G. N. HARTMAN.

SILO MOLD.

APPLICATION FILED APR. 23, 1912.

1,099,038.

Patented June 2, 1914.

3 SHEETS—SHEET 1.

Fig 1

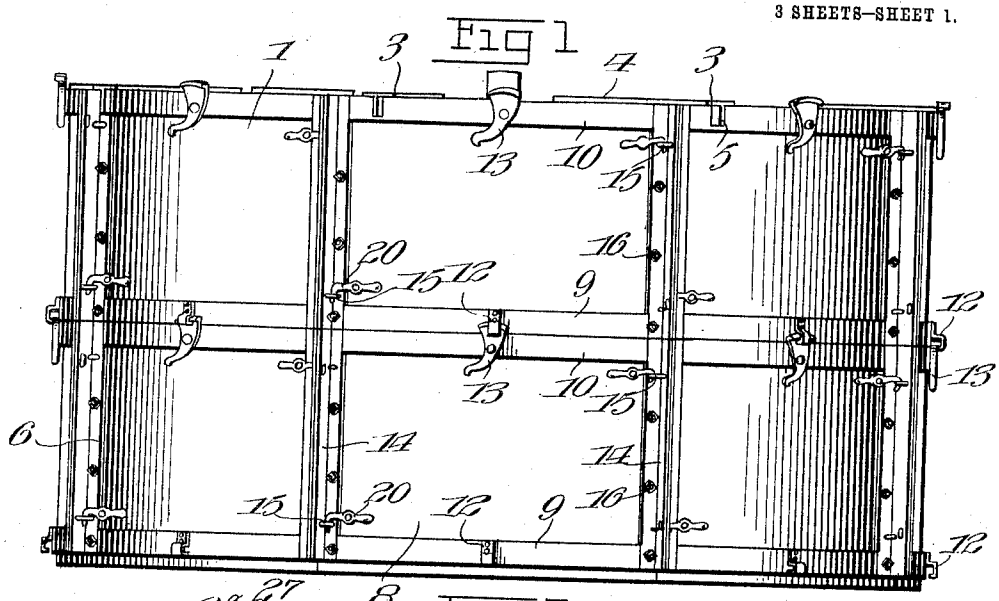
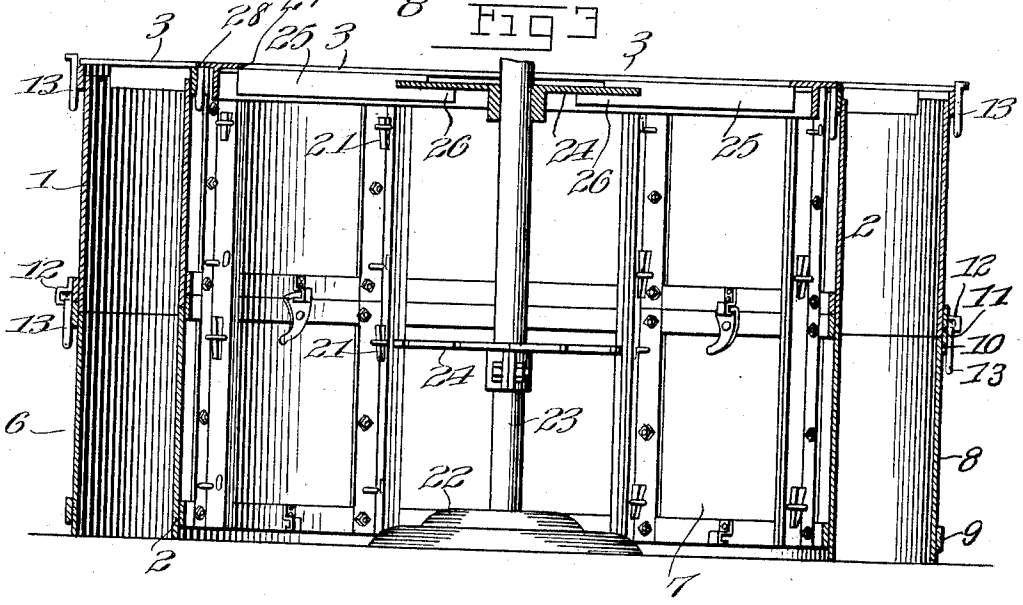


Fig 3



Witnesses

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3 SHEETS—SHEET 2.

