

[54] SCAFFOLDING

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[51] Int. Cl. **E06c 1/20, E06c 1/34**

[58] Field of Search.....182/152, 119, 118, 179, 178;
108/107

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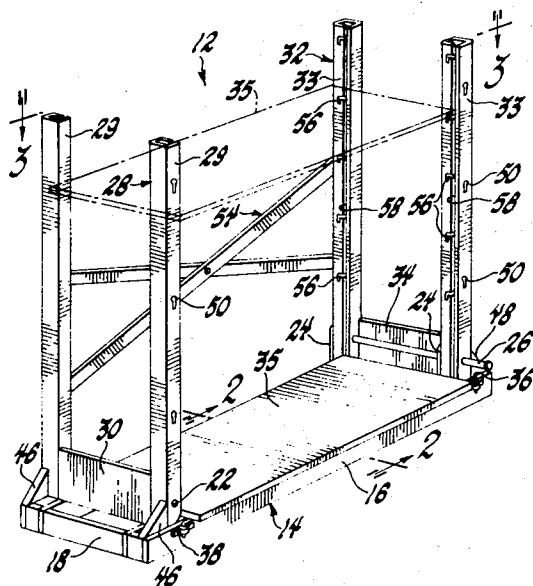
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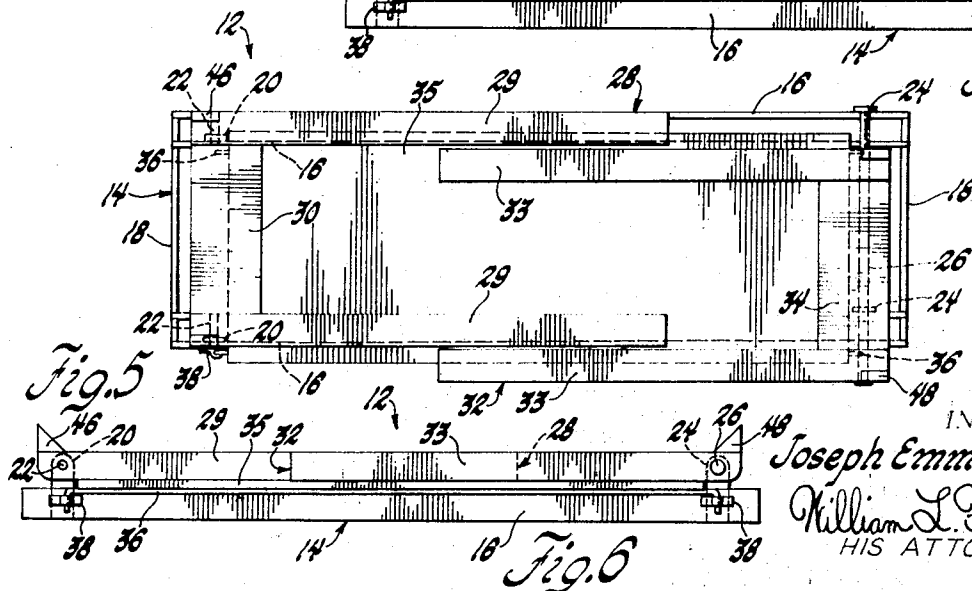
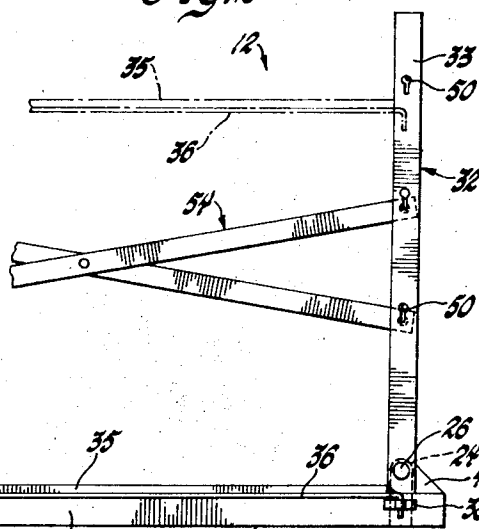
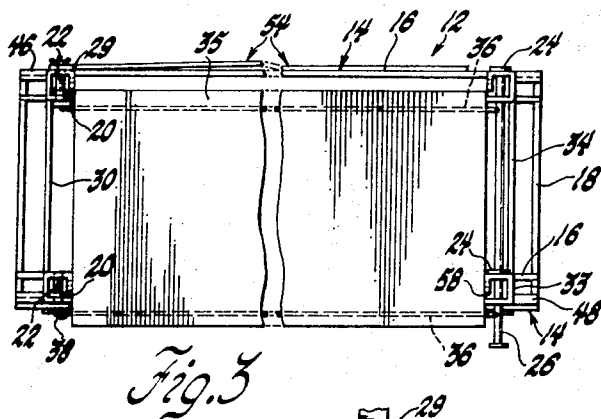
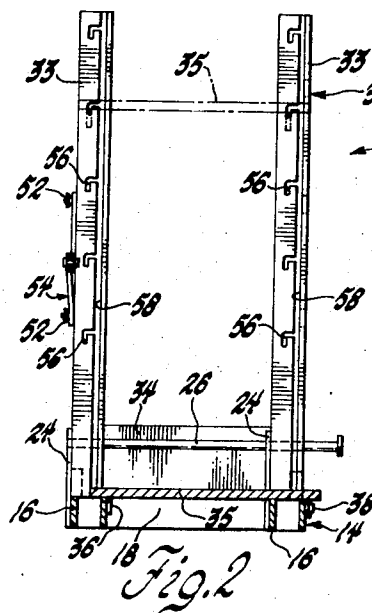
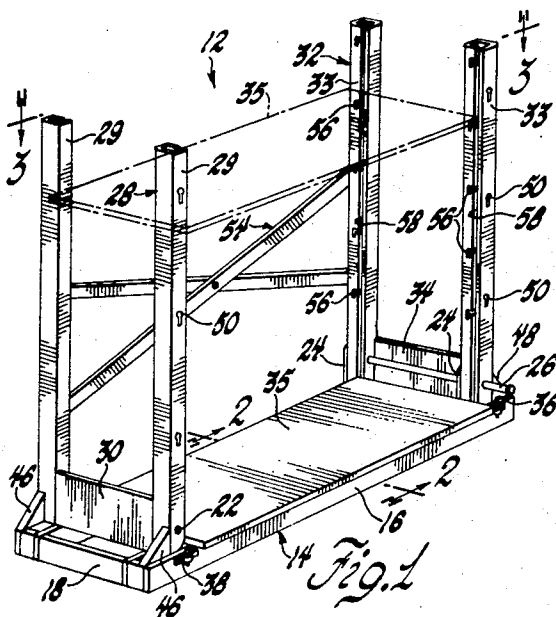
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ABSTRACT

