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(54) **COMPOSITE MASONRY BLOCK**

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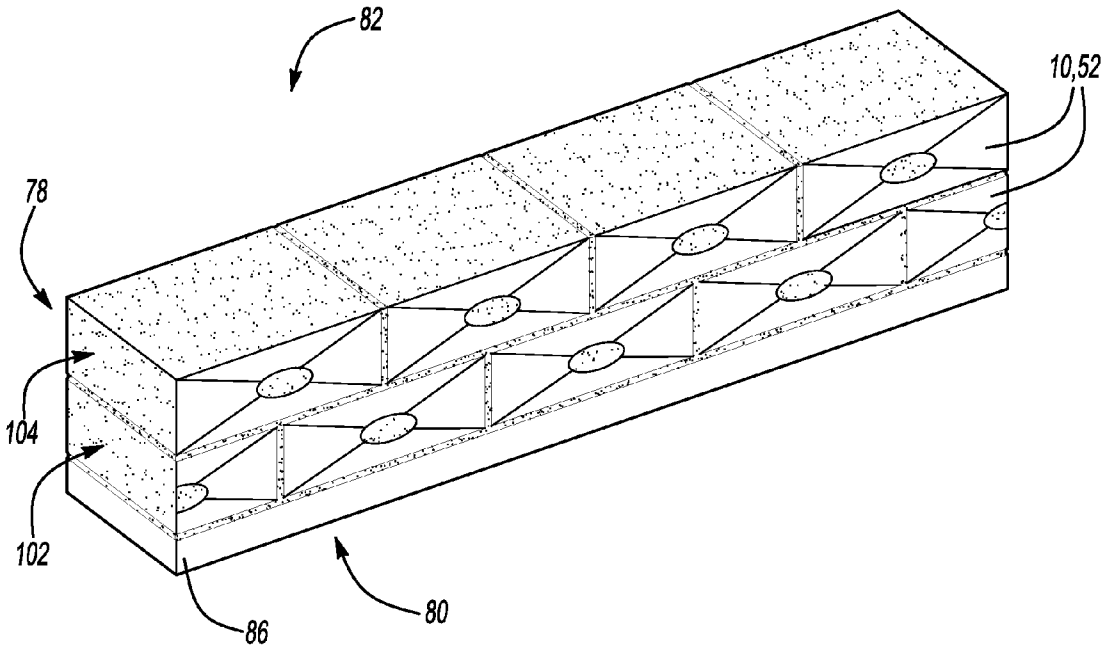
(57) **ABSTRACT**

A masonry block wall system includes a plurality of brackets which establish a wall framework. Each bracket includes a plurality of fins adapted to receive and support at least one block member such that the fins establish a desired alignment of block members relative to one another.



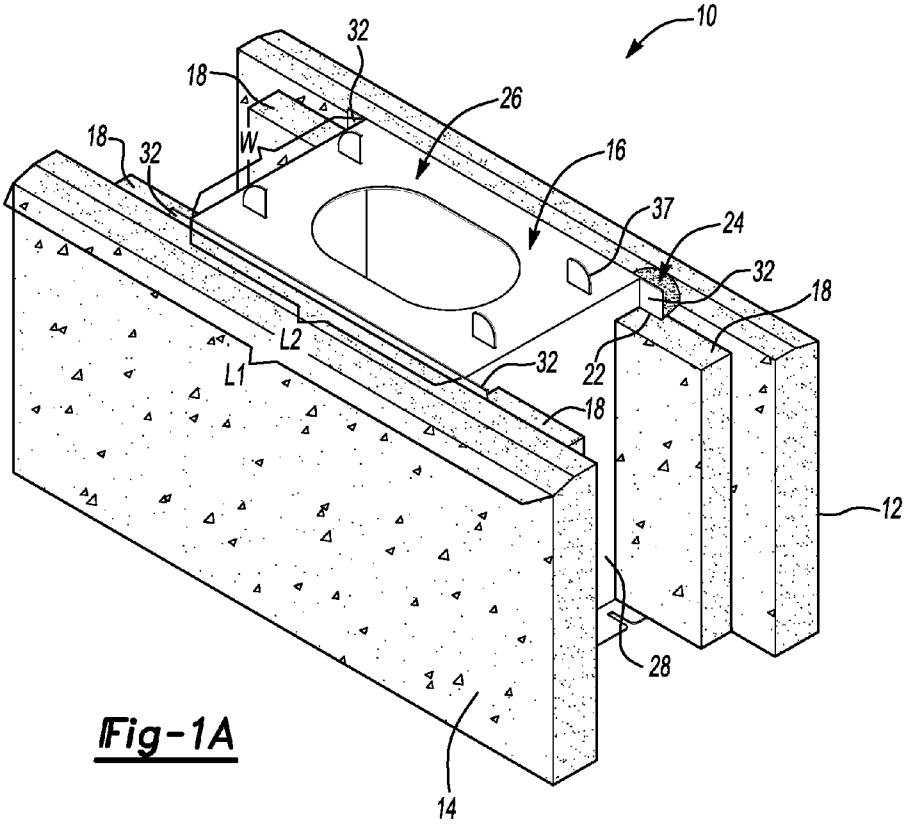

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Fig-1A

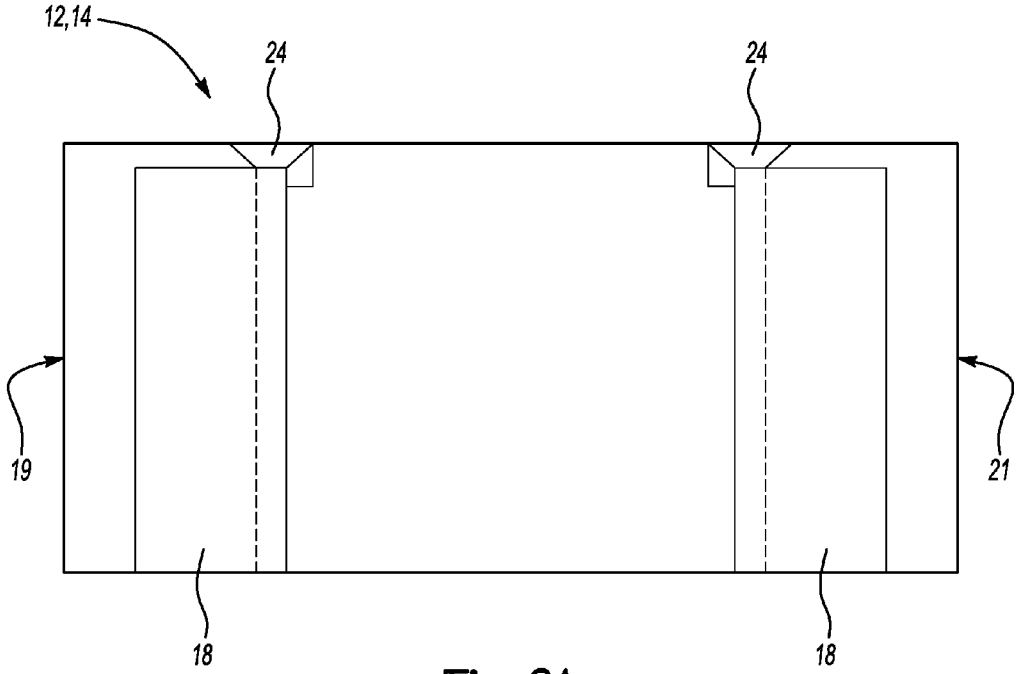
12,14
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Fig-2A

