

Nov. 11, 1947.

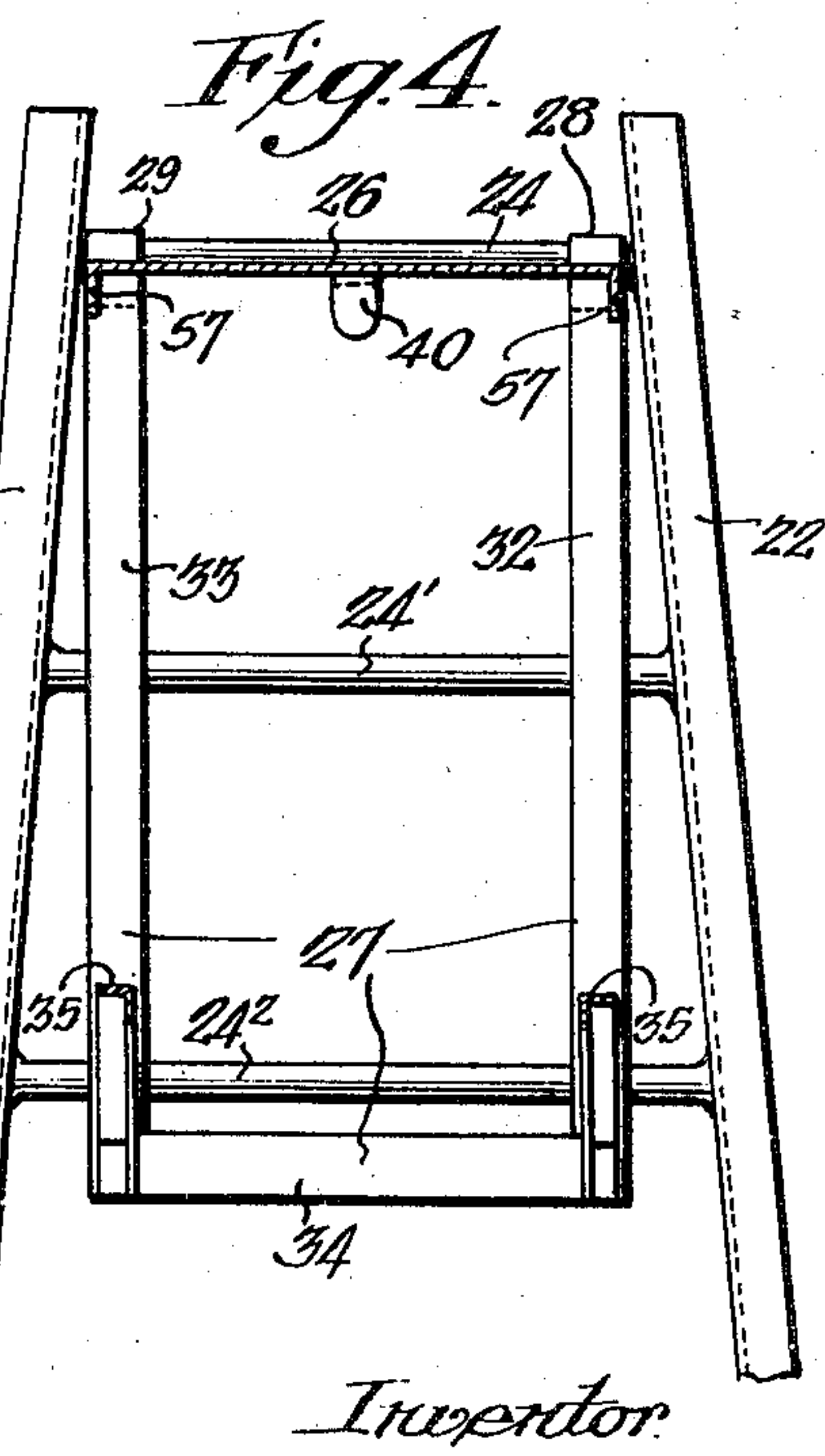
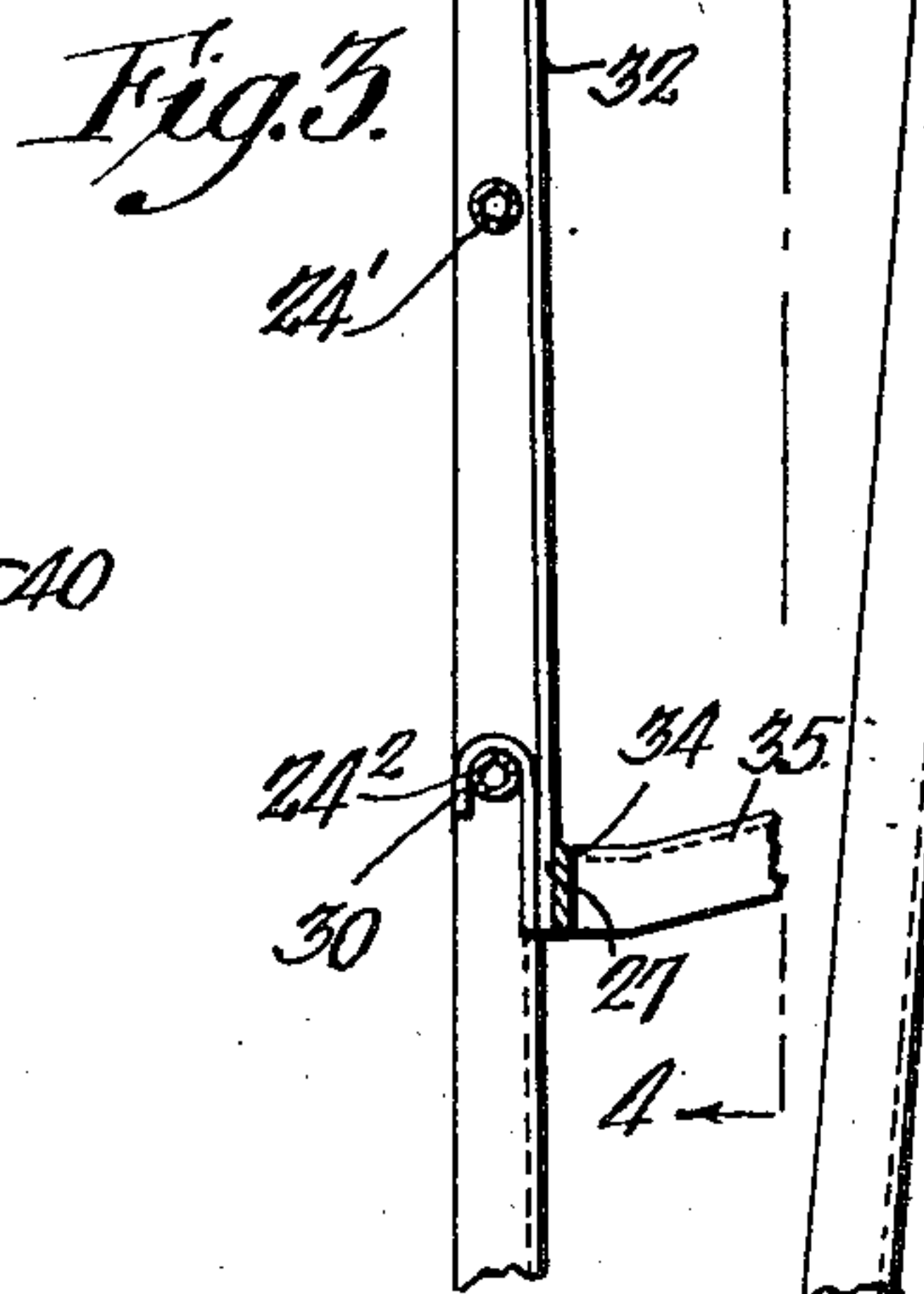
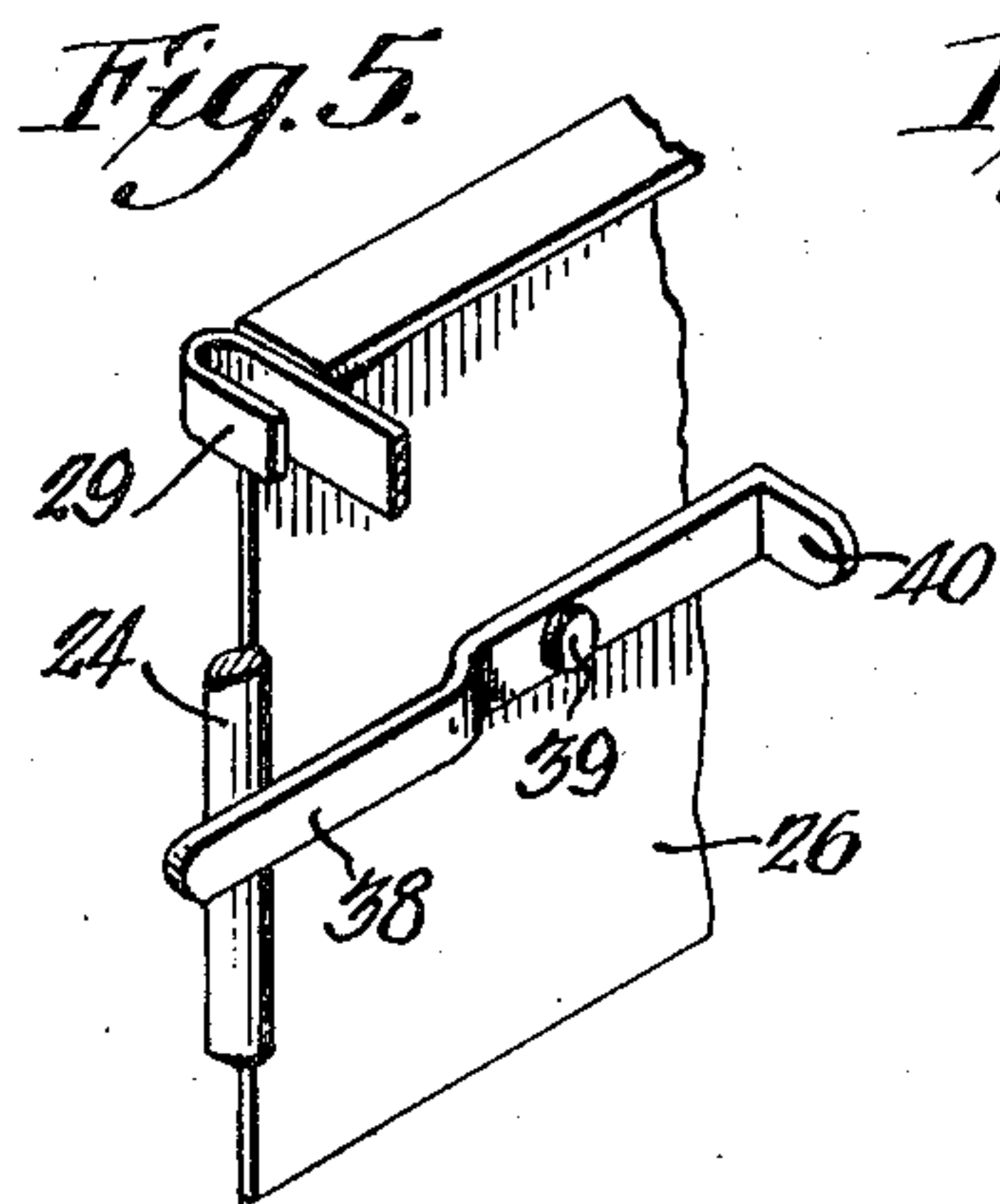
