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Octrooihouder(s):

**BakerCorp International B.V.
te Zevenbergschen Hoek.**

(72)

Uitvinder(s):

**Evert Stobbelaar te Lemelerveld.
Matthijs Alexander Johannes Dokter te Wilp.**

(74)

Gemachtigde:

ir. H.V. Mertens c.s. te Rijswijk.

(54) **Mobile tank for storing a liquid.**

(57) A mobile tank for storing a liquid, said mobile tank comprising a bottom part, a top part and side walls extending from the bottom part to the top part to form a liquid reservoir, wherein a safety rail is pivotable connected to an upper surface of the top part, which safety rail is pivotable from a laid down position into a raised position, and vice versa, the safety rail comprises two, and only two, support legs positioned at a first distance from each other and extending in a flat plane, the safety rail further comprises a rail part connected to upper ends of the support legs, which rail part extends in the plane and in a direction transverse to the support legs over a second distance being larger than the first distance of the support legs, the safety rail comprises one, and only one, connector by which the safety rail is connected to the upper surface, and each of the support legs is at a lower end thereof pivotable coupled to the connector.

Title: Mobile tank for storing a liquid

5 FIELD OF THE INVENTION

The invention relates to mobile tanks for storing a liquid. The mobile tanks have typically a bottom part, a top part and side walls extending from the bottom part to the top part to form a liquid reservoir. In use, liquid is stored in the liquid reservoir. In practice, these tanks are often used to temporarily store a liquid, until it is transported to a different location.

10 Long term storage of liquid is also possible.

The top part has an upper surface. Persons need to be able to perform operations on the upper surface in a safe manner. To ensure this, safety rails are provided on the upper surface to prevent that a person falls from the upper surface. In this situation, the safety rail extends from the upper surface.

15 Since the mobile tanks are in general often transported, it is required that the safety rail can be placed in a lowered configuration.

BACKGROUND OF THE INVENTION

The invention is based on the insight that the known mobile tanks are difficult to
20 build. The invention is furthermore based on the insight that the known safety rails are not user friendly.

SUMMARY OF THE INVENTION

The invention has the objective to provide an improved or alternative mobile tank.
25 The mobile tank according to the present invention comprises a bottom part, a top part and side walls extending from the bottom part to the top part to form a liquid reservoir, wherein;
- a safety rail is pivotable connected to an upper surface of the top part, which safety rail is pivotable from a laid down position into a raised position, and vice versa,
- the safety rail comprises two, and only two, support legs positioned at a first distance from
30 each other and extending in a flat plane,
- the safety rail further comprises a rail part connected to upper ends of the support legs, which rail part extends in the plane and in a direction transverse to the support legs over a second distance being larger than the first distance of the support legs,
- the safety rail comprises one, and only one, connector by which the safety rail is connected
35 to the upper surface, and
- each of the support legs is at a lower end thereof pivotable coupled to the connector.

This allows that during the building of the mobile tank, only one connector has to be connected to the upper surface to mount the safety rail. This operation can be performed by a single person in an easier manner, when compared to safety rails which are connected by multiple connectors. Due to this, the mobile tank can be built in a more efficient manner. A
5 mobile tank has often multiple safety rails connected to the upper surface. Which means that this can lead to a relatively large reduction in the production time and labour costs of the mobile tank. In addition to this, the mobile tank has a simpler construction.

In an embodiment of the mobile tank according to the invention, the safety rail has a T-like form.

10 In an embodiment of the mobile tank according to the invention, the two support legs are pivotable about one, and only one, pivot axis.

In an embodiment of the mobile tank according to the invention, the two support legs are coupled to the connector via one, and only one, pivot axle.

In an embodiment of the mobile tank according to the invention, the second distance
15 of the rail part is between 5 – 15 times, preferably 10 times, larger than the first distance of the support legs.

In an embodiment of the mobile tank according to the invention, the first distance of the support legs is between 1 and 20 cm.

In an embodiment of the mobile tank according to the invention, the two support legs
20 are formed by a first tube and a parallel extending second tube, the rail part comprises a lower rail section, an intermediate rail section and an upper rail section, the lower rail section is formed by a third tube connected at the upper end of the first tube and extending perpendicular to the first tube and a fourth tube connected at the upper end of the second tube and extending perpendicular to the second tube, which third and fourth tube extend in
25 opposite directions, the intermediate rail section is formed by a fifth tube connected to the third tube and extending perpendicular to the third tube and away from the first tube and by a sixth tube connected to the fourth tube and extending perpendicular to the fourth tube and away from the second tube, and the upper rail section is formed by a seventh tube connected to the fifth and sixth tube and extending perpendicular to the fifth and sixth tube.

30 In an embodiment of the mobile tank according to the invention, the first, second, third, fourth, fifth, sixth, and seventh tube all extend in the flat plane.

In an embodiment of the mobile tank according to the invention, the rail part is extendable such that the second distance over which the rail part extends can be increased.

In an embodiment of the mobile tank according to the invention, the third and
35 seventh tube are extendable and/or the fourth and seventh tube are extendable.

In an embodiment of the mobile tank according to the invention, the safety rail is formed by a single tubular element which is bend to form the first, second, third, fourth, fifth, sixth, and seventh tube.

In an embodiment of the mobile tank according to the invention, the safety rail
5 extends in the laid down position under a first angle smaller than 10° relative to the upper surface and in the raised position at a second angle between 80° - 100° relative to the upper surface.

In an embodiment of the mobile tank according to the invention, the connector comprises a base plate which is connected to the upper surface and two upright plates and
10 wherein each of the two support legs is pivotable coupled to a different one of the upright plates.

In an embodiment of the mobile tank according to the invention, each support leg comprises a longitudinal leg axis and is movable relative to the upright plate to which it is connected in the direction of its longitudinal leg axis, each support leg further comprises a
15 fixation member, each upright plate comprises an upper fixation slot and a lower fixation slot, the upper fixation slots of the two upright plates are positioned to receive the fixation members of the support legs when the safety rail is in its raised position moved along the longitudinal leg axes and towards the upright plates in order to prevent that the safety rail is pivoted out of the raised position, and the lower fixation slots of the two upright plates are
20 positioned to receive the fixation members of the support legs when the safety rail is in its laid down position moved along the longitudinal leg axes and towards the upright plates in order to prevent that the safety rail is pivoted out of the laid down position.

In an embodiment of the mobile tank according to the invention, the upper fixation slots are formed to allow that gravity working on the safety rail located in the raised position
25 facilitates the movement of the fixation members into the upper fixation slots and the lower fixation slots are formed to allow that gravity working on the safety rail located in the laid down position facilitates the movement of the fixation members into the lower fixation slots.

In an embodiment of the mobile tank according to the invention, the safety rail comprises at least one tension member, such as a spring, the tension member is (directly or
30 indirectly) attached to at least one of the support legs and to a pivot axle by which said support leg is coupled to the connector, and the tension member actively pulls the support legs towards the connector. This tends to facilitate that the fixation members remain in the upper fixation slots or the lower fixation slots, when the safety rail is located in the raised position or the laid down position, respectively.

35 In an embodiment of the mobile tank according to the invention, each of the support legs comprises at the lower end a plate recess in which one of the upright plates is positioned such that the support leg extends at opposite sides of the respective upright

plate. This tends to increase the stability of the safety rail during the pivoting from the laid down position 8 in the raised position, and vice versa.

In an embodiment of the mobile tank according to the invention, multiple safety rails are connected to the upper surface, which safety rails are positioned to surround at least
5 part of the upper surface.

BRIEF DESCRIPTION OF THE DRAWINGS

Embodiments of the mobile tank will be described by way of example only, with reference to the accompanying schematic drawings in which corresponding reference
10 symbols indicate corresponding parts, and in which:

Figure 1 schematically shows a view in perspective of an embodiment of the mobile tank according to the invention, which mobile tank comprises a safety rail located in a raised position,

Figure 2 schematically shows a view in perspective of the mobile tank of fig. 1, which
15 mobile tank comprises a safety rail located in a laid down position,

Figure 3 schematically shows an enlarged view in perspective of one of the safety rails of the mobile tank of fig. 1 in the raised position,

the Figures 4 and 5 schematically show enlarged views of the support legs and the connector of the safety rail of fig. 3,

20 Figure 6 schematically shows an enlarged view in perspective of the safety rail of fig. 3 in the laid down position,

Figure 7 schematically shows an enlarged view of the support legs and the connector of the safety rail of fig. 6,

Figure 8 schematically shows a front view an alternative embodiment of the safety
25 rail for the mobile tank according to the invention,

Figure 9 schematically shows a side view of the safety rail of fig. 3 in the raised position,

the Figure 10-13 schematically show enlarged side views of the support legs and the connector of the safety rail of fig. 9, which safety rail is moved from the raised position into
30 the laid down position,

Figure 14 schematically shows a front view of another alternative embodiment of the safety rail for the mobile tank according to the invention,

Figure 15 schematically shows an enlarged view in perspective of the extendable rail part of the safety rail of fig. 14,

35 Figure 16 schematically shows a front view of the safety rail of fig. 14,

Figure 17 schematically shows an enlarged view in perspective of the extendable rail part of the safety rail of fig. 16,

Figure 18 schematically shows a front view of another alternative embodiment of the safety rail for the mobile tank according to the invention, and

Figure 19 schematically shows an enlarged front view of the support legs and the connector of the safety rail of fig. 18.