The improvement in portable scaffolding is disclosed comprising, in combination, a base, a pair of joined together uprights pivotally supported at opposite ends of the base, said uprights having a stowage position on the base in which they are horizontally disposed and a work position in which they are vertically disposed, means for holding said uprights vertically disposed in their work position, means including a different construction of one of the pair of uprights than the other pair of uprights for holding said uprights horizontally disposed in their stowage positions, each pair of uprights having no transverse bracing means therebetween above the upper halves thereof, said uprights also having no longitudinal bracing at the upper ends thereof so that said scaffolding provides unobstructed reaching space on all sides thereof between and above the tops of said uprights, said uprights having longitudinally spaced apart aperture means thereon for supporting work-upon means in vertically spaced horizontal work positions.

8 Claims, 18 Drawing Figures





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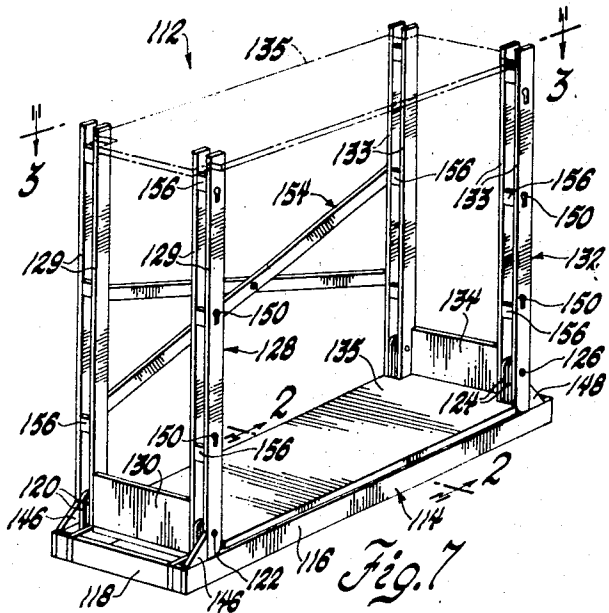