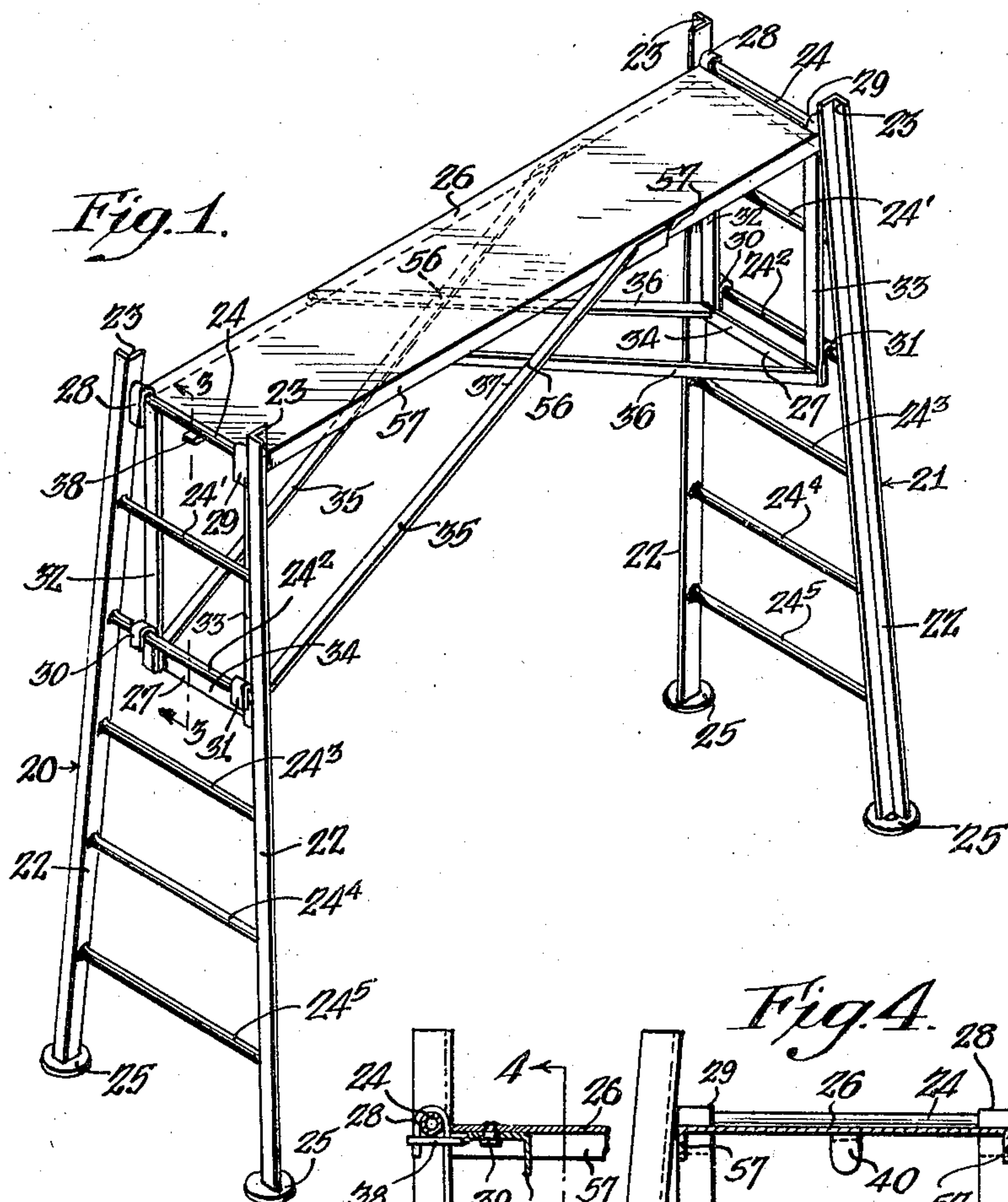
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2,430,642

