

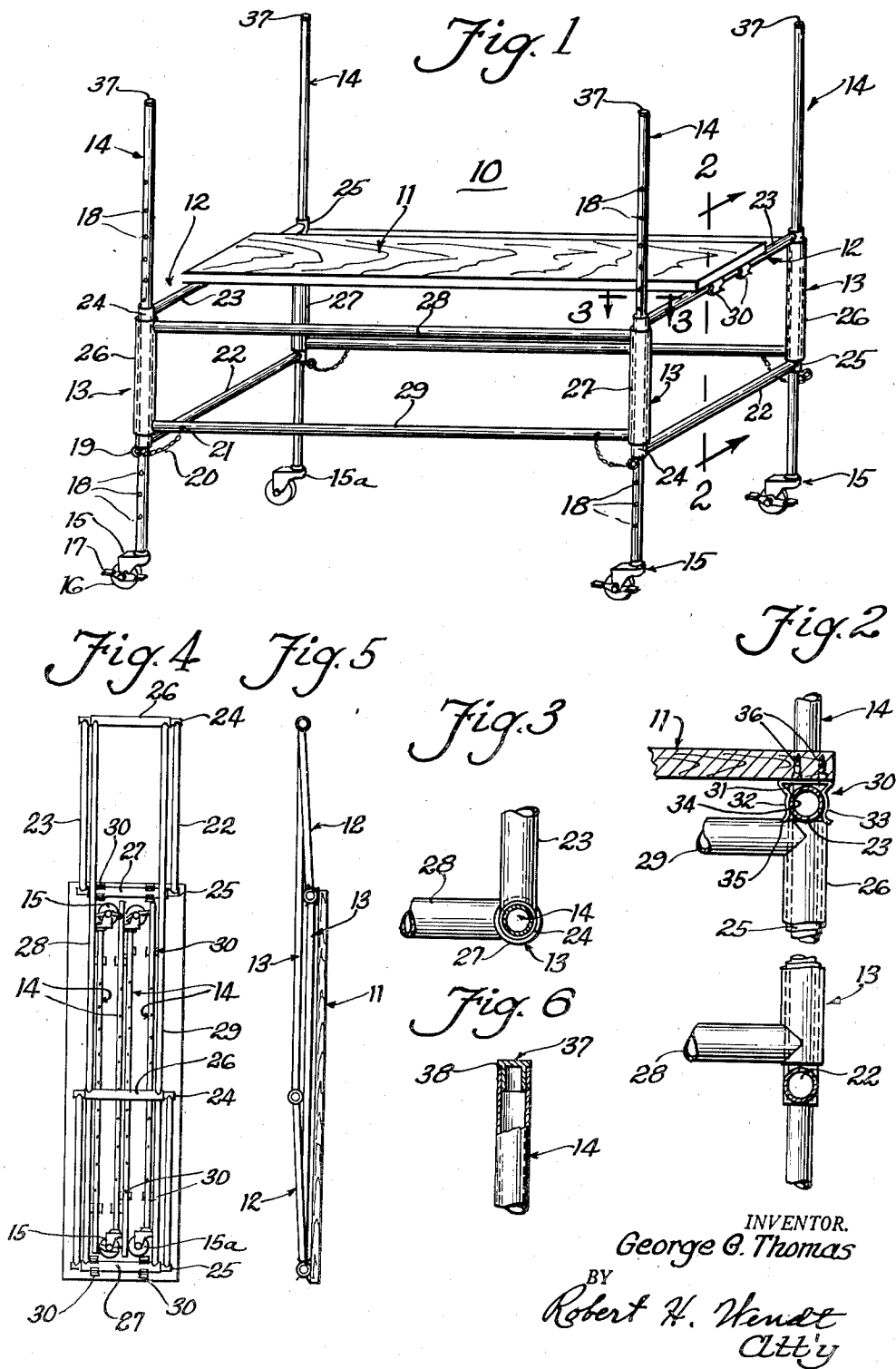
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FOLDABLE SCAFFOLD FOR HOUSEHOLD USE

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FOLDABLE SCAFFOLD FOR
HOUSEHOLD USES

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1 Claim. (Cl. 304—29)

1

The present invention relates to foldable scaffolds for household use, and is particularly concerned with the provision of an improved light and simple scaffold which can be used in the home when walls or ceilings are to be cleaned, papered, painted, calcimined or the like.