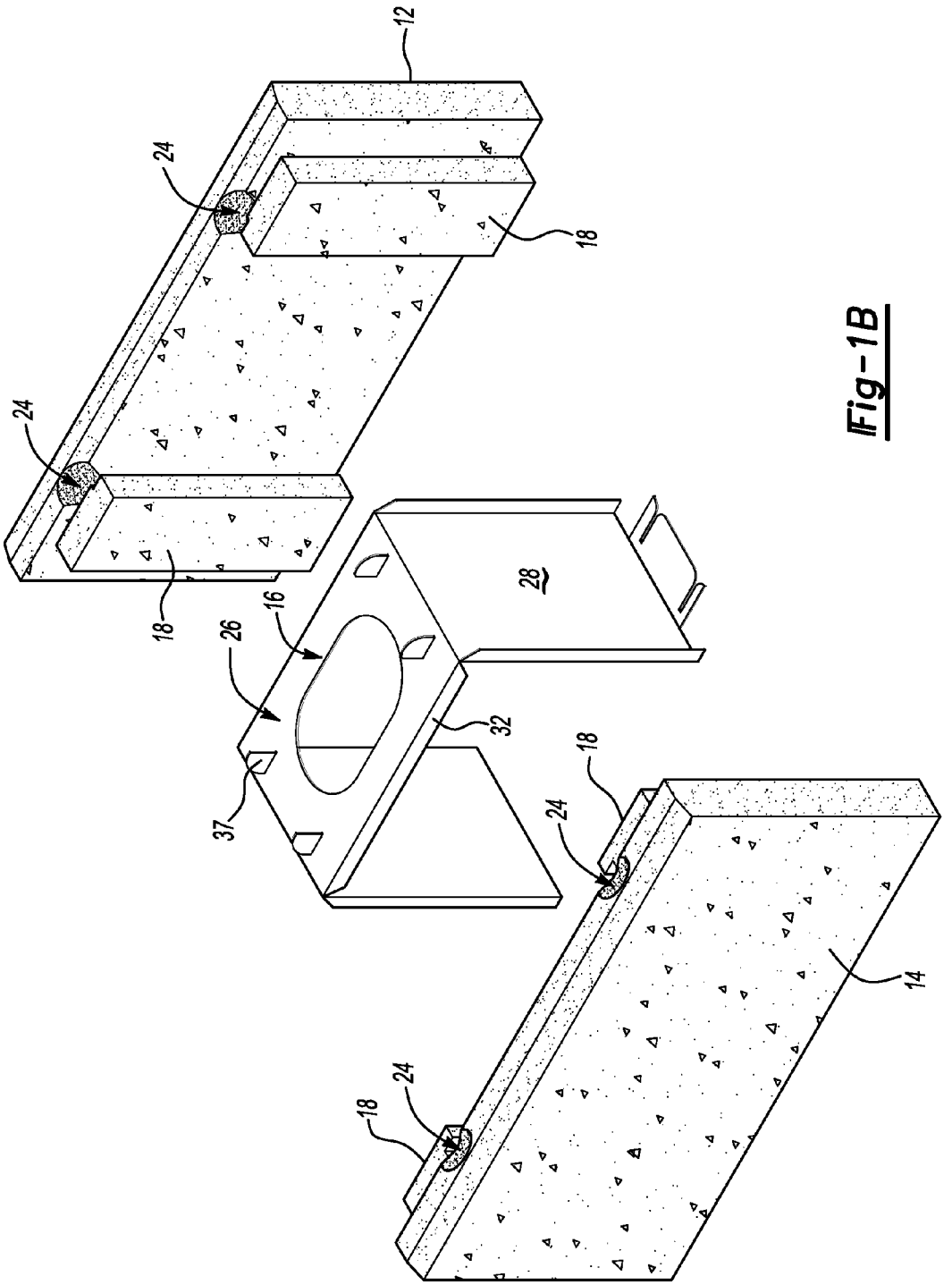

Fig-1B

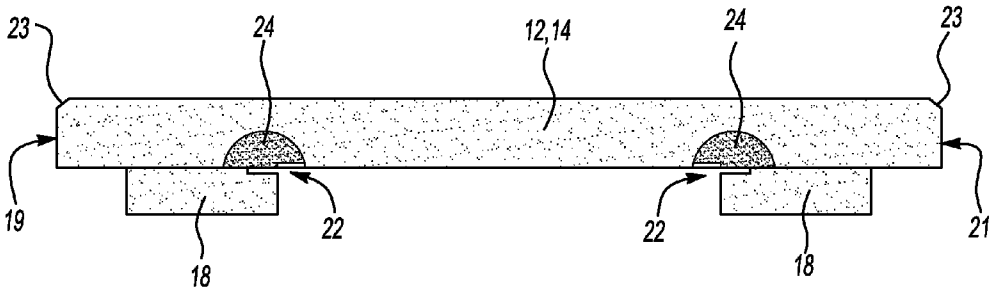

Fig-2B

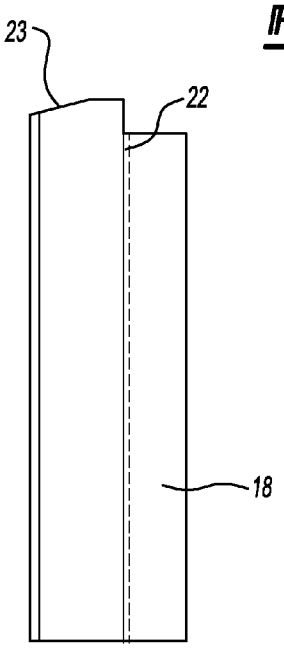

Fig-2C

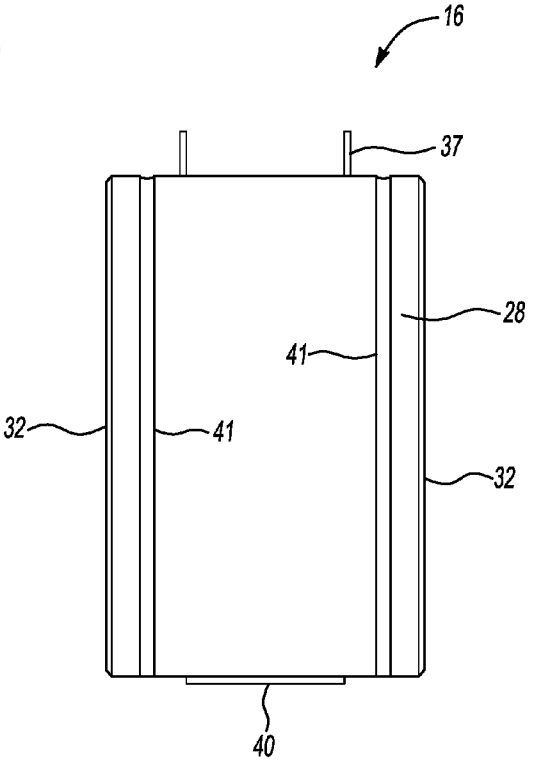

Fig-3C

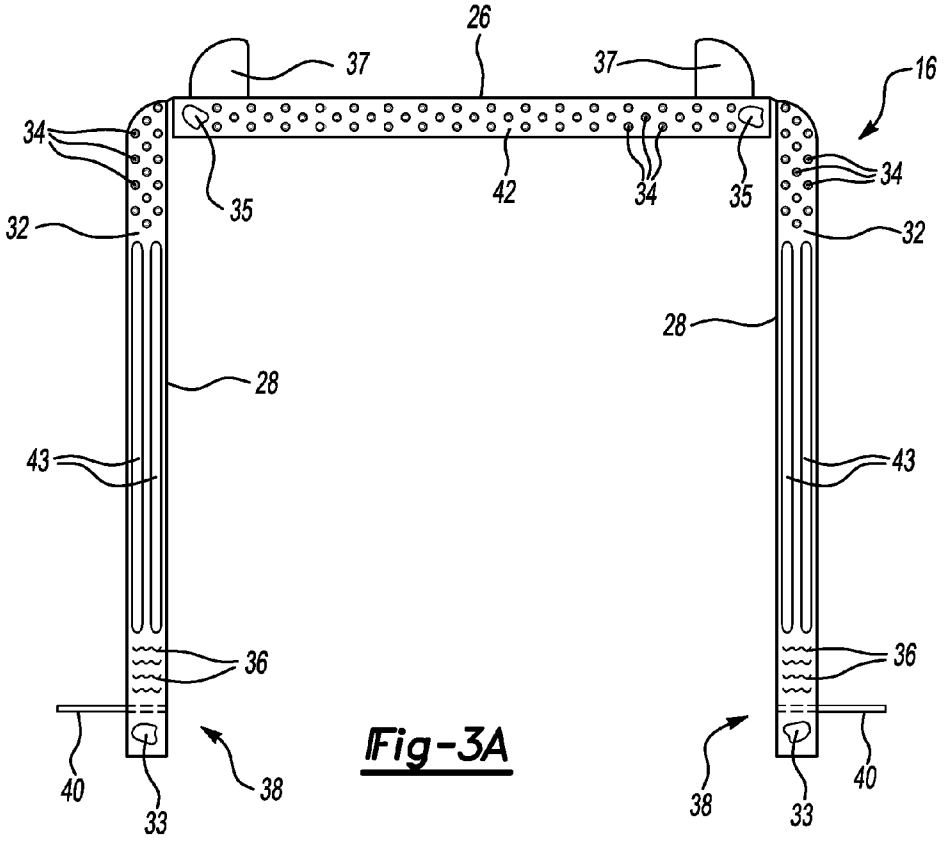
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Fig-3A

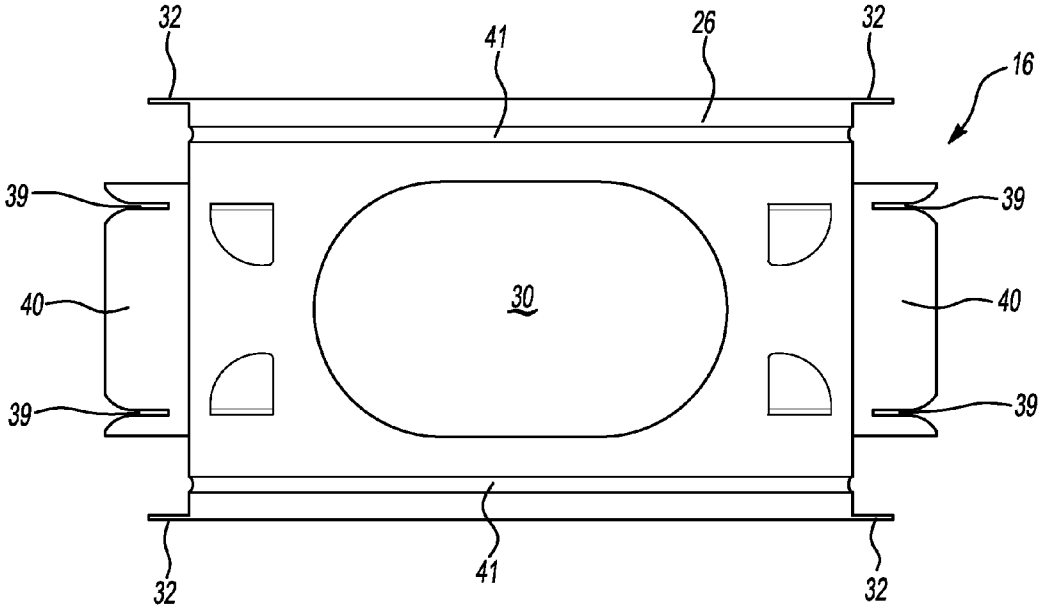
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Fig-3B