Fig. 7

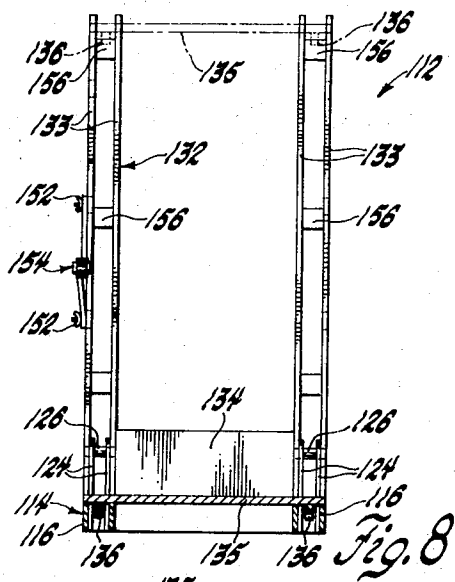


Fig. 8

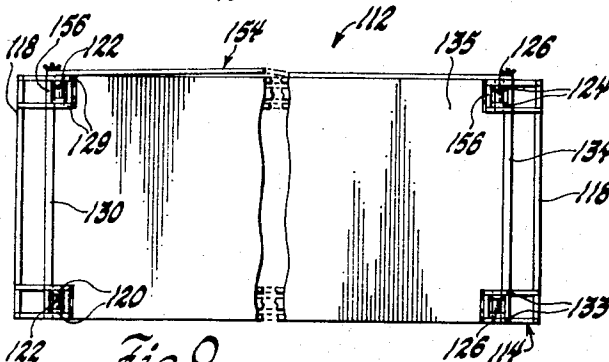


Fig. 9

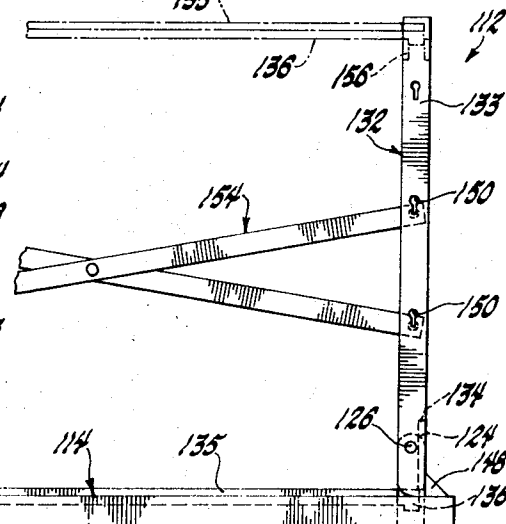


Fig. 10

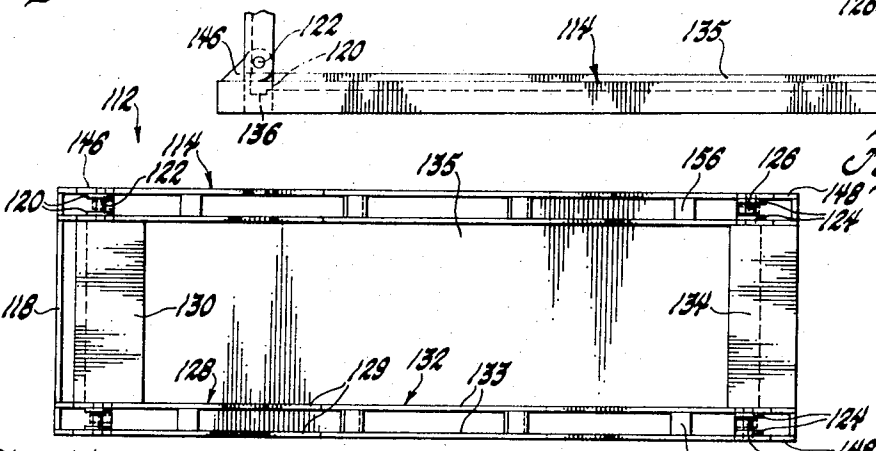


Fig. 11

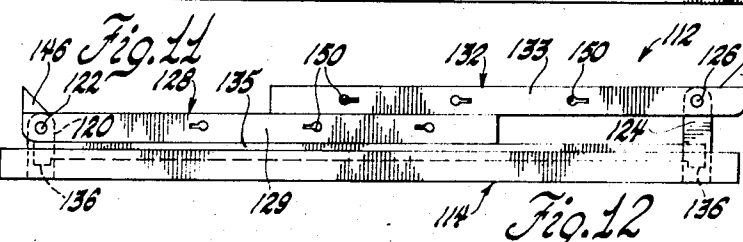


Fig. 12

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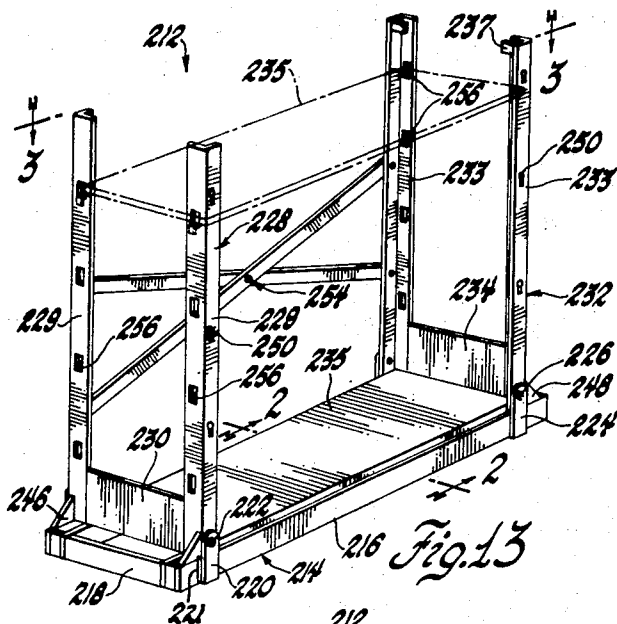


