

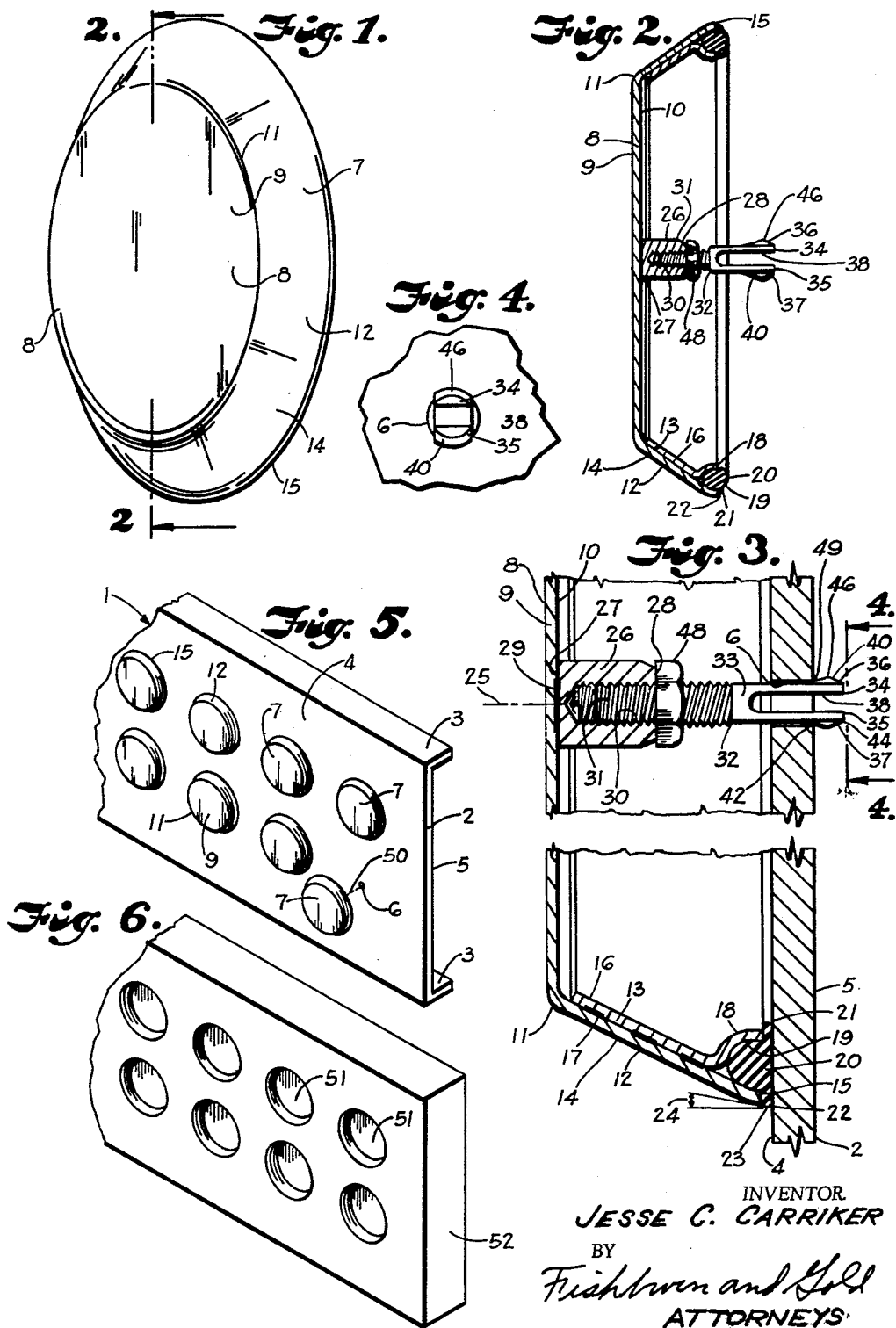
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CONCRETE WALL DECORATION APPARATUS

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CONCRETE WALL DECORATION APPARATUS
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This invention relates to the art of pouring concrete walls, and more particularly to apparatus for forming decorations in such walls.

Poured concrete walls make up a large percentage of foundation and retaining wall construction; however, as poured they are normally unsightly structures which must be covered with a finishing or covering material to properly blend in with the surrounding architecture. It has been suggested heretofore that concrete can be molded into unusual shaped blocks which may be used for decorative wall construction. This has proved to be quite expensive and, therefore, not suitable in many instances.

The principal objects of the present invention are: to provide concrete form apparatus for molding decorated concrete walls easily and cheaply and without departing from normal construction methods; to provide such apparatus which may be easily modified to produce variations in the decoration patterns and sizes; to provide pods easily connected to and removed from the usual concrete pouring forms by unskilled labor; to provide such pods for use with concrete forms which may be used and reused many times; and to provide such decoration apparatus which is inexpensive to produce and well suited for its intended purpose.