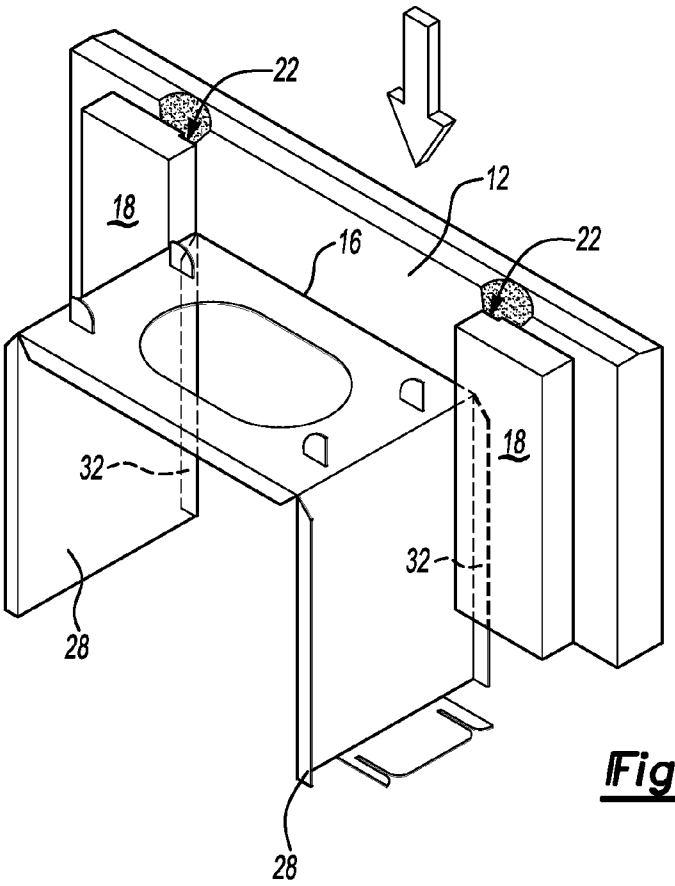
22
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Fig-3D

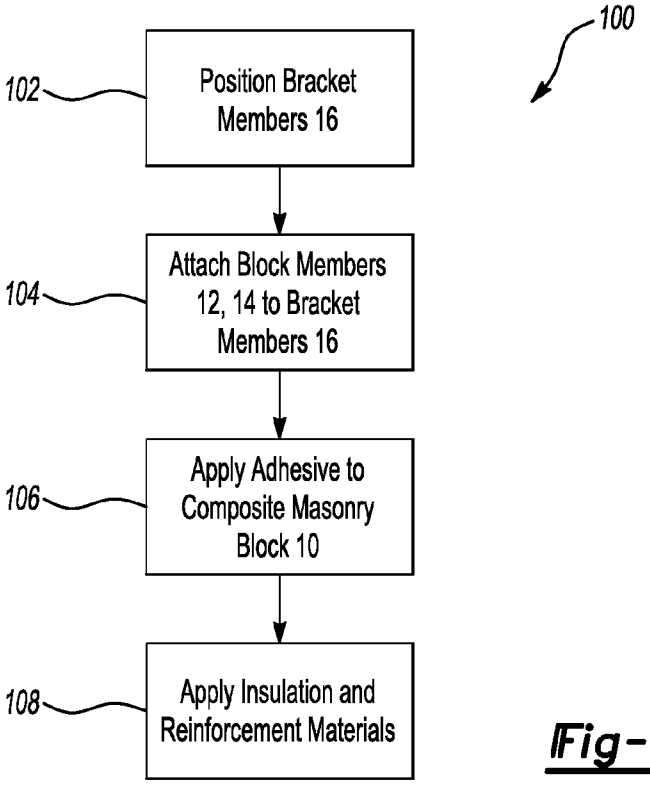
100
102
Position Bracket Members 16
104
Attach Block Members 12, 14 to Bracket Members 16
106
Apply Adhesive to Composite Masonry Block 10
108
Apply Insulation and Reinforcement Materials

Fig-4

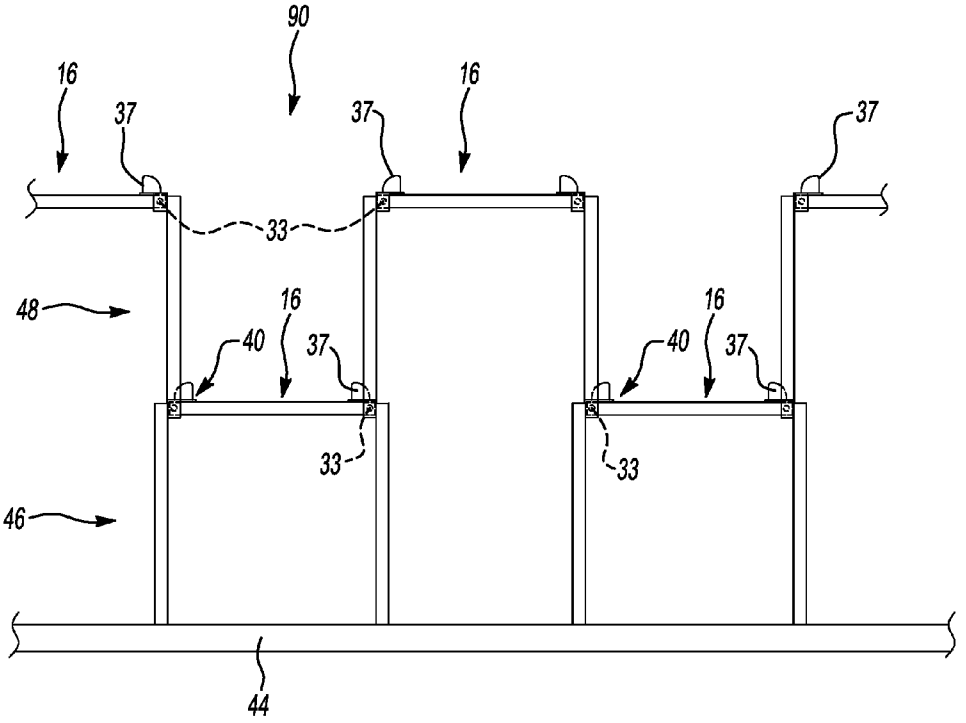
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Fig-5A

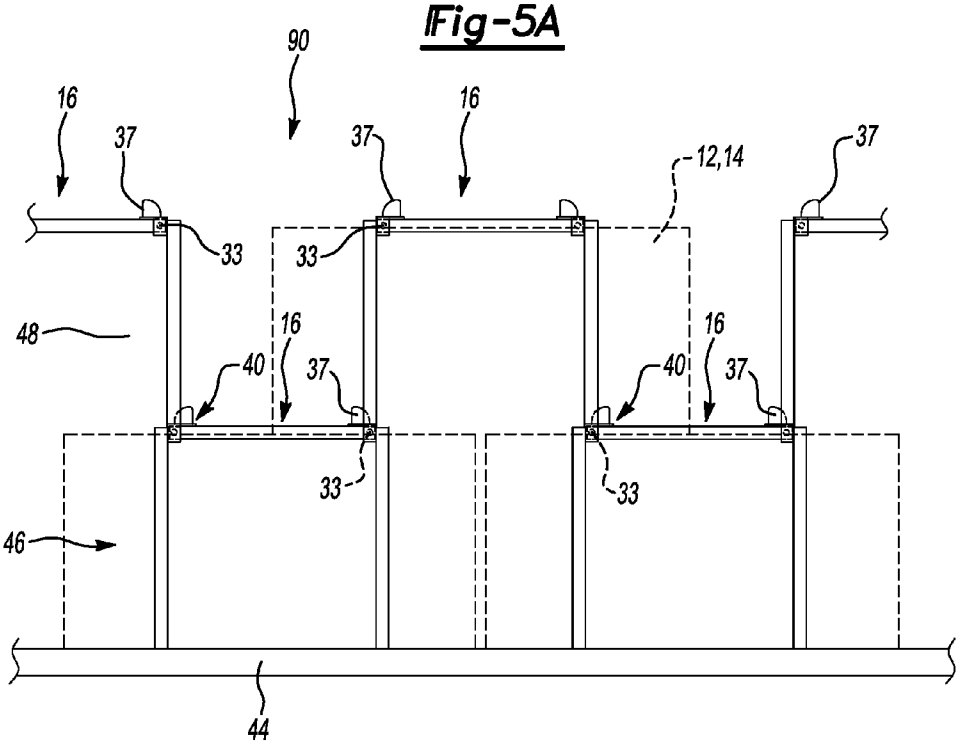
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Fig-5B

