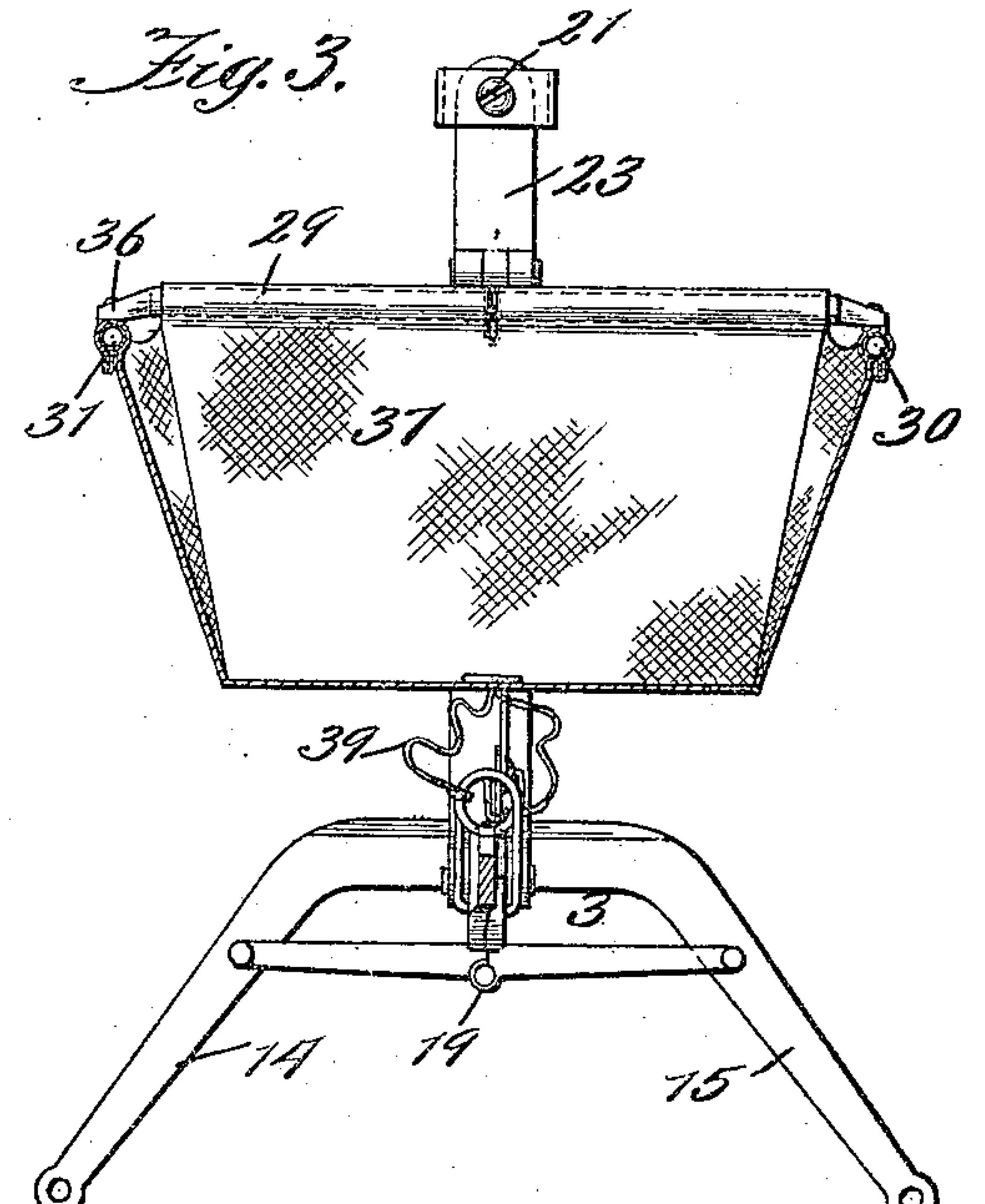
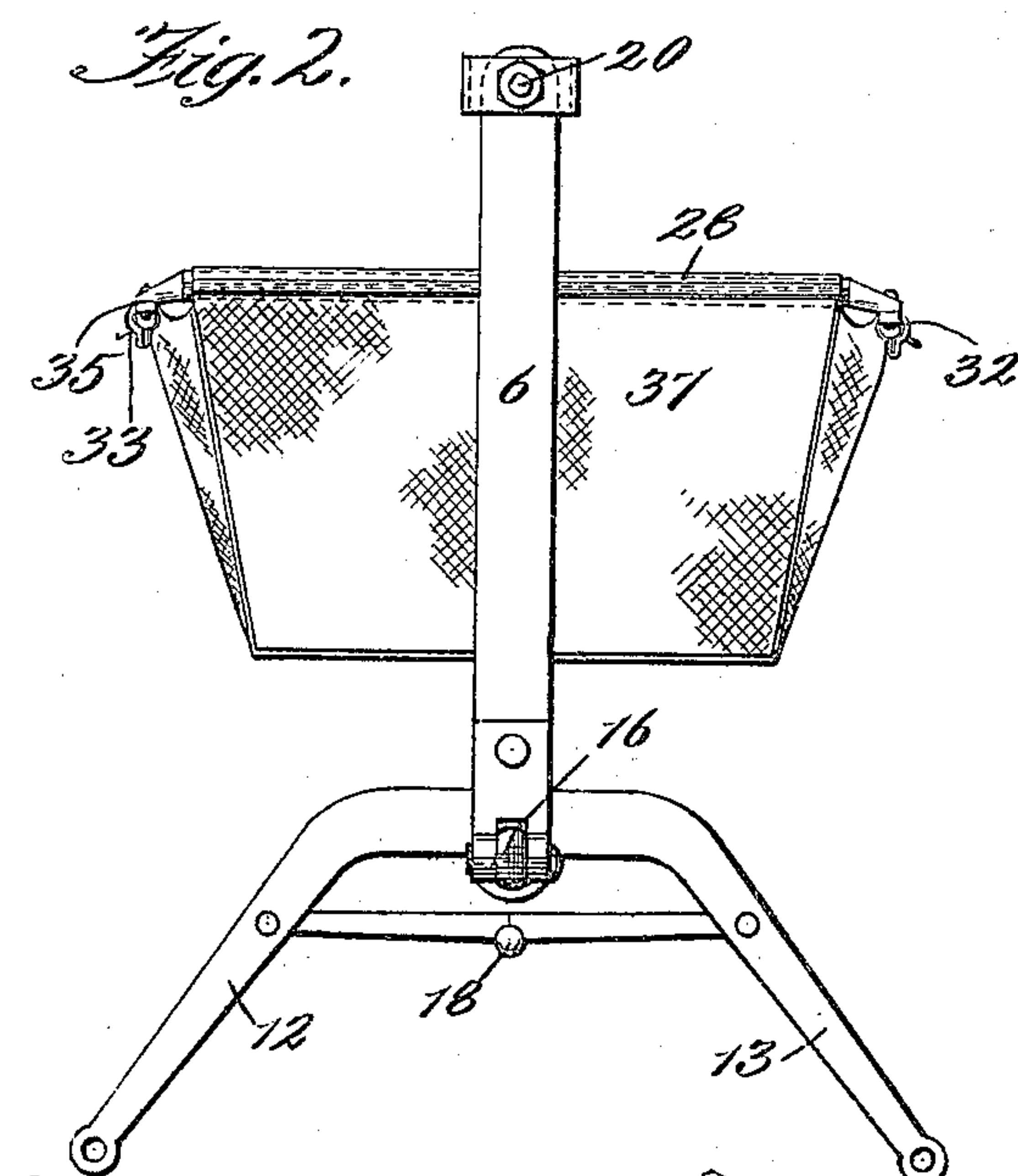