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DETAILED DESCRIPTION OF THE DRAWINGS

Figure 1 shows a view in perspective of an embodiment of the mobile tank 1 according to the invention. The mobile tank 1 comprises a bottom part 2, a top part 3 and side walls 4 extending from the bottom part 2 to the top part 3 to form a liquid reservoir 6. In use, a liquid is stored in the liquid reservoir 6. A safety rail 7 is pivotable connected to an upper surface 5 of the top part 3. The safety rail 7 is pivotable from a laid down position 8 into a raised position 9, and vice versa. The safety rail 7 comprises two, and only two, support legs 10 positioned at a first distance D1 from each other and extending in a flat plane 13. The safety rail 7 further comprises a rail part 14 connected to upper ends 11 of the support legs 10, which rail part 14 extends in the plane and in a direction transverse to the support legs 10 over a second distance D2 being larger than the first distance D1 of the support legs 10. The safety rail 7 comprises one, and only one, connector 18 by which the safety rail 7 is connected to the upper surface 5, and each of the support legs 10 is at a lower end 12 thereof pivotable coupled to the connector 18.

20 This allows that during the building of the mobile tank 1, only one connector 18 has to be connected to the upper surface 5 to mount the safety rail 7. This operation can be performed by a single person in an easier way, when compared to safety rails which are connected by multiple connectors 18. Due to this, the mobile tank 1 can be built in a more efficient manner. A mobile tank 1 has often multiple safety rails 7 connected to the upper surface 5, which means that this can lead to a relatively large reduction in the production time and labour costs of the mobile tank 1. In addition to this, the mobile tank 1 has a simpler construction.

The mobile tank 1 comprises wheels 41 and is constructed to be transported over a road. The mobile tank 1 can be coupled to a vehicle, but other ways of transporting the mobile tank 1 are possible.

The upper surface 5 of the top part 3 comprises four surface edges 40 which define an area where an upper plate is located. The upper plate forms part of the upper surface 5 and is not shown to obtain a view inside the liquid reservoir 6. In figure 1, the several safety rails 7 are positioned side by side on one of the surface edges 40. In practice, the other three surface edges 40 are in the same manner provided with safety rails 7. This way, the safety rails 7 surround the upper surface 5. The safety rails 7 are positioned in a raised

position 9. This way, the safety rails 7 can function as a safety barrier for a person standing on the upper surface 5.

In figure 2, the safety rails 7 are positioned in a laid down position 8. This facilitates the transportation of the mobile tank 1.

5 Figure 3 shows an enlarged view in perspective of one of the safety rails 7 of the mobile tank 1 of fig. 1. The safety rail 7 has a T-like form. The figures 4 and 5 show enlarged views of the support legs 10 and the connector 18 of the safety rail 7 of fig. 3.

The safety rail 7 is located in the raised position 9. The safety rail 7 extends perpendicular to the upper surface 5. In other embodiments of the mobile tank 1, the safety
10 rail 7 extends under an angle between 80° and 100° degrees with the upper surface 5.

The two support legs 10 are pivotable about one, and only one, pivot axis 19. The two support legs 10 are coupled to the connector 18 via one, and only one, pivot axle 20.

The connector 18 comprises a base plate 30 which is connected to the upper surface 5 and two upright plates 31. Each of the two support legs 10 is pivotable coupled to a
15 different one of the upright plates 31.

Each of the support legs 10 comprises at the lower end 12 a plate recess 36 in which one of the upright plates 31 is positioned, such that the support leg 10 extends at opposite sides 37, 38 of the respective upright plate 31. This increases the stability of the safety rail 7 during the pivoting from the laid down position 8 in the raised position 9, and vice versa. In
20 other examples, each support leg 10 is completely positioned at one of the sides 37, 38 of the upright plate 31 to which the support leg 10 is connected.

The two support legs 10 are formed by a first tube 21 and a parallel extending second tube 22. The rail part 14 comprises a lower rail section 15, an intermediate rail section 17 and an upper rail section 16. The lower rail section 15 is formed by a third tube
25 23 connected at the upper end 11 of the first tube 21 and extending perpendicular to the first tube 21 and a fourth tube 24 connected at the upper end 11 of the second tube 22 and extending perpendicular to the second tube 22, which third and fourth tube 24 extend in opposite directions. The intermediate rail section 17 is formed by a fifth tube 25 connected to the third tube 23 and extending perpendicular to the third tube 23 and away from the first
30 tube 21 and by a sixth tube 26 connected to the fourth tube 24 and extending perpendicular to the fourth tube 24 and away from the second tube 22. The upper rail section 16 is formed by a seventh tube 27 connected to the fifth and sixth tube 26 and extending perpendicular to the fifth and sixth tube 26. The first, second, third, fourth, fifth, sixth, and seventh tube 27 all extend in the flat plane 13. In figure 3, the first, second, third, fourth, fifth, sixth, and seventh
35 tube 27 are made of separate tube elements which are interconnected.

Figure 6 shows an enlarged view in perspective of the safety rail 7 of fig. 3 in the laid down position 8. The safety rail 7 is positioned at an angle of around 5° with the upper

surface 5. In other embodiments of the mobile tank 1, the safety rail 7 extends under an angle between 0° and 10° degrees with the upper surface 5.

Figure 7 shows an enlarged view of the support legs 10 and the connector 18 of the safety rail 7 of fig. 6.

5 Figure 8 shows a front view and figure 9 a side view of an alternative embodiment of the safety rail 7 for the mobile tank 1 according to the invention. The safety rail 7 only differs from the one shown in fig. 3, in that the safety rail 7 is formed by a single tubular element 29, which is bent to form the first, second, third, fourth, fifth, sixth, and seventh tube 27.

The second distance D2 of the rail part 14 is around 10 times larger than the first
10 distance D1 of the support legs 10. In other embodiments of the mobile tank 1, said second distance D2 is between 5 – 15 times larger than said first distance D1.

The first distance D1 of the support legs 10 is around 16 cm. In other examples, said first distance D1 is between 1 and 20 cm.

The figure 10-13 show enlarged side views of the support legs 10 and the connector
15 18 of the safety rail 7 of fig. 9, which safety rail 7 is moved from the raised position 9 into the laid down position 8.

Each support leg 10 comprises a longitudinal leg axis 32 and is movable relative to the upright plate 31 to which it is connected in the direction of its longitudinal leg axis 32. Each support leg 10 further comprises a fixation member 33. Each upright plate 31
20 comprises an upper fixation slot 34 and a lower fixation slot 35. The upper fixation slots 34 of the two upright plates 31 are positioned to receive the fixation members 33 of the support legs 10 when the safety rail 7 is in its raised position 9 moved along the longitudinal leg axes 32 and towards the upright plates 31 in order to prevent that the safety rail 7 is pivoted out of the raised position 9. The lower fixation slots 35 of the two upright plates 31 are
25 positioned to receive the fixation members 33 of the support legs 10 when the safety rail 7 is in its laid down position 8 moved along the longitudinal leg axes 32 and towards the upright plates 31 in order to prevent that the safety rail 7 is pivoted out of the laid down position 8.

In figure 10, the safety rail 7 is located in the raised position 9. The fixation members 33 of the support legs 10 are located in the upper fixation slots 34 of the upright plates 31.
30 The fixation members 33 and the upper fixation slots 34 prevent that the safety rail can be moved out the raised position 9 by only pivoting the safety rail 7.

In figure 11, the safety rail 7 is moved along the longitudinal leg axes 32 and away from the upright plates 31 so that the fixation members 33 are positioned outside the upper fixation slots 34. This movement is shown by arrow 51. The safety rail 7 is movable relative
35 to the upright plates 31, due to recesses 42 provided in the support legs 10. The recesses 42 allow that the support leg 10 can be moved in the direction of the longitudinal leg axis 32 and along the pivot axle 20 with which the support leg 10 is coupled to the connector 18.

