Sept. 18, 1928. 1,685,012

H. J. YAGER

COLLAPSIBLE AND PORTABLE CORE FORM

Original Filed April 29, 1926 2 Sheets-Sheet 1

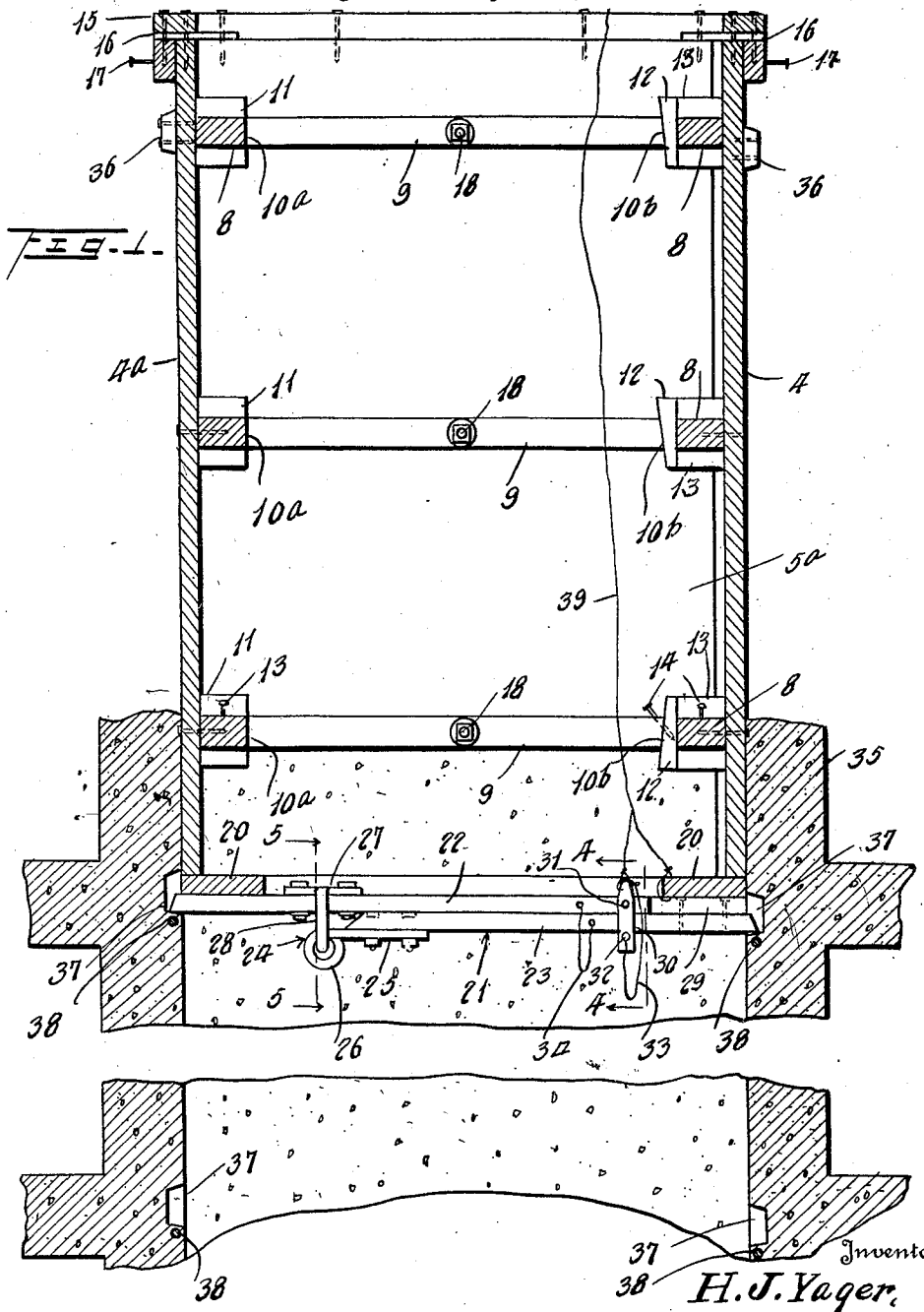
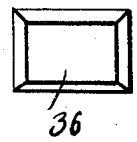


FIG. 6.