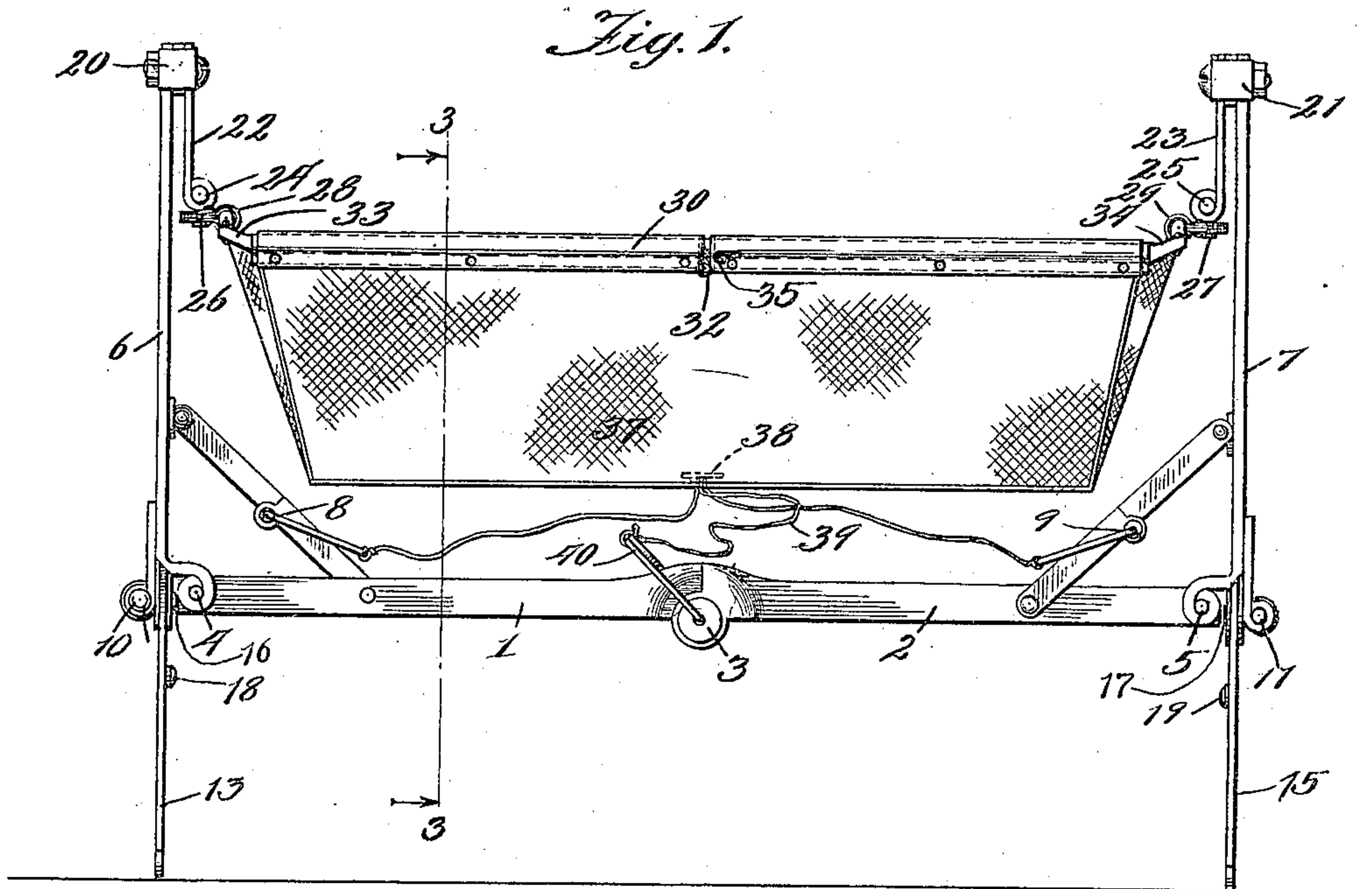