In figure 12, the safety rail 7 is pivoted towards the laid down position 8, such that the fixation members 33 are located just above the lower fixation slots 35. This movement is shown by arrow 52.

5 In figure 13, the safety rail 7 pivoted further towards the laid down position 8 so that the fixation members 33 enter the lower fixation slots 35. The safety rail 7 is subsequently moved along the longitudinal leg axes 32 and towards the upright plates 31. This movement is shown by arrow 53. During this movement, the fixation members 33 are moved further into the lower fixation slots 35. The safety rail 7 is now located in the laid down position 8. The fixation members 33 and the lower fixation slots 35 prevent that the safety rail can be moved
10 out the laid down position 8 by only pivoting the safety rail 7.

As the figures 10-13 show, the upper fixation slots 34 are formed to allow that gravity working on the safety rail 7 located in the raised position 9 facilitates the movement of the fixation members 33 into the upper fixation slots 34 and the lower fixation slots 35 are formed to allow that gravity working on the safety rail 7 located in the laid down position 8
15 facilitates the movement of the fixation members 33 into the lower fixation slots 35.

Figure 14 shows a front view of another alternative embodiment of the safety rail 7 for the mobile tank 1 according to the invention. The rail part 14 is extendable such that the second distance D2 over which the rail part 14 extends can be increased. The third and seventh tube 27 are extendable. In other examples, the fourth and seventh tube 27 are
20 extendable. In yet other examples, the third, fourth and seventh tube 27 are extendable.

Figure 15 shows an enlarged view in perspective of the extendable rail part 14 of the safety rail 7 of fig. 14.

In the figures 16 and 17, the third and seventh tube 27 are extended when compared with the figures 14 and 15.

25 Figure 18 shows a front view of another alternative embodiment of the safety rail 7 for the mobile tank 1 according to the invention, and figure 19 shows an enlarged front view of the support legs 10 and the connector 18 of the safety rail 7 of fig. 18. The safety rail 7 only differs from the one shown in fig. 8, in that two tension members 39 are provided. The tension members 39 are springs. In other examples, other types of tension members 39 can
30 be used. The tension members 39 are indirectly (via the fixations members 33) attached to the support legs 10 and also to a pivot axle 20 by which the support legs 10 are coupled to the connector 18. The tension members 39 actively pull the support leg 10 towards the connector 18. This facilitates that the fixation members 33 remain in the upper fixation slots 34 or the lower fixation slots 35, when the safety rail 7 is located in the raised position 9 or
35 the laid down position 8, respectively. In other embodiments, the safety rail 7 comprises only one tension member 39 or more than two tension members 39.

As required, detailed embodiments of the present invention are disclosed herein; however, it is to be understood that the disclosed embodiments are merely exemplary of the invention, which can be embodied in various forms. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis
5 for the claims and as a representative basis for teaching one skilled in the art to variously employ the present invention in virtually any appropriately detailed structure. Further, the terms and phrases used herein are not intended to be limiting, but rather, to provide an understandable description of the invention.

The terms "a" or "an", as used herein, are defined as one or more than one. The term
10 plurality, as used herein, is defined as two or more than two. The term another, as used herein, is defined as at least a second or more. The terms including and/or having, as used herein, are defined as comprising (i.e., open language, not excluding other elements or steps). Any reference signs in the claims should not be construed as limiting the scope of the claims or the invention.

15 The mere fact that certain measures are recited in mutually different dependent claims does not indicate that a combination of these measures cannot be used to advantage.

It will be apparent to those skilled in the art that various modifications can be made to the device and method without departing from the scope as defined in the claims.

CONCLUSIES

1. Mobiele tank voor opslag van een vloeistof, welke mobiele tank een bodemdeel, een bovendeele en zijwanden die zich van het bodemdeel naar het bovendeele uitstrekken om een vloeistofreservoir te vormen omvat, waarbij;

- een veiligheidsrek zwenkbaar verbonden is met een bovenoppervlak van het bovendeele,

5 welk veiligheidsrek zwenkbaar is van een neergelaten positie naar een opgeheven positie, en visa versa,

- het veiligheidsrek twee, en slechts twee, steunbenen gepositioneerd op een eerste afstand van elkaar en zich uitstrekkend in een plat vlak omvat,

10 - het veiligheidsrek verder een rekdeel verbonden met bovineinden van de steunbenen, welk rekdeel zich uitstrekt in het vlak en in een richting dwars op de steunbenen over een tweede afstand groter is dan de eerste afstand van de steunbenen,

- het veiligheidsrek omvat een, en slechts een connector waarmee het veiligheidsrek verbonden is met het bovenoppervlak en

- elk van de steunbenen is een ondereinde daarvan zwenkbaar gekoppeld met de connector.

15

2. Mobiele tank volgens conclusie 1, waarbij het veiligheidsrek een T-achtige vorm heeft.

3. Mobiele tank volgens conclusie 1 of 2, waarbij de twee steunbenen zwenkbaar om een, en slechts een, zwenkas zijn.

20

4. Mobiele tank volgens een der voorgaande conclusies, waarbij de twee steunbenen aan de connector gekoppeld zijn via een, en slechts een, zwenkas.

5. Mobiele tank volgens een der voorgaande conclusies, waarbij de tweede afstand van het rekdeel tussen 5 - 15 maal groter is dan de eerste afstand van de steunbenen.

25

6. Mobiele tank volgens een der voorgaande conclusies, waarbij de eerste afstand van de steunbenen tussen 1 en 20 cm ligt.

7. Mobiele tank volgens een der voorgaande conclusies, waarbij ;

30

- de twee steunbenen worden gevormd door een eerste buis en een evenwijdig uitstrekkende tweede buis,

- het rek een onderreksectie, een tussenliggende reksectie en een bovenreksectie omvat,

- de onderreksectie wordt gevormd door een derde buis verbonden aan het bovineinde van

35

de eerste buis en zich loodrecht uitstrekkend op de eerste buis en een vierde buis verbonden

aan het bovineinde van de tweede buis en zich loodrecht uitstrekkend op de tweede buis, welke derde en vierde buis zich in tegengestelde richtingen uitstrekken,

- de tussengelegen reksectie wordt gevormd door een vijfde buis verbonden met de derde buis en zich loodrecht uitstrekkend op de derde buis en weg van de eerste buis en een zesde buis verbonden met de vierde buis en zich loodrecht uitstrekkend op de vierde buis en weg van het tweede buis,
- de bovenreksectie wordt gevormd door een zevende buis verbonden met de vijfde en zesde buis en loodrecht uitstrekkend op de vijfde en zesde buis.

8. Mobiele tank volgens een der voorgaande conclusies, waarbij het rekdeel zodanig verlengbaar is dat de tweede afstand waarover het rekdeel zich uitstrekt vergroot kan worden.

9. Mobiele tank volgens conclusie 8 in combinatie met conclusie 7, waarbij de derde en zevende buis verlengbaar zijn en/of de vierde en zevende buis verlengbaar zijn.

10. Mobiele tank volgens een der voorgaande conclusies in combinatie met conclusie 7, waarbij de veiligheidsrek wordt gevormd door een enkel buisvormig element dat is gebogen om de eerste, tweede, derde, vierde, vijfde, zesde en zevende buis te vormen.

11. Mobiele tank volgens een der voorgaande conclusies, waarbij het veiligheidsrek zich in de neergelaten positie onder een eerste hoek kleiner dan 10^0 ten opzichte van het bovenoppervlak en in de opgeheven positie een tweede hoek tussen 80^0 - 100^0 opzichte van het bovenoppervlak uitstrekt.

12. Mobiele tank volgens een der voorgaande conclusies, waarbij de connector omvat een basisplaat die is verbonden met het bovenvlak en twee opstaande platen en waarbij elk van de beide steunbenen zwenkbaar gekoppeld is met een verschillende van de opstaande platen.

13. Mobiele tank volgens conclusie 12, waarbij;

- elk steunbeen een longitudinale beenas omvat en ten opzichte van de opstaande plaat waar het mee verbonden is beweegbaar in de richting van de longitudinale beenas is,
- elk steunbeen verder een fixeerorgaan omvat,
- elke opstaande plaat een bovenfixatiesleuf en een onderfixatiesleuf omvat,
- de bovenfixatiesleuven van de twee opstaande platen gepositioneerd zijn om de fixatieorganen van de steunbenen te ontvangen wanneer het veiligheidsrek in de opgeheven

positie bewogen wordt langs de longitudinale beenassen en naar de opstaande platen om te voorkomen dat het veiligheidsrek uit de opgeheven positie gezwenkt wordt, en

- de onderfixatiesleuven van de twee opstaande platen gepositioneerd zijn om de fixatieorganen van de steunbenen te ontvangen wanneer het veiligheidsrek in de neergelaten

5 positie bewogen wordt langs de longitudinale beenassen en naar de opstaande platen om te voorkomen dat het veiligheidsrek uit de neergelaten positie gezwenkt wordt.

