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MEANS FOR ERECTING BUILDING STRUCTURES

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Fig. 1.

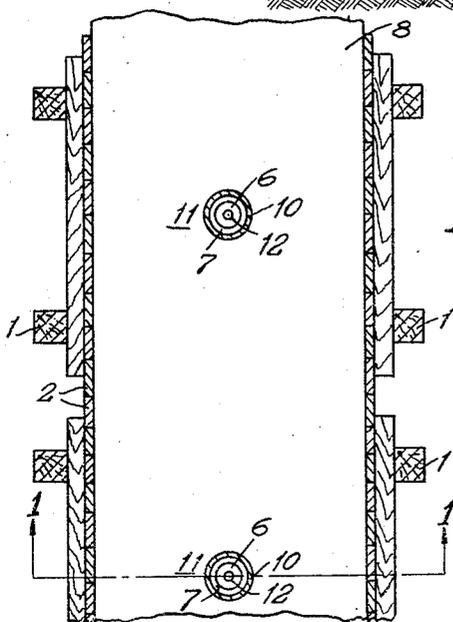
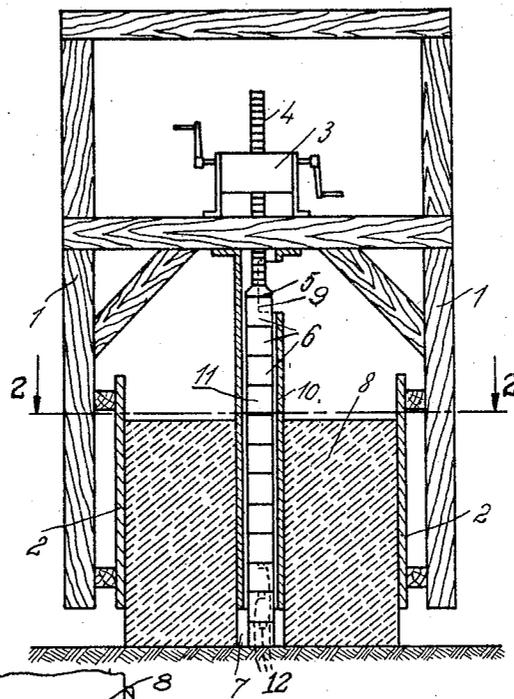


Fig. 2.

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MEANS FOR ERECTING BUILDING STRUCTURES

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My invention relates to a mold for erecting cast concrete structures, and more particularly to a sliding mold employed in the construction of silos, water towers and similar structures as well as of cast wall structures in general.

In the methods heretofore employed in the construction of the aforesaid structures, it has been customary, when using sliding frame molds, to raise the latter by means of iron bars, positioned in the walls to be erected, said bars serving as racks cooperating with a jack, mounted on the platform of the frame. These racks, which are of a greater height than the desired height of the structure, are, however, expensive, and remain upon completion of the work in the structure and contribute as reinforcing members comparatively little to the strengthening of the walls.

The object of my present invention is to provide a simple, economical and efficient sliding frame with mold plates attached thereto, which is supported by a variable number of individual supporting elements and which is elevated by suitable lifting means as the construction of the walls progresses.

A preferred form of my invention is represented in the accompanying drawing, forming part of this specification, and in which

Fig. 1 is a transverse vertical section through the wall in course of construction and through the frame mold on the line 1—1 in Fig. 2, showing the manner in which a sliding frame element of the mold is supported and lifted, and

Fig. 2 is a horizontal section through the mold taken on the line 2—2 of Fig. 1.

In building a hollow, curved or straight wall structure of large dimensions, a number of frames, depending upon the size of the structure to be erected, are employed, the sliding plates of which are brought into alignment so as to constitute a mold of the desired form.

Referring to Fig. 1, the frame 1 with the sliding form walls 2 fixed thereto rests at the beginning on the foundation and the rack 4

on the column 11, formed of individual blocks 6, which may be held in position by a tenon joint 12 or in any suitable manner known to those skilled in the art. The column 11 is disposed within the tubular guide 10 attached to frame 1, and rests likewise on the foundation. Material is then poured into the mold which, when the first wall section 8 has sufficiently set, is raised by means of the aforementioned racks 4 by manipulating lifting devices 3, one being attached to each form supporting frame 1.

Whilst this is being done, that portion of the sliding framework is sufficiently supported by the neighbouring frame work and lifting devices, one of which additional frames is shown in Fig. 2. As soon as a new block has been brought into position, the foot 5 of the toothed rack 4 is brought down again upon it and an additional block is in corresponding manner placed under the next climbing device.

The column 11 or similar bodies serving as a support for the hoisting device (3, 4) and consisting of the blocks 6 can be set up on a bottom part of the building structure, for instance on the foundations. The higher the wall 8; the longer the supporting column 11 will of course become. When the column has reached a certain length, it will, depending upon the shape of the column blocks, at some places bend and lean against the walls of the well 7, particularly since between the blocks and the wall of the well a free space is left behind by the protecting tube 10, as shown near the bottom of the well in Fig. 1. The leaning of the supporting column will always take place only below the protecting tube 10, where the concrete walls 8 are already completely set.

According to my invention it is of course also possible to place, instead of the blocks 6, other supporting members or bodies under the lifting device. It is in all cases essential that the supporting members or bodies should rest on parts of the building structure which are already solid.

A further advantage of the new lifting arrangement consists in the possibility of using particularly simple lifting devices with short

lifting bars or rods (toothed racks 4, spindles or the like). The column blocks may consist of any suitable material, for instance wood; concrete blocks may also be employed, which when feasible may be formed right at the building site.

The blocks may also be provided, for example, with mortise and tenon and joined together so that they may be taken out when the building is finished, and used again.

While I have shown my invention in its preferred form, it will be obvious to those skilled in the art that it is susceptible of minor changes and modifications, without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are imposed by the prior art.

I claim as my invention:

1. In a mold for casting building structures, a frame having form plates attached to it at opposite sides, a supporting column for said frame, composed of a variable number of individual supporting members, said column being positioned midway between two opposing form plates and resting on the foundation for the building structure, and means disposed on said supporting column for raising said frame, and a hollow guide, attached to said frame and containing a substantial portion of the upper part of said column, for laterally supporting said column through the structure portion in the course of casting and setting.

2. In a mold for casting building structures, a frame having form plates attached to it at opposite sides, a supporting column for said frame, composed of a variable number of individual supporting members, said column being positioned midway between two opposing form plates and resting on the foundation for the building structure, and means disposed on said supporting column for raising said frame, and a hollow guide, attached to said frame and containing a substantial portion of the upper part of said column, for laterally supporting said column through the structure portion in the course of casting and setting, said guide having an aperture at its upper end for inserting additional column members to increase the height of the column.

In testimony whereof I affix my signature.
ARTUR DURCHHOLZ.

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