Fig. 13

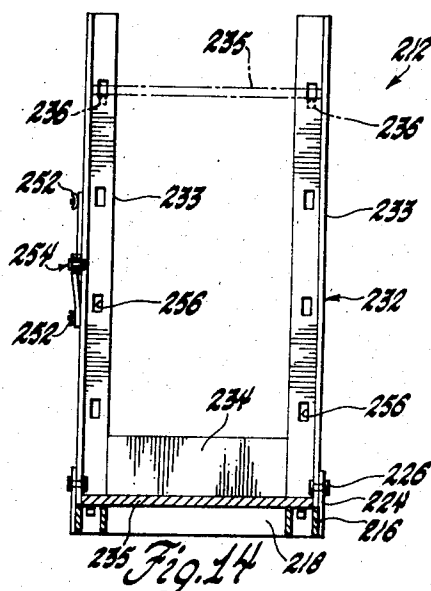


Fig. 14

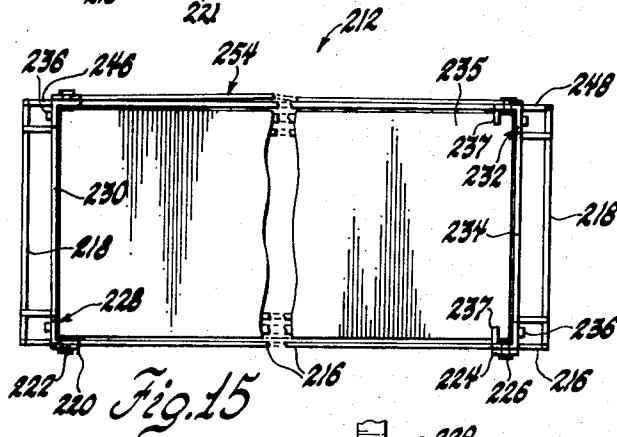


Fig. 15

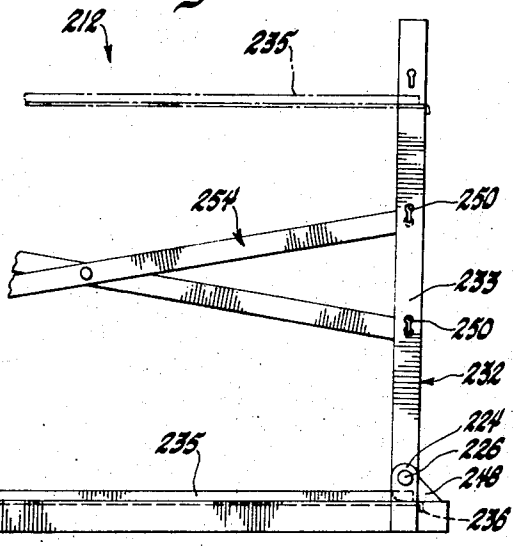


Fig. 16

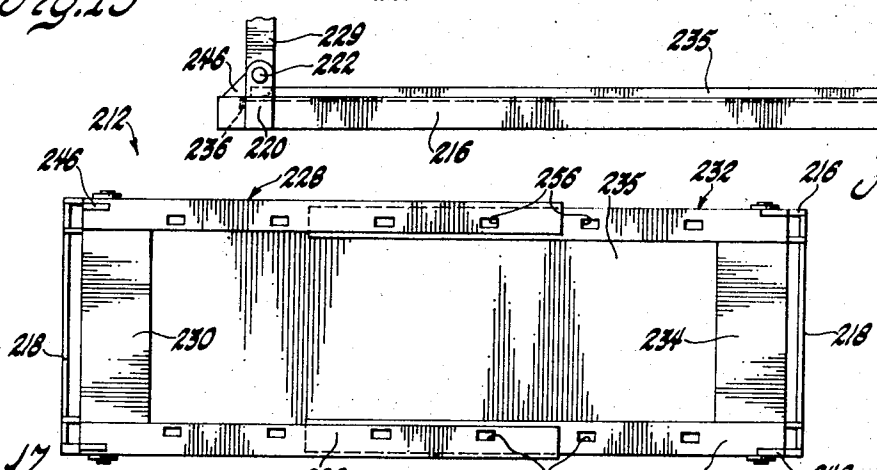


Fig. 17

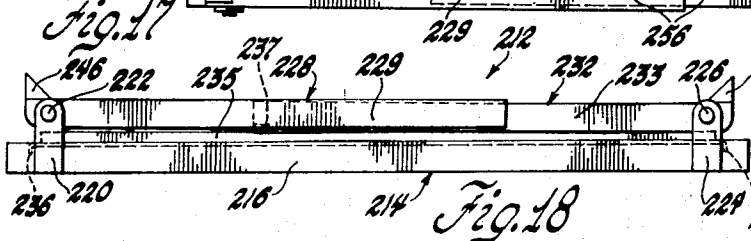


Fig. 18

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SCAFFOLDING

My invention relates to portable scaffolding.

The principal object of my invention is the provision of portable scaffolding which provides users thereof with a great deal of freedom of movement in working upon walls and ceilings.

The foregoing object of my invention and the advantages thereof will become apparent during the course of the following description, taken in conjunction with the accompanying drawings, in which:

FIGS. 1, 2 and 3 are, respectively, perspective, vertical cross-sectional and top plan views of scaffolding means embodying my invention;

FIG. 4 is a fragmentary front elevational view of said embodiment; and

FIGS. 5 and 6 are, respectively, top plan and front elevational views of said embodiment shown in storage positions;

FIGS. 7-12 are views of another embodiment of my scaffolding means which views correspond, respectively, to FIGS. 1-6;

FIGS. 13-18 are views of still another embodiment of my scaffolding means which views correspond, respectively, to FIGS. 1-6.

Referring to the drawings in greater detail, and to FIGS. 1-6, 12 generally designates said embodiment shown therein which comprises a base 14 having four longitudinal members 16 arranged in transversely spaced apart pairs each of which is a transversely spaced apart pair. Said members 16 are joined to a pair of longitudinally spaced apart transverse members 18. At one end of the base 14 are