14. Mobiele tank volgens conclusie 13, waarbij de bovenfixatiesleuven gevormd zijn om te zorgen dat de zwaartekracht werkend op het veiligheidsrek in de opgeheven positie de

10 beweging van de fixatieorganen in de bovenfixatiesleuven faciliteert en de onderfixatiesleuven gevormd zijn om te zorgen dat de zwaartekracht werkend op het veiligheidsrek in de neergelaten positie de beweging van de fixatieorganen in de onderfixatiesleuven faciliteert.

15 15. Mobiele tank volgens een der voorgaande conclusies, waarbij ;

- het veiligheidsrek ten minste een spanorgaan, zoals een veer, omvat,

- het spanorgaan bevestigd is aan ten minste een van de steunbenen en aan een zwenkas waarmee genoemd steunbeen gekoppeld is met de connector en

- het spanorgaan actief de steunbenen naar de connector trekt.

20

16. Mobiele tank volgens een der voorgaande conclusies in combinatie met conclusie 12, waarbij elk van de steunbenen aan het ondereinde een plaatuitsparing omvat waarin een van de opstaande platen zodanig gepositioneerd is dat het steunbeen zich aan weerszijden van de respectievelijke opstaande plaat uitstrekt.

25

17. Mobiele tank volgens een der voorgaande conclusies, welke mobiele tank omvat meerdere veiligheidsrekken verbonden met het bovenoppervlak, welke veiligheidsrekken gepositioneerd zijn om ten minste een deel van het bovenoppervlak te omgeven.

30

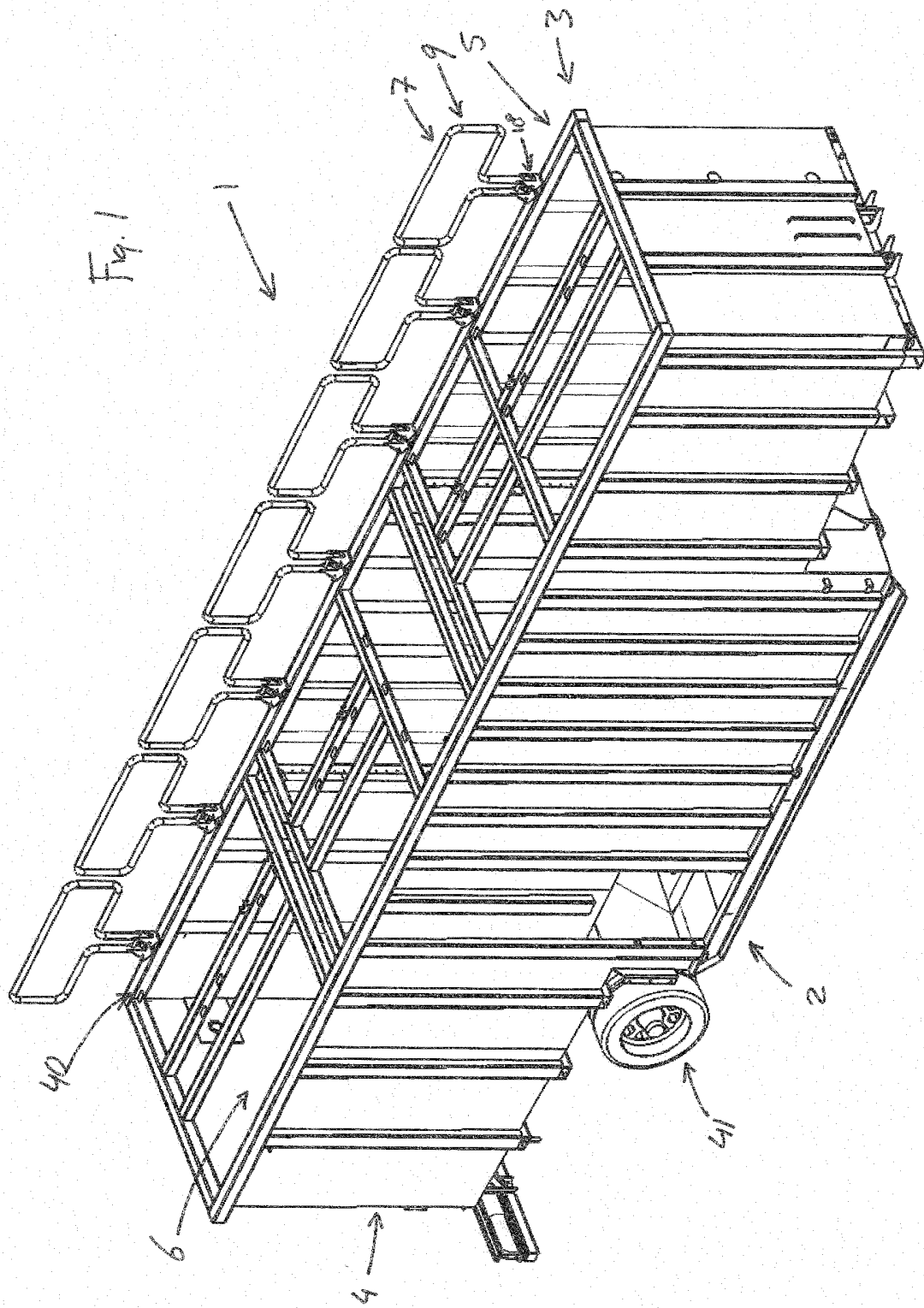
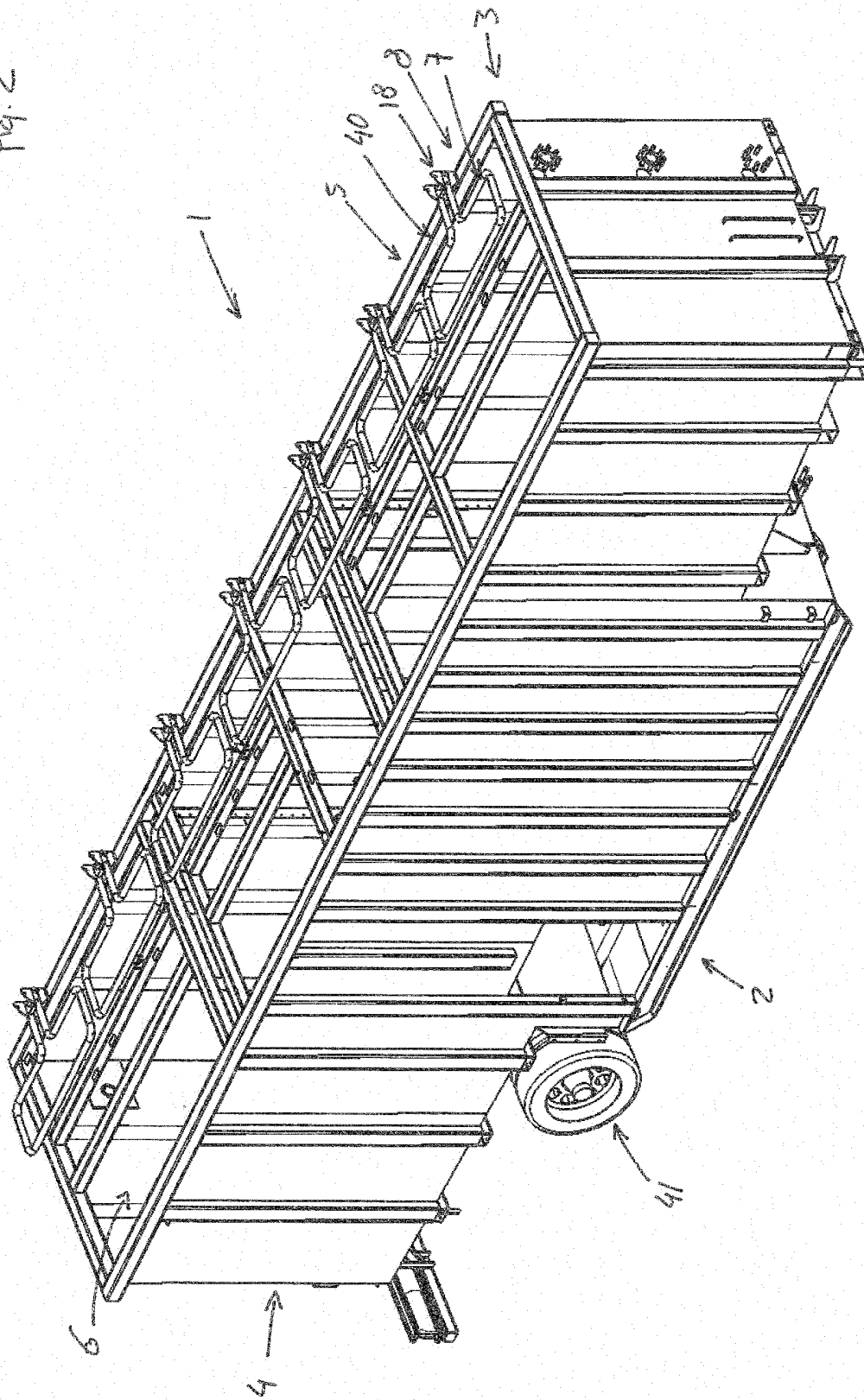
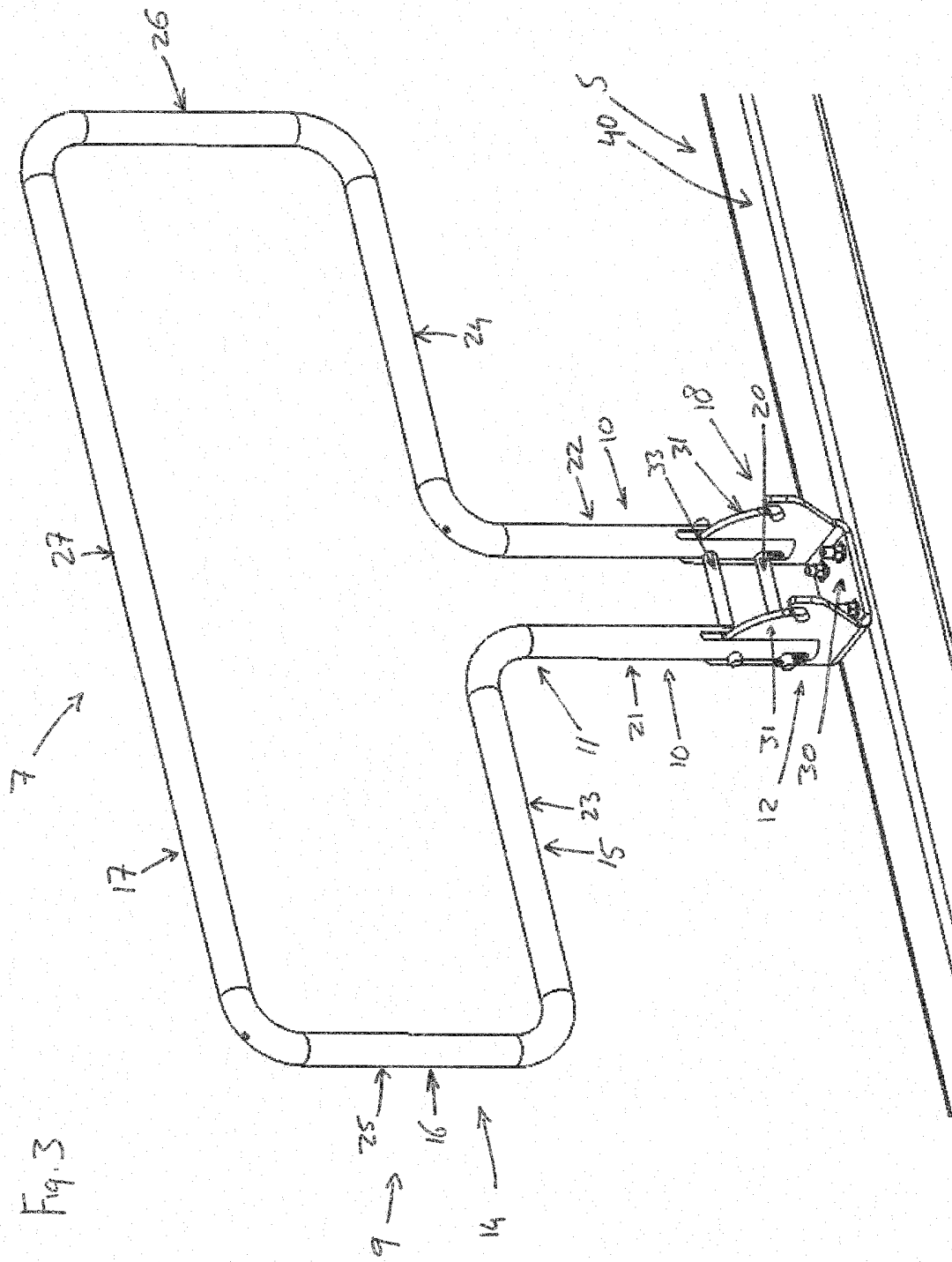