SAFETY TRESTLE

Filed July 28, 1944

4 Sheets-Sheet 1



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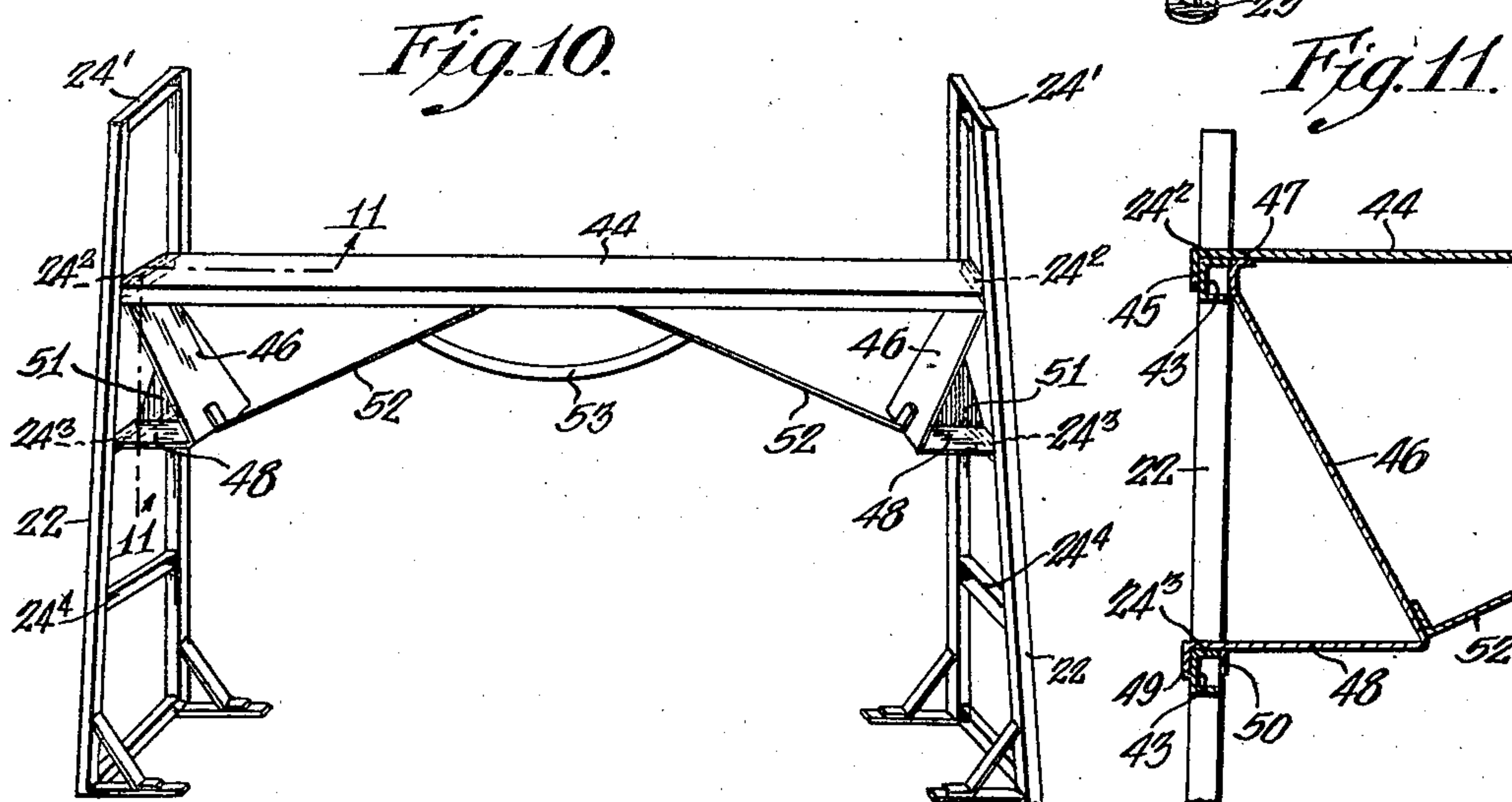
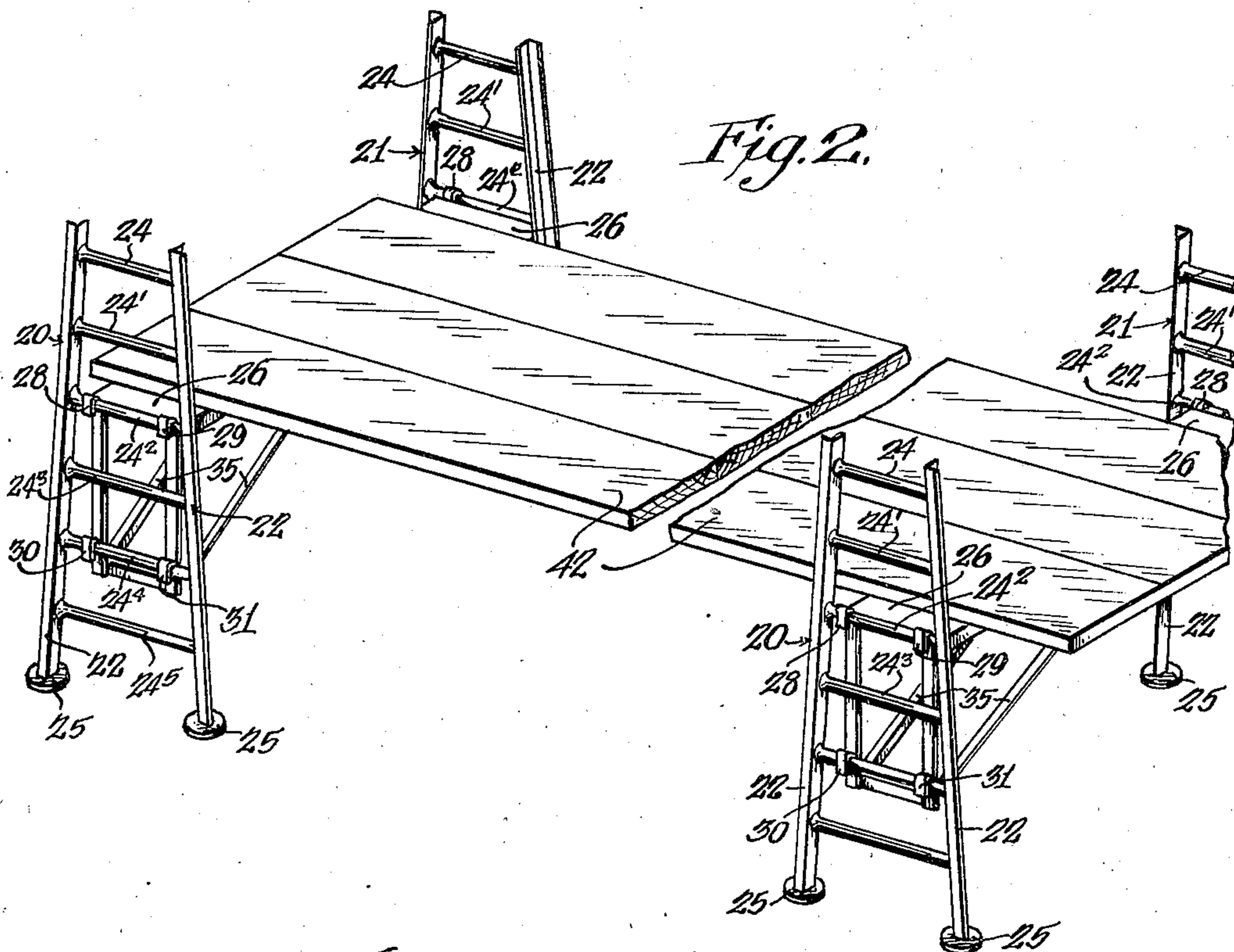
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SAFETY TRESTLE