supported on the members 16 transversely spaced apart pivot supports 20 which in turn individually support a pair of axle means 22 while at the other end thereof transversely spaced apart pivot supports 24 are similarly supported on the members 16 and in turn commonly support single axle means 26. Framework means consisting of two pairs of transversely spaced apart uprights 28 and 32 transversely joined together at the lower ends thereof, as by means 30 and 34, respectively, are pivotally supported on the axle means 22 and 26, respectively. Each pair of uprights 28 and 32 consists of two square cross-sectional tubular members 29 and 33, respectively. Walk-upon means in the form of a workboard means 35 is stowed in said scaffolding 12 by resting upon the base 14. The workboard means 35 is provided with support means in the form of a pair of round rods 36 which are fastened to the underside and project beyond the length thereof. The rods 36 have downturned ends which in the stowage position of said workboard means 35 are received in holding means in the form of two brackets 38 fast on the front sides of the frontmost member 16.

In their stowage position the framework means rest horizontally upon the workboard means 35 and are side by side in the same elevation as shown in FIG. 6. The axle means 26 extends frontwardly of the front pivot support 24 and the uprights 32 are transversely slidable via the axle means 26 in respect to the base 14 so that the uprights 32 can be shifted between their stowage and work positions. The uprights 28 and 32 are swung upwardly and outwardly on their respective pivots to assume their respective work positions as shown in FIG. 1 and in addition the uprights 32 are slid transver-

