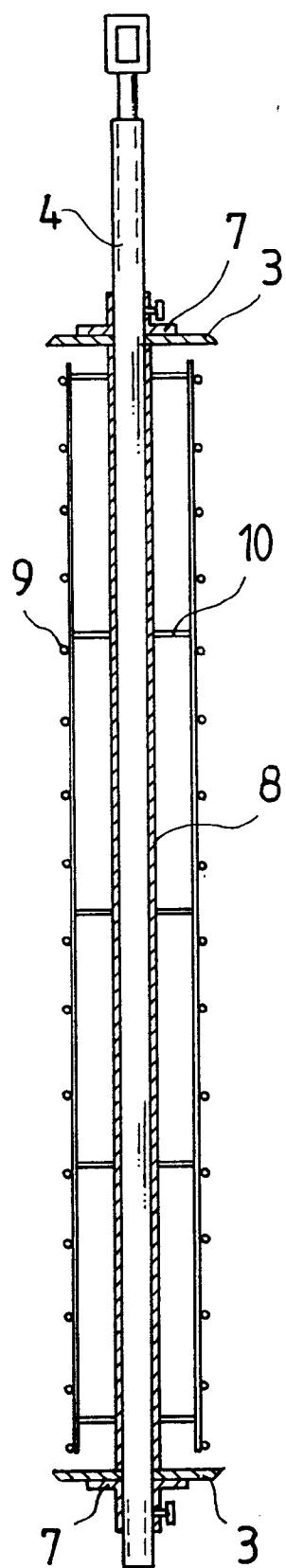


Fig.1

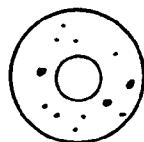


Fig.2

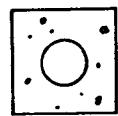


Fig.3

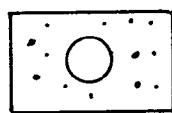


Fig.4

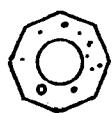


Fig.5

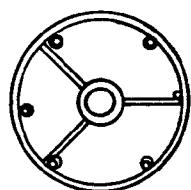


Fig.6

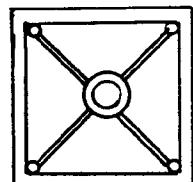


Fig.7

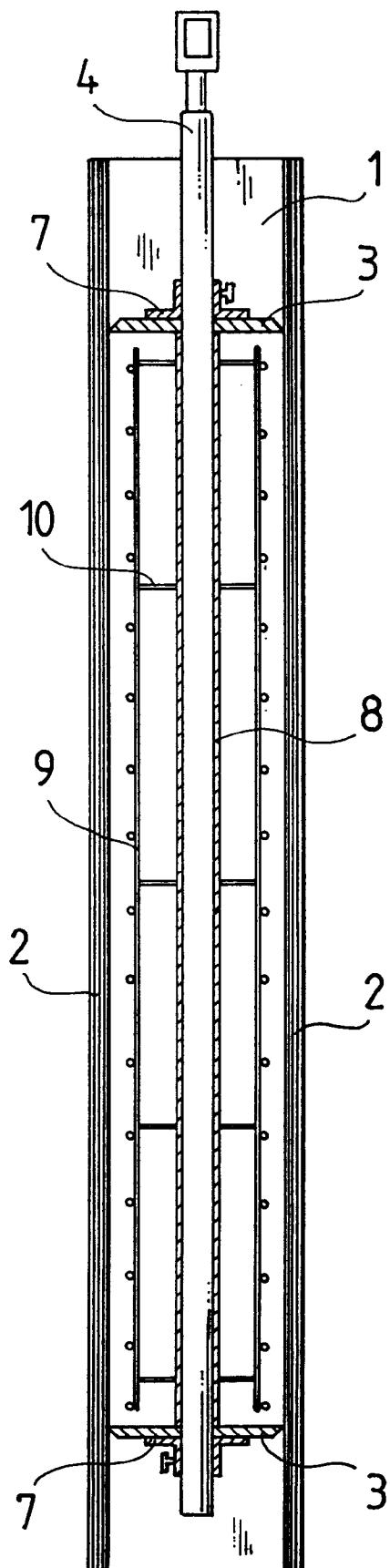


Fig. 8

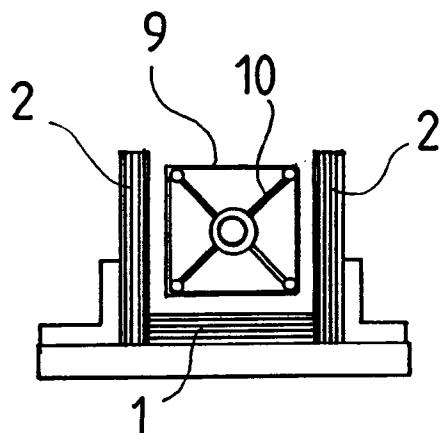


Fig. 9

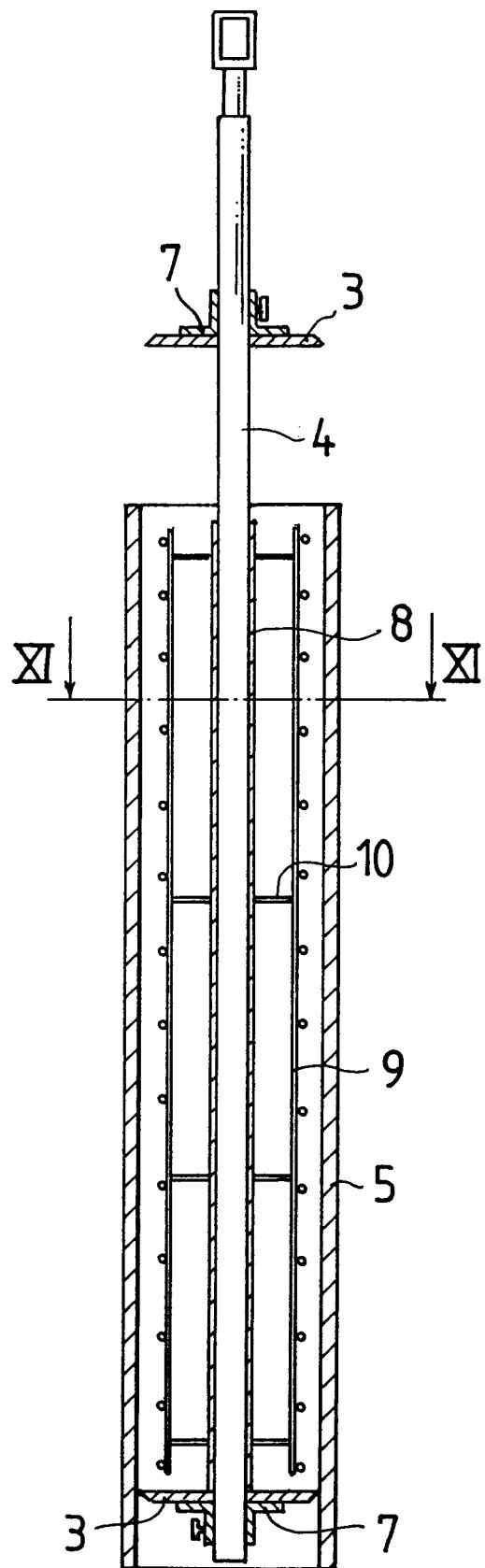


Fig. 10

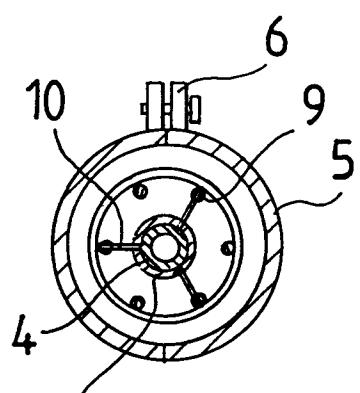


Fig. 11



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 93 85 0033

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y, P	EP-A-0 490 856 (BETEMI OY) * the whole document * ---	1	B28B7/18 B28B7/16 B28B11/08 B28B11/12
Y	FR-A-578 907 (T. G. O. HYDEN) * column 2, line 32 - column 2, line 38; figures 1,2 * ---	1	
Y	EP-A-0 440 591 (LOHJA BETONILA OY) * the whole document, in particular column 1 line 31-33 * ---	1	
A	US-A-2 377 480 (J. A. CANN) * the whole document, in particular column 1 line 19-22 * ---	1	
A	US-A-1 456 286 (H. W. SNOW) * the whole document * ---	1	
A	US-A-3 260 494 (F. N. DEIGAARD) * the whole document, in particular figure 8 * -----	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B28B
<p>The present search report has been drawn up for all claims</p>			
Place of search THE HAGUE	Date of completion of the search 04 MAY 1993	Examiner GOURIER P.A.	
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	