

[54] **ROTATIONAL CASTING MACHINE**

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[58] Field of Search..... 425/174.4, 174, 429,
425/430

[56] **References Cited**

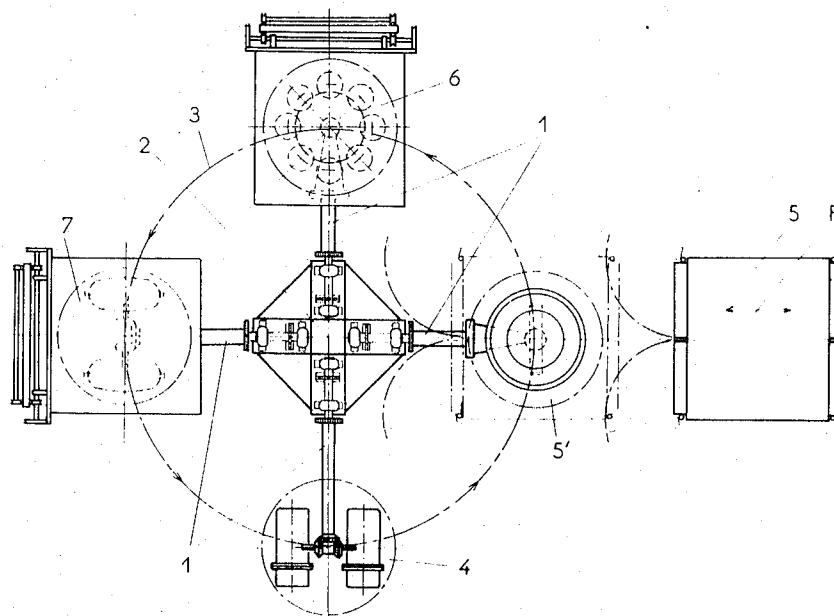
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[57] **ABSTRACT**

The disclosure is of a rotational casting machine capable of functioning continuously, comprising a rotary assemblage with four or more arms supporting moulds or mould-rotating devices, a charging station, a heating station, and at least two cooling stations.