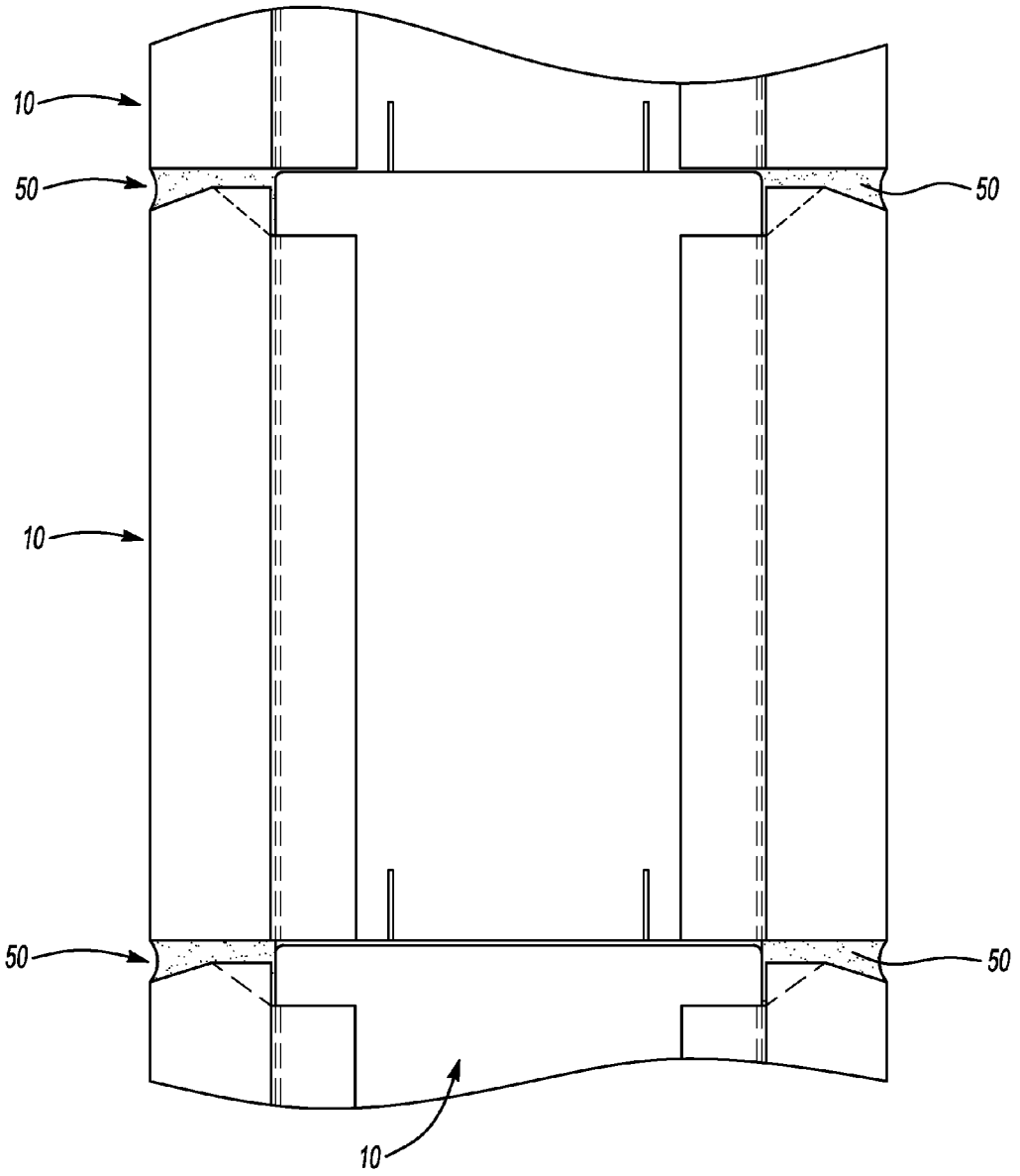

Fig-6

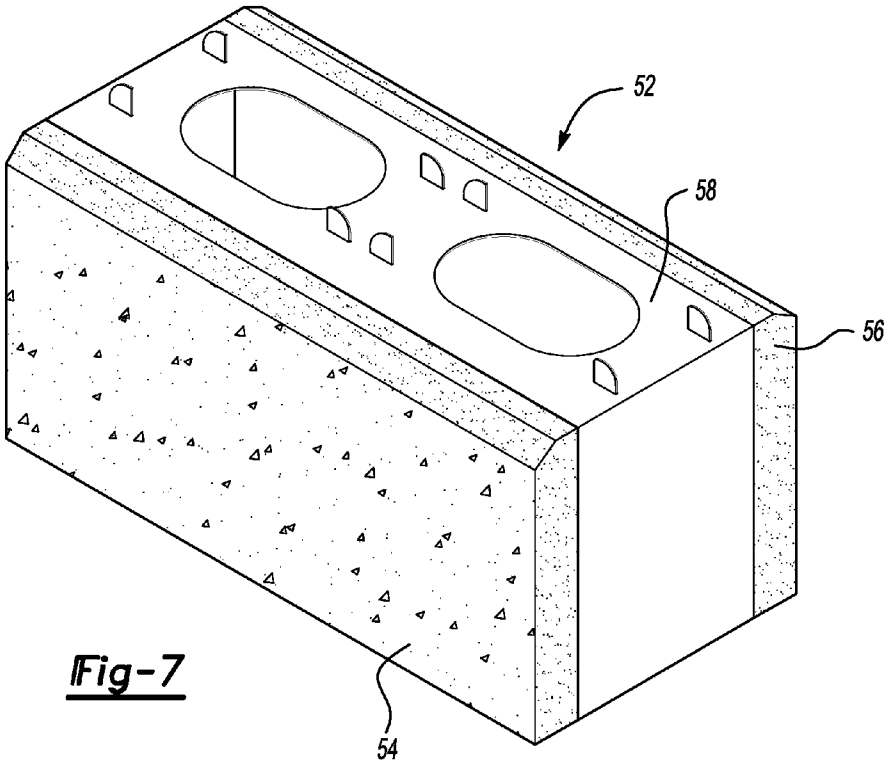

Fig-7

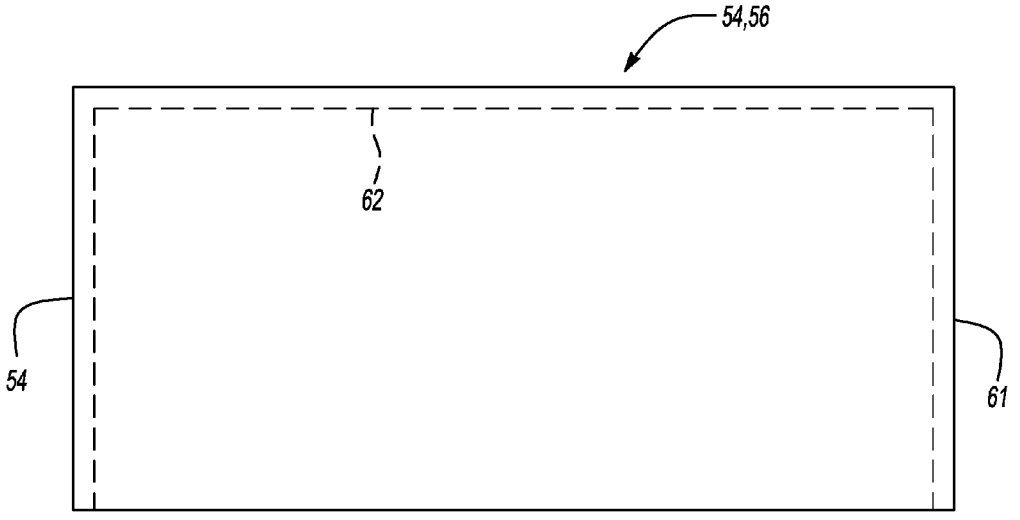

Fig-8A

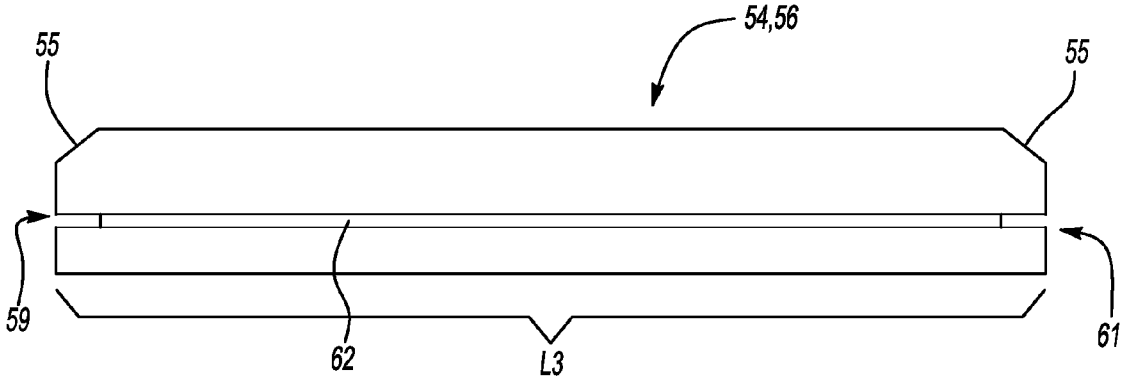

Fig-8B

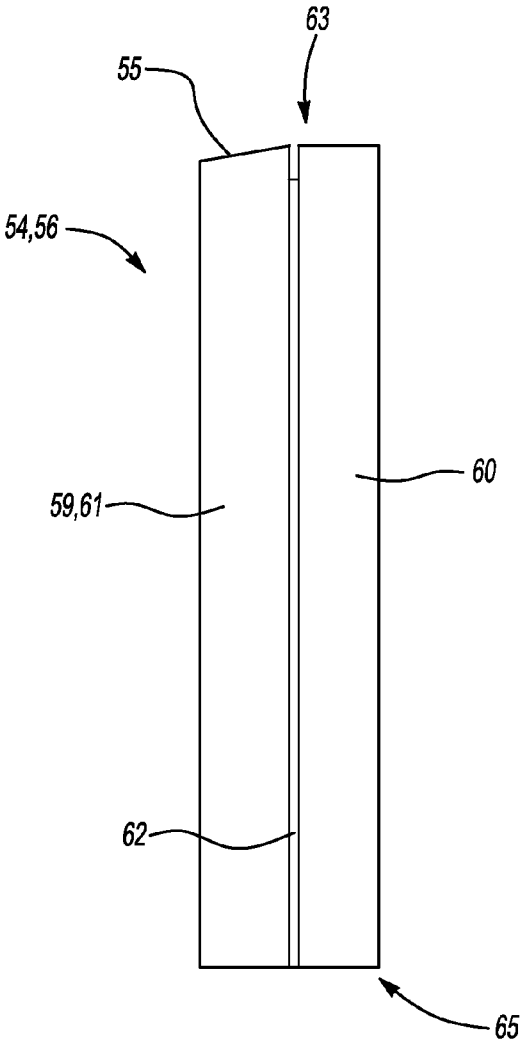

Fig-8C

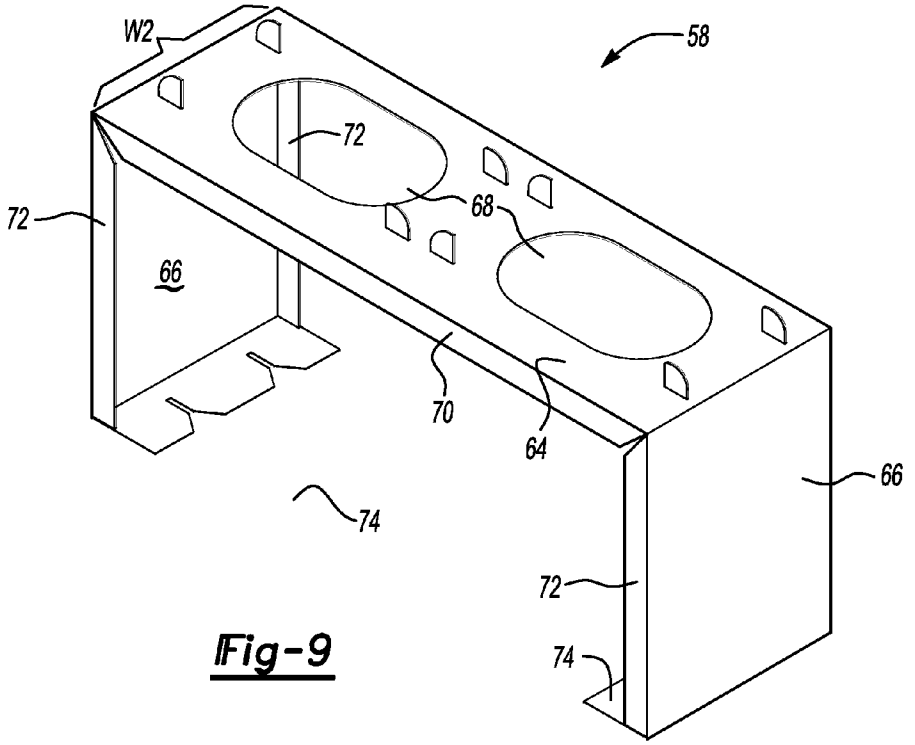

Fig-9

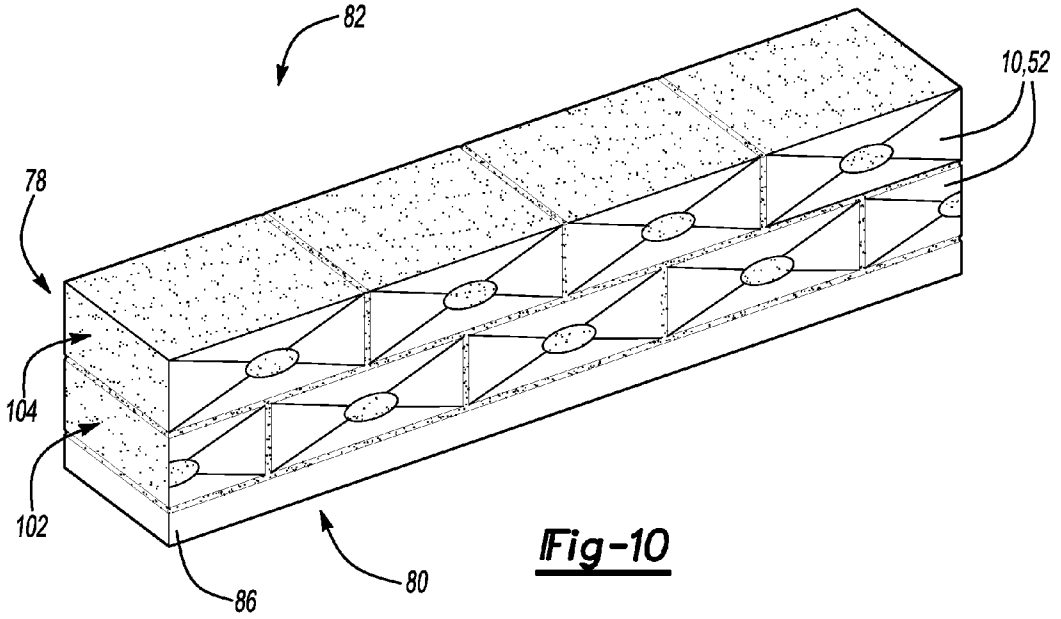

Fig-10