One of the objects of the invention is the provision of an improved scaffold of the class described, which may be folded into a minimum amount of space and which may have all of its parts secured together in the folded position so that it may be readily stored in a closet or storeroom when not in use.

Another object of the invention is the provision of an improved scaffold which is sturdy, which may be rolled from place to place but which is also adapted to be fixedly secured against rolling, and which may be quickly adjusted as to height to suit the convenience of the user.

Another object is the provision of an improved scaffold which is adapted to fold laterally but which is safely secured against folding by the assembly of its parts when it is being used, and which is adapted to support a maximum weight with the use of a minimum amount of metal.

Other objects and advantages of the invention will be apparent from the following description and the accompanying drawings, in which similar characteristics of reference indicate similar parts throughout the several views.

Referring to the single sheet of drawings accompanying the specification:

Fig. 1 is a view in perspective of the scaffold as it appears when it is ready for use;

Fig. 2 is a fragmentary sectional view taken on the plane of the line 2—2 of Figure 1, looking in the direction of the arrows;

Fig. 3 is a fragmentary sectional view taken on the horizontal plane of the line 3—3, looking in the direction of the arrows, showing the details of construction at one corner;

Fig. 4 is a side elevational view of the scaffold when folded;

Fig. 5 is a top plan view of the folded scaffold; and

Fig. 6 is a fragmentary sectional view showing the structure of the cap at the upper end of each leg.

The present scaffold is indicated in its entirety by the numeral 10, in Figure 1, and it preferably includes a platform 11, which is carried by identical end frames 12, the end frames in turn carrying the side frames 13, and being in turn supported by four identical legs 14.

2

Each leg 14 may consist of a steel tube which is provided at its lower end with a caster 15, the caster preferably being of the type having solid rubber tired wheels 16, and provided with a brake which is controlled by the lever 17.

The casters 15 have their upper shank (not shown) fixedly secured in each tubular leg, but the casters 15 rotate upon the legs and permit the scaffold to be moved from place to place with a minimum amount of effort.

Any two casters can be secured with its wheel blocked against rotation by means of a brake 17 to hold the scaffold, but I prefer to provide three of the casters with brakes for the reason that it may not be convenient to reach the specific two casters if only two are provided with brakes.

By omitting the brake upon the fourth caster 15a, it is easier to know which caster must be given attention when the brake is to be released.

The tubes of the legs 14 are provided with a plurality of diametrically extending through apertures 18, regularly spaced from each other from a point near the bottom of each leg to a point which is spaced from the top by a distance substantially equal to the height of the scaffold frames.

The apertures 18 are used for a cotter pin or for an eye bolt 19, which passes through both apertures and supports the end frames 13 at the desired level. The eye bolts 19 are preferably mounted upon chains 20 which are secured to an adjacent frame member, as, for example, at the point 21, by means of a suitable eye bolt. Thus the eye bolts 19 cannot be lost when withdrawn, and being secured to the longitudinally extending frame members of the side frames 13, the eye bolts 19 are also in proper position to be inserted in a suitable aperture 18, immediately below the frames at any desired level.

By means of the apertures 18 and the eye bolt 19, the height of the scaffold can be varied at will.

The end frames 12 are identical in shape and construction and each includes a pair of parallel transverse frame members 22, 23, and a pair of vertical frame members 24, 25. The transverse frame members 22 and 23 may be substantially as large in diameter as the tubular legs 14, but the vertical frame members 24 and 25 are of such a size that they can be slidably mounted on the legs 14, with only sufficient clearance for free sliding movement.