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4 Sheets-Sheet 2



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SAFETY TRESTLE

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4 Sheets-Sheet 3

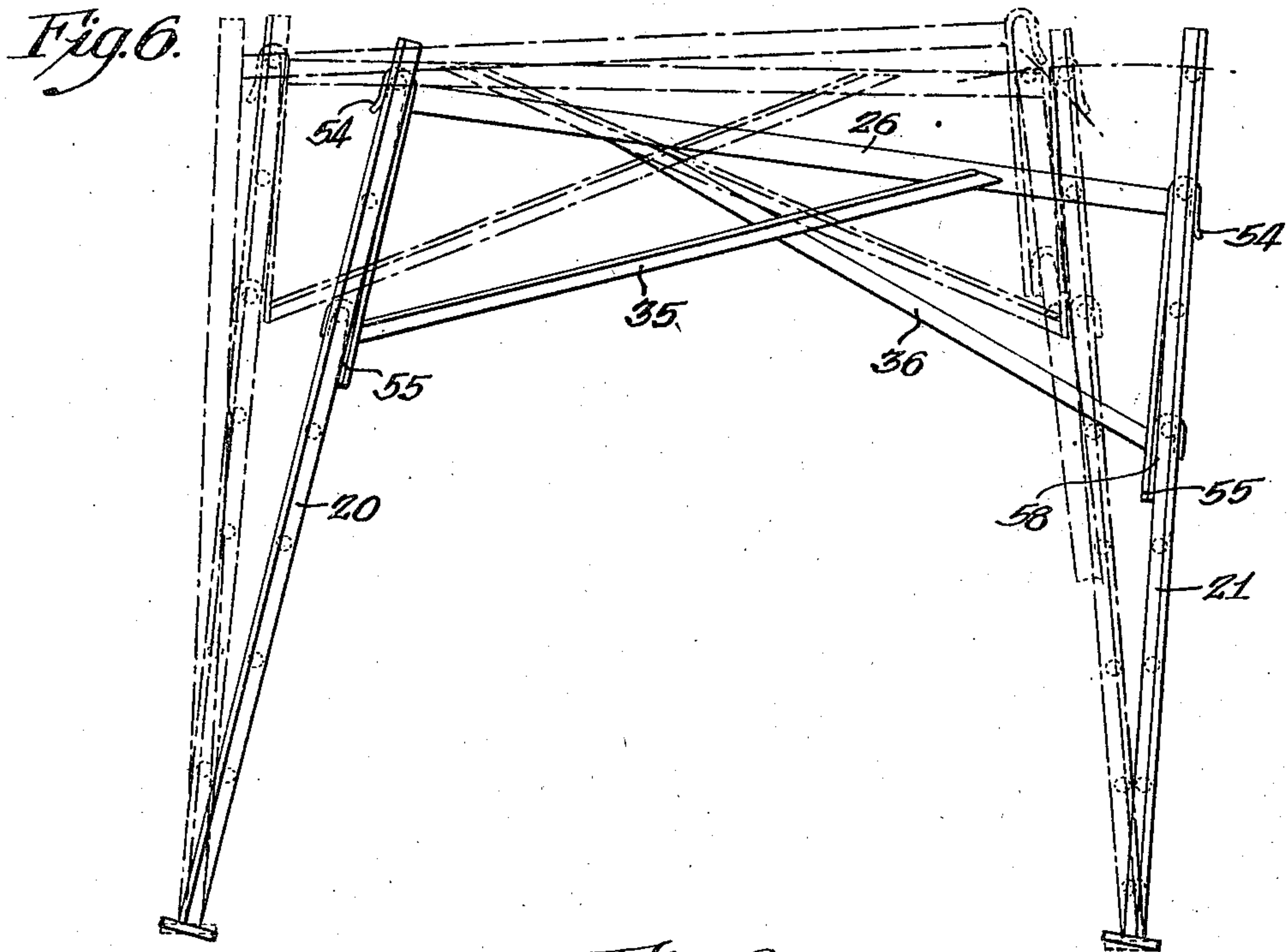
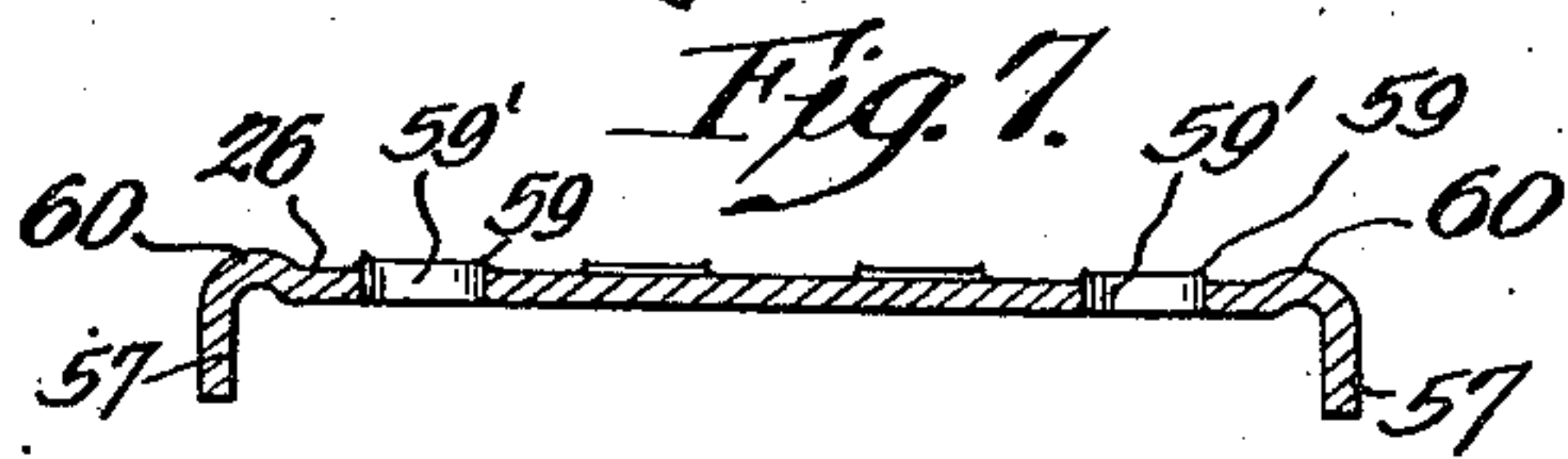
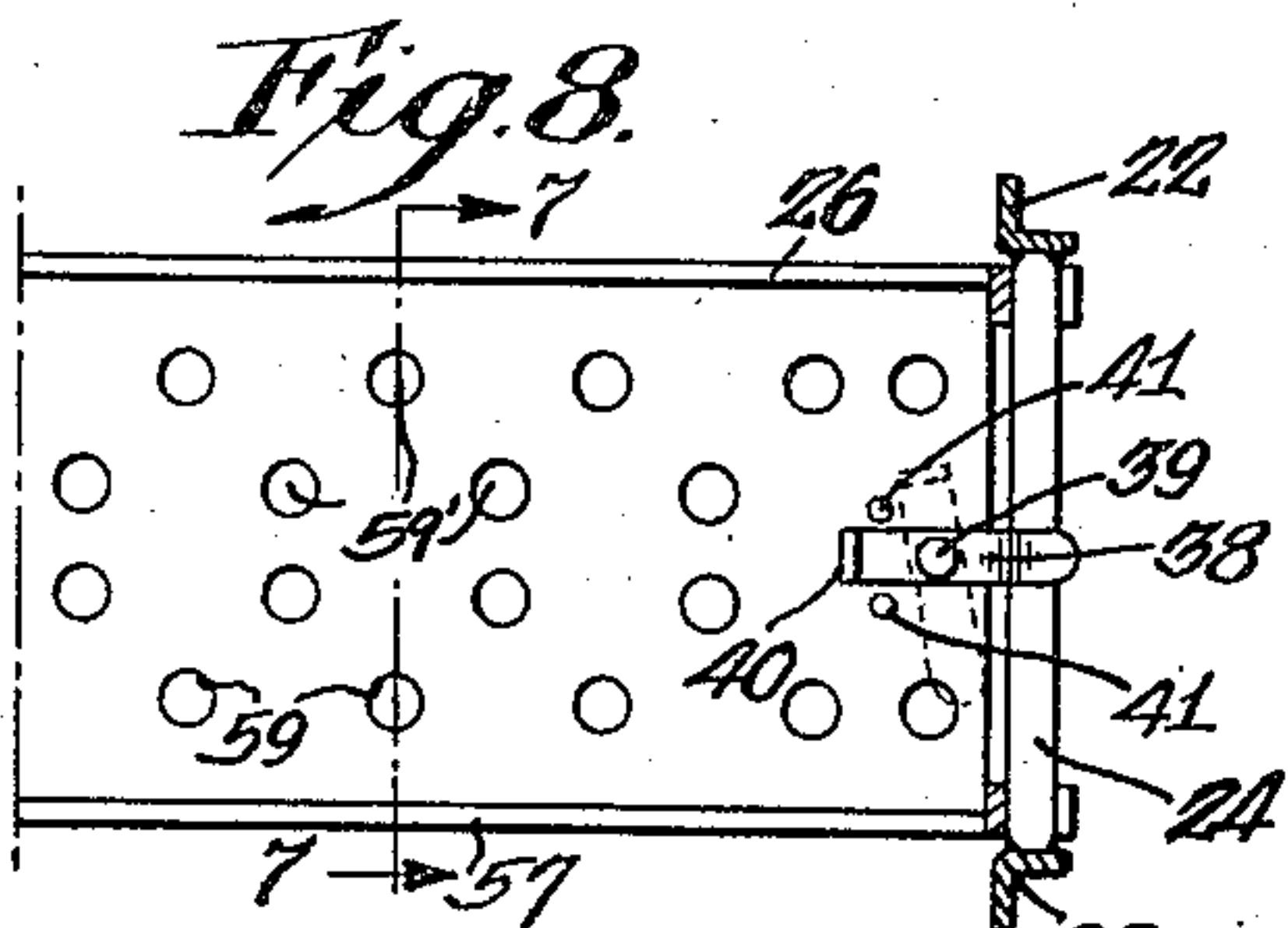
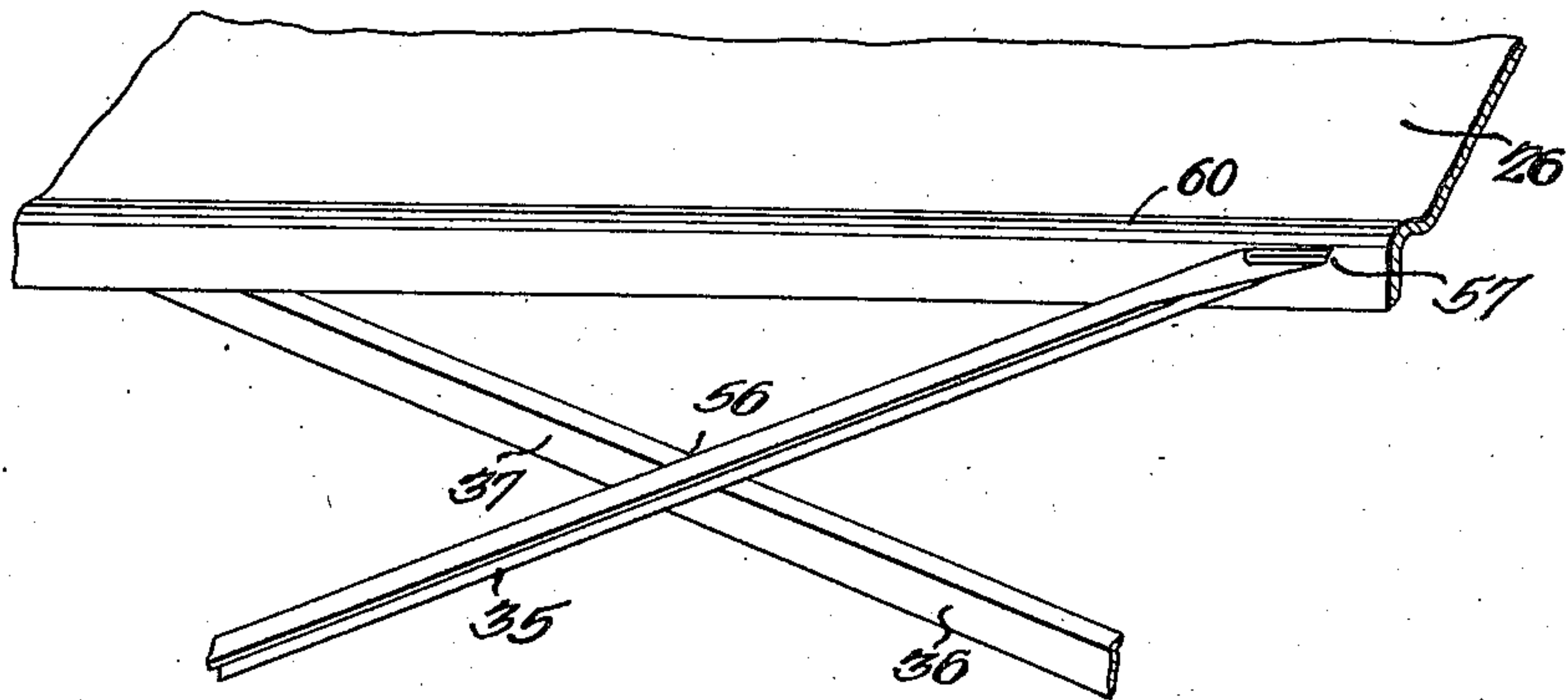