Fig 2

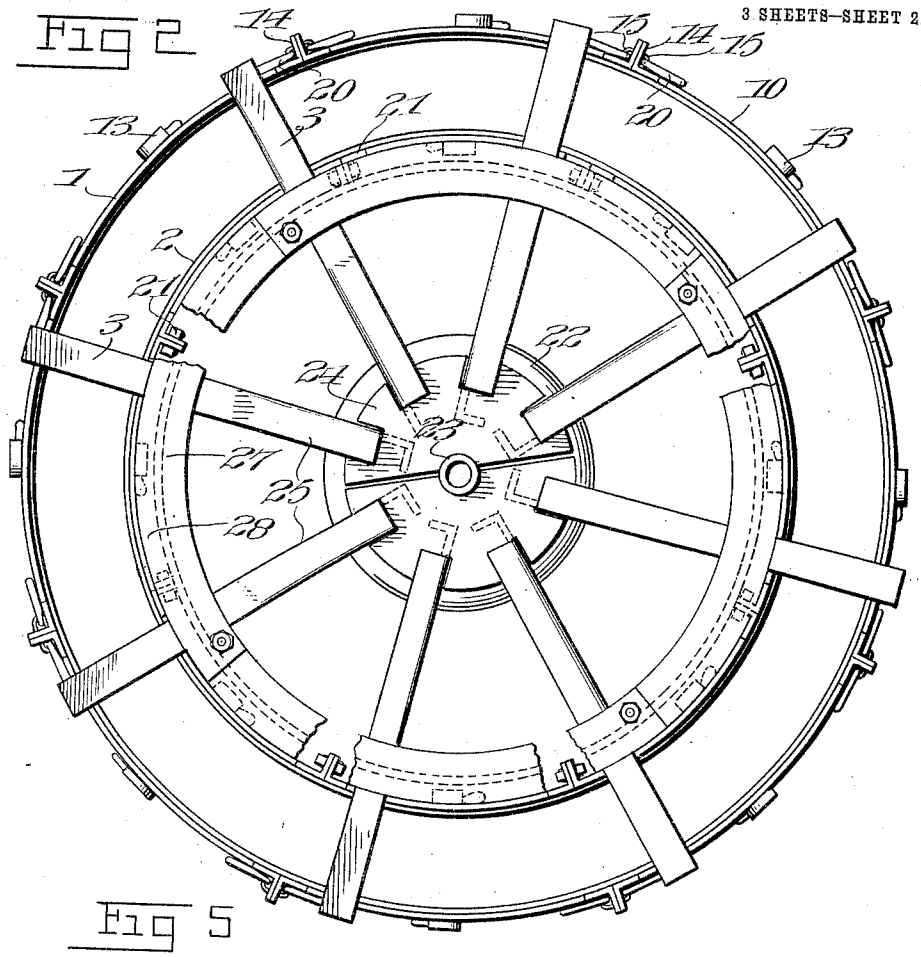


Fig 5

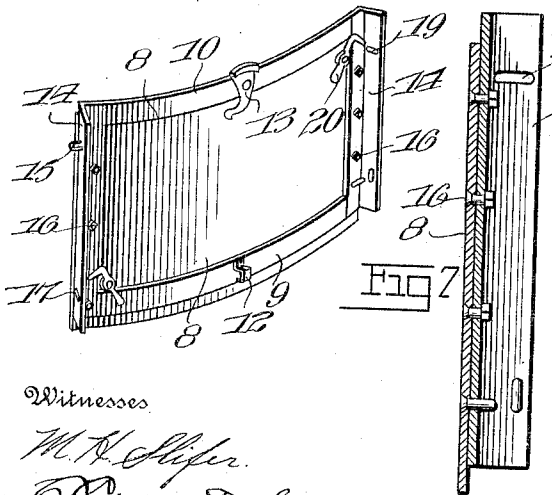
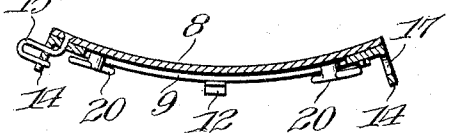