Fig. 2





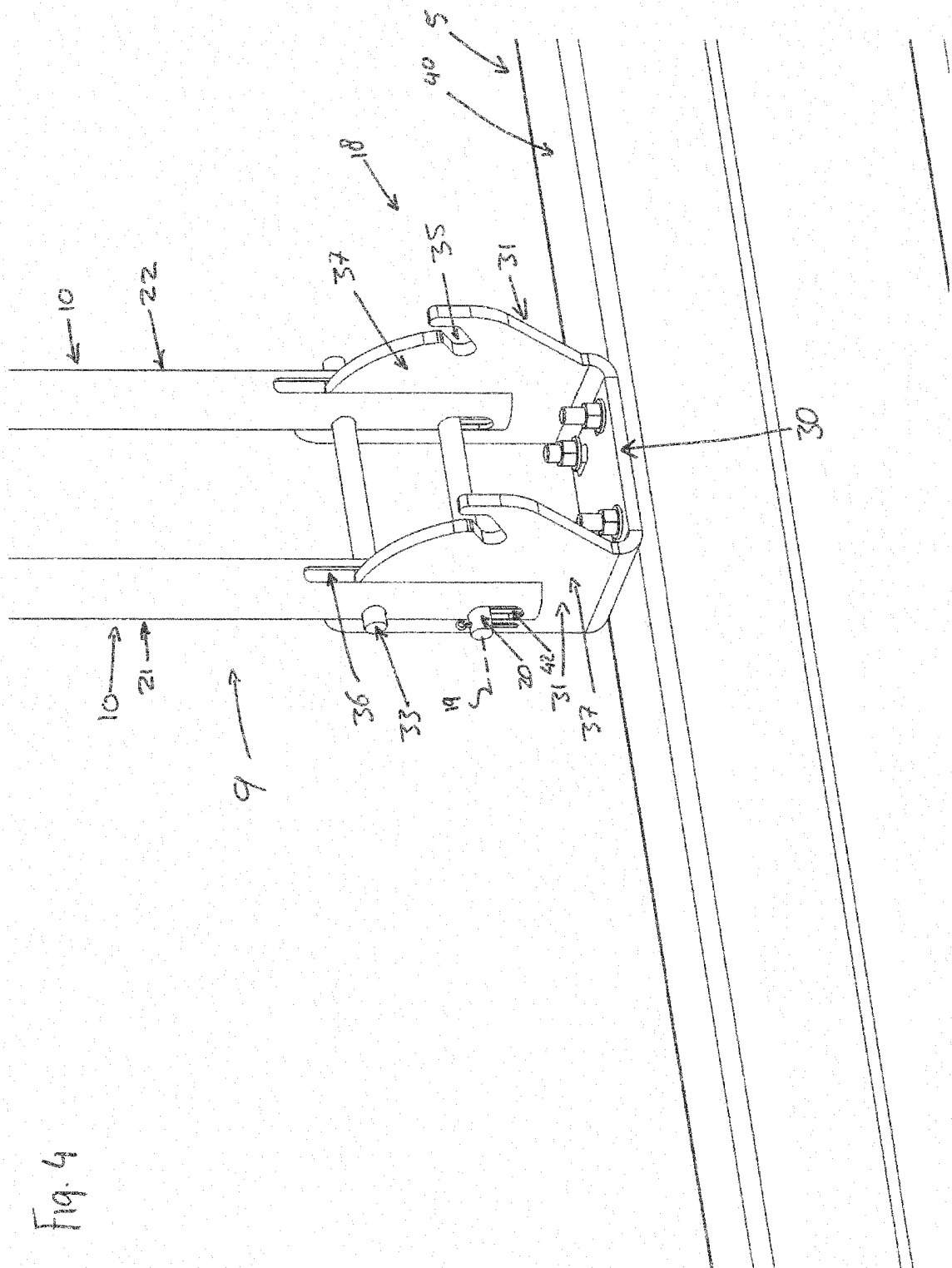


Fig. 5

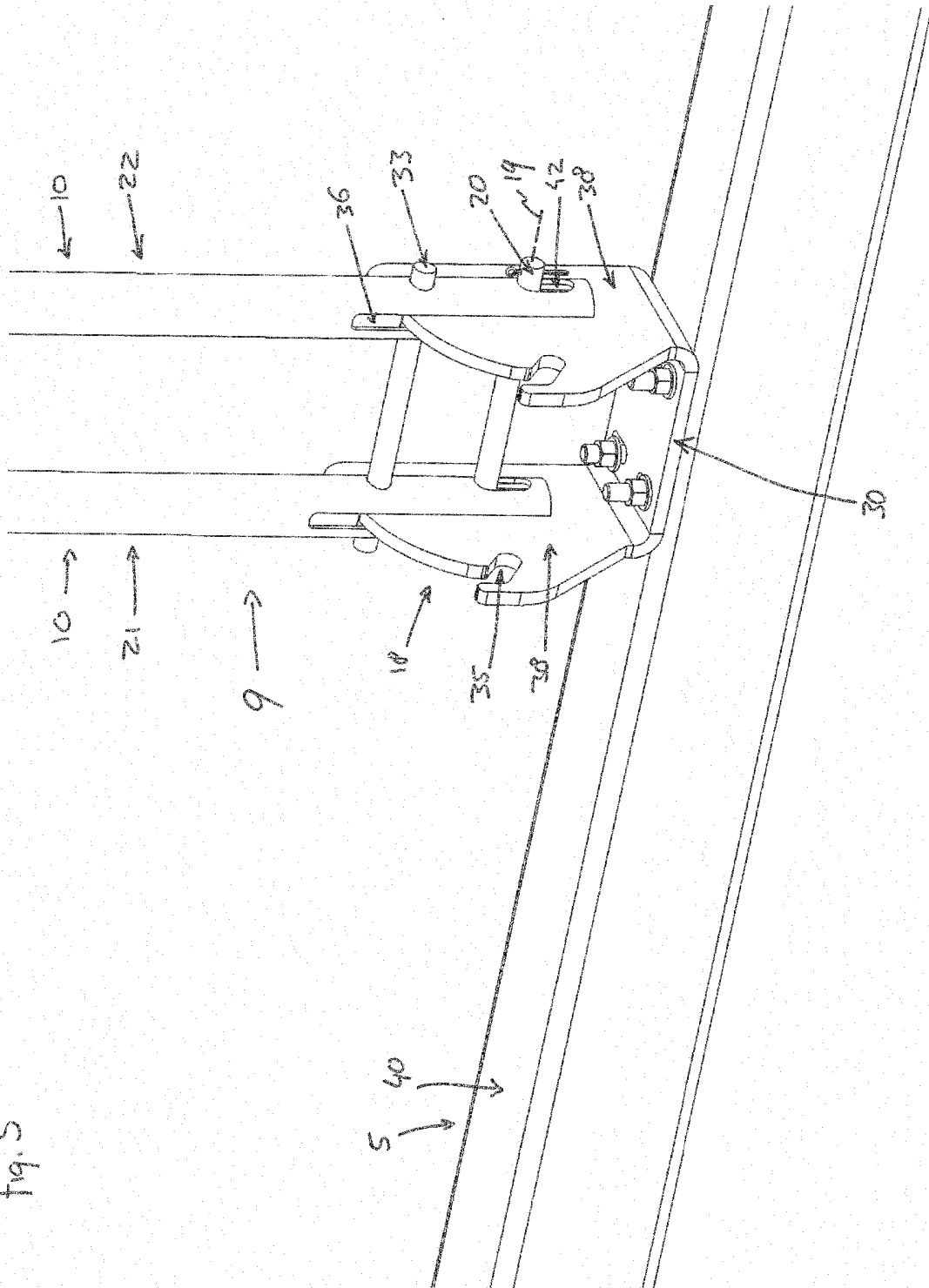