Other objects and advantages of this invention will become apparent from the following description taken in connection with the accompanying drawings wherein are set forth by way of illustration and example certain embodiments of this invention.

FIG. 1 is a perspective view showing a decorative pod embodying this invention.

FIG. 2 is a cross-sectional view through the pod taken on the line 2-2, FIG. 1, particularly showing a ring seal and anchor assembly thereon.

FIG. 3 is a fragmentary view on an enlarged scale showing the construction of the pod anchor assembly in greater detail and illustrating the pod in anchored position on a pouring form.

FIG. 4 is a fragmentary view taken on the line 4-4, FIG. 3, showing the rear portion of an anchor member bifurcated section.

FIG. 5 is a fragmentary partially exploded perspective view on a reduced scale showing a pouring form structure with a plurality of pods secured thereto in a regular repeating pattern.

FIG. 6 is a fragmentary perspective view illustrating a concrete wall which was poured using the form of FIG. 5.

Referring to the drawings in more detail:

The reference numeral 1 generally indicates a concrete wall-forming form for supporting poured concrete during hardening or curing. The form 1 comprises an elongated generally vertically extending substantially planar structure 2 preferably of sheet steel and reinforced by suitable flanges 3 or the like. The structure 2 has a substantially smooth continuous concrete contacting or outside surface 4 and a rear surface 5. A plurality of spaced apart bores 6 extend through the structure 2 and communicate between the surfaces 4 and 5. The bores 6 form a suitable repeating pattern on the structure 2 for a purpose apparent hereinafter.

A pod 7, preferably of sheet metal, is provided for each of the bores 6. The pods 7, in the illustrated example, are respectively comprised of a planar circular central portion 8 having a smooth front face 9 and a rear face 10 and an outer periphery 11. The pods 7 each include

an annular skirt 12 generally in the form of a regular conical section which is joined to the central portion 8 at the periphery 11 and tapers outwardly from the central portion. The skirt 12 has an inner surface 13 and a smooth outer surface 14 and terminates in an outer rim 15 spaced axially rearwardly of the central portion 8.

An annular sheet metal ring 16 of generally conical shape is adapted to contact and is secured to the skirt inner surface 13, in the illustrated example by spaced resistance welds at 17. The ring 16 terminates in a curved rim 18 spaced inwardly from the skirt rim 15 and forming therewith an annular channel 19 opening rearwardly of the central portion front face 9.

A resilient ring seal 20 preferably of a relatively inert material such as Neoprene rubber is retained in the channel 19 by compression between the rims 15 and 18 and extends rearwardly past said rims at 21. The ring seal 20 has an outer flange portion 22 adapted to deform under forward pressure against the structure outside surface 2 due to pressure produced by means described hereinafter and blend with the skirt outer rim 15 to produce a substantially continuous rearwardly extending surface at 23. The surface at 23 extends at a positive draft angle, as indicated by the double arrows at 24, with the circumferential axis 25 of the pod 7.

An elongated retainer member 26 has a forward end 27 and a rear end 28 and is secured by welding at the forward end 27 to the central portion rear face 10 to secure the retainer member 26 in a rearwardly extending position. A threaded bore 30 extends into the retainer member 26 from the rear end 28 coaxially of the axis 25 and receives the threaded shank 31 of an elongated anchor member 32. The anchor member 32 has a bifurcated or split section 33 extending axially rearwardly of the threaded shank 31 and having a pair of resilient legs 34 and 35 respectively terminating in enlarged feet 36 and 37. Each of the feet 36 and 37 respectively have inwardly facing portions 38 and outwardly facing portions 40.

The outwardly facing portions 40 respectively have forward ends 42 and rear ends 44. The outwardly facing portions 40 taper outwardly from the respective ends thereof forming longitudinally central protrusions 46 normally spaced apart a distance greater than the diameter of the respective bore 6. The rear ends 44 are free, being cantilever mounted by the legs 34 and 35, and are normally spaced apart a distance smaller than the diameter of the respective bore 6 for being easily received thereinto. Upon insertion into a bore 6, a wedging action is set up which urges the respective feet 36 and 37 resiliently together to permit same to pass longitudinally into and through the bore. The inwardly facing portions 38 are normally spaced apart a distance permitting the protrusions to move toward each other for insertion into and through the bore 6.

A lock nut 48 is threadedly engaged with the threaded shank 31 for selective jamming against the retainer member 26 for locking the protrusions 46 in an adjusted axial position with respect to the central portion 8. The desired adjusted position is attained when, upon insertion, the feet 36 and 37 contact the structure 2 at a point 49 whereupon the protrusions extend slightly rearwardly of the structure rear surface 5. This permits the protrusions 46 to slightly move away from each other, anchoring the pod 7 onto the structure 2. Since the feet 36 and 37 are then engaged by the structure 2 at the tapered surface between the respective protrusions 46 and the forward ends 42, there is a rearward component of force developed which maintains the ring seal 20 in compression between the outside surface 4 and the outer rim 15 to produce a seal sufficient to prevent freshly poured con-

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crete from entering within the pod even under relatively high pressure. The width of the feet 36 and 37 is such to prevent lateral motion of the pod when anchored in the bore 6. It is noted that the hydraulic pressure exerted by the relatively plastic concrete will cause the ring seal 20 to be compressed against the outside surface 4 with additional force.