Fig 7

Fig 6



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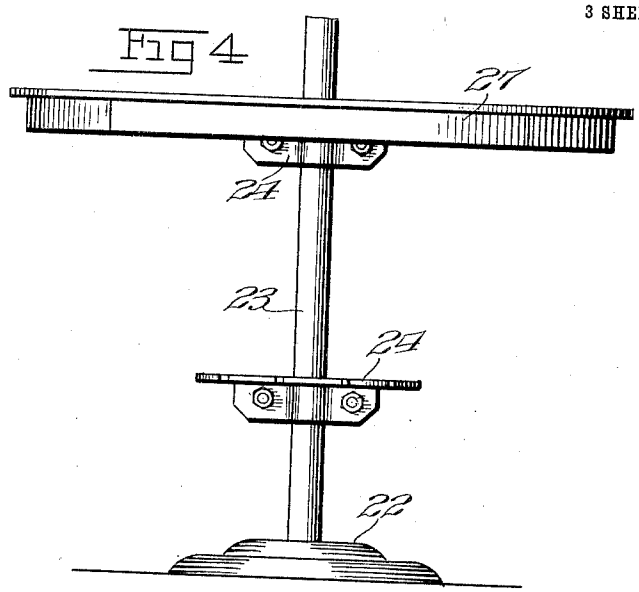
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3 SHEETS—SHEET 3.

Fig 4



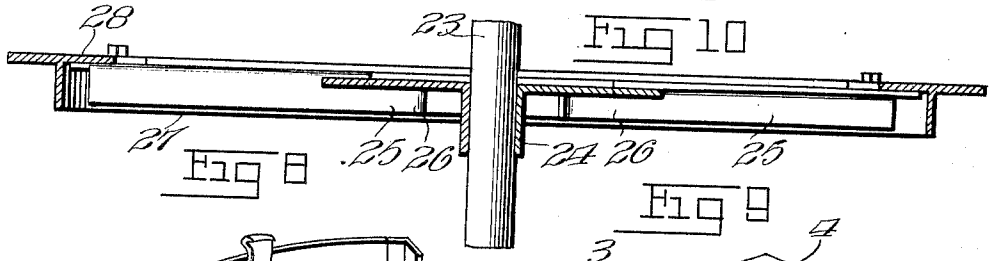


Fig 10

Fig 8

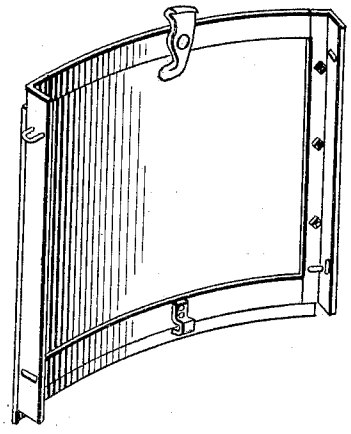


Fig 9

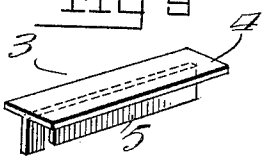
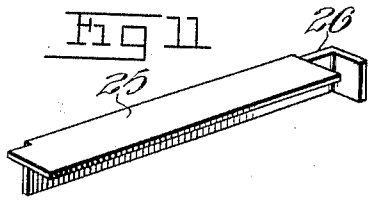


Fig 11



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE N. HARTMAN, OF HORICON, WISCONSIN.

SILO-MOLD.

1,099,038. Specification of Letters Patent. Patented June 2, 1914.

Application filed April 23, 1912. Serial No. 692,586.

To all whom it may concern:

Be it known that I, GEORGE N. HARTMAN, a citizen of the United States, residing at Horicon, in the county of Dodge and State of Wisconsin, have invented new and useful Improvements in Silo-Molds, of which the following is a specification.

This invention relates to molds and particularly to that type which are used for molding concrete silos and the like.

One of the principal objects of the invention is to provide novel means whereby the walls of the mold may be built up as the construction proceeds and readily taken down after the cement has properly set, one man being able to connect the sections without aid.

A still further object of the invention is the provision of a mold of this character having a staging or scaffolding arranged in connection with the same and adapted to support or brace the inner mold walls.

A still further object of the invention is the provision of novel means for connecting the separate sections of each tier and for connecting the separate tiers together.

Further objects of this invention will appear as the following specific description is read in connection with the accompanying drawing, which forms a part of this application, and in which:—

Figure 1 is a side elevation. Fig. 2 is a top plan view. Fig. 3 is a vertical sectional view. Fig. 4 is an elevation of the staging removed. Fig. 5 is a perspective view of one of the outer tier sections. Fig. 6 is a sectional view taken on line 6—6 of Fig. 5. Fig. 7 is an enlarged detail vertical sectional view. Fig. 8 is a perspective view of one of the inner tier sections. Fig. 9 is a perspective view of one of the spacing elements. Fig. 10 is an enlarged sectional view through one of the staging heads showing the arms in side elevation. Fig. 11 is a perspective view of one of the staging arms.