3 Claims, 2 Drawing Figures



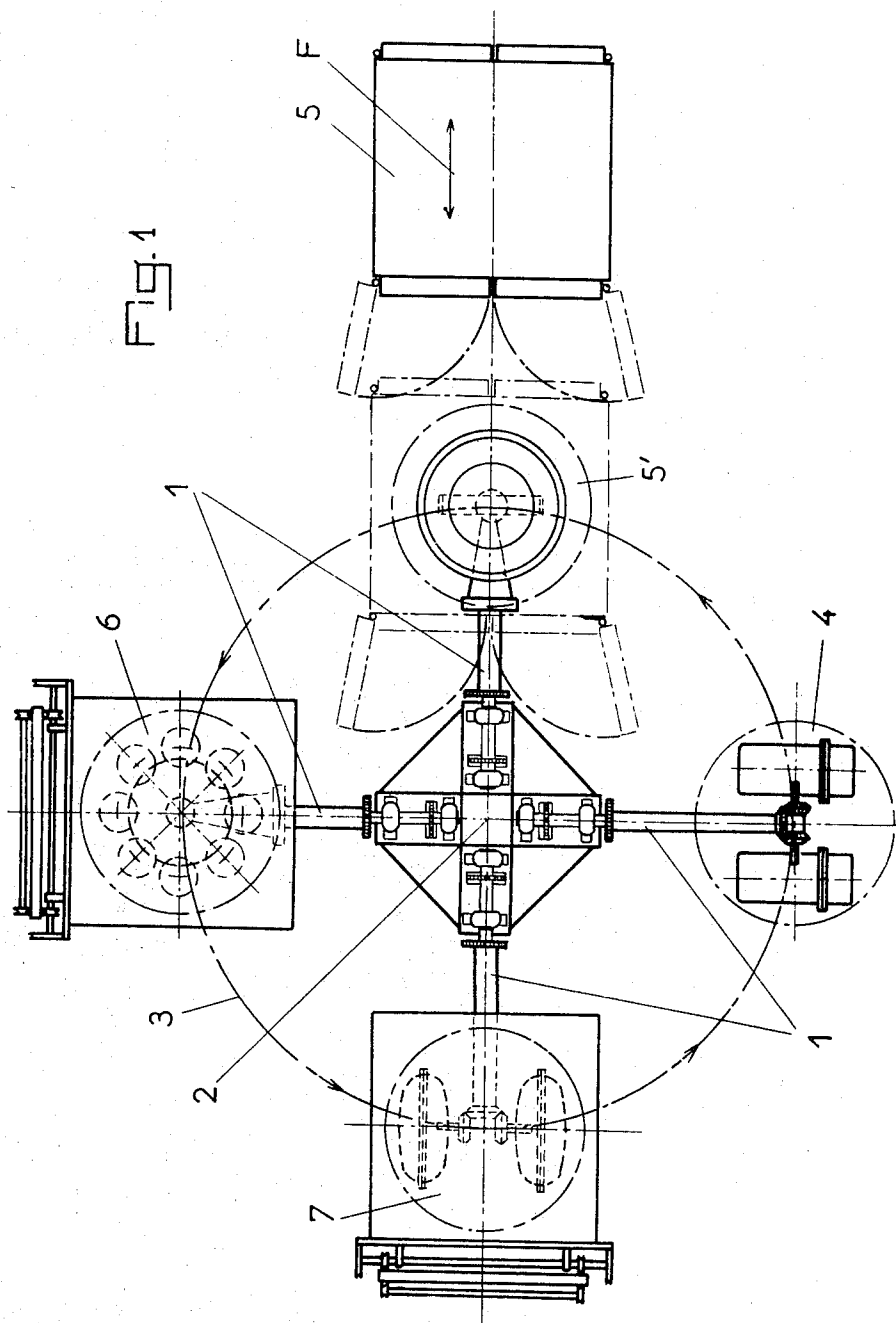
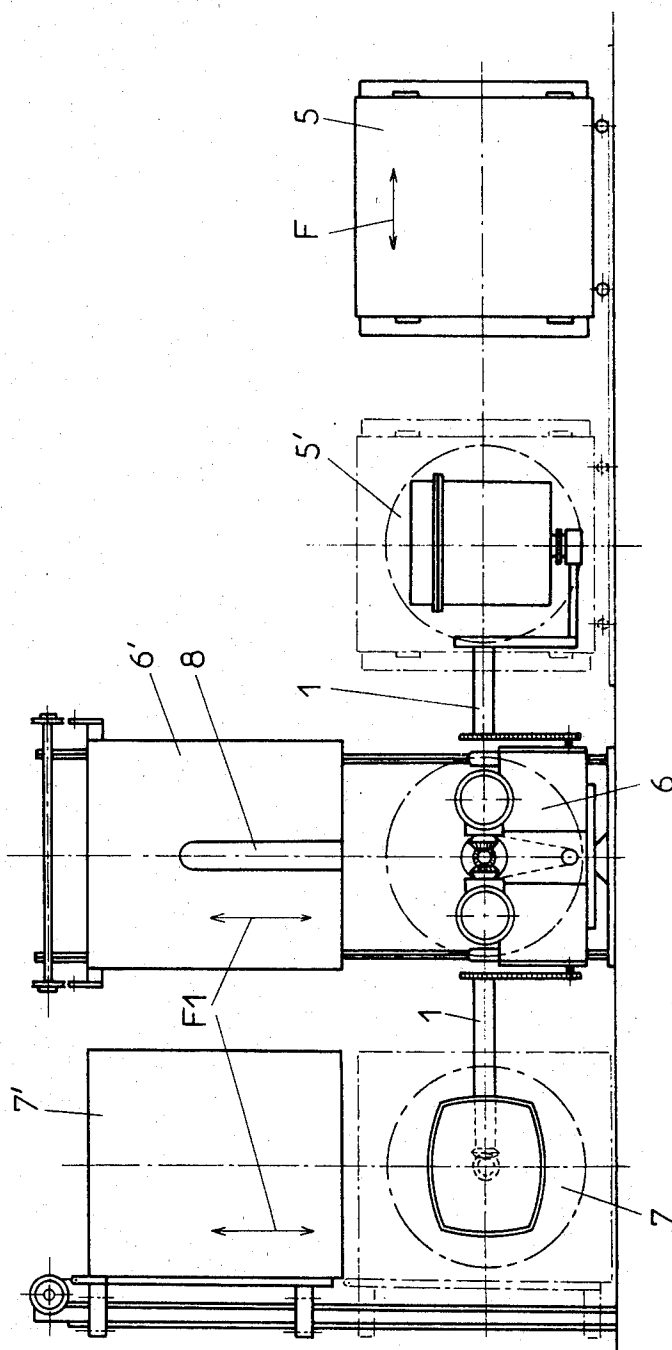


Fig. 2



ROTATIONAL CASTING MACHINE

INTRODUCTION AND BACKGROUND OF THE INVENTION

This invention relates to rotational casting machines for casting synthetic plastics materials or analogous materials, and refers more particularly to machines with rotary assemblages capable of functioning continuously.

In the known machines of this kind generally there are provided three production stations disposed upon a circle about the centre of which there turns a rotary assemblage equipped with three arms allowing the charges to pass without interruption from one station to another. In order to improve the smoothness of production there have likewise been used such machines with four stations and comprising two heating stages.