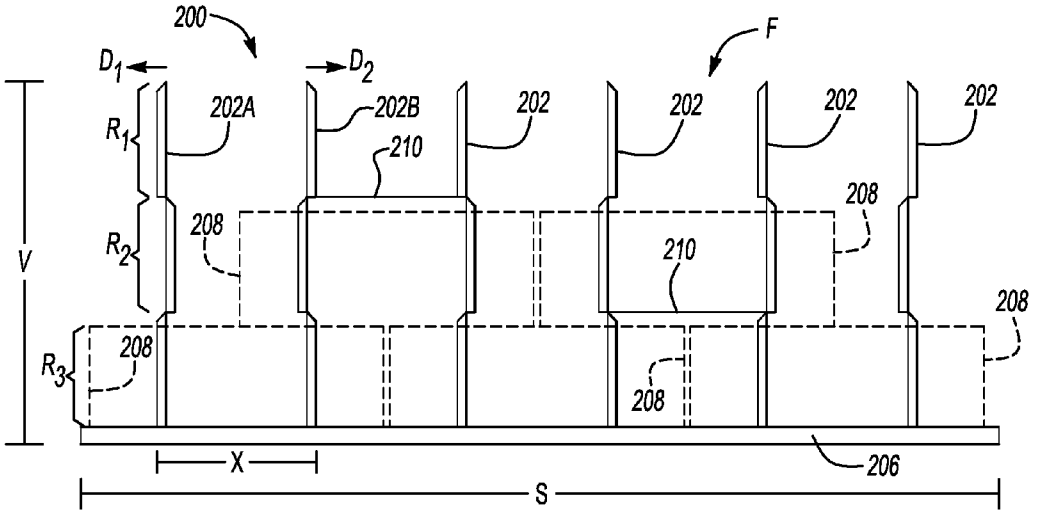

Fig-11A

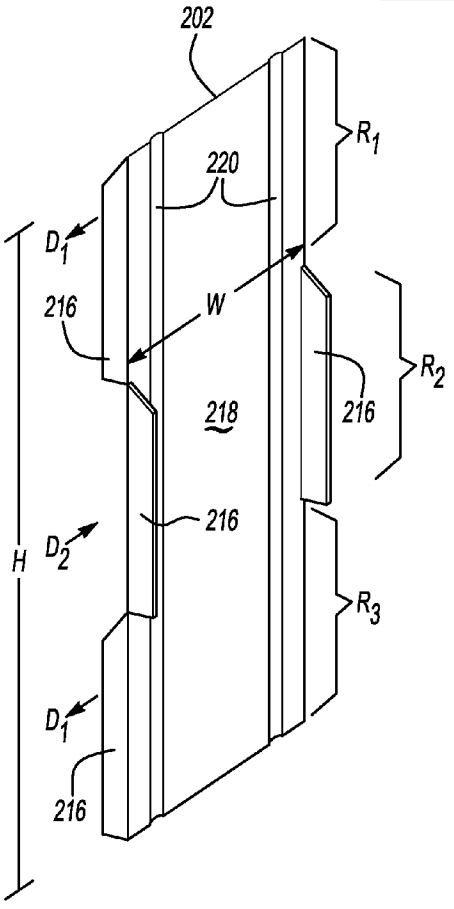

Fig-11B

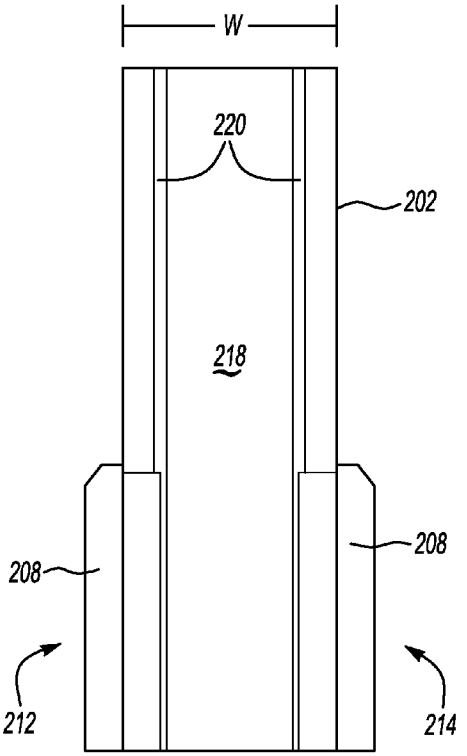

Fig-11C

COMPOSITE MASONRY BLOCK

BACKGROUND OF THE INVENTION

[0001] The present invention generally relates to building components, and more particularly to composite masonry blocks for constructing wall systems.