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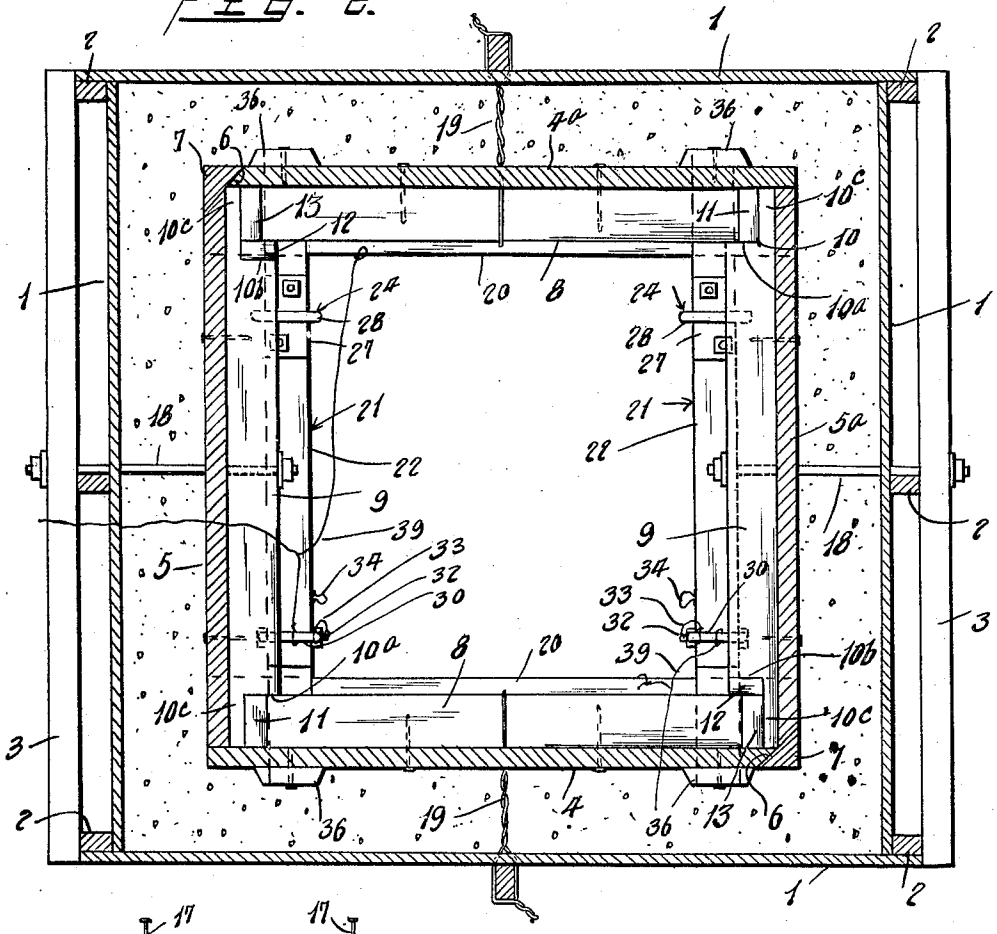
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Fig. 2.



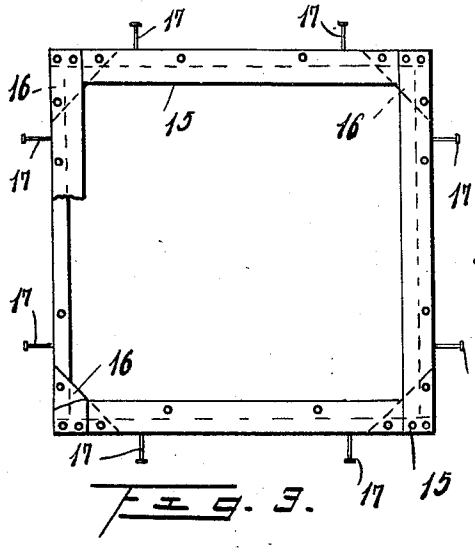


Fig. 3.

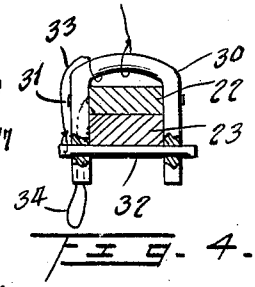


Fig. 4.

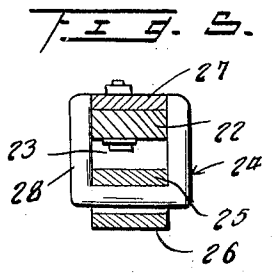


Fig. 5.