A. W. H. RAETTIG.
FOLDING CRADLE.
APPLICATION FILED JUNE 14, 1909.

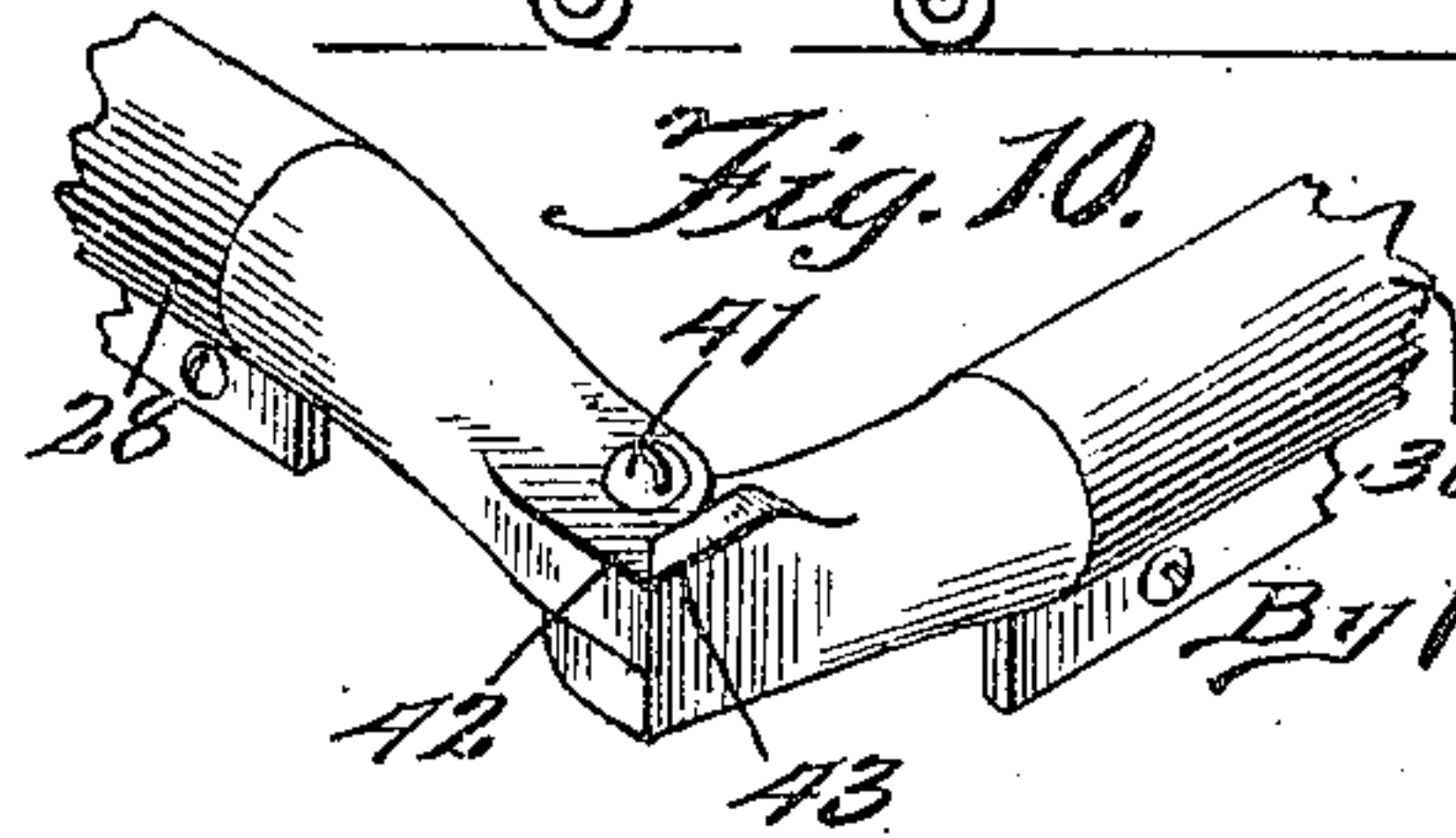
962,587.