Fig. 6

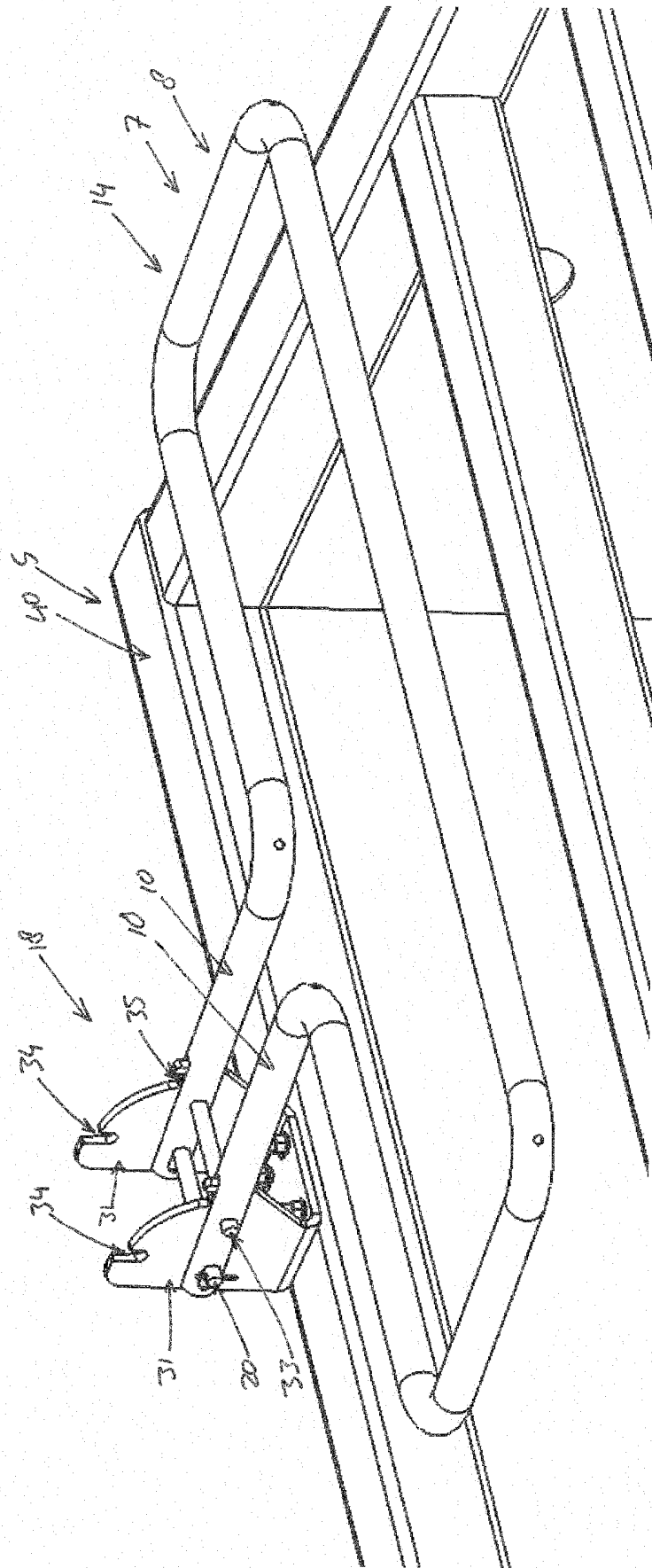
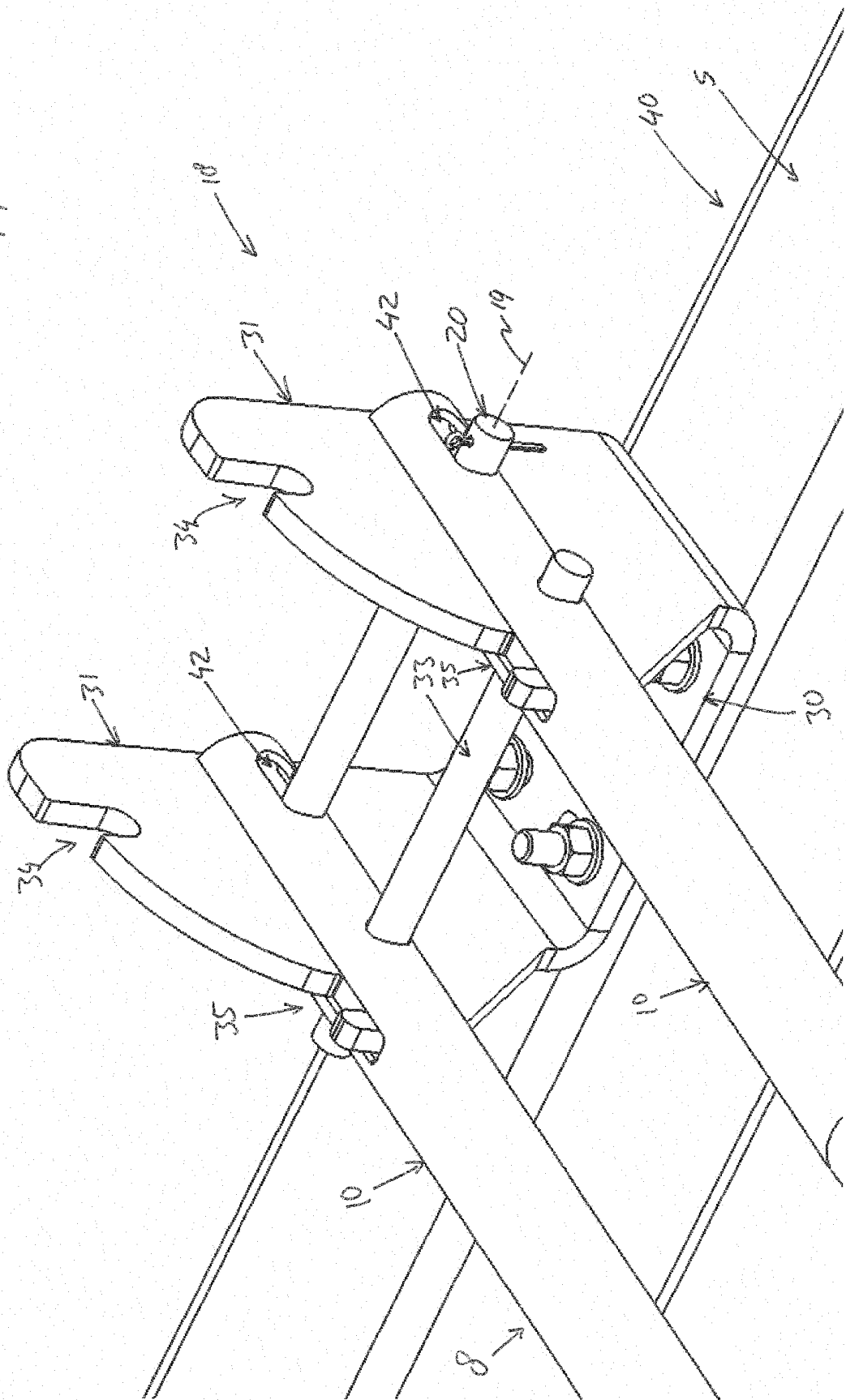