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UNITED STATES PATENT OFFICE.

HARVEY J. YAGER, OF SEATTLE, WASHINGTON.

COLLAPSIBLE AND PORTABLE CORE FORM.

Application filed April 29, 1926, Serial No 105,431. Renewed February 23, 1928.

This invention relates to collapsible and portable core forms for molds of that type used in building concrete chimneys, elevator shafts and other hollow structures, and more particularly to improvements in the collapsible and portable core form forming the subject-matter of my application filed August 1, 1925 serially numbered 47,603 which became Patent Number 1,591,907 on March 12, 1926.

The present invention has for one of its objects the provision of novel and highly efficient means for holding the sides of the core form against outward displacement while the core form is being assembled and the concrete poured.

A further object of the present invention is to improve the wale pieces and wedges of the core form to the end that the core form will be held against collapsing under any pressure that the material of which it is made will resist without fracturing.

A further object of the present invention is to alter the formation of the mold blocks to the end that they may be more readily withdrawn from the structure being molded.

With the foregoing and other objects in view, the nature of which will become apparent as the description proceeds, the present invention consists of the novel construction, combination and arrangement of parts hereinafter fully described and claimed, and illustrated in the accompanying drawings, wherein:

Figure 1 is a sectional view taken on a plane extending verically through the core form and a finished section of a chimney or elevator shaft, the core form being shown in position to permit the building of another section of the chimney or elevator shaft,

Figure 2 is a sectional view taken on a plane extending horizontally through the core form, chimney or elevator shaft and outside form,

Figure 3 is a detail top plan view of the frame or means for holding the sides of the core form against outward displacement while assembling the parts of the core form and pouring the concrete,

Figure 4 is a detail sectional view taken on the vertical plane indicated by the line 4—4 of Figure 1,

Figure 5 is a similar view taken on the vertical plane indicated by the line 5—5 of Figure 1, and

Figure 6 is a detail view in elevation of one of the mold blocks of the core form.

Corresponding and like parts are referred to in the following description, and designated in the several views of the accompaying drawings, by similar reference characters.

The mold of which the core form forms a part includes an outside form which is of the usual construction and comprises sheeting boards 1, studs 2 and wale pieces 3.

The core form comprises opposite sides 4 and 4^a and opposite sides 5 and 5^a, the latter being located between the former. Diagonally opposite corners of the core form are beveled as indicated at 6, and positioned at and contacting with these corners are removable strips 7 which correspond in length to the corresponding dimension of the core form and are of right angled triangular formation in horizontal section. Wale pieces 8 are secured to the sides 4 and 4^a, and wale pieces 9 to the sides 5 and 5^a. The wale pieces 8 terminate short of the vertical edges of the sides 4 and 4^a and the ends thereof are inclined with respect to the vertical. The wale pieces 9 extend to the vertical edges of the sides 5 and 5^a, and are provided at their ends with recesses 10 for the reception of the ends of the wale pieces 8. The recesses 10 present each wale piece 9 with shoulders 10^a and 10^b and extensions 10^c of which the latter have vertical inner sides. The shoulders 10^a are vertical and contact with the wale pieces 8, and the shoulders 10^b are inclined with respect to the vertical and spaced from these wale pieces. At diagonally opposite corners of the core form, the shoulders 10^a of the wale pieces 9 contact with the wale pieces 8, and at these points wedges 11 are positioned between the ends of the wale pieces 8 and the extensions 10^c of the wale pieces 9. At the other diagonally opposite corners of the core form, wedges 12 are positioned between the wale pieces 8 and the shoulders 10^b of the wale pieces 9 and wedges 13 are positioned between the ends of the wale pieces 8 and the extensions 10^c of the wale pieces 9. The shoulders 10^b of the lowermost wale pieces 9 and the ends of the lowermost wale pieces 8 incline downwardly and outwardly so as to permit the wedges

between these parts to be displaced in a downward direction, these wedges being secured against casual displacement by nails 14. In the lower portion of the core form there is comparatively little room in which to work, and the arrangement of the lowermost wedges permits them to be easily and quickly displaced when it is desired to take the core form apart after completing a section of the structure being molded. The arrangement of the ends of the wale pieces 8 and 9 in overlapping relation together with the wedges 11, 12 and 13 render it impossible for the pressure exerted on the core form by the concrete to move the sides 4—5ª out of alinement at the corners thereof.

