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[54] INTERIOR SCAFFOLDING ARRANGEMENT

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[52] **U.S. Cl.**.....**182/132,** 182/57, 182/82, 182/128

[51] **Int. Cl.**.....**E04g 3/02,** E04g 1/04

[58] **Field of Search**.....182/82, 229, 230, 57, 132, 182/128

[56] **References Cited**

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[57] **ABSTRACT**

A scaffold assembly for use in the erection of exterior building walls, said assembly being mounted interiorly of a building under construction, adjacent a proposed exterior wall. Said assembly includes a plurality of laterally spaced frame members, each of which includes a first support member which is secured to the interior of the building for bracing a pair of elongated planks and a second support member which is mounted to the first support member and which extends outward beyond the proposed wall for bracing an esterior elongated plank.

4 Claims, 5 Drawing Figures

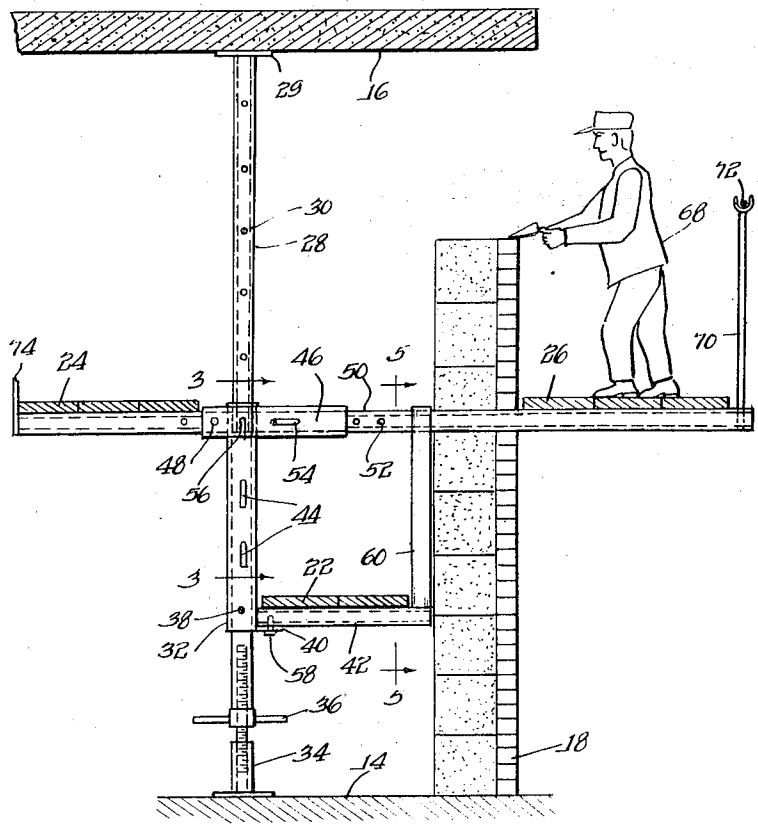

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Fig. 4.