sely backwardly via the axle means 26. The uprights 28 and 32 are provided with stop means in the form of triangular plates 46 and 48, respectively, fast to the lower outside faces of the members 29 and 33, respectively, which plates 46 and 48 support the uprights 28 and 32, respectively, in a vertical position until the workboard means 35 is fastened in its work position on said framework means. The members 29 and 33 are provided with longitudinally spaced apart keyhold aperture means 50 in their outside faces in which fasteners 52 are received for fastening removeable brace means in the form of an X-type frame brace 54 which may be used for bracing the framework means in their work positions. The frame brace 54 may be applied to the front or back of the framework means or two such frame braces 54 may be applied one to the front and the other to the back of the framework means. The frame brace 54 carries said fasteners 52 and may be stowed between the framework means and the workboard means 35. The workboard means 35 is disposed back to front in its stowage position and has a number of vertically spaced horizontal work positions on the uprights 28 and 32. The uprights 28 and 32 have no transverse bracing therebetween above the upper halves thereof so as to provide maximum freedom for work movements of workmen standing on the workboard means 35. Said uprights 28 and 32 also have no longitudinal bracing at the upper ends thereof. Consequently said scaffolding 12 provides unobstructed reaching space on all sides thereof between and above the tops of said uprights 28 and 32. The members 29 and 33 are provided on their inside faces with longitudinally spaced apart right angled aperture means 56 which open to slotted aperture means 58 in which aperture means 58 the rods 36 are received for moving the workboard means 35 between its work positions on the uprights 28 and 32.

In operation of the embodiment of my invention shown in FIGS. 1-5, the scaffolding means 12 is carried to the place of use and set on the floor with the base 14 down and the uprights 28 and 32 are lifted upwardly and outwardly until they reach a vertical position against the plates 46 and 48, respectively. The uprights 32 are transversely aligned with the uprights 28. The frame brace 54 may be fastened between the vertically positioned uprights 28 and 32. The workboard means 35 is then lifted off the base 14 and arranged front to back between the uprights 28 and 32 with the rods disposed in the aperture means 58. The workboard means 35 is then elevated to the desired work position with the rods 36 moving in the aperture means 58 and the workboard means is shifted backwardly until the rods 36 enter the aperture means 56 in which position the workboard means 35 is supported in its work position. Suitable means may be provided for climbing unto the workboard means 35 such as a short ladder which could hang from the tops of the members 29 or 33. The work position of the workboard means 35 may be raised or lowered as desired by removing the rods 36 from the particular set of aperture means 56 and moving the rods 36 in the aperture means 58 until the rods reach a new set of aperture means 56 corresponding to the new work position. The scaffolding 12 may be moved about in its work position by lifting it, by sliding it on the base 14 or by rolling it on locking type casters.

After the scaffolding 12 has served its purpose at its place of use the workboard means 35 is removed from its work position and lowered and turned back to front and then inserted into its stowage position resting on the base 14 with the rods 36 received in the brackets 38. The uprights 32 are shifted frontwardly via the axle means 26 and then the uprights 28 and 32 are moved downwardly and inwardly on their respective pivot axes until they lay side by side in the same elevation.

Referring to FIGS. 7-12, 112 generally designates said embodiment shown therein which comprises a base 114 having similarly arranged transversely spaced apart longitudinal members 116 joined to longitudinally spaced apart transverse members 118. At one end of the base 114 transversely spaced apart pivot supports 120 are supported on the members 116 and in turn individually support a pair of axle means 122 while at the other end thereof spaced apart pivot supports 124 are similarly supported on the members 116 and in turn individually support single axle means 126. Framework means consisting of two pairs of transversely spaced apart similarly constructed uprights 128 and 32, transversely joined together at the lower ends thereof, as by means 130 and 134, respectively, are pivotally supported on the axle means 122 and 126, respectively. Said axle means 126 is disposed higher than said axle means 122. Each pair of uprights 128 and 132 consists of two pairs of transversely spaced apart parallel disposed rectangular bars 129 and 133, respectively. Each pair of bars 129 and 133 are joined together by longitudinally spaced apart support blocks 156 having aperture means therein which are disposed between each pair of bars 129 and 133. Walk-upon means in the form of a workboard means 135 is stowed in said scaffolding 112 by resting upon the base 114. The workboard means 135 is provided with support means in the form of a pair of bars 136 which are fastened to the underside of the workboard means 135.