[0002] Modern day building construction, including construction of commercial and residential buildings, often includes the construction of concrete wall systems. A plurality of masonry blocks are stacked in a plurality of rows to construct the wall systems. Typical masonry blocks include masonry face members which are outwardly aligned and parallel and include structural cross members that extend between the parallel faces. Traditional concrete masonry blocks are of unitary construction, with the cross members and face members all formed of a concrete material.

[0003] Traditional masonry blocks include a one-piece construction. Therefore, the masonry blocks must be transported, in finished form, from the point of fabrication, storage, and/or sale, and ultimately to the construction site. Utilization of concrete cross members increases the weight of each individual unit. The relatively high weight of the individual masonry block members is undesirable from the viewpoint of an installer who must lift, transport, and possibly re-lift the masonry block members several times during the installation process.

[0004] Attempts have been made to provide a reduced weight masonry block at a low cost. For example, masonry block assemblies are known which include a pair of masonry block members which are bridged by coupling members of a different material. Although masonry block assemblies of this type are lighter than traditional masonry blocks, these masonry block assemblies typically are difficult to assemble and impractical to manufacture. In addition, these masonry block assemblies must be installed using the same basic method as standard masonry blocks and may be difficult to insulate.

[0005] Accordingly, it is desirable to provide an improved composite masonry block of reduced weight which is simple to manufacture and simple to assemble to construct a wall system.

SUMMARY OF THE INVENTION

[0006] A masonry block wall system includes a plurality of brackets which establish a wall framework. Each bracket includes a plurality of fins adapted to receive and support at least one block member such that the fins establish a desired alignment of block members relative to one another.

[0007] A method of assembling a wall system includes positioning a plurality of bracket members to establish a self-supporting wall frame and attaching a plurality of block members to the plurality of bracket members.

[0008] A composite masonry block wall system includes a first row of composite masonry blocks and a second row of composite masonry blocks affixed to the first row. Each composite masonry block includes a first block member, a second block member and at least one bracket member. The bracket members of the composite masonry blocks establish a wall frame independent of the first block members and the second block members.

[0009] The various features and advantages of this invention will become apparent to those skilled in the art from the following detailed description. The drawings that accompany the detailed description can be briefly described as follows.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. **1**A schematically illustrates an example composite masonry block;

[0011] FIG. **1**B schematically illustrates an assembly view of the composite masonry block illustrated in FIG. **1**A;

[0012] FIG. **2**A illustrates an example block member of the composite masonry block illustrated in FIG. **1**;

[0013] FIG. **2**B illustrates a top view of the example block member;

[0014] FIG. **2**C illustrates an end view of the example block member;

[0015] FIG. **3**A illustrates an example bracket member of the composite masonry block illustrated in FIG. **1**;

[0016] FIG. **3**B illustrates a top view of the example bracket member;

[0017] FIG. **3**C illustrates an end view of the example bracket member;

[0018] FIG. **3**D illustrates an in-process assembly view of a block member received on the example bracket member;

[0019] FIG. **4** is a flowchart of an example method for assembling a composite masonry block wall system;

[0020] FIG. **5**A illustrates a plurality of bracket members positioned in a plurality of rows to form a wall frame;

[0021] FIG. **5**B illustrates the wall frame illustrated in FIG. **5**A and including a plurality of block members in phantom view;

[0022] FIG. **6** illustrates a cross-sectional end view of a plurality of joints between a plurality of composite masonry blocks;

[0023] FIG. **7** illustrates a second example composite masonry block;

[0024] FIG. **8**A illustrates an example block member of the composite masonry block illustrated in FIG. **7**;

[0025] FIG. **8**B illustrates a top view of the example block member of FIG. **8**A;

[0026] FIG. **8**C illustrates an end view of a second example block member of the composite masonry block illustrated in FIG. **7**;

[0027] FIG. **9** illustrates an example bracket member of the composite masonry block illustrated in FIG. **7**;

[0028] FIG. **10** schematically illustrates a composite masonry block wall system;

[0029] FIG. **11**A illustrates another example wall system;

[0030] FIG. **11**B illustrates a bracket stud of the example wall system illustrated in FIG. **11**A; and

[0031] FIG. **11**C illustrates a side view of the example wall system of FIG. **11**A.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0032] FIGS. **1**A and **1**B illustrate an example composite masonry block **10** that includes a first block member **12**, a second block member **14**, and a bracket member **16**. The first block member **12** and the second block member **14** comprise a first material which is different than a second material of the bracket member **16**. In one example, the first block member **12** and the second block member **14** are concrete and the bracket member **16** is metal, such as 25 gauge galvanized sheet metal, for example. In another example, the bracket member **16** is plastic. The first block member **12**, the second

block member **14**, and the bracket member **16** may comprise any other materials known to be suitable by those skilled in the art who have the benefit of this description.

[0033] The bracket member **16** is a single sheet member and is connected between the first block member **12** and the second block member **14**. The bracket member **16** has a width W that establishes a spacing between the first block member **12** and the second block member **14**. The bracket members **16** may be manufactured having different widths to obtain composite masonry blocks **10** of various sizes while utilizing standard sized block members **12**, **14**. That is, the actual width of the composite masonry block **10** is controlled by the width W of the bracket member **16**. The actual width W of the bracket member **16** will depend upon design-specific parameters including, but not limited to, the desired size and strength of the composite masonry block **10**.

[0034] The first block member **12** and the second block member **14** each have a length L**1**. In one example, the length L**1** of the first and second block members **12**, **14** is approximately sixteen inches. In another example, the length L**1** is approximately eight inches. However, the first and second block members **12**, **14** may be manufactured to the specifications of any desired length.

[0035] The bracket member **16** has a generally planar body which is continuous and uninterrupted immediately adjacent the length L**1**. The bracket member **16** has a length L**2**, which is in one example approximately 50% of the length L**1** of the first block member **12** and the second block member **14**. In another example, the length L**2** of the bracket member **16** is 75% of the length L**1** of the first block member **12** and the second block member **14**. In yet another example, the length L**2** of the bracket member **16** is coextensive with the entire length L**1** of the first block member **12** and the second block member **14**. In yet another example, the size of length L**2** decreases as the size of length L**1** decreases. That is, the length L**2** of the bracket member **16** may be scaled to any size in proportion to the length L**1** of the block members **12**, **14**. For example, the length L**2** may be in the range of approximately the thickness of the material of the bracket member **16** up to approximately eight inches. A worker in the art would understand how to design the bracket members **16** and the block members **12**, **14** to provide composite masonry blocks **10** of multiple sizes and strengths.

[0036] FIGS. **2**A, **2**B, and **2**C, with continued reference to FIG. **1**, show an example first block member **12**. The block member **12** is shown and described as typical of both block members **12** and **14**. The example first block member **12** includes a positioning member **18** located near a first end **19** and another near a second end **21** of the first block member **12**. The bracket member **16** receives and aligns the block members **12**, **14**.

[0037] A slot **22** is defined between each positioning member **18** and the first block member **12** (FIG. **2**B). A fin **32** on the bracket member **16** receives the slot **22** (see FIGS. **3**A-**3**C) for receiving and aligning the first and second block members **12**, **14** with respect to the bracket member **16**.

[0038] A depression **24** on the first block member **12** is adjacent each positioning member **18**. In one example, the depressions **24** are directly aligned with the example slots **22**. The depressions **24** are filled with an adhesive, such as mortar or glue, for example, during installation of the composite masonry block **10**, and secure the first block member **12** and the second block member **14** to the bracket member **16**, as is further discussed below.

[0039] Each of the first end **19** and the second end **21** include a beveled corner **23** (FIGS. **2**B and **2**C). In one example, the beveled corner **23** is at about a 45 degree angle relative to the face of the block member **12**.

[0040] FIGS. **3**A-**3**C, with continued reference to FIGS. **1** and **2**, illustrate the bracket member **16** having a top face **26** and opposing side faces **28**. The top face **26** extends parallel to the length L**1** and between the first block member **12** and the second block member **14**. The opposing side faces **28** are positioned at opposite ends of the top face **26** and extend in a transverse direction away from top face **26**. The side faces **28** are generally perpendicular to and extend between the block members **12**, **14** in an assembled condition.

[0041] The top face **26** includes at least one opening **30** (FIGS. **3**B and **3**C), unless the top face **26** is required to be closed for horizontal reinforcement of the composite masonry block **10**. The openings **30** provide an installer of the composite masonry blocks **10** with the ability to insulate and vertically reinforce the composite masonry block **10**. Optionally, the opposing side faces **28** may include at least one opening where necessary to provide insulation and horizontal reinforcement during specific installation criterion.

[0042] The opposing side faces **28** have fins **32** near their edges. The fins **32** at least partially receive the slots **22** of the first and second block members **12**, **14** to assemble the composite masonry block **10** (See in-process view illustrated by FIG. **3**D). The fins **32** each include a plurality of openings **34** to permit an adhesive to penetrate through the openings **34** and fixedly attach the first block member **12** and the second block member **14** to the bracket member **16**.