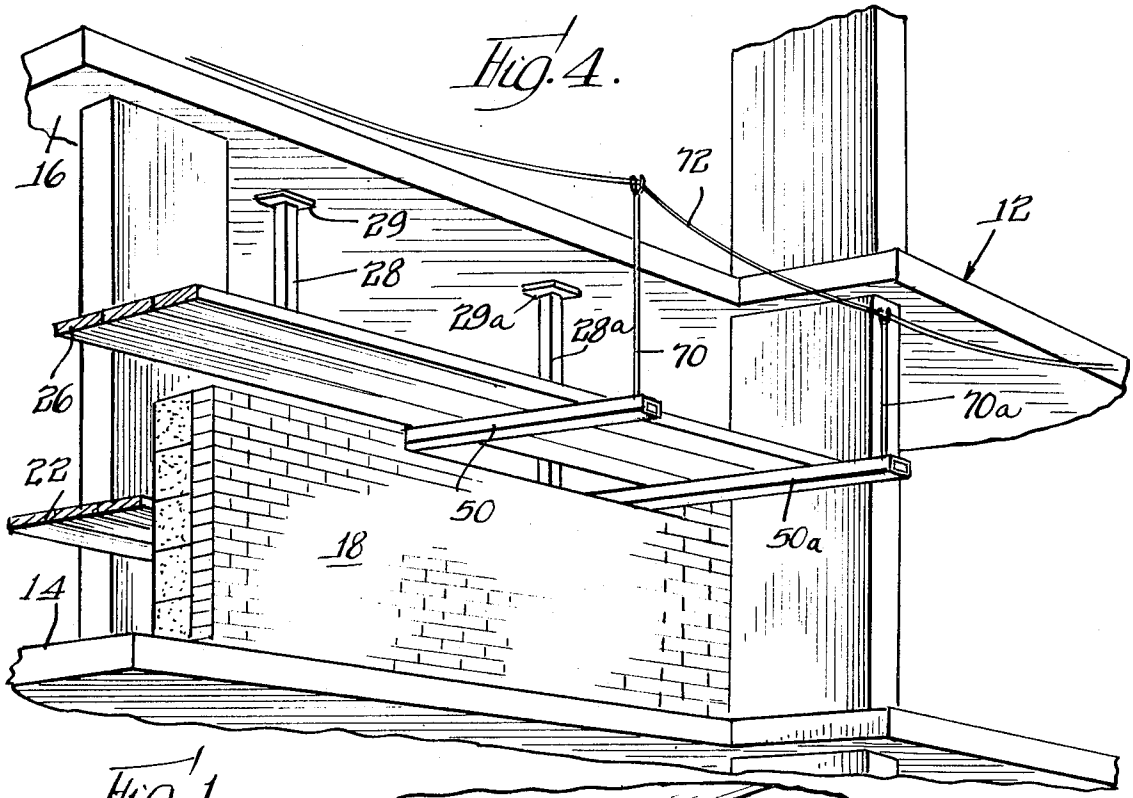
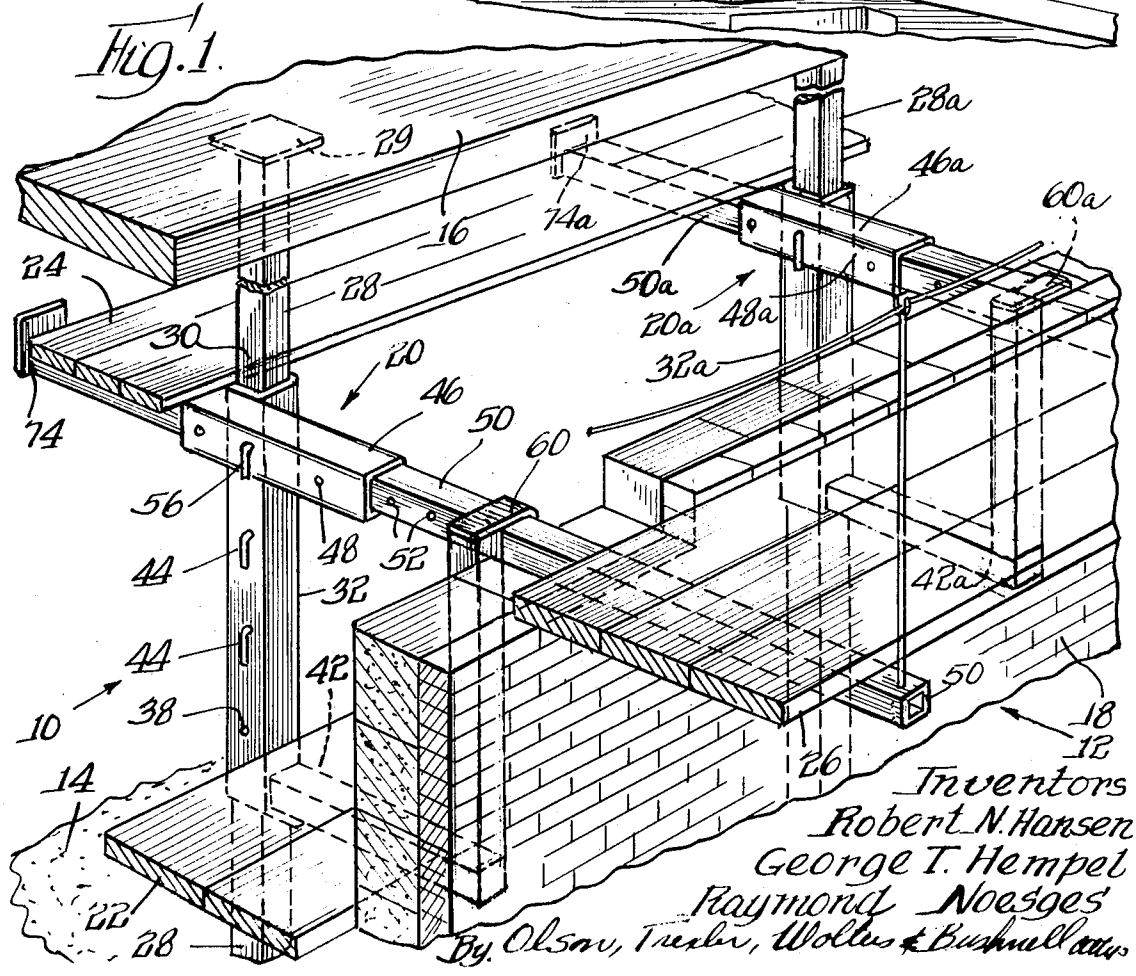