Patented June 28, 1910.

3 SHEETS—SHEET 1.



Witnesses:
J. D. Perry
A. W. Knight.



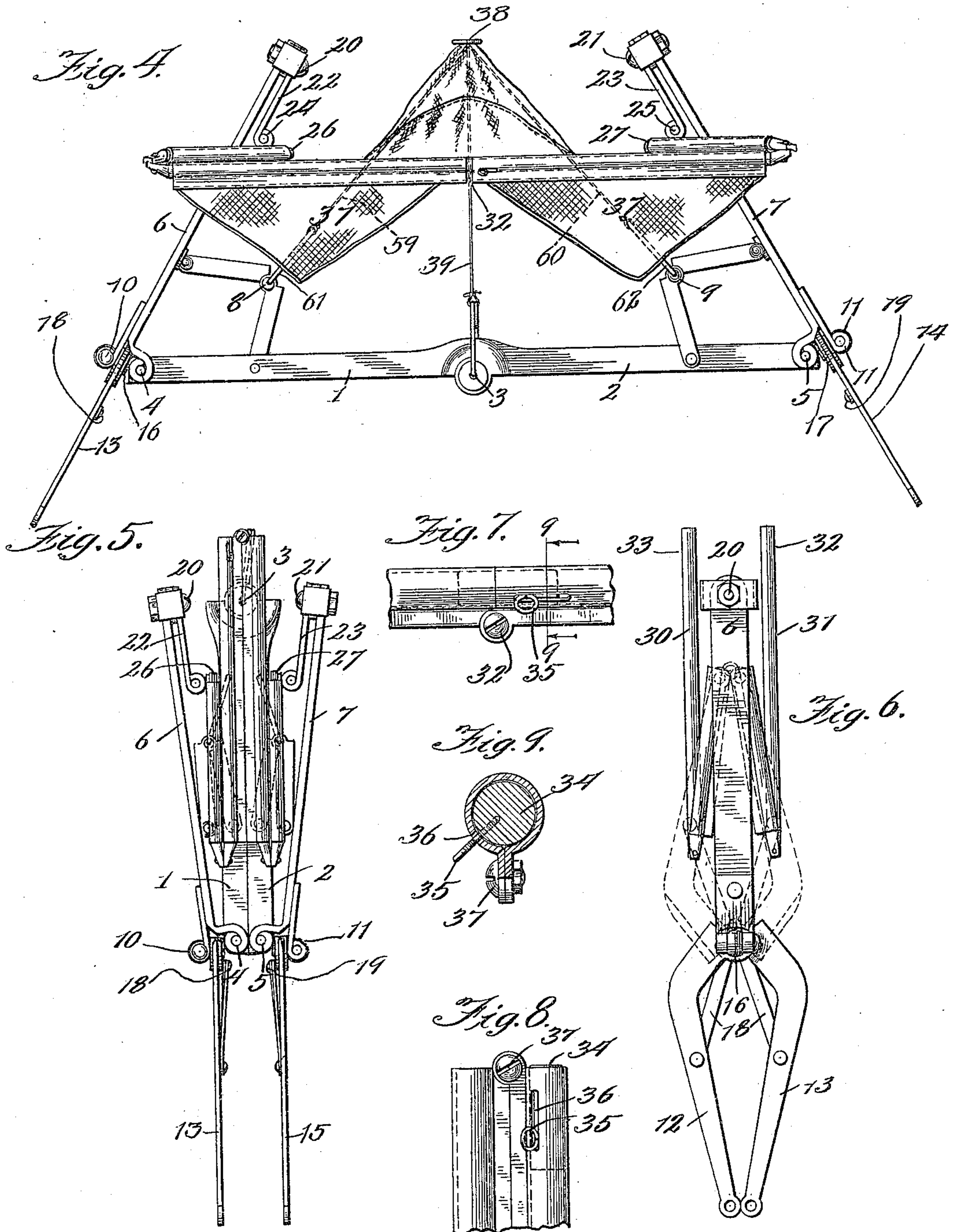
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3 SHEETS—SHEET 2.



Witnesses:
R. D. Perry
A. Knight.