To hold the sides 4—5ª of the core form against outward displacement while assembling the core form and pouring the concrete, there is provided a frame 15 the sides of which are of angular form in cross section. The frame 15 is adapted to be applied to the upper end of the core form with the horizontal members of its sides in contact with the upper edge of the core form and with the vertical members of its sides in contact with the outer surfaces of the core form. The frame may be made of wood or metal, and the sides thereof are connected by angular corner pieces 16. The frame is adapted to be secured against casual displacement by nails 17 or the like. The core form is connected to the outside form by bolts 18 and wire loops 19.

The core form is supported by scaffold planks 20 which are in turn supported by trusses 21. Each truss comprises an upper bar 22 and a lower bar 23 which contact with each other and an end of each of which extends beyond an end of the other. The bars 22 and 23 are connected together by a hinge 24 which comprises a plate 25 bolted to the under side of the bar 23 and provided with a barrel 26, and a plate 27 bolted to the upper side of the bar 22 and provided with a loop 28 which embraces this bar and passes through the barrel 26. Filler blocks 29 are secured to the upper sides of the bars 23 so as to effect the supporting of the scaffold planks 20 in the same horizontal plane. Yokes 30 straddle the bars 22 and 23, and are pivoted to the edges of the bars 22 as at 31. Pins 32 are removably carried by the yokes 30 and contact with the lower sides of the bars 23. The yokes 30 and pins 32 prevent the bars 22 and 23 from having any casual pivotal movement. To prevent their loss, the pins 32 are connected to the yokes 30 by flexible elements 33, and to limit the pivotal movement of the bars 22 and 23 of each truss in a direction away from each other, a flexible element 34 is connected to the bars.

The core form is adapted to be used for building an entire chimney, elevator shaft or other hollow structure. After a section of the structure is completed, the outside form and core form are taken apart and removed and again erected and supported in an upwardly extending position with relation to the completed section, as clearly illustrated in Figure 1. In this figure and in Figure 2, 35 designates the partly completed structure. Opposite sides of the core form are provided with mold blocks 36 which are adapted to form recesses 37 in inner opposite sides of the structure 35. The upper, lower and lateral edges of the mold blocks 36 are beveled in order to permit them to be readily withdrawn from the concrete. The recesses 37 are adapted for the reception of the ends of the truss bars 22 and 23, and to prevent the bottom walls of the recesses 37 from breaking down under the weight placed thereon, reenforcing rods 38 are embedded in the structure 35 directly below said walls.

To permit the scaffold timbers 20 and trusses 21 to be removed from the completed section of the structure 35 after the removal of the core form, cables 39 are provided and are connected to the scaffold timbers 20 and yokes 30.

From the foregoing description, taken in connection with the accompanying drawings, it will be understood that the core form may be readily taken apart and removed from the completed section of the structure, that the core form may be readily erected and supported from the completed structure section, and that it provides in each completed section recesses for the reception of the supporting trusses therefor.

While I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the invention as claimed.

What is claimed is:—

1. A core form comprising separable sides, wale pieces carried by certain of said sides, other wale pieces carried by the other sides and having recesses for the reception of the ends of the first named wale pieces, and wedges positioned between certain ends of the wale pieces.

2. A core form comprising separable sides, wale pieces secured to certain of said sides and having their ends inclined with respect to the vertical, other wale pieces secured to the other sides and having certain of their ends contacting with the first named wale pieces and provided with extensions, the other ends of said other wale pieces having extensions and inclined with respect to the horizontal, wedges positioned between the ends of the first named wale pieces and the extensions of the other wale pieces, and wedges positioned between the first named

wale pieces and the inclined ends of the other wale pieces.

3. A core form comprising separable sides, wale pieces secured to certain of said sides and terminating short of the vertical edges thereof, other wale pieces secured to the other sides and having recesses for the reception of the ends of the first named wale pieces, and wedges positioned between the wale pieces.

4. A core form supporting truss comprising pivotally connected bars, a yoke carried by one of the bars and embracing the other, and a pin removably carried by the yoke and contacting with the other bar.

5. A core form supporting truss comprising upper and lower bars, a hinge connecting an end of one of the bars to the other, a yoke pivotally connected to one of the bars and embracing the other, and a pin removably carried by the yoke and contacting with the other bar.

In testimony whereof I affix my signature.

HARVEY J. YAGER.