Fig. 1.



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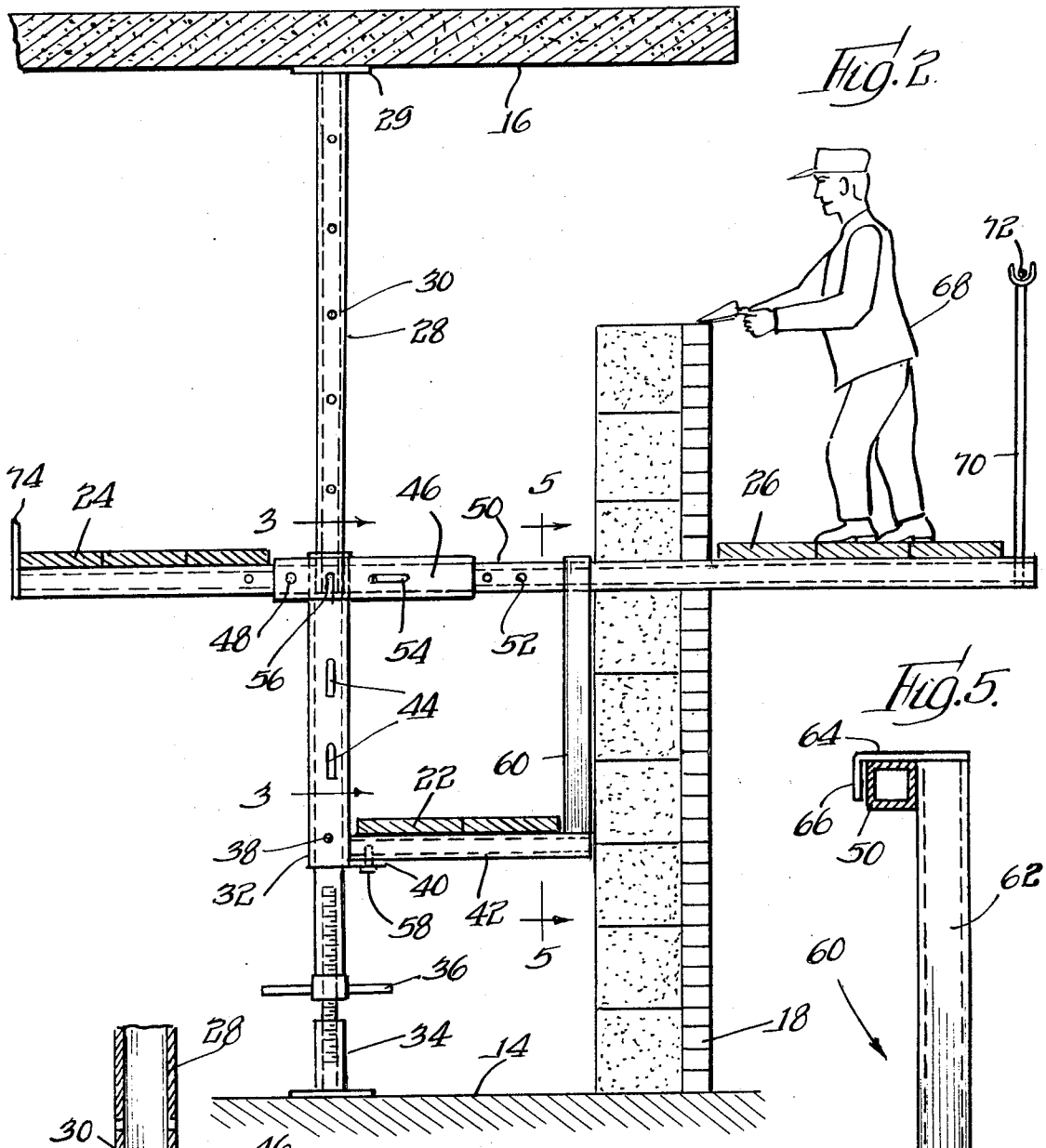