Fig. 9.



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SAFETY TRESTLE

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4 Sheets-Sheet 4

Fig. 14.

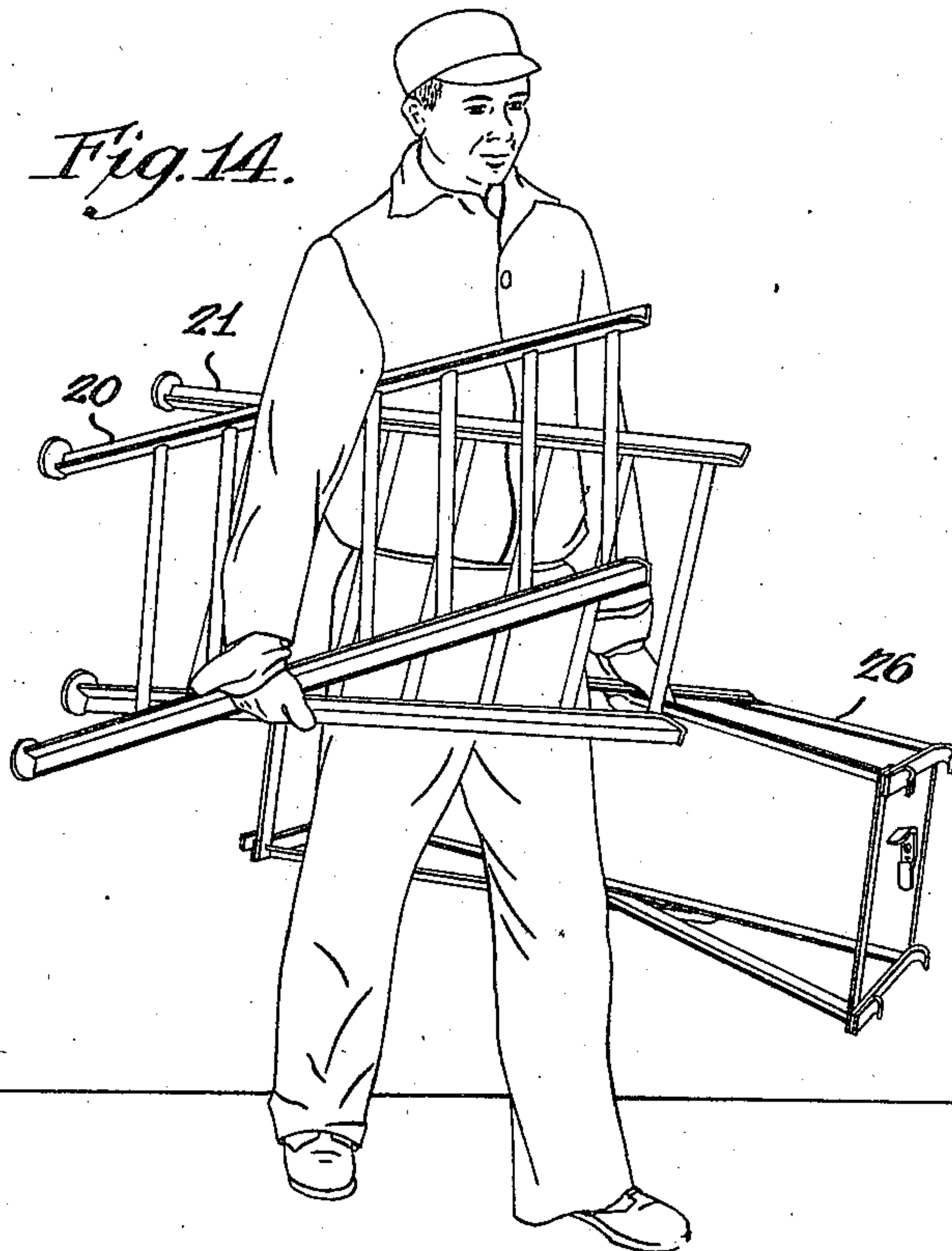


Fig. 12.

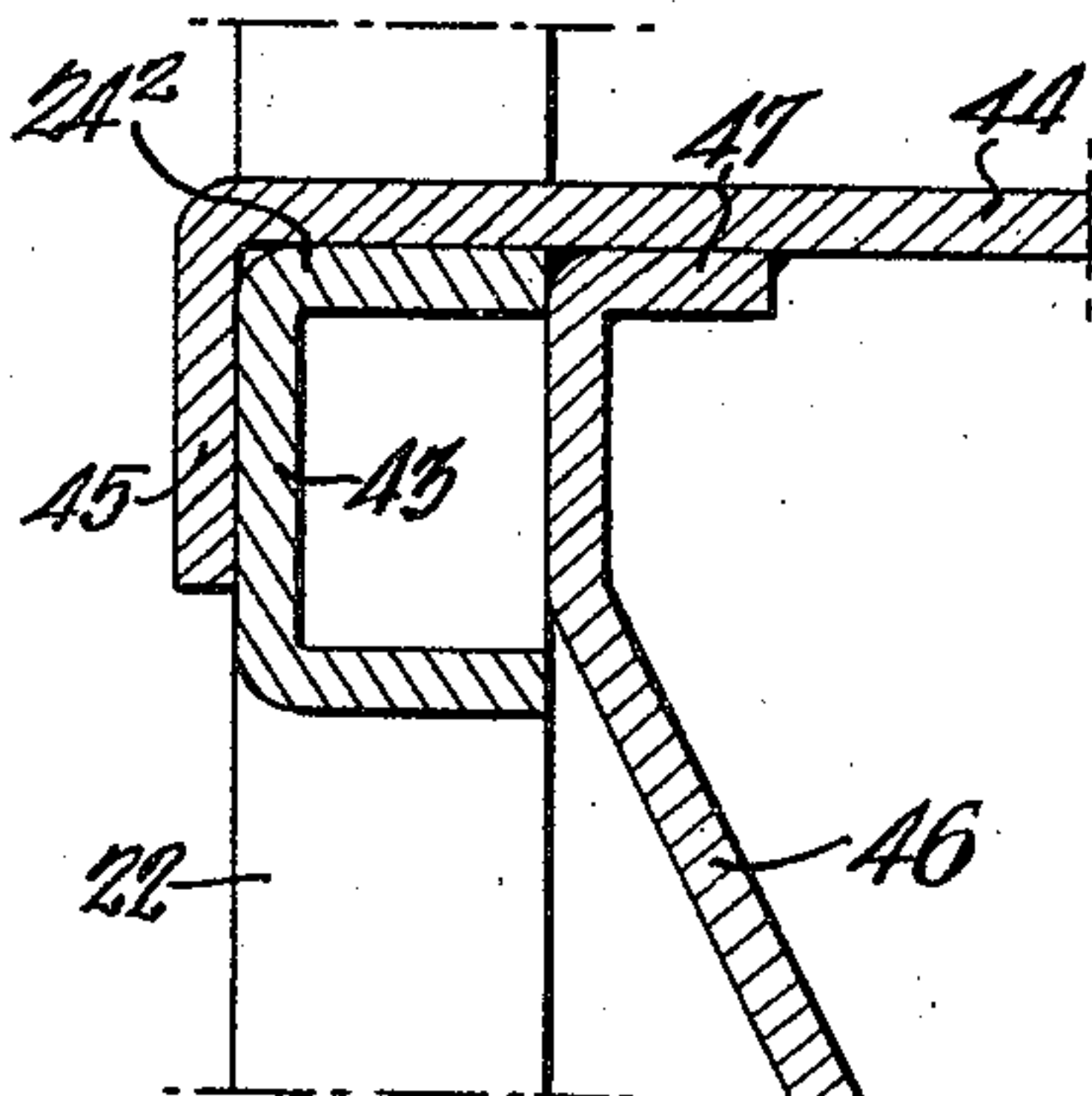
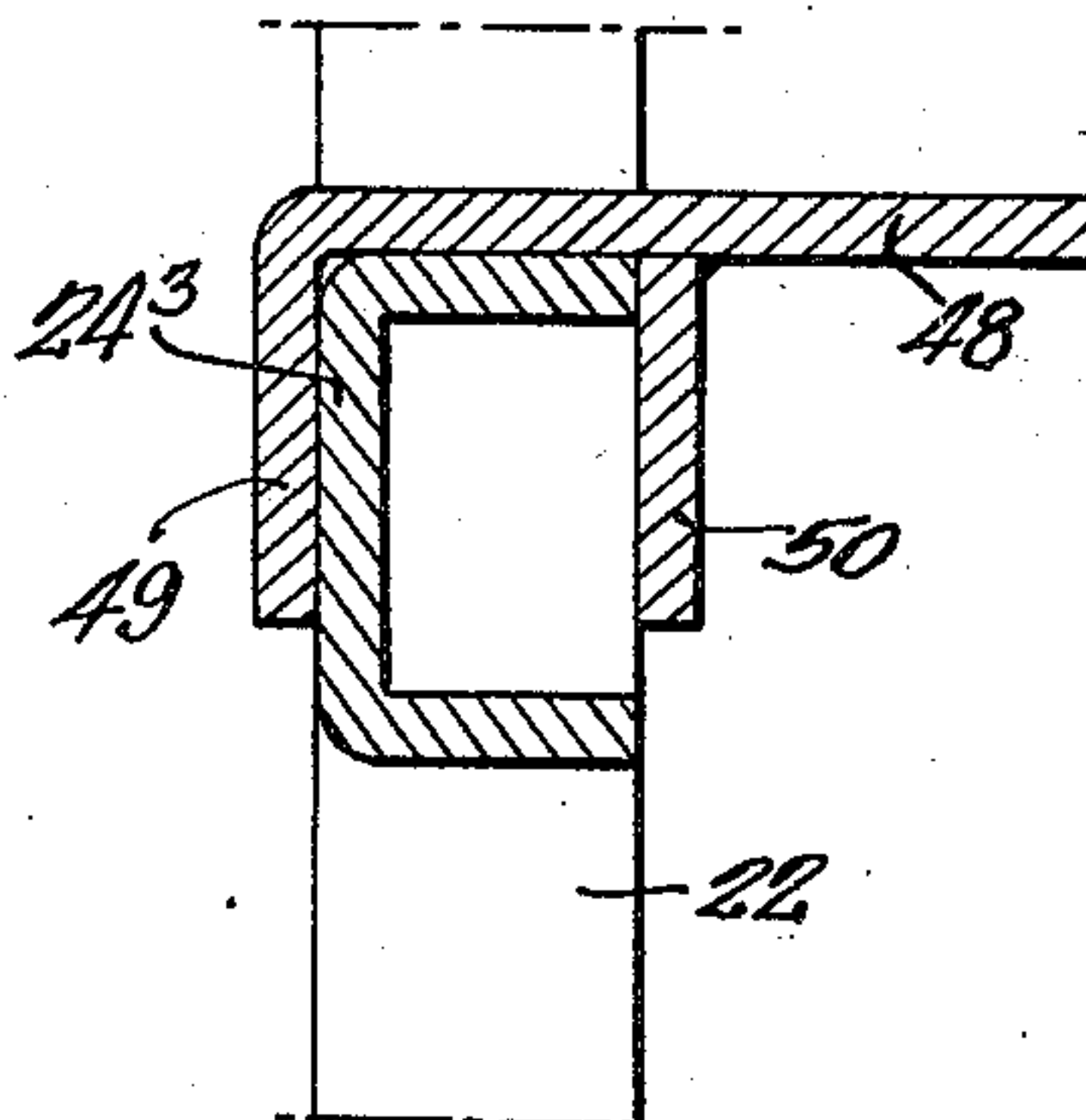