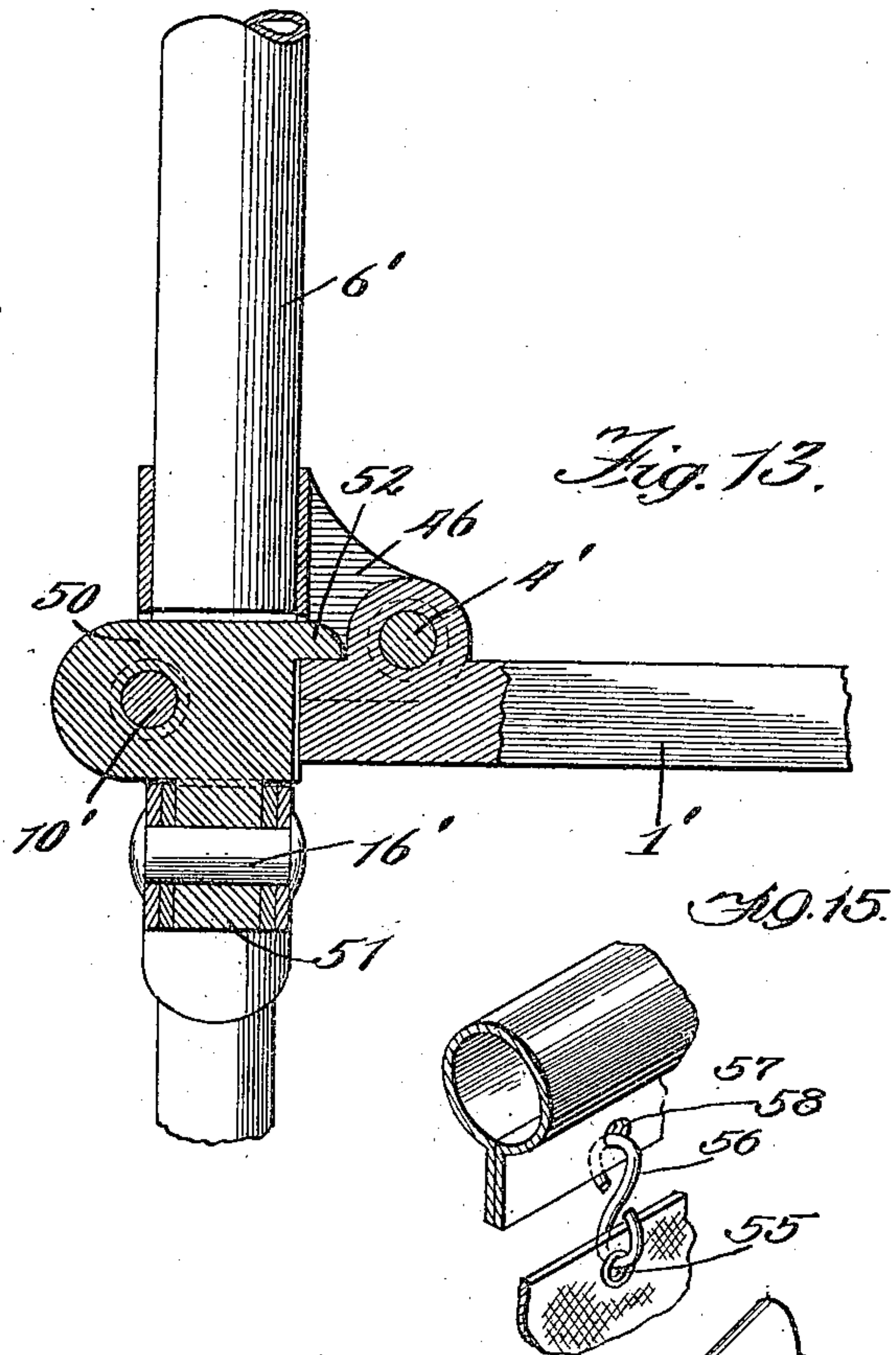
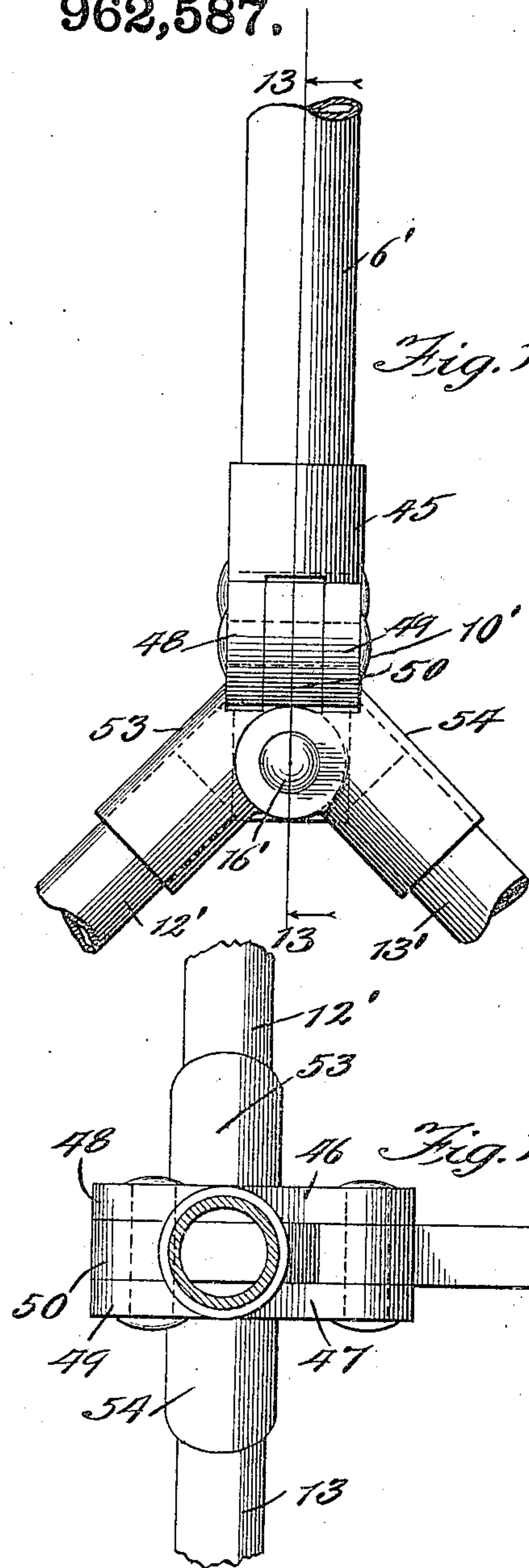
Inventor:
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3 SHEETS—SHEET 3.