Fig. 7



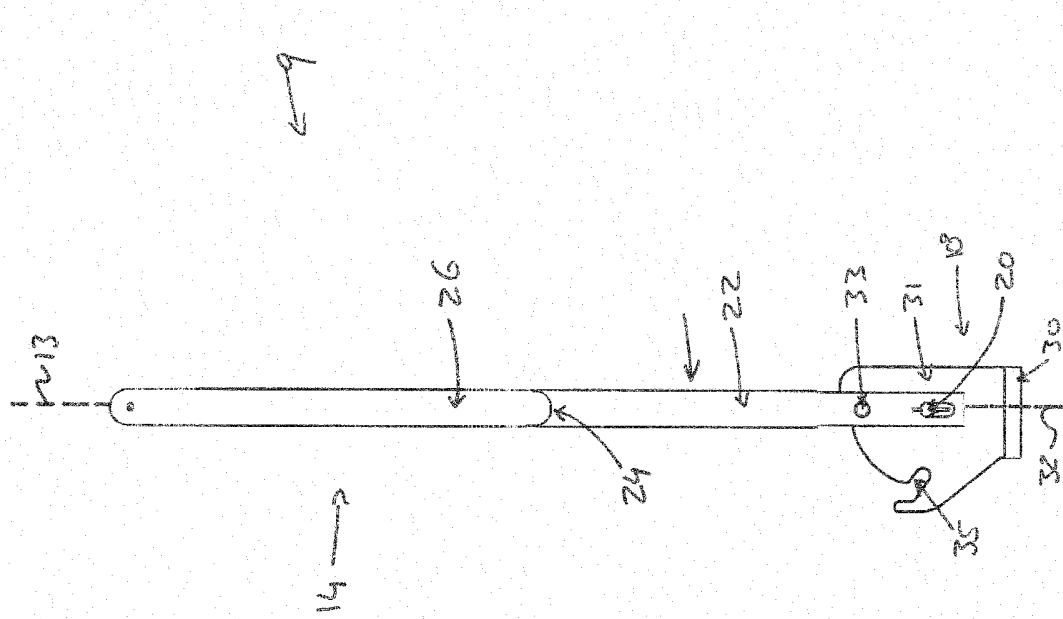


Fig. 9

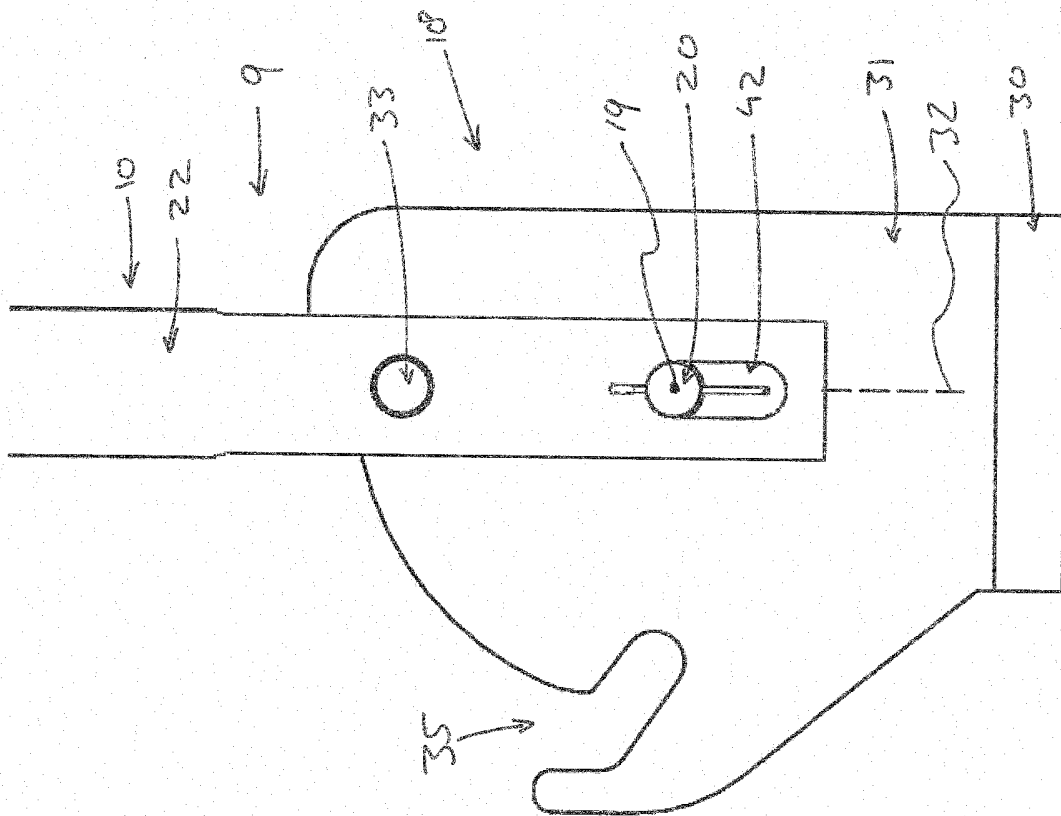


Fig. 10