[0043] Each example fin **32** also includes a plurality of corrugations **36** near an end **38** opposite from the top face **26**, in one example. In another example, the fins **32** includes a plurality of flute members **43**. The corrugations **36** and flute members **43** provide a friction surface between the first and second block members **12**, **14** and the bracket member **16** and secure the slots **22** of the first and second block members **12**, **14** on the fins **32** of the bracket member **16**.

[0044] Each opposing side face **28** of the bracket member **16** further includes a leg member **40**. In one example, the leg member **40** is integrally formed on the opposing side faces **28** adjacent the end **38**. In another example, the leg member **40** is attached to the side face **28** by welding, gluing or by any other known attachment means. The leg members **40**, in combination with the fins **32** and the slots **22**, retain, align and stabilize the first block member **12** and the second block member **14** with respect to the bracket member **16**.

[0045] The top face **26** of the bracket member **16** includes fins **42** at each of its sides. The fins **42** extend in a transverse direction from the top face **26** (i.e., in a direction parallel to the opposing side faces **28**). The fins **42** include a plurality of openings **34**, which are identical to the openings **34** of the side face **28** fins **32**, which allow an adhesive to penetrate and fixedly attach the first and second block members **12**, **14** to the bracket member **16**.

[0046] The fins **32** of the opposing side faces **28** include a clip **33** near the end **38**. The fins **42** correspondingly include clip engagement holes **35** near opposite ends of each fin **42**. The clips **33** are received within the clip engagement holes **35** to attach additional bracket members **16** together to form a wall frame **90** (See FIG. **5**A). In one example, the clips **33** are hook members which snap into the clip engagement holes **35**. Other configurations are contemplated to connect the bracket

members **16** as would be understood by those skilled in the art who have the benefit of this description.

[0047] A plurality of tabs **37** are punched outwardly from the top face **26** in a direction opposite the opposing side faces **28**. In one example, each tab **37** has a rounded corner which slideably engages a slot **39** of the leg member **40**. The tab **37**/slot **39** engagement, in combination with the clip **33**/clip engagement hole **35** connection, positions the bracket members **16** in a plurality of rows (See FIGS. **5**A and **5**B).

[0048] The bracket member **16** also includes a plurality of troughs **41**. The troughs **41** are located on the top face **26** and the opposing side faces **28** of the bracket member **16**. The troughs extend along the lengths of the top face **26** and opposing side faces **28**. In one example, the top face **26** and each opposing side face **28** includes two troughs **41**, with one trough **41** located on each side of the leg member **40**. It should be understood that the troughs **41** may be positioned at other locations of the bracket member **16**. The troughs **41** funnel water away from the composite masonry block **10** and thereby reduce the penetration of water within an interior of the composite masonry blocks **10** (i.e., the troughs **41** prevent water from penetrating through the composite masonry blocks **10**).

[0049] Referring to FIG. **4**, and with continuing reference to FIGS. **1-3**, a method **100** for assembling a composite masonry block wall system that includes the composite masonry block **10** is illustrated. At step block **102**, a plurality of the bracket members **16** are positioned at a desired location. The bracket members **16** are preferably positioned in a plurality of rows and form a wall frame **90** (See FIG. **5**A). For example, a first row **46** of bracket members **16** is affixed to a starting strip **44**, for example, which may be bolted or glued to a footing. In one example, the first row **46** of bracket members **16** is bolted to the starting strip **44**. In another example, the bracket members **16** of the first row **46** are attached to the starting strip **44** with an adhesive. The bracket members **16** of the first row **46** are attached to the starting strip **44** in any known manner.

[0050] A second row **48** of bracket members **16** is attached to the first row **46** of bracket members **16** (FIG. **5**A). In one example, the second row **48** of bracket members **16** is snap-fit to the first row **46** of bracket members **16** via the clip **33**/clip engagement hole **35** connection and the tab **37**/slot **39** engagement. Additional rows of bracket members **16** are added as required by design specific parameters including the size of the wall desired. The bracket members **16** establish the horizontal and vertical spacing of the block members **12**, **14**. Advantageously, the positioning of the bracket members **16** into rows in the manner illustrated with respect to step block **102** allows the quality of the installation of the wall system to be controlled.

[0051] The block members **12**, **14** attach to the plurality of bracket members **16** at step block **104**. In one example, the wall frame **90** is established independently of the block members **12**, **14** (See FIG. **5**B). That is, the wall frame **90** is self-supporting. The block members **12**, **14** are positioned slightly above and in front of the bracket member **16** and are inserted over the fins **32** of the opposing side faces **28** of the bracket member **16** between the positioning members **18** to attach the block members **12**, **14** to the bracket member **16** (See FIG. **3**D). That is, the block members **12**, **14** are slid over the fins **32** in a downward direction on each side of the bracket member **16** to assemble the composite masonry block **10**.

[0052] Next, at step block **106**, an adhesive is applied to at least a portion of the plurality of block members **12**, **14** to permanently affix the block members **12**, **14** to the bracket members **16**. In one example, the adhesive comprises mortar. In another example, the adhesive is polyurethane glue. The adhesive is sprayed or injected onto the composite masonry blocks **10** with a mortar mixer/pump. One example adhesive is applied at a plurality of joints **50** between each composite masonry block **10** (See FIG. **6**). In another example, the adhesive is applied at each depression **24** of the first and second block members **12**, **14**. In yet another example, the adhesive is applied along the length L**1** of each block member **12**, **14**. Advantageously, the composite masonry blocks **10** may either be assembled on-site (i.e., at the construction site) or at a fabrication facility.

[0053] At step block **108**, insulation is sprayed within the openings **30** of the top face **26** and the opposing side faces **28** of the bracket member **16**. The insulation sound proofs the wall system and improves the thermal efficiency of the wall system. Additionally, vertical and horizontal reinforcement may be provided to the composite masonry blocks **10** at step block **108**.

[0054] FIG. **7** shows a second example composite masonry block **52**. The composite masonry block **52** includes a first block member **54**, a second block member **56**, and a bracket member **58**. The bracket member **58** establishes the horizontal and vertical spacing between the first block member **54** and the second block member **56**. The first block member **54** and the second block member **56** comprise a first material which is different than the material of the bracket member **58**. In one example, the first block member **54** and the second block member **56** are concrete. In another example, the bracket member **58** is metal. One example metal includes 25 gauge galvanized sheet metal. In another example, the bracket member **58** is a synthetic, such as a plastic, for example.

[0055] FIGS. **8**A, **8**B, and **8**C, with continued reference to FIG. **7**, illustrate the first block member **54** of the composite masonry block **52**. The block member **54** is shown as typical of both block members **54** and **56**.

[0056] The first block member **54** has a length L**3** between a first end face **59** and a second end face **61**. In one example, the length L**3** is approximately sixteen inches, although the actual length will vary depending upon design specific parameters. In one example, the first block member **54** includes a slot **62** coextensive with the length L**3** for receiving a portion of the bracket member **58** (see FIG. **8**B).

[0057] The slot **62** further extends along the first and second end faces **59**, **61** from a top end **63** towards a bottom end **65** of the first block member **54** (See FIG. **8**C). Therefore, a portion of the bracket member **58** extends along each of the first and second end faces **59**, **61** of the first block member **54**.

[0058] The first end face **59** and the second end face **61** each include a bevel angle **55** near the top end **63** of the first block member **54**. In one example, the bevel angle **55** is about a 45° angle relative to the face of the block member **54**.

[0059] FIG. **9**, with continued reference to FIGS. **7** and **8**, shows the bracket member **58** having a top face **64** and opposing side faces **66**. The bracket member **58** is comprised of a single sheet member and is aligned with the length L**3** of the first and second block members **54**, **56**. In addition, the opposing side faces **66** of the bracket member **58** extend along the first and second end faces **59**, **61** of the first and second block

members **54**, **56**. The bottom side of the composite masonry block **52** is open to provide further weight reductions.

[0060] The bracket member **58** has a width W**2** that establishes a spacing between the first block member **54** and the second block member **56**. The bracket member **58** may be manufactured having different widths to obtain composite masonry blocks **52** of various sizes while utilizing standard sized block members **52**, **54**. That is, the actual width of the composite masonry block **52** is controlled by the width W**2** of by the bracket member **58**. The actual width W of the bracket member **58** will depend upon design-specific parameters, including but not limited to, the desired size and strength of the composite masonry block **52**.

[0061] The top face **64** of the bracket member **58** includes a plurality of openings **68**. The openings **68** provide an installer of the composite masonry blocks **52** with the ability to insulate and reinforce the composite masonry block **52**. Optionally, the opposing side faces **66** may include at least one opening where necessary to provide insulation and reinforcement during specific installation criterion.

[0062] The top face **64** of the bracket member **58** has at least two fins **70** which extend along its length. The fins **70** extend transversely from the top face **64** in a direction away from the top face **64**. The fins **70** of the top face **64** are received within the slot **62** of the first and second block members **54**, **56** to assemble the composite masonry block **52**.

[0063] The opposing side faces **66** each include side fins **72** and a bottom fin **74**. The side fins **72** are received at the slot **62** of the first and second end faces **59**, **61** of the first and second block members **54**, **56**. The bottom fin **74** at least partially wraps around the bottom end **65** of the first and second block members **54**, **56**. The bracket member **58** is securely affixed to the first and second block members **54**, **56** via an adhesive. Any known adhesive is suitable to attach the bracket member **58** to the first and second block members **54**, **56**. The bracket member **58** could include a tab/slot arrangement similar to the tab/slot arrangement of the bracket member **16** illustrated in FIGS. **3**A through **3**C. The composite masonry block **52** is assembled at a fabrication facility prior to being shipped to the construction site, in one example.