Witnesses:
J. D. Perry
A. Knight.

Inventor:
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UNITED STATES PATENT OFFICE.

ALFRED W. H. RAETTIG, OF KLINGERS, MICHIGAN.

FOLDING CRADLE.

962,587.

Specification of Letters Patent. Patented June 28, 1910.

Application filed June 14, 1909. Serial No. 501,958.

To all whom it may concern:

Be it known that I, ALFRED W. H. RAETTIG, a citizen of the United States, residing at Klingers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Folding Cradles, of which the following is a specification.

This invention relates to cradles in which the cradle member is swingingly mounted upon a suitable frame and in which the cradle and frame together are collapsible into a compact bundle without separating any of the parts.

The object of this invention is to provide a knock-down cradle of improved structure whereby the entire structure is adapted to be folded in the smallest compass when not in use, and to be mounted with the maximum degree of stability when in service.

Other and further objects will appear in the following specification and be more specifically pointed out in the appended claims.

The cradle structure contemplated by this invention consists generally of a folding supporting frame, all the members of which are arranged in substantially the same plane and adapted to be folded together one against the other; secondly, the cradle proper is constructed in sections, said sections being adapted to be folded into approximate coincidence with the plane of said cradle supporting frame; and thirdly, the cradle frame supports or leg members which are adapted to be folded into approximate coincidence with the plane of the supporting frame and to be rotated to lie snugly against the folded cradle frame.

In the drawings—Figure 1 is a side elevation of the complete structure embodying my invention. Fig. 2 is an end elevation of the same. Fig. 3 is a section on line 3—3 of Fig. 1. Fig. 4 is a side elevation of the structure shown in Fig. 1, showing the structure about to be collapsed. Fig. 5 is a side elevation after the cradle structure has been collapsed longitudinally. Fig. 6 is an end elevation corresponding to Fig. 5. Fig. 7 is a detail view showing the hinge connection of the side rails. Fig. 8 is a side elevation of the side rail hinge flexed. Fig. 9 is a section on the line 9—9 of Fig. 7. Fig. 10 is a detail view of the connection between the side rail and the cross rail of the cradle body. Fig. 11 is an end elevation of a modified form of the end support. Fig. 12

is a top plan view of the same shown partly in section. Fig. 13 is a section on the line 13—13, Fig. 11. Fig. 14 is a side elevation of the modified structure showing the operation of the same. Fig. 15 is a detail perspective view showing the preferred means for suspending the cradle body from its frame.

Referring more particularly to the drawings, the cradle supporting frame is composed of a longitudinal member comprising sections 1 and 2, said sections being shown on the drawings as solid bars connected at their adjacent ends by the knuckle-joint 3. Connected to the outer ends of said bar sections by means of the hinges 4, 5 are the uprights or standards 6, 7, which may be of any desired construction, being shown in the drawings as solid bars. In order to provide means for setting the standards 6, 7 perpendicularly to the bar sections 1 and 2, said standards and sections are connected by the toggle joint levers 8, 9, whereby said standards are adapted to be folded upon the longitudinal member when the cradle structure is to be collapsed. In order to provide means for supporting the cradle supporting frame the outer ends of the cradle supporting frame are provided with collapsible supports comprising members 12, 13 on one end and 14, 15 on the other end, hinged or pivotally connected respectively at 10 and 11 with said outer ends of the cradle supporting frame. The supports or legs 12 and 13 are hinged together at 16, while the supports 14 and 15 are hinged together at 17. The leg members of said end supports are also connected together by the toggle levers 18, 19, whereby they are adapted to be placed and set up in position, or to be folded together for packing in a manner to be hereinafter referred to.

Mounted to swing about the pivots 20, 21 at the top of the standards 6 and 7 are links 22, 23, the lower ends of which are hinged by pintles 24, 25 to the hinged joints 26, 27 of the cross-rails 28, 29. The cross-rails are thus connected by said hinges 26, 27 in such manner as to fall together into the plane of the cradle support frame. Connecting the outer ends of the cross-rails 28, 29 are the side-rails 30, 31, said side rails being provided intermediately of their ends with knuckle-joints 32, 33, as shown on a large scale in Fig. 7 of the drawings.