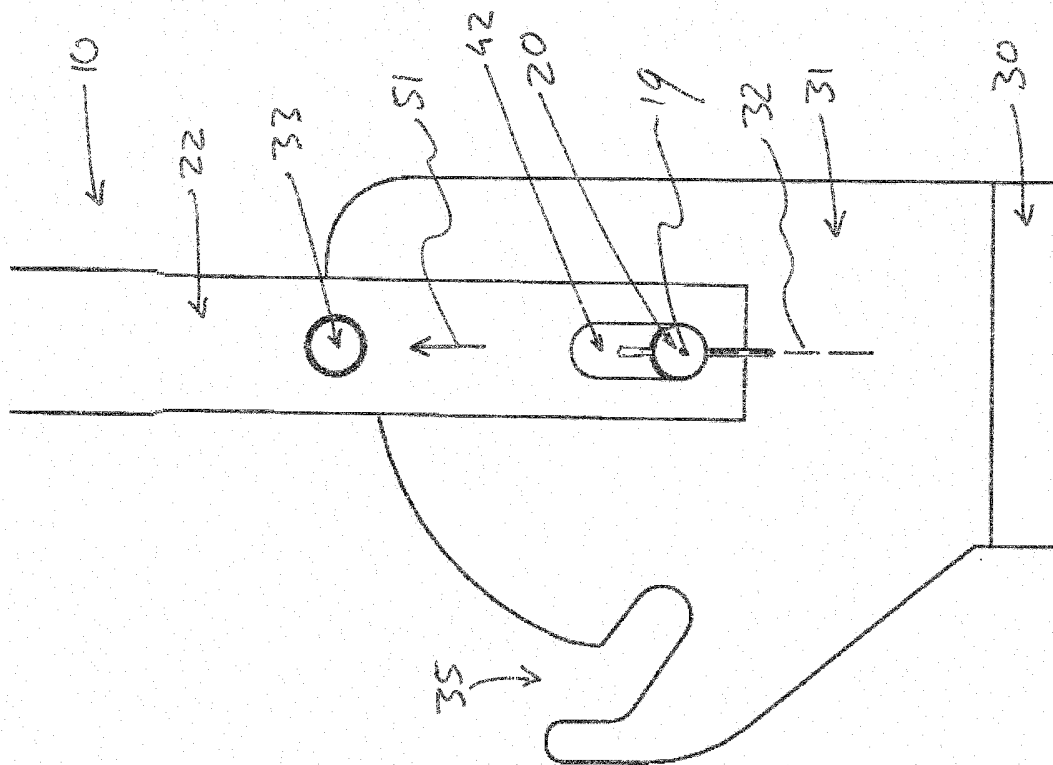


Fig. 11

Fig. 12

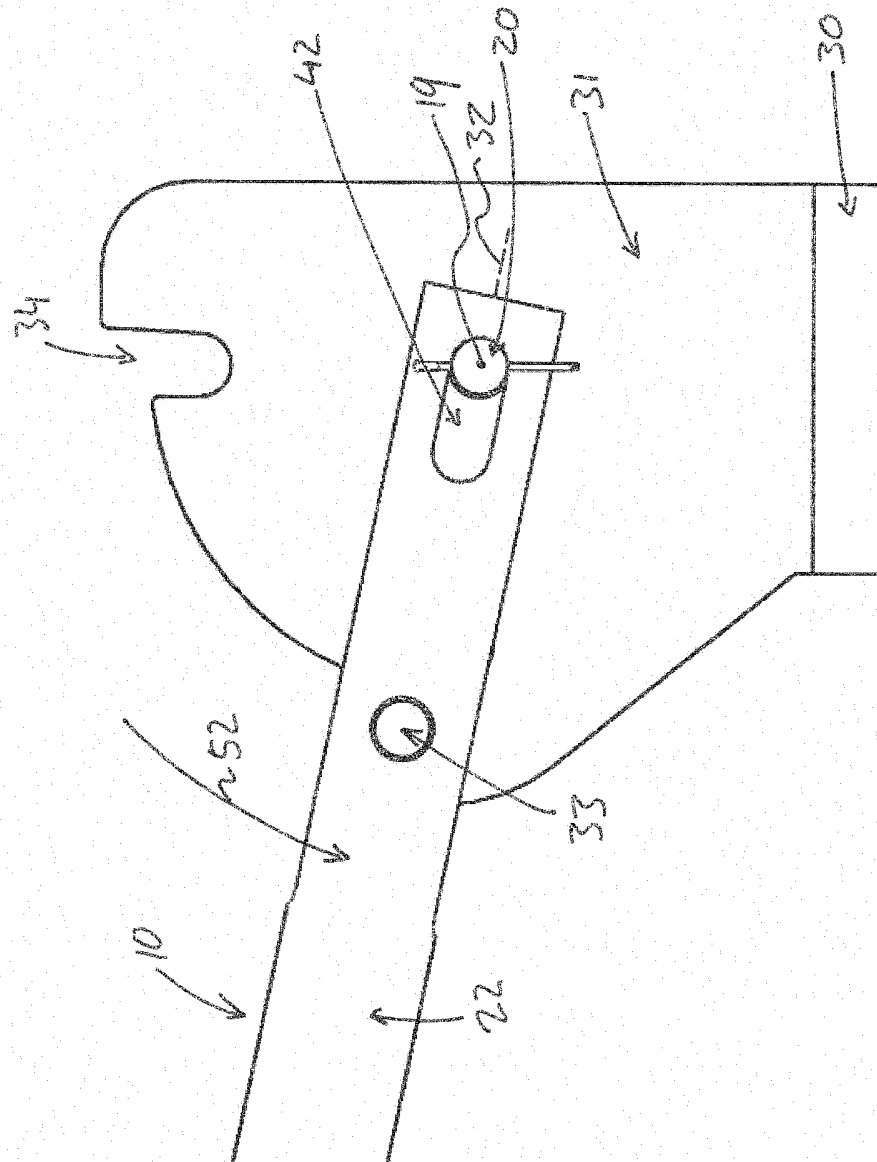
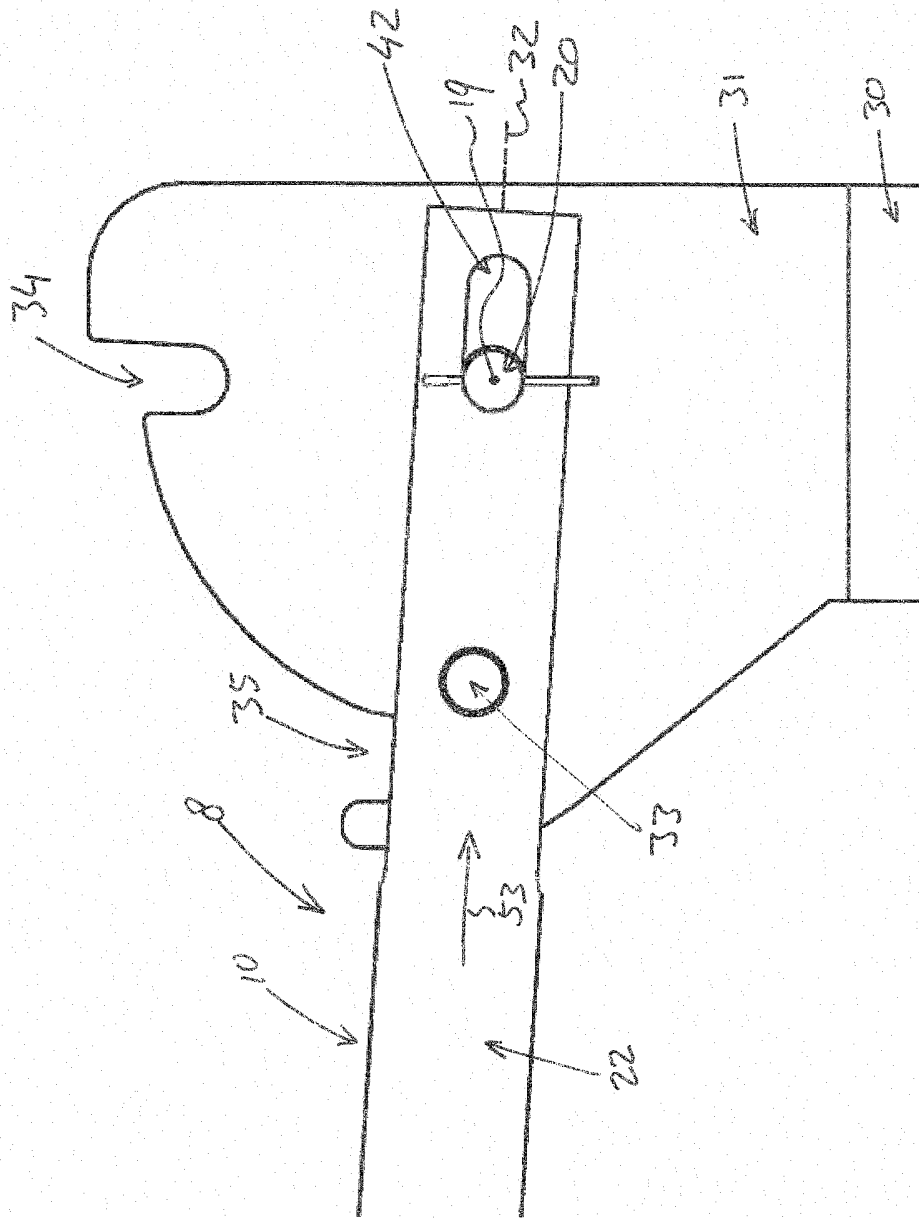