[0064] FIG. **10** illustrates a composite masonry block wall system **82** which includes an interior side **78** and an exterior side **80**. The wall system **82** may include a plurality of the composite masonry blocks **10** or a plurality of the composite masonry blocks **52**. The exterior side **80** of the wall system **82** may include block members having a decorative face. The block members of the interior side **78** include a non-decorative face. The faces of the block members **10**, **52** of each of the exterior side **80** and the interior side **78** are parallel to one another.

[0065] The composite masonry blocks **10**, **52** are positioned in a plurality of rows to assemble the wall system **82**. For example, the wall system **82** includes a first row **102** and a second row **104**. Although the example wall system **82** is shown and described as having two rows, it should be understood that the wall system **82** may include any number of rows. Each row **102**, **104** includes a plurality of the composite masonry blocks **10**, **52** abutted one next to another. The first row **102** is positioned at a starting strip **86**, for example, which may be glued or bolted to a footing. The second row **104** is positioned atop the first row **102**. Subsequent rows may be added in a like manner to construct the wall system **82**.

[0066] FIGS. **11**A-**11**C illustrate another example wall system **200**. The wall system **200** includes a plurality of bracket studs **202** (See FIGS. **11**B and **11**C) which establish a framework F of the wall system **200**. The bracket studs **202** are disposed adjacent and parallel to one another along a starting strip **206**, which may be attached to a footing. The actual number of bracket studs **202** used to establish the framework F, and the spacing between each bracket stud **202**, will vary depending upon design specific parameters including, but not limited to, the size of the wall system **200** desired.

[0067] A plurality of block members **208** (which are identical to block members **12**, **14** illustrated in FIG. **1** and FIG. **2**) are received on each bracket stud **202**. The framework F of the wall system **200** is established independently of the block members **208**. Therefore, the bracket studs **202** dictate both the horizontal spacing S and the vertical spacing V of the block members **208**. The horizontal spacing S and the vertical spacing V are dictated by the spacing X between adjacent bracket studs **202** and a height H of each bracket stud **202**, respectively. It should be understood that the spacing X and height H of the bracket studs **202** may be designed and manufactured to any specification to fabricate a wall system **200** of any size. In addition, the dimensions of the block members **208** are directly proportional to the spacing between adjacent bracket studs **202**. For example, block members **208** of approximately sixteen inches in length are used where the bracket studs **202** are spaced approximately eight inches apart.

[0068] The framework F may include cross members **210** to provide support to the wall system **200**. The cross members **210** extend between adjacent bracket studs **202** to provide the necessary structural support. The wall system **200** includes an inner wall **212** and an outer wall **214** (See FIG. **11**C). A width W of each bracket stud **202** controls the distance between the inner wall **212** and the outer wall **214** (See FIG. **11**B).

[0069] FIG. **1**B illustrates example features of the bracket studs **202** which establish the framework F of the wall system **200**. The bracket studs **202** each include a plurality of fins **216** for receiving, supporting and positioning the block members **208**. The bracket studs **202** and the block members **208** are comprised of different materials, in one example. The block members **208** may be received on the fins **216** in an identical manner as that disclosed with respect to FIGS. **1** through **5** (i.e., via the positioning members and slots of the block members). A plurality of fins **216** extend vertically along the height H on each side of the bracket studs **202**. The actual number of fins **216** included along the height H will vary depending upon the size of the wall desired.

[0070] In the illustrated example, each bracket stud **202** includes three rows (R**1**, R**2** and R**3**) of fins **216**, with each row R**1**, R**2** and R**3** including at least two fins **216** (i.e., one fin **216** on each side of width W of the bracket stud **202**). The first row R**1** of fins **216** extend in a first direction D**1** away from the bracket stud **202**. The second row R**2** of fins **216** extend in a second direction D**2** away from the bracket stud **202**. The second direction D**2** is opposite from the first direction D**1**. Direction D**1** and direction D**2** are transverse to the height H and the width W of each bracket stud **202**. The third row R**3** of fins **216** extend in the first direction D**1** (parallel to the fins **216** of the first row R**1**) away from the bracket stud **202**. That is, adjacent fins **216** along the height H of each bracket stud **202** extend in opposite directions.

[0071] If additional rows are included on the bracket stud **202**, this alternating pattern of fin **216** positioning continues along the entire height H of the bracket studs **202**. Although three rows are illustrated, it should be understood that the

actual number of rows of fins **216** will vary depending upon design specific parameters including, but not limited to, the size of the wall system **200** and the height H of each bracket stud **202**.

[0072] Additionally, adjacent fins **216** of adjacent bracket studs **202** extend in opposite directions relative to one another. For example, the fins **216** of row R**1** of bracket stud **202**A extend in the first direction D**1** and the fins **216** of the row R**1** of the bracket stud **202**B extend in the second, opposite direction D**2** (See FIG. **11**A).

[0073] Each bracket stud **202** also includes a face section **218** extending between the opposing fins **216** of each row. Troughs **220** extend along the face sections **218** of each bracket stud **202**. The troughs **220** funnel water through the framework F to reduce the penetration of water within an interior of the wall frame F (i.e., the troughs **220** prevent water from penetrating through the block members **208** and settling within the wall system **200**).

[0074] The foregoing description shall be interpreted as illustrative and not in any limiting sense. A worker of ordinary skill in the art would recognize that certain modifications would come within the scope of this invention. For that reason, the follow claims should be studied to determine the true scope and content of this invention.

What is claimed is:

1. A masonry block wall system, comprising:

a plurality of brackets arranged to establish a wall framework, each of said plurality of brackets having a plurality of fins adapted to receive and support at least one block member such that said plurality of fins establish a desired alignment of block members relative to each other.

2. The wall system as recited in claim **1**, wherein said plurality of brackets comprise bracket studs that each have a plurality of fins sufficient to receive and support at least a portion of at least three block members.

3. The wall system as recited in claim **1**, wherein said plurality of fins receive a corresponding slot of said at least one block member to secure said at least one block member to said plurality of brackets.

4. The wall system as recited in claim **1**, wherein said plurality of fins are disposed along a height of said plurality of brackets and on each side of a width of said plurality of brackets, wherein adjacent fins along said height of each of said plurality of brackets extend in opposing directions from one another and adjacent fins along said width of each of said plurality of brackets extend in a similar direction relative to one another.

5. The wall system as recited in claim **4**, wherein each of said plurality of brackets include a face section disposed along said height and said width of each of said plurality of brackets.

6. The wall system as recited in claim **1**, wherein said plurality of fins of adjacent brackets of said plurality of brackets extend in an opposite direction relative to each other.

7. The wall system as recited in claim **1**, wherein said plurality of brackets establish a horizontal spacing and a vertical spacing of block members relative to each other.

8. The wall system as recited in claim **1**, comprising at least one cross member extending between said plurality of brackets to support said wall framework.

9. The wall system as recited in claim **1**, wherein the wall system includes an inner wall and an outer wall, wherein said plurality of brackets establish a width between said inner wall and said outer wall.

10. The wall system as recited in claim **1**, wherein each of said plurality of brackets include at least one trough that funnels water through the wall system.

11. A method of assembling a wall system, comprising the steps of:

(a) positioning a plurality of bracket members to establish a self-supporting wall frame; and

(b) attaching a plurality of block members to the plurality of bracket members.

12. The method as recited in claim **11**, wherein said step (a) comprises the steps of:

affixing a first row of the plurality of bracket members at a starter strip; and

connecting a second row of the plurality of bracket members to the plurality of bracket members of the first row.

13. The method as recited in claim **11**, wherein the plurality of bracket members are bracket studs and said step (a) comprises the step of:

affixing a first bracket stud at a starter strip; and

affixing a second bracket stud adjacent to the first bracket stud along the starter strip.

14. The method as recited in claim **11**, wherein said step (b) comprises:

sliding the plurality of block members over a plurality of fins of the plurality of bracket members.

15. The method as recited in claim **11**, comprising the step of:

(c) applying an adhesive to at least a portion of the plurality of block members to secure the plurality of block members to the plurality of bracket members.

16. The method as recited in claim **15**, wherein said step (c) comprises:

applying the adhesive along an interface between each of the plurality of block members and a corresponding bracket member; and

applying the adhesive within a plurality of joints extending between adjacent block members.

17. The method as recited in claim **11**, wherein said step (b) is performed subsequent to said step (a).

18. The method as recited in claim **11**, comprising the step of:

(c) insulating and reinforcing the wall system.

19. A composite masonry block wall system, comprising:

a first row of composite masonry blocks; and

a second row of composite masonry blocks affixed to said first row, wherein said composite masonry blocks each include a first block member, a second block member and at least one bracket member, wherein said bracket members establish a wall frame independent of said first block members and said second block members.

20. The wall system as recited in claim **19**, wherein said bracket members of said first row and said second row form a self-supporting wall frame, wherein said bracket members of said first row and said second row are spaced apart a length equal to approximately 50% of a length of said first block members and said second block members.

21. The wall system as recited in claim **19**, wherein said bracket members each define a plurality of tabs and a plurality of leg members, wherein said plurality of tabs of said bracket members of said first row are at least partially received by said plurality of leg members of said bracket members of said second row.

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