Fig. 2.

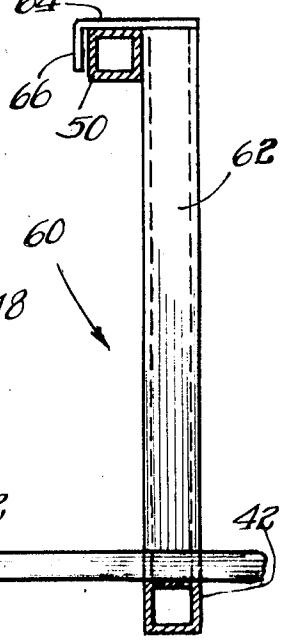

Fig. 5.

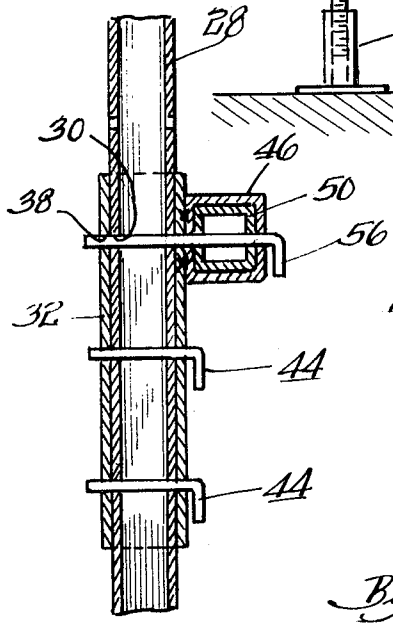

Fig. 3.

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INTERIOR SCAFFOLDING ARRANGEMENT

BACKGROUND OF THE INVENTION

With present day methods for constructing masonry buildings, one practice is to first construct a reinforced concrete interior frame which defines the floors of the building, and then enclose the floors with masonry walls comprised of juxtaposed layers of concrete blocks and facing bricks. It should be understood that multi-story masonry buildings may be constructed in other manners, however, the present invention is primarily concerned with the general type referred to above.

In practice, few problems are encountered in constructing the masonry walls for the lower floors of a building. However, as the height of a building increases, it becomes more difficult to provide adequate working space or platforms for the masons and laborers. Various techniques are used throughout the industry, but the most common involve the use of exterior scaffolding of the stacked or suspended variety.

The stacked form of scaffolding requires a great number of frame sections to reach the upper floors, and as the height of the scaffold increases, the provision of safe working conditions becomes a problem. Suspended scaffolding, on the other hand, requires considerable setup and change-over time, in addition to the fact that the masonry contractor must wait for substantial completion of the poured concrete frame before he can commence work.