Referring now to Figs. 7, 8 and 9 of the

drawings, the hinged connection between the sections of the side-rails 30 and 31 as well as the hinged connections between the sections of the cross-rails 28, 29 are provided with a sliding key 34 with a projection 35 extending through the slot 36 in the wall of one of the tubular sections comprising the side rails. Said slot 36 is made of such length and so positioned as to permit the key 34 to slidably engage the adjacent section to hold the side-rail extended, or to be withdrawn therefrom to permit said side-rail to be folded. The cradle frame comprising the cross-rails 28, 29, and the side-rails 30, 31, has a flexible cradle body 37 which may be attached thereto in any suitable manner, but according to my preferred embodiment, said body is provided with a series of eyelets 55 (see Fig. 15) by means of which the body is suspended with hooks 56 from the flanges 57 of the side rails and cross-rails, said flanges being provided with perforations 58 for suspending said hooks. To the bottom of said cradle body 37 is secured a button 38 which is connected by a cord 39 through the bottom of said body with a wire bail 40, which is pivotally connected with the hinge 3 for the purpose to be hereinafter referred to. Said button is also connected by cords 59 and 60 with the wire bails 61 and 62 which are pivotally attached to the toggle levers 8 and 9 respectively.

Referring now to Fig. 10, the connection between the side-rails and the cross-rails will be seen to consist of a pintle 41 joining said rails, the ends of said rails being provided with lugs 42, 43 respectively, which adapt said rails to be folded together, but at the same time prevent them opening to a greater extent than ninety degrees.

The operation of the device will now be readily understood. When the cradle structure is in the set up position as shown in Fig. 1, and it is desired to collapse the structure for packing into the bundled position, the operator takes hold of the button 38 and raises it into the position shown in Fig. 4, at the same time flexing the toggle levers 3, 8 and 9 by giving a jerk on the button 38 upwardly, when the cradle structure assumes the position shown in Figs. 5 and 6. When the parts have assumed the position shown in these figures, the end supports comprising the leg members 12, 13, may be brought together by flexing the toggle joints 18 and 19, whereupon the legs may be swung on their hinges 10 and 11 into a position in which they will lie close against the uprights 6, 7 of the cradle support. It will be observed that when the structure is in erected position, shown in Fig. 1, the planes of the legs 12, 13 and 15 are approximately coincident with the planes of the standards 6, 7. Moreover,

said leg supports are prevented from rotating under the weight of the cradle by being securely clamped between the sections 1 and 2 and the hinges 10 and 11 respectively.

It is evident that while I have disclosed my improvement by means of the embodiment illustrated in the drawings, that the spirit of my invention contemplates any structure which could be made to act in accordance with the principles underlying the illustrated embodiment thereof. I therefore do not wish to be limited to the specific structure herein shown and described, as it is evident that many slight modifications could be made in the construction and arrangement of the several parts without departing from the broad spirit of my invention. Thus, in the modification shown in Figs. 11, 12, 13 and 14, the standards and leg sections, as well as the members connecting said sections together, are made tubular, while at the same time the refinement of structure in the jointed parts provides a structure that is more rigid and stable when in set up position. In this modification, a longitudinal member 1' is connected in the same manner at each end to one of the standards, the connection on one end only being shown in the drawing. Thus, to connect the tubular section 6' with the longitudinal member 1' a collar 45 secured to the upright 6' is provided with a slotted lug to form the bearing cheeks 48, 49. Between said bearing cheeks is mounted on the pivot 10' the semi-circular lugged portion of the connection member 50. Adjacent to the extreme end of the longitudinal member 1' the connection member 50 is provided above with a lug 52, which engages the end of said longitudinal member when the cradle is in set up position. Integral with said member 50 and depending therefrom is a bearing block 51, which carries the pivot 16', said pivot serving to pivotally mount the tubular connections 53, 54. Connected to the said tubular connections 53, 54, are the tubular leg members 12' and 13'.

Referring now to Fig. 14, the operation of this modification will be apparent. It will be seen that as long as the cradle support is in its set up position, the legs 12' and 13' will be maintained spread out by reason of the weight of the entire device. When it is desired to fold the support, the standard 6' is first rotated on its pivot 4', while at the same time the legs 12' and 13' are brought together about the pivot 16'. As soon as the lug 52 is freed from the end of the longitudinal member 1', the leg supports are free to swing about the pivot 10' into their upper position shown in dotted lines in Fig. 14. The entire structure is then ready to be collapsed upon the longitudinal member 1' in the manner already described in the other embodiment of the device. By an inspection

tion of Figs. 11, 12, 13 and 14, it will be seen that the angular movements of the several members take place substantially in the vertical planes of the longitudinal member 1' and the end supports supporting the same.

What I claim is:

1. In a folding cradle, the combination with a jointed supporting frame collapsible endwise, of a cradle frame also collapsible endwise, a flexible cradle body suspended from the cradle frame, and a flexible connection extending between said cradle body and each of the joints of said supporting frame whereby the supporting frame may be collapsed by collapsing the cradle body.

2. In a folding cradle, the combination of a supporting frame comprising members connected together in such manner as to be collapsible in the plane of said frame, means for supporting said frame, said means being collapsible transversely of the plane of said supporting frame, and a cradle frame swingingly mounted on said supporting frame, said cradle frame being composed of jointed side members collapsible longitudinally in a plane transverse to the plane of said cradle frame and jointed end members collapsible laterally in the plane of said cradle frame.

3. In a folding cradle, the combination of a supporting frame comprising members connected together in such manner as to be collapsible in the plane of said frame, means for supporting said frame, said means being collapsible transversely to the plane of said supporting frame, and a cradle frame swingingly mounted on said supporting frame, said cradle frame being comprised of jointed side members collapsible longitudinally in a plane transverse to the plane of said cradle frame, and jointed end members collapsible laterally in the plane of said cradle frame, the plane of said cradle frame being transverse to that of said supporting frame.