The lateral frame members 22 and 23 are welded to the outside of the vertical frame members 24 and 25, adjacent the ends of the

vertical frame members 24 and 25, so as to form a rectangle. Before welding both frame members 22 and 23 to the vertical frame corner members 24 and 25, the corner frame members 26, 27 must be located upon the tubes 24.

These corner frame members 26 and 27 form part of the side frames 13, and are preferably of substantially the same length as the distance between the end frame members 22 and 23. The lower edge of each corner frame member 27 rests upon the side of the lower end frame member 22, which in turn is supported by the eye bolt 19 acting through the frame member 24.

The diametrical size of the frame members 26 and 27 is such that the interior bore of these tubes has a rotating fit on the frame members 24 or 25, for the purpose of permitting the folding of the scaffold.

The corner frame members 26 and 27 are joined by the longitudinally extending frame members 28 and 29, to which they are welded. The longitudinal frame members 28 and 29 are welded to the corner frame members 26, 27, adjacent their ends, thus forming a rectangular frame 13 for each side. Looking at the assembled framework from the top it forms a parallelogram which is collapsible to the position shown at the left of Figure 5.

The platform 11 may comprise a relatively wide and thick plank of five-ply plywood of rectangular shape. The width of the plank 11 is preferably slightly greater than the length of the frame members 24. The length of the plank 11 is slightly greater than the distance between the similar frame members 23, at the top of the scaffold when the scaffold is arranged to be rectangular in plan.

Thus the plank 11 may lie upon the top frame members 23 of the two end frames 12, and it is preferably secured there by means of a plurality of resilient sheet metal clips 30, Figure 2. These clips may also be seen at the right end in Figure 1, on the lower side of the plank 11, engaging the horizontal frame member 23, and a similar pair of clips is located at the other end for engaging the adjacent frame member 23.

Each clip 30 comprises a resilient sheet metal member which may be made of steel having a flat base 31 and a pair of resilient clamping fingers 32, 33. At the base 31, each finger is bent backward to extend toward each other and to locate the finger in proximity to the pipe 23.

Each finger is then formed with an inner partially cylindrical surface 34, complementary to the pipe 23, and each finger is formed with an outwardly turned end portion 35 to provide the clip 30 with a bell mouth. The base 31 of the clip may have suitable apertures for receiving the wood screws 36, by means of which the clip is secured to the bottom of the plank 11.

Such a clip is provided adjacent each of the four corners of the bottom of the plank, and the clips are preferably equally spaced from each other and symmetrically located with regard to the plane of the plank. Longitudinally, the clips are far enough apart so that when one pair engages the left frame member 23, the other pair is in position to engage the right frame member 23.

Thus the clips 30 secure the plank to the frame of the scaffold and also prevent the scaffold from changing its right angular parallelogram form. The scaffold cannot be folded or collapsed to the position of Figure 5 without removing the plank 11 first. Clips 30 being resilient, they are ca-

pable of receiving the pipes 23 or the pipes 27, which are the larger corner frame members. Thus when the scaffold is collapsed to the position of Figure 5, the clips 30 may be engaged on the outside of two of the corner frame members 27, so that the platform is assembled with the frame also in the collapsed position.

Each leg 14 is provided at its upper end with a cap or cover 37, preferably of the type shown in Figure 6, wherein a tubular part fits in the leg 14, and a projecting annular flange 38 overlaps the end of each leg. The caps may be secured in place by friction or by through rivets or spot-welding; and the flange 38 must be small enough in diameter to pass readily through the corner tubes 24.

When in the operative position the plank 11 prevents the scaffold from folding because the clips 30 hold the frame members 23 parallel to each other.

Referring to Figure 4, this shows the folded scaffold. In addition to the assembly of the frame work and plank, as shown in Figure 5, Figure 4 shows the legs 14 arranged longitudinally of the bottom of the plank 11, the legs being alternately reversed in position so as to provide room for the casters.