Protuberant male lock means are formed on the four free ends of the bars 136. In their stowage position the uprights 128 and 132, respectively, rest upon the workboard means 135 and are disposed one on top of the other in different elevations as shown in FIG. 12. The uprights 128 and 132 are swung upwardly and outwardly on their respective pivots to assume their respective work positions as shown in FIG. 1. The uprights 128 and 132 are provided with stop means in the form of triangular plates 146 and 148 fast to the lower outside faces of the outside bars 129 and 133, respectively, which support the framework means 128 and 132 in an upright position until the workboard means 135 is fastened in its work position on said framework means. The bars 129 and 133 are provided with longitudinally spaced apart keyhole type aperture means 150 in their outside faces in which fasteners 152 are received for fastening removeable brace means in the form of an X-type frame brace 154 which may be used for bracing the framework means 128 and 132 in their work positions. The frame brace 154 carries the fasteners 152 and may be stowed between the framework means 126 and 132 and the workboard means 135. The workboard means 135 has a number of vertically spaced horizontal work positions on the uprights 128 and 132. The uprights 128 and 132 have no transverse bracing therebetween above the upper

halves thereof so as to provide maximum freedom for work movements of workmen standing on the workboard means 135. Said uprights 128 and 132 also have no longitudinal bracing at the upper ends thereof. Consequently said scaffolding 112 provides unobstructed reaching space on all sides thereof between and above the tops of said uprights 128 and 132. The aperture means in the blocks 156 receive the male lock means in the bars 136 to hold the workboard means 135 in its work positions on the uprights 128 and 132.

In operation of the embodiment of my invention shown in FIGS. 7-12, the scaffolding means 112 is carried to the place of use and set on the floor with the base 114 down and the framework means 128 and 132 are lifted upwardly and outwardly until they reach a vertical position against the plates 146 and 148, respectively. The frame brace 154 may be fastened between the uprights 128 and 132. The workboard means 135 is then lifted off the base 114 and arranged between the uprights 128 and 132 and is then elevated to the desired work position and the male lock means on the bars 36 are inserted into the support blocks 156 by which the workboard means 135 is supported in its work position. The work position of the workboard means 135 may be raised or lowered as desired by removing the male lock means on the bars 136 from the particular set of support blocks 156 and moving the workboard means 135 until the male lock means on the bars 136 are in position to be inserted into a new set of support blocks 156 corresponding to the new work position. The scaffolding 112 may be moved about in its work position by lifting it, by sliding it on the base 114 or by rolling it on locking type casters. After the scaffolding 112 has served its purpose at its place of use the workboard means 135 is removed from its work position and lowered into its stowage position resting on the base 114. The uprights 128 and 132 are lowered downwardly and inwardly on their respective pivot axes and the framework means 132 is disposed on top of the framework means 128 so that the framework means 132 lays in a higher elevation than the framework means 128.

Referring to FIGS. 13-18, 212 generally designates said embodiment shown therein which comprises a base 214 having transversely spaced apart longitudinal members 216 similarly arranged and joined to longitudinally spaced apart transverse members 218. At one end of the base 214 transversely spaced apart pivot supports 220 are supported on the members 216 and in turn individually support a pair of axis means 222 while at the other end thereof transversely spaced apart pivot supports 224 are similarly supported and in turn individually support a pair of axle means 226. Said support members 220 are spaced farther apart than said support members 224 by means of spacers 221 (FIG. 13) which are interposed between the longitudinal members 216 and the support members 220. Framework means consisting of two pairs of transversely spaced apart similarly constructed uprights 228 and 232, transversely joined together at the lower ends thereof, as by means 230 and 234, respectively, are pivotally supported on the axle means 222 and 226, respectively. Each pair of uprights 228 and 232 consists of two right angularly formed members 229 and 233, respectively. The width of the uprights 228 is larger

than the width of the uprights 232 by an amount equal to twice the wall thickness of either of the right angularly formed members 229 or 233. Walk-upon means in the form of a workboard means 235 is stowed in said scaffolding 212 by resting upon the base 214. The workboard means 235 is provided with support means in the form of a pair of bars 236 fastened to the underside and projecting beyond the length thereof. The bars 236 have downturned free ends.

Means are provided for holding the uprights 228 and 232 horizontal in their stowage position which in the instance comprises inwardly projecting stops 237 fast on the inside edges of the pair of uprights 232 so that in the stowage position of the latter they are supported by the workboard means 35. The uprights 232 nest inside of the uprights 228 in their stowage position as shown in FIG. 18. The uprights 228 and 232 are provided with stop means in the form of triangular plates 246 and 248 fast to the lower outside faces of the members 229 and 233, respectively, which support the framework means vertically until the workboard means 235 is fastened in its work position on said framework means. The members 229 and 233 are provided with longitudinally spaced apart keyhole type aperture means 250 in their outside faces in which fasteners 252 are received for fastening removeable brace means in the form of an X-type frame brace 254 which may be used for bracing the uprights means in their work positions. The frame brace 254 carries the fasteners 252 and may be stowed between the framework means and the workboard means 235. The uprights 228 and 232 have no transverse bracing therebetween above the upper halves thereof so as to provide maximum freedom for work movements of workmen standing on the workboard means 235. Said uprights 228 and 232 also have no longitudinal bracing at the upper ends thereof. Consequently said scaffolding 212 provides unobstructed reaching space on all sides thereof between and above the tops of said uprights 228 and 232. The workboard means 235 has a number of vertically spaced horizontal work positions on the framework means. The members 229 and 233 are provided on their inside faces with longitudinally spaced apart rectangular aperture means 256 in which the bars 236 are received for holding the workboard means 235 in its work positions on the framework means.