Accordingly, a general object of the present invention is to provide a new and improved scaffold assembly of the type used for supporting an individual outside and adjacent to a building under construction.

A more particular object of the present invention is to provide a new and improved scaffold assembly which is mounted interiorly of a building under construction while supporting a bricklayer outside thereof.

These and other objects and features of the present invention will become more apparent from a reading of the following description.

SUMMARY OF THE INVENTION

The present invention alleviates many of the problems inherent with prior art scaffolding and their methods of use. More specifically, with this invention, there is provided a novel method and apparatus for effecting the erection of masonry closing walls wherein the main scaffold structure is erected interiorly of the wall under construction with beams extending perpendicular to and exteriorly of said wall for supporting planking which provide adequate work space for the masons exteriorly of said wall.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. **1** is a perspective view of the scaffold assembly constructed in accordance with the present invention, the assembly being mounted interiorly of a building under construction and extending out beyond a partially completed masonry wall;

FIG. **2** is a side elevational view of the scaffold assembly with the masonry or brick wall being shown in a more completed state;

FIG. **3** is a sectional view of the scaffold assembly taken generally along the line 3—3 in FIG. **2**;

FIG. **4** is an exterior perspective view of the partially constructed building with the scaffold assembly extending out therefrom; and

FIG. **5** is a sectional view taken generally along the line 5—5 in FIG. **2**.

DETAILED DESCRIPTION

Referring now to the drawings and particularly FIG. **1**, a scaffold construction or arrangement in accordance with the invention is generally designated by the reference numeral **10**.

The arrangement **10** is mounted interiorly of a partially constructed building **12** which, as shown here, includes a floor **14**, a ceiling **16** and a partially completed brick wall **18**.

The scaffold arrangement **10** comprises two laterally spaced and aligned identical scaffold frame assemblies **20** and **20a** which are positioned interiorly of the partially completed wall section **18** for supporting several sets of planking. Two said sets of planking **22** and **24** are disposed interiorly of the partially constructed wall **18**, while the third set **26** is disposed outside and adjacent the wall. Since the scaffold frame assemblies **20** and **20*a*** are identical, like components will be designated by like numerals with the suffix "*a*" distinguishing those components of scaffold frame **20*a*** from similar components of frame assembly **20**, with only the latter being described in detail. While only two frame assemblies are shown, it is to be understood that the invention contemplates any number of aligned assemblies depending upon the length of the wall section **18** under construction.

Referring now to FIG. **2**, scaffold frame assembly **20** includes an elongated, hollow standard or support member **28** having a plurality of longitudinally spaced apertures **30** which extend through opposite sides thereof, as seen best in FIG. **3**. Slidably positioned on support member **28** is an elongated sleeve member **32**, the purpose of which will be set forth hereinafter. The standard **28** is vertically positioned adjacent exterior wall **18** and is rigidly secured in this position by a conventional jack screw arrangement **34**. The jack screw extends through the bottom end of the standard and, by applying a rotary force to jack screw handles **36**, the top flanged end **29** of the standard and the base **31** are engaged against the ceiling **16** and the floor **14**, respectively, to wedge member **28** in position.

Sleeve member **32**, which is appropriately dimensioned for slidably receiving the standard or support member **28**, includes a plurality of longitudinally spaced apertures **38** extending through opposite sides thereof. The apertures **38** are alignable with the apertures **30** formed in support member **28**, with one or more locking pins **44** being disposed in aligned sets to fix the portions of sleeve **32** along the length of support **28**. In addition, the sleeve **32** also includes a flange **40** mounted to its bottom end which provides means for mounting a stanchion **42** to said sleeve.

The sleeve member **32** is slidable along the length of standard **28** so that it may be positioned at any desired height relative to floor **14**. Once the desired position is chosen, a plurality of locking pins **44** are inserted entirely through aligned apertures **30** and **38** for rigidly securing the sleeve member to the standard or beam, as shown in FIG. **4**. As will become apparent hereinafter, the position at which the sleeve member is secured to the standard or beam determines the positions of planks **22**, **24** and **26** relative to the floor of building **12** and that this relative disposition is adjustable.