Fig. 13.



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UNITED STATES PATENT OFFICE

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SAFETY TRESTDLE

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Application July 28, 1944, Serial No. 547,049

6 Claims. (Cl. 304—3)

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My invention relates to trestles such as are used by painters and other workmen.

The main purpose of the invention is to secure rigidity and stiffness of trestle construction.

A further purpose is to supply a transverse bracing member between ladder supports, having diagonal stiffening for the bracing member, and spaced engagement with upper and lower rungs of the ladder.

A further purpose is to provide rigid transverse connecting means between the ladder elements of a trestle and to brace hook engagement with the rungs of the ladder by overlapping stiffening ties.

A further purpose is to facilitate one-man setting-up of the trestle and one-man adjustment of height.

A further purpose is to form trestle ladders with lateral front flanges extending up to the trestle platform and preferably above it.

A further purpose is to make the trestle safe in use.

Further purposes will appear in the specification and in the claims.

I have preferred to illustrate my invention by but one general form with several modifications of its structure, selecting a general form which is practical and effective, rigid and inexpensive, and at the same time well illustrates the principles of the invention.

Figures 1 and 2 are perspectives showing slightly different applications of the same general invention.

Figure 3 is a fragmentary section of Figure 1 upon line 3—3 thereof.

Figure 4 is a fragmentary section of Figure 3 on line 4—4 thereof.

Figure 5 is a sectional perspective showing latching mechanism.

Figure 6 is a largely diagrammatic view showing how adjustment in height is effected.

Figure 7 is a section upon lines 7—7 of Figure 8.

Figure 8 is a section, largely a fragmentary bottom plan view showing a platform and a fastening device.

Figure 9 is a fragmentary perspective of a platform.

Figure 10 is a perspective view showing a slightly modified form.

Figure 11 is a section of Figure 10 upon line 11—11.

Figures 12 and 13 are enlarged cross sections showing structure of ladder rungs and hooks.

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Figure 14 is a perspective view showing the parts separated and how they are carried.

In the drawings similar numerals indicate like parts.

Painters and others having use for trestles have had great difficulty in securing trestles which are light, rigid, easily assembled and easily carried. The present invention has been intended to fill this need. It is intended also to be easy to climb when the painter is carrying bucket and brushes.

Describing first the structure of Figures 1—5: the ladder-like sections 20, 21 have side rails 22, preferably made from angle irons or channels flanged outwardly away from each other at 23 generally parallel to the planes of the rungs 24—24⁵.

The flanges thus are in line and are on the outside (toward the one using the ladder) when the structure is assembled. This secures the stiffness of the angle irons or channels while permitting the user to steady himself in mounting by a partial hold on the thin flange edge, even though his hands are filled with tools. Adjoining rungs are spaced equally and suitable feet 25 are shown.

The two ladder sections are united by a platform 26, and by rung engaging brackets 27, oppositely facing toward the respective ladder sections. These are opposite counter-parts, the one of the other. They terminate each in rigid hooks 28, 29 above and 30, 31 below. The rungs above are spaced vertically from the rungs below to engage different rungs and are spaced uniformly in order that the platform section may be connected at variant points in the heights of the two ladder sections. The bracket hook spacing is shown as twice the rung spacing. Hooks 28 and 29 fit over runs 24, for example, and the hooks 30 and 31 fit over rungs 24², the vertical spacing matching for alternate rungs.

The platform 26 and the brackets, including hooks 28—31 are rigid as a unit and are preferably welded together.

The hooks 28 and 30, or the brackets at corresponding positions, are connected by straps 32; and the upper hooks are shown as turned ends of the straps. The hooks 29 and 31, or the brackets at these positions, are connected by straps 33 definitely spacing these hooks vertically at their desired positions. The hooks 28 and 29 are held in position and spaced laterally by the platform, but hooks 29 and 31 are spaced by horizontal straps 34. The spacing of the hooks, as shown, approaches the length of the

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shortest rung and is greater preferably than one half of the rung length.

In order to stiffen the structure I connect the lower hook positions and the platform on each side by struts 35 and 36, preferably to the farther ends of the platform, causing the two struts from one end to overlap the two from the other.

As thus far described the platform unit can be united to each of the ladders, one at one end and the other at the other, at any height desired, which will skip a rung. This "skipping" a rung gives a wide span with a close rung position for adjustment of height.

There is no reason why the rungs need be the top and third rung from the top, but instead may be the third and fifth rungs respectively, 24² and 24⁴, for example, as seen in Figure 2.

In order to protect against accidental release of the hold of the hooks upon the several rungs, I latch each end of the platform against its rung 24 by a button 38 pivoted at 39 and engaging the underside of the rung 24. The button can be turned by the rear extension 40. Stops 41 are punched down from the platform (see Figure 8). The extension may be sprung so as to pass them but they prevent accidental release of the button.

I have thus far described the complete structure of Figure 1, which is shown in Figure 14 as capable of being carried by the user. It may be used by him in the form seen in Figure 1 without additional platform space, or may be used by him as one or two trestles connected by an enlarged platform 42, seen in Figure 2.

The purpose of the lateral separation of the hooks in the other figures, that of rigidity by engagement at widely spaced points, can be secured by using a plate or sheet engaging near its edges but permissibly making contact the entire width as in Figures 10, 11, 12 and 13. Rectangular rungs 24', 24², 24³, 24⁴ are shown, which are channels 43 opening laterally.

The platform 44 is bent down at the end at 45 to form part of the hook and strut 43 is welded to the platform at 47 to complete the hook (Figure 12).