4. In a folding cradle the combination with a supporting frame having its members arranged in substantially the same plane and collapsible one against the other in that plane, of a cradle frame arranged in a plane transverse to the plane of said supporting frame, said cradle frame comprising members collapsible to lie one against the other in the plane of the cradle frame, and means connecting the cradle frame with the supporting frame whereby the collapsed cradle frame may be brought into close contact with the collapsed supporting frame.

5. In a folding cradle, a cradle supporting frame comprising jointed members arranged in the same plane and adapted to be folded into close contact one with the other, and means for supporting said supporting frame, said means being collapsible into approximate coincidence with the plane of said

frame and pivotally mounted with said supporting frame in such manner as to adapt it to be swung in the plane of said frame to lie against the frame when folded.

6. In a folding cradle, a cradle supporting frame comprising hinged members collapsible in the plane of said frame, of supporting means for said supporting frame comprising laterally collapsing leg members, and means movably connecting said leg members to the supporting frame whereby said supporting means may be swung in the plane of said frame to lie against the folded supporting frame.

7. In a folding cradle the combination with a supporting frame having its members arranged in the same plane and collapsible one against the other, of supporting means therefor, said supporting means being collapsible laterally to the plane of said frame and rotatable thereon in the plane of said supporting frame.

8. In a folding cradle, the combination of a cradle supporting frame comprising members arranged in the same plane and collapsible in said plane, and supports for said frame, each of said supports being swingingly mounted on an axis in said plane and on another axis transverse to said plane.

9. In a folding cradle the combination with a folding supporting frame comprising a jointed longitudinal member, uprights hinged to said longitudinal member, all of said members being arranged in the same plane, a cradle body swingingly mounted on said uprights and collapsible in the plane of said supporting frame and in a plane transverse thereto, and means interengaging between said cradle body and the joint of said longitudinal member whereby the collapsing movement of the cradle body is communicated to the supporting frame.

10. In a device of the nature described, the combination of a longitudinal member, an upright member pivotally connected therewith, said members being provided with cooperating clamping jaws, and collapsible legs rotatable into and out of clamping engagement with said clamping jaws.

11. In a device of the nature described, the combination with a longitudinally arranged toggle lever, of uprights hinged to the outer ends of said lever, the hinged ends of the uprights and lever being provided with cooperating clamping means, and collapsible supports movable into and out of clamping relation with the clamping means.

12. In a device of the nature described, the combination with a swinging cradle, of a collapsible supporting frame therefor, said frame comprising a longitudinal member provided with a toggle joint, an upright connected therewith by a toggle joint, and means operatively connecting the cradle

with each of said toggle joints whereby the frame may be collapsed by collapsing the cradle.

13. In a device of the nature described, the combination with a longitudinal member provided with a toggle joint intermediately of its ends, of uprights pivotally connected with the ends of said member, toggle levers connecting said uprights with said member, and means operatively connected to each of said toggle levers and toggle joint for simultaneously balancing them.

14. In a device of the character described, the combination with the uprights, of a member pivotally connected with each of said uprights, said member being provided with a toggle joint intermediate of said pivotal connections, and said member and uprights being provided with cooperating clamping means, and supports collapsible laterally and movable into and out of clamping engagement with said clamping means, said clamping means being adapted to hold said supports against lateral collapse.

15. In a device of the character described, the combination with the uprights, of a member pivotally connected with each of said uprights, said member being provided with a toggle joint intermediate of said pivotal connections, and said member and uprights being provided with cooperating clamping means and collapsible supports suitably mounted to swing outwardly from the ends of said member into and out of clamping engagement with said clamping means, said clamping means being operatively related to said toggle joint.

16. In a device of the character described, the combination with the uprights, of a member pivotally connected with each of said uprights, said member being provided with a toggle joint intermediate of said pivotal connections, and said member and uprights being provided with cooperating clamping

means and collapsible supports rotatable outwardly from the ends of said member into and out of clamping engagement with said clamping means.

17. In a device of the character described, the combination with the uprights, of a member pivotally connected with each of said uprights, said member being provided with a toggle joint intermediate of said pivotal connections, and said member and uprights being provided with cooperating clamping means and collapsible supports rotatable in two planes into and out of clamping engagement with said clamping means.

18. In a device of the character described, the combination with the uprights, of a member pivotally connected with each of said uprights, said member being provided with a toggle joint intermediate of said pivotal connections, and said member and uprights being provided with cooperating clamping means and collapsible supports rotatable relatively to said uprights in planes coincident with and transverse to the plane of said member and uprights into and out of clamping engagement with said clamping means.

19. In a device of the character described, the combination with a collapsible swinging support, of a collapsible frame support comprising a toggle-jointed member and uprights pivoted to said member, toggle levers connecting said uprights to said members, collapsible leg supports for said frame, and means acting in the central plane of said frame support for simultaneously balancing the toggle levers and joint.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 27 day of May A. D. 1909.

ALFRED W. H. RAETTIG.

Witnesses:

PERRY L. TURNER,
GRACE BAUM.