In operation of the embodiment of my invention shown in FIGS. 13-18, the scaffolding means 212 is carried to the place of use and set on the floor with the base 214 down and the framework means are lifted upwardly and outwardly until they reach a vertical position against the plates 246 and 248. The frame brace 254 may be fastened to the framework means. The workboard means 235 is then lifted off the base 214 and arranged between the framework means and elevated to the desired work position. The bars 236 are then inserted into the respective apertures 256 by which the workboard means 235 is supported in its work positions. The workboard means 235 may be raised or lowered to different work positions as desired by removing the bars 236 from the particular set of apertures 256 and moving the workboard means 235 until the bars 236 reach a new set of apertures 256 corresponding to the new work position. The scaffolding 212 may be moved about in its work position by lifting

it, by sliding it on the base 214 or by rolling it on locking-type casters. After the scaffolding 212 has served its purpose at its place of use the workboard means 235 is removed from its work position and lowered into its stowage position resting on the base 214. The uprights 232 are first swung downwardly and inwardly on their pivot axes until the stops 237 rest upon the workboard means 235 and then the uprights 228 are swung downwardly and inwardly on their pivot axes until the uprights 228 rest upon the uprights 232 with both pairs of uprights horizontally disposed in their stowage position.

It will thus be seen that there has been provided by my invention portable scaffolding in which the object hereinabove set forth together with many thoroughly practical advantages has been successfully achieved. While a preferred embodiment of my invention has been shown and described it is to be understood that variations and changes may be resorted to without departing from the spirit of my invention as defined by the appended claims.

What I claim is:

1. In portable scaffolding, the improvement comprising, in combination, a base, a pair of joined together uprights pivotally supported at opposite ends of the base, said uprights having a stowage position on the base in which they are horizontally disposed and a work position in which they are vertically disposed, means for holding said uprights vertically disposed in their work position, means including a different construction of one of the pair of uprights than the other pair of uprights for holding said uprights horizontally disposed in their stowage positions, each pair of uprights having no transverse bracing means therebetween above the upper halves thereof, said uprights also having no longitudinal bracing at the upper ends thereof so that said scaffolding provides unobstructed reaching space on all sides thereof between and above the tops of said uprights, said uprights having longitudinally spaced apart aperture means thereon for supporting work-upon means in vertically spaced horizontal work positions.

2. In portable scaffolding, the improvement as claimed in claim 1, further comprising work-upon means, said work-upon means having support means constructed to be received in said aperture means for supporting said work-upon means in vertically spaced horizontal work positions on said scaffolding.

3. In portable scaffolding, the improvement as claimed in claim 2, stowage means for stowing work-upon means between the base and said uprights when the latter are in their stowage positions.

4. In portable scaffolding, the improvement as claimed in claim 1, one of said pairs of uprights slidable transversely of the base so as to be capable of being disposed side by side in the same elevation in respect to the other pair of uprights in their stowage position.

5. In portable scaffolding, the improvement as claimed in claim 1, one of said pairs of uprights having a greater width than the other so that said pairs of uprights nest together in their stowage positions, the other inside the one pair, the uprights of each pair constructed so as to remain parallel to each other in all positions thereof relative to the base.

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6. In portable scaffolding, the improvement as claimed in claim 2, each of said uprights having slotted aperture means therein in which parts of said work-upon means travel during movement of said work-upon means between its work positions in respect to said uprights.

7. In portable scaffolding, the improvement as claimed in claim 6, said longitudinally spaced apart aperture means on each of said uprights being longitudinally spaced apart right angled blind-ended aperture means therein in which parts of said work-upon means are received for supporting said work-upon means in its different work positions on said scaffolding, each of

8

said right angled blind-ended aperture means having an open end opening to said slotted aperture means.

8. In portable scaffolding, the improvement as claimed in claim 1, each of said uprights supporting longitudinally spaced apart support blocks having aperture means therein in which aperture means, parts of said work-upon means are received for supporting said work-upon means in its different work positions on said scaffolding, each of said uprights having transversely spaced apart parallel members disposed in parallel longitudinal planes for holding therebetween said support blocks.

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