A second sleeve member **46**, somewhat similar to sleeve member **32**, is welded or otherwise suitably secured to an upper surface of sleeve member **32**. This second sleeve member **46** also includes a plurality of longitudinally spaced apertures designated **48** and extending through opposite sides thereof. Sleeve member **46** has its axis disposed transversely of support member **28** and the sleeve **32** and is designed for slidably receiving and supporting a similarly directed beam **50**. As seen in FIG. **2**, the beam **50** is telescopically carried by the second sleeve member **46** so that its position relative thereto may be adjusted until a free end thereof extends a sufficient distance beyond wall **18** for adequately supporting the planks **26**. The other free end of beam **50** is disposed interiorly of the wall **18** and provides support means for one end of planking **24**.

The beam **50** also includes a plurality of longitudinally spaced apertures **52**, which are alignable with the apertures **48** in sleeve **46**. Thus, once the beam **50** is moved into its desired position relative to the support member **28**, locking pins **54**, which are identical to locking pins **44**, may be inserted through aligned apertures **48** and **52** to secure beam **50** in said position.

In addition, a locking pin **56**, similar to locking pins **44** and **54**, but of greater length, may be inserted through appropriately aligned apertures in sleeve member **46**, standard or beam **50**, sleeve member **32** and standard or beam **28** for further interlocking these components, if desired. It is to be understood, however, that the apertures extending through beam **50** and the apertures extending through sleeve member **46** in conjunction with locking pins **54** are not necessary for securing the beam to the sleeve member, since the weight of the workmen and the material supported on planking **24** or **26** will adequately prevent relative movement. In addition, it should be noted that while the second sleeve arrangement **46** is the preferred means for slidably mounting beam **50** relative to member **28**, the invention may be practiced with the use of other structures equally adapted for this purpose.

The stanchion **42** carried by the first sleeve member **32** provides support for planking **22**. This element **42** is mounted to the flange **40** of sleeve member **32** by means of a suitable fastening arrangement **58** so that it extends horizontally towards wall **18**. The otherwise free end of stanchion **42** is supported by a brace member **60** which is engaged over or hung from the elongated beam **50**, as shown in FIG. **5**.

Referring now to FIG. **5**, the brace member **60** includes an elongated portion **62** having a reverse bent flange portion **64** terminating in a bight **66**. The bight **66** is engaged over the beam **50** while the lower end of portion **62** forms an integral part of stanchion **42**. In the illustrated embodiment, brace member **60** is welded to stanchion **42**, however, it is to be understood that other forms of bracing may be employed.

With scaffold frame assemblies **20** and **20a** constructed and positioned in the aforesaid manner, the free ends of the elongated beams **50** and **50a** extend beyond the partially constructed wall **18**, as shown best in FIG. **4**, for supporting elongated planking **26** adjacent the exterior surface of the wall. Planking **26**, in turn, provides a working platform for a bricklayer **68**. Two upwardly extending guard posts **70** and **70*a*** are secured at their lower ends to the outwardly extending ends of beams **50** and **50*a***, respectively. In addition to supporting a safety rope **72**, the guard posts laterally confine the planking to a position between said posts and wall **18**.

As seen in FIGS. **1** and **2**, planking **22** is supported on stanchions **42** and **42*a***, while the planking **24** is supported on the inwardly extending free end portions of beams **50** and **50*a***. If desired, flange members **74** and **74*a*** can be provided on the ends of the beams **50** and **50*a*** for laterally confining said planking **24**. The planking **22** and **24** provide platforms for laborers and building material, respectively.

The method of employing the novel scaffolding structure **10** of the present invention for the construction of a masonry enclosing wall will now be detailed, with reference primarily to FIGS. **1**, **2** and **4**. Initially, the lower portion of a wall section **18** is constructed without the aid of scaffolding, the bricklayers and laborers working from the floor **14**. As the height of wall **18** increases, the bricklayer cannot conveniently work from the floor **14**, and of necessity will need scaffolding to complete the uppermost courses of brick and block. It is at this stage in the construction of wall **18** that the scaffold structure **10** is employed.