Referring to FIG. 5, the respective pods are mounted on the structure 2 by blindly inserting the feet 36 and 37 into the bores 6 in the manner indicated by the broken line at 50. When the concrete is poured using the form 1 and is allowed to set and the form is subsequently removed, regular depressions 51 are formed in the completed concrete wall 52 corresponding in position, shape and size to the pods 7. It is to be understood that the pods 7 may be varied in size, shape and pattern on the structure 2 without departing from the scope of this invention. It is to be further understood that while one form of this invention has been illustrated and described, it is not to be limited to the specific form or arrangement of parts herein described and shown except insofar as such limitations are included in the claims.

What I claim and desire to secure by Letters Patent is:

1. A decorative concrete wall form for supporting poured concrete during curing comprising:

- (a) a form structure having a poured concrete contacting outside surface and a rear surface,
- (b) a plurality of spaced apart bores extending through said structure and communicating between said structure surfaces and forming a pattern on said structure outside surface,
- (c) a pod for each of said bores, said pods each being comprised of a central portion having a front face and a rear face and an outer periphery, said pods each including a skirt joined to said central portion at said periphery and tapering outwardly from said central portion, said skirt having an inner surface and an outer surface and terminating in an outer rim spaced rearwardly of said central portion,
- (d) support means secured to said skirt inner surface, said support means terminating in a rim adjacent said skirt rim and forming therewith a continuous open channel,
- (e) a resilient continuous seal secured in said channel and extending rearwardly past said rims, and
- (f) anchor means secured to and extending rearwardly of said respective central portion rear faces, said anchor means being insertable in respective bores and adapted to anchor said respective pods against said structure outside surface in a pattern corresponding to said bore pattern.

2. The form as set forth in claim 1 wherein said anchor means comprise:

- (a) an elongated retainer member having a forward end and a rear end, said retainer member being secured at said forward end to said central portion rear face, said retainer member extending rearwardly of said central portion rear face and having a threaded bore extending thereinto axially of said central portion from said retainer member rear end,
- (b) an elongated anchor member having a threaded shank engaged in said threaded bore and a bifurcated section extending axially of said shank, said bifurcated section having a pair of resilient legs each terminating in an enlarged foot having an inwardly and an outwardly facing portion,
- (c) said outwardly facing portions of said feet having forward and rear ends and being tapered outwardly from said forward and rear ends forming respective longitudinally central protrusions normally spaced

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apart a distance greater than the diameter of said respective bores, said latter rear ends being normally spaced apart a distance smaller than the diameter of said respective bores, said inwardly facing portions being normally spaced apart a distance permitting the resilient displacement of said protrusions toward each other to a distance equal to the diameter of said respective bores, and

(d) a lock nut on said threaded shank for locking said protrusions in an adjusted axial position with respect to said central portion.

(e) whereby said anchor members are blindly insertable in said respective bores to a point where said protrusions extend slightly rearwardly of said structure rear surface whereupon said pods are removably mounted on said structure with seal under sealing pressure against said structure outside surface.

3. A decorative depression-producing member for use on concrete forms having a concrete contacting surface comprising:

(a) a pod, said pod being comprised of a central portion having a front face and a rear face and an outer periphery, said pod including a skirt joined to said central portion at said periphery and tapering outwardly from said central portion, said skirt having an outer surface and terminating in an outer rim spaced axially rearwardly of said central portion,

(b) support means associated with said skirt, said support means terminating in a rim adjacent said skirt rim and forming therewith a channel, a sealing member secured in said channel and extending rearwardly of said rims for contacting and sealing against said form surface, and

(c) means associated with said rear face for anchoring said pod on said form surface.

4. A decorative depression-producing member for use on concrete forms having a concrete contacting surface comprising:

(a) a thin sheet metal pod, said pod being comprised of a planar circular central portion having a smooth front face and a rear face and an outer periphery, said pod including an annular skirt of regular conical section, said skirt being joined to said central portion at said periphery and tapering outwardly from said central portion, said skirt having an inner surface and a smooth outer surface and terminating in an outer rim spaced axially rearwardly of said central portion,

(b) an annular sheet metal conical ring adapted to contact and being secured to said skirt inner surface, said ring terminating in a curved rim adjacent said skirt rim and forming therewith an annular channel opening rearwardly of said central portion front face,

(c) a resilient ring seal retained in said channel and extending rearwardly past said rims, said ring seal having an outer flange portion adapted to deform under pressure against said form surface and blend with said skirt rim in a positive draft angle, and

(d) means extending from said central portion rear face for securing said pod on said form surface with said ring seal under pressure against said form surface.

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