The strut 46 is turned across at 48 (Figures 12 and 13). It is turned down at 49 and the lower hook is completed by welded strip 50. A brace 51 stiffens the strut and the strut is further stiffened by rods 52 connected to the platform. They are joined intermediately by a handle 53. All joints are welded. The bracket "hooks" engage adjoining rungs in Figures 10 and 11.

In Figures 1-6, the lower hooks are farther apart lengthwise of the platform than the upper hooks, corresponding to the spacing of the ladder sections greater at their feet than at their upper ends. The hooks slide over the round pipe rung, the curve of the round rung fitting and guiding the ends of the hooks over the rungs; and in order that it may not be necessary to match the positions of the upper hooks with the upper rungs engaged at the same time that the lower hooks are matched with the lower rungs, the upper hooks are made longer vertically than the lower hooks as seen to advantage at 54, in Figure 6. The straps extend below the lower hooks at 55.

The struts 35 and 36, (Figures 1, 6 and 9) are united to the vertical or horizontal straps adjacent the lower hooks and, as shown, are made of angle irons having the flanges 37 of straps 35 parallel to and closely adjacent to the flanges 37 of straps 36 so that the two straps can be welded together where they pass each other at 56. The flanges 37 are parallel with the downwardly

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turned flanges 57 of the platform permitting welding at these points also to advantage.

As thus far described the first step in assembly (Figure 6) is by slipping the hooks at one end, such as the left hand end of this figure over the rungs 24 and 24² respectively so that the platform is rigidly united to the left hand ladder section in the dash and dot line position at the left of Figure 6. The ladder sections are then swung until all four hooks at the right rest above the corresponding rungs 24, 24² of the right hand ladder section. The parts are then swung together so that the hooks slide over the rungs. The upper hooks at the right engage their rung first and the lower rung is lined up against the bracket at 58 below the lower hook, the surface about 58 guiding the parts during the final movement of the bracket into place.

When the position of the platform is to be changed, for example to be lowered in the figures, the bracket is freed from the rungs by lifting it at one end to the dash and dot position seen at the right, for example, in Figure 6. The right ladder section is swung slightly to the right of the position which it had previously occupied. The parts on the left are then swung about the feet at the left until the hooks lie below the rungs previously occupied. Continued swinging of the left ladder section and the platform clockwise about the left hand feet as an axis and counter-clockwise swinging of the right hand ladder section bring the parts together and the right hand hooks can thus be engaged respectively with rungs next below those previously engaged.

The platform can next be freed from the rungs of the left hand ladder section, repeating the operation and bringing the platform back to a horizontal level which is one rung lower than was the initial dotted line platform position.

The intermediate position seen in Figure 6 illustrates a position in which my trestle may be used to give an approximately level position notwithstanding the slope of surface upon which the feet rest.

The platform is shown in Figures 7 and 8 as perforated, preferably with a dull die which leaves rough rings 59 about the openings 59'. At the edges it is upwardly turned to form a shoulder or raised bead 60 and then it is downwardly turned to form the flange 57 to which the struts 36 are welded.

The shoulder protects against the user carelessly moving off to the side, and the rung to which the platform is attached at the top is preferably higher than the platform so that even when the platform is at its highest point parts across from one trestle to the other, as in Figure 2, are protected against falling off at the end of the trestle.

The rigidity to which my spaced upper and spaced lower hooks contributes so much can of course be secured also in the form of Figures 10, 11, 12 and 13 by insuring wide separation along the lengths of the rungs of parts of the plate or strip which engage the rungs so that the same end effect is produced as would be secured by the use of hooks as in the other figures.

Where I refer to spaced hooks I intend this to be interpreted to cover hook-like contacts with the rungs at a considerable spacing along the lengths of the rungs whether there be an intervening web of plate as in Figures 10-13 or not.

It will be evident that with the strength and additional rigidity given by my construction the trestle is suited to support a man who is doing heavy work such as chipping, riveting, etc.

In view of my invention and disclosure variations and modifications to meet individual whim or particular need will doubtless become evident to others skilled in the art, to obtain all or part of the benefits of my invention without copying the structure shown, and I, therefore, claim all such in so far as they fall within the reasonable spirit and scope of my claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a knock-down trestle, a pair of rung supports at opposite ends of the trestle and a platform unit between the supports firmly connected with the rungs of the supports, cambered lengthwise of the platform unit, the platform at each end being substantially on the level with but below the top of an upper rung with which the platform is connected and having a shoulder extending upwardly along the length of each side of the platform, the rungs at the ends and the shoulders at the sides providing a warning to the user of proximity to the edge of the platform.

2. In a knock-down trestle, ladder-like trestle ends having feet and rungs which are rounded at their upper sides, a rigid platform, two brackets each having hooks, engaging at opposite ends of the platform with an upper rung at distances along the rung spaced more than half the length of the rung and having hooks engaging with relatively lower rungs, one at each end of the platform, the hooks being spaced further apart along each rung than half the length of the rung and the hooks engaging the lower rungs at opposite platform ends being further apart lengthwise of the platform than are the hooks engaging the upper rungs, the hooks being slightly flared, whereby with the platform connected one end can be disconnected by lifting the platform end, the ladder can be swung out and the platform end dropped below the rungs with which it has been connected, the ladder can then be pushed in and the ends of the platform can be connected with the next rungs below those with which connection was previously had while maintaining the feet of both ladders in their previous positions.

3. In a knockdown trestle, ladder-like trestle ends having feet and rungs which are rounded at their upper sides, a rigid platform, two brackets each having fastenings engaging at opposite ends of the platform with an upper rung at distances along the rung spaced more than half the length of the rung and having fastenings engaging with relatively lower rungs, one at each end of the platform, contacts of the fastenings being spaced further apart along each rung than half the length of the rung and the fastenings engaging the lower rungs at opposite platform ends being further apart lengthwise of the platform than are the fastenings engaging the upper rungs, the fastenings being slightly flared, whereby with the platform connected one end can be disconnected by lifting the platform end, the ladder can be swung out and the platform end dropped below the rungs with which it has been connected, the ladder can be pushed in and the ends of the platform can be connected with the next rungs

below those with which connection was previously had while maintaining the feet of both ladders in their previous positions.

4. A trestle bracket platform comprising a platform plate upturned near the side edges to form shoulders and downwardly turned from the shoulders into side flanges, hooks at each end of the platform, two in an upper row reaching above the level of the platform and two in a lower row, spaced at a distance corresponding with intended rung spacings between the upper and lower pairs of hooks and spaced laterally more than half the length of the rungs with which the platform is intended to be used, and side angles extending from the lower hooks at each end and at each side, passing each other and fastened to the flanges, a flange of one angle at each side being outwardly turned and a flange of the other angle being inwardly turned, bringing the other flanges of the angles at each side parallel to each other at their passing point, the angles being welded to the side platform flanges and to each other at the point of passing.

5. A bridge section for a trestle structure comprising a platform having a raised bead near the outer edges of the platform and a downwardly turned flange adjacent to the bead, hooks at the ends of the bridge section, braces between the downwardly turned edges and the hooks at the two sides, comprising angle irons having welded connection with the hooks at one end each and with the flanges at the other end each and comprising angle irons whose vertical flanges adjoin and are welded together at an intermediate portion of the braces.

6. A knock-down trestle comprising a pair of ladders inwardly inclined toward one another and having uniformly spaced rungs and a platform having two sets of hooks at each end, one of which adjoins the top of the platform and engages an upper rung and the other of which engages a lower rung, the hooks and the other parts of the platform structure being rigidly welded together, and the platform having one position in which the upper set of hooks at each end engages rungs of the ladders at the same distances from the bottom thereof and another position in which the hooks at the one end are shifted bodily to engage other rungs of the inwardly inclined ladder at that end.

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