First, the upright standards or support members **28** and **28*a*** are wedged in positioned between ceiling **16** and floor **14** by means of jack screws **34** and **34*a***. The standards **28** and **28*a*** are aligned longitudinally of and spaced from the wall **18** such that the distal ends of stanchions **42** and **42*a*** are disposed just short of the interior block portion of said wall. Next, the sleeves **32** and **32*a*** are adjusted until the axes of the associated sleeves **46** and **46a** are approximately at the same height as the uppermost portion of the partially completed wall **18**. The sleeves **32** and **32a** are then fixed in position by insertion of the locking pins **44** and **44a**, as discussed previously.

With the sleeves **32** and **32*a*** properly positioned, beams **50** and **50*a*** are inserted within the transverse sleeve members **46** and **46*a***, said beams being telescoped until their free ends extend outwardly beyond the wall **18** a distance sufficient to accommodate planking **26**. Once properly positioned, beams **50** and **50*a*** are locked in position by means of locking pins **56** and **54**. After this is accomplished, the braces **60** and **60a** are assembled to insure adequate support for the free ends of stanchions **42** and **42*a***.

Preferably, the upright support members **28** and **28*a*** are positioned so that the free ends of beams **50** and **50a** extend through a window opening, or the like in wall **18**. However, as will be apparent from the following description, this is not absolutely necessary, and solid walls of considerable extent may be constructed with the method and scaffold arrangement of the present invention, without regard for the disposition of beams **50** and **50*a***.

With the scaffolding frames in position, the various planking arrangements **22**, **24** and **26** are then assembled, said arrangements being supported by the opposed free ends of beams **50** and **50*a***, and the stanchions **42** and **42*a*** so that three work platforms are provided. To insure the safety of the bricklayers on the platform **26**, the guard posts **70** and **70*a*** are now inserted and safety rope **72** strung.

The planking or platform **26** of the scaffolding arrangement **10** is now ready to accommodate bricklayers exteriorly of the proposed, partially completed wall section **18**. Working from the platform **26**, the bricklayer will now extend wall **18** upwardly to the level of the ceiling **16**. During this time, bricks, blocks and masonry are supplied to the bricklayers through a window opening or over wall **18**, the laborers operating from the interior platforms provided by planking **22** and **24**. Further, when the height of wall **18** is such that building materials no longer can be passed over the wall, supply may be effected from the above adjacent tier.

The employment of window openings, or the like, for accommodating beams **50** and **50*a*** represent the ideal operating condition. However, openings such as these are not always available at the proper location along the length of the wall section to accommodate planking safely. When such is the case, the bricklayers merely build or form the wall **18** about the beams **50** and **50*a*** by omitting the blocks and bricks in the area of said beams so that, in effect, openings are left in the wall through which the beams **50** and **50*a*** extend. The manner or method of attending to these temporary openings will be discussed more completely hereinafter.

After the wall **18** is completed, the bricklayers may leave the platform **26** by way of a convenient window opening or they may merely climb upwardly to the next adjacent floor. In a like manner, the laborers will then remove the guard posts **70** and **70*a*** and the planking **26**. Next, the interior planking **24** is disassembled, the locking pins **54** and **54*a*** are removed, and the respective beams **50** and **50*a*** are retracted or withdrawn from the opening in wall **18** interiorly of said wall. The upright support members **28** and **28*a*** are dismantled and the respective scaffolding frame assemblies are transported to the above tier for subsequent use, the bricklayers having previously commenced construction of the lower portion of the enclosing wall for said adjacent tier.

It will be realized, that at those locations where wall **18** was constructed around a beam member **50** or **50*a***, an opening will remain upon retraction of said member. The interior end of this opening defined by block portion of the wall can be easily sealed from within. The omitted face brick for the exterior portion of wall **18** will be inserted or set in place during the final cleaning operation.