Referring more particularly to the drawings, 1 and 2 represent the outer and inner walls of the mold, respectively, said walls being held in separated relation by means of the spacing members 3 which are preferably formed in the manner shown in Fig. 9. These spacing members are constructed with a base 4 and a central vertical flange 5 which is provided with notches adjacent each end to receive the walls 1 and 2. Each wall is built up in separate tiers, as shown at 6 and 7, and the tiers connected together, as will be hereinafter described. Each tier is constructed of a plurality of separate curved wall sections 8, the lower edge of which has secured thereto a shoulder receiving strip 9 and the upper edge of which has formed thereon an offset flange 10 adapted to overlap the portion of the adjoining superposed section, which projects below the shoulder forming strip 9 and to engage the shoulder 11 formed by said strip. The lower portion of each section is provided with an open hook 12 similar in construction to the type of hook found in sash fasteners and the upper portion of each section is provided with a cam lever 13 adapted to coact with the hook of the adjoining section to draw the said sections together. The end of each section has secured thereto, as will be hereinafter described, an angle iron 14 which is partially held in position upon the section by means of a staple 15 (see Fig. 6), one end of which extends horizontally or laterally through the flange of the angle iron which is parallel with the plate and the opposite leg of said staple extends downwardly at right angles to the bend of the first leg and through the flange of the angle iron which is at right angles to the plate, the loop of the staple being projected beyond this latter flange and on the outside thereof. The lower portion of the angle iron is secured to the section by means of bolts 16. At the opposite end of the sections, the angle iron is secured in a similar manner by the staple in this instance is adjacent the bottom edge of the section instead of at the top edge and the angle adjacent the top edge is provided with a slot 17 similar to the slot 19 arranged in the angle iron and at the opposite end so that when the adjoining horizontal sections are connected together, the upper staple of one section will pass through the slot in the adjoining section and the lower staple of the adjoining section will pass through the lower slot in the adjoining section in an opposite direction. Pivoted to each section and adapted to engage the staple on the adjoining section when the same is projected through the angle iron are latching hooks 20 which connect the sections and hold them firmly together.

It will be noticed that the inner surface of the outer wall, when the sections are connected together, is perfectly smooth and in order to properly mold the material between

the inner and outer walls, the outer surface of the inner wall must also be smooth. Therefore, in this instance, the angle irons are projected inwardly, as will be readily seen from an inspection of Figs. 2 and 3, the tiers being connected together in a similar manner and the sections of each tier may also be secured together in a similar manner, but I have here shown wedges 21 to engage the staple. When the walls are held in separated relation by the spacing members, as shown in Fig. 3, it will be noticed that a smooth circular receptacle is produced which is adapted to receive the cement for forming the silo or other device.

In order to hold the inner wall to form, to effectually brace the same, and to provide a staging upon which the workman may stand, there is mounted upon the ground within the inner member a movable base 22 from which projects a vertical standard 23 carrying a plurality of adjustable heads 24, each comprising clamping members and a radially notched flange, as shown. Engaged with the flange are angle irons 25 having one flange cut away adjacent its end and the opposite projecting flange bent at right angles, as shown at 26, to form a supporting foot. When these devices are in position, the vertical flange is entered into the slot of the head with the horizontal flange lying on top of the head and the laterally extending foot 26 resting upon the underneath side of the flange and supporting the arms in horizontal position. Carried by these arms is a sectional ring 27 having an annular lip or flange 28 adapted to rest upon the top of the angle irons of the inner wall sections. This ring effectually prevents collapse of the inner walls, holds them to form, and at the same time is adapted to support a part of the staging or platform which is placed upon the top of the arms. The ring also forms a deflecting surface which prevents any material from dropping down inside of the inner walls.

It will be readily seen how one man may conveniently connect up all of the sections of the inner and outer walls and by moving up the heads on the standards, they readily elevate the staging support to the required height.

What is claimed is:—

A circular staging for silo molds comprising a base, a standard rising therefrom, a two-part head adjustably mounted upon the standard and having a horizontally extending and radially slotted flange, angle bars each having one flange cut away for a short distance and the remaining flange bent at right angles, said angle bars adapted to engage the slots in the head and the right angular end adapted to prevent twisting of the bar on the head, and a sectional ring engaged with the ends of the arms and supported thereby.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE N. HARTMAN.

Witnesses:

F. H. CLAUSEN,

HERMAN LANGE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."