The bottom of the plank 11 is, therefore, provided with a plurality of the same clips 30, so arranged that each leg is engaged by two of the clips 30 adjacent its ends, and thus the legs may be assembled and held on the bottom of the plank when the scaffold is folded.

The operation of my folding scaffold is as follows:

Assuming that parts are folded, as shown in Figures 4 and 5, the legs should first be removed from the bottom of the platform 11 by merely pulling them out of their clips 30. Then the scaffold frames, comprising the four frames 13—13 and 12—12 are moved relative to each other, rotation taking place at each corner until the collapsed frame of Figure 5 is rectangular in plan.

The plank may then be placed on top of the horizontal end frame members 23, and the plank may be secured to these horizontal end frame members 23 by pushing the clips 30 over the pipes 23.

One way of assembling the legs with the expanded frame is to turn the frame upside down at this time and to insert the four legs in the four vertically open tubes that are provided by the corner frame members 24 of the end frames 12.

The eye bolts 19 should be inserted through suitable apertures 18 in the legs 14 to adjust the height of the scaffold. For example, this adjustment may be such that the user can reach the ceiling with his hands, and his head is below the ceiling. Of course the adjustment must be different for men of different size, but the present scaffold can be adjusted to any desired height and all four corners must have their eye bolts 19 located at the same height.

Assuming that the scaffold is now upside down, it should then be inverted so that the plank 11 is on top. The scaffold may then be moved to the desired place where it takes the place of two step ladders and the usual extensible plank. The scaffold should then be secured in the position to which it has been rolled by actuating two of the brake levers 17 on the casters 15.

All of the tubular parts of the present scaffold are preferably made out of steel so as to secure

a maximum strength with a minimum amount of metal.

In some embodiments of the invention aluminum alloys may be employed, provided they have the adequate strength.

It will thus be observed that I have invented an improved foldable scaffold for household use, in which the platform may be located at any of a plurality of vertical adjustments to suit the user.

When the scaffold is extended, its plank holds it in this position. When the scaffold is folded its plank must be removed from the top but it may be secured to the side of the scaffold.

The legs are also slidably mounted in the tubular frame members 24, so that the legs may be removed; and the legs may be secured to the bottom of the plank by means of spring clips.

The present scaffold is sturdy, capable of being locked in place, incapable of folding except by the intention of the user, and when folded it may be stored in a minimum amount of space.

The corner construction of the present scaffold is a matter of the utmost importance as it provides a maximum rigidity with the use of a minimum amount of metal.

While I have illustrated a preferred embodiment of my invention, many modifications may be made without departing from the spirit of the invention, and I do not wish to be limited to the precise details of construction set forth, but desire to avail myself of all changes within the scope of the appended claim.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

In a folding scaffold for household use, comprising two identical side frames, each having a first pair of short vertical corner tubes joined by long horizontal tubes, two identical end

frames, each having a second pair of vertical corner tubes, long enough to project at each end from the first vertical corner tubes in which the second vertical corner tubes are rotatably mounted and confined by being welded at each end to a second pair of longer horizontal tubes, forming a foldable parallelogram frame, four elongated vertical leg tubes, each leg tube being slidably mounted in one of the said second vertical corner tubes and each leg tube having a multiplicity of transverse apertures, a transverse pin in one of the apertures of each leg tube, said pins being engaged by the lower ends of said second corner tubes, and an elongated plank overlapping the end frames when the parallelogram frame is rectangular in plan, said plank having a pair of downwardly extending two-legged spring clips at each end, said slips being formed with partially cylindrical portions receiving the horizontal tubes of the end frames, to hold the scaffold in open rectangular position and to retain the plank on said horizontal tubes, said clips also being of sufficient size to clamp two of said corner tubes to secure the plank and frames together in folded position.

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