With regard to this latter point, for purposes of a more complete understanding, it should be noted that after completion of the masonry work, it is necessary that the brick veneer be cleaned and washed thoroughly to remove all excess mortar, or the like. Generally, this cleaning operation is effected with the use of scaffolding suspended from the roof of the now substantially completed building. Accordingly, it is an extremely simple expedient, at this time, for the tuckpointers performing the cleaning operation to inset all missing face brick.

While a preferred embodiment of the present invention is shown in the drawings and described above, it is to be un-

derstood that those skilled in the art will readily appreciate that certain modifications, changes and substitutions may be effected with regard to the illustrated structure. Insofar as these modifications, substitutions and alterations fall within the spirit and scope of the present invention as defined by the claims appended hereto, they are contemplated.

What is claimed is:

1. A scaffold frame assembly mountable interiorly of a building under construction and adapted for use with one or more similar assemblies to provide a support platform for a workman, said frame assembly comprising: an elongate support member adapted to be positioned vertically within the interior of a building under construction and adjacent a proposed exterior wall; a beam element carried by said support member and having an end segment thereof adapted to extend outwardly of said proposed exterior wall when said frame assembly is in the assembled condition; mounting means for retractably attaching said beam element to said support member, said mounting means including a first sleeve member slidably carried by said support member, and a second sleeve member carried by said first sleeve member and disposed transversely thereafter with its axis offset with respect to the axis of said first sleeve member, said second sleeve member slidably receiving said beam element to provide for retractive movement of said beam element relative to said second sleeve and said support member, and said end segment of the beam element having an end construction which can be withdrawn through a relatively small yet to be completed opening left in the wall, such that after completion of said wall around said beam element while in the assembled condition, said beam element may be withdrawn interiorly of said wall without altering the position of said support member or said respective sleeve members.

2. A scaffold assembly as defined in claim 1, further including a stanchion arrangement having a first, generally horizontal section releasably connected to said first sleeve member and a second vertically disposed section integral with said first section and having means for engagement with said beam element, such that said vertically extending section is available to provide support for planking interiorly of said wall.

3. A method of providing a working platform exteriorly of a proposed masonry wall of a building under construction, which building includes floor and ceiling structure to be enclosed by said wall, said method including the steps of: providing two or more scaffolded frame assemblies, each including an elongate, extendable support means and a beam element carried by said support means and having a free, load supporting end; mounting said assemblies interiorly and independently of the proposed wall by engaging said elongate, extendable support means with said floor and ceiling structure; disposing said beam elements with the free ends thereof extending perpendicularly to and outwardly of said proposed wall; and supporting one or more planks on said free ends of the beam elements to provide a working platform, the improvement including the steps of: retractably mounting certain of said beam elements, providing the free ends of said certain beam elements with structure permitting said free ends to be retracted through yet to be completed openings in said masonry wall, and upon completion of said wall about the free ends of said certain beam elements withdrawing said beam elements interiorly of said masonry wall through said openings without disengagement and disassembly of said elongate extendable support means.

4. A method of constructing masonry walls for a building of the general type wherein a concrete frame or the like is constructed to define and provide floor and ceiling structure for the respective floors thereof, with said masonry wall being employed to enclose said floors, said method including the steps of: partially completing the lower portion of a proposed masonry wall section; providing at least two scaffold frame assemblies, each having an elongate extendable support means and a beam element having a free load supporting end; mounting said scaffold frame assemblies interiorly of and adjacent to said partially completed wall section by engaging said extendable, elongate support means with said floor and ceiling structure, with the free ends of the beam elements extending perpendicular to and outwardly of said proposed wall; employing said free ends to define a working platform for masons exteriorly of said partially completed wall section; completing said proposed wall about said beam elements except for one or more relatively small, yet to be completed openings through which said beam elements extend; withdrawing said beam elements through said relatively small, yet to be completed openings, after completion of said wall section, without disengagement and disassembly of the elongate, extendable support means; and enclosing said opening subsequent to withdrawal of the free ends of said beam elements.

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