Nevertheless all these machines present various disadvantages which are not negligible. In practice it is more and more necessary and useful, in order to meet the requirements of manufacture with new plastics materials or compounds to effect, for the same moulding, several chargings of materials with the necessity of indexing the rotary assemblage, for each charging, to the station provided for this purpose. It has been attempted to solve this problem by providing a rearwards return of the rotary assemblage, a solution which nevertheless implies, in order to avoid a reheating in the furnace of the articles remaining at the cooling station, that the said heating stations with furnaces remain open, thus involving excessive losses of heat.

On the other hand, in the known machines the changes of moulds and of arms are lengthy and cannot be integrated into the normal cycle of operation and therefore necessitate interruptions of manufacture which are often prolonged and always unproductive.

In order to alleviate these disadvantages the present invention has for its object a rotational casting machine thanks to which it is possible on the one hand to effect several chargings without returning the rotary assemblage towards the rear, without heat losses, and on the other hand to double the period of cooling, all whilst maintaining the same rhythm of production and, finally, to frequently change the moulds and the arms without interrupting the manufacture.

BRIEF SUMMARY OF THE INVENTION

For this purpose the invention provides a rotary assemblage with four or more arms supporting moulds or mould-rotating devices, a charging station, a heating station, and at least two cooling stations.

FURTHER DESCRIPTION OF THE INVENTION

In an advantageous construction the heating station includes a movable heater, for example a furnace, movable upon guide rails to a withdrawn position in which it is completely clear of the mould-supporting arms and moulds. Preferably each cooling station is upwardly removable and includes a hood forming a cooling chamber which is vertically displaceable, for example by means of pulleys with cables or chains.

The following description explains, by way of non-limitative example, a form of construction of the machine in accordance with the present invention, with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE VIEWS IN THE DRAWINGS

In the accompanying drawings:

FIG. 1 is a diagrammatic plan view of the machine according to the invention provided with different moulds, and

FIG. 2 is a lateral elevation thereof.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Thus as represented in the accompanying drawings the machine is constituted essentially by a rotary assemblage with four or more arms 1, rotatable about the central axis 2, and by four production stations disposed upon a circular path 3 in such a manner that the arms provided with different moulds or mould-rotating devices travel to these different stations in succession.

According to a first characteristic of the machine forming the subject of the invention the heating station is formed by a furnace 5 which is movable, for example on rails according to the double arrow *F*, in such a path that in the withdrawn position (shown in continuous lines in the drawings) it is completely clear of the corresponding mould support thereby permitting the closing and opening of its doors.

A further characteristic of the invention consists in providing, outside the charging station 4 and the heating station 5', at least two cooling stations 6, 7 thus permitting the doubling of the cooling time, necessary in some instances. In case of non-use of the second cooling operation this station may serve possibly for the changing of moulds or of arms without interruption of production. Special arm-carrying carriages, which are not shown, permit the effecting of this operation in a very short time.

The cooling stations are characterised in that they are vertically removable, that is to say that their cooling hoods 6', 7', provided each with a slot 8 for engagement over the arms of the rotary assemblage, can be displaced vertically in the directions of the double arrows *F*1 by known means such as, for example, pulleys with cables or chains, or jacks, or the like.

Thanks to this possibility of vertical removal of the hoods 6', 7' it is possible to free completely the floor at the cooling stations which facilitates, in a beneficial manner, the changing of the moulds or the arms as well as the supply and removal of these elements with the aid of mechanical means such as trucks.

It will well be understood that the different rotational motions of the arms, which may be straight or bent, as well as the movements of the rotary assemblage, are effected and may be controlled by known means.

The machine which forms the subject of the invention may be utilised for the manufacture of articles of plastics materials or analogous materials, particularly containers, tanks, packaging components, toys, septic tanks, elements for decoration, boxes, ventilation ducts, and analogous articles.

What is claimed is:

1. A rotational casting machine capable of functioning continuously, comprising a rotary assemblage with at least four mold-supporting means thereon, a charging station, a heating station, at least two cooling stations, means for rotating said assemblage about an upright axis between said stations so that said mold-supporting means dwell in said stations, said heating

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station comprising a heater, means mounting said heater for movement radially of said axis between a radially inner position in which said heater encloses a said mold-supporting means and a radially outer position in which molds carried by said mold-supporting means can pass said heater, said at least two cooling stations comprising hoods open at their bottom and each comprising a cooling chamber, and means to move said hoods vertically between an upper position in which said hoods clear the molds carried by said mold-supporting means, and a lower position in which said hoods surround the molds carried by said mold-

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supporting means.

2. A machine as claimed in claim 1, the said hoods extending below the molds carried by said mold-supporting means in said lower position and having a slot on their radially inner side to receive said mold-supporting means in said lower position.

3. A machine as claimed in claim 1, in which said heater comprises an enclosure having doors on its radially inner side that swing about vertical axes to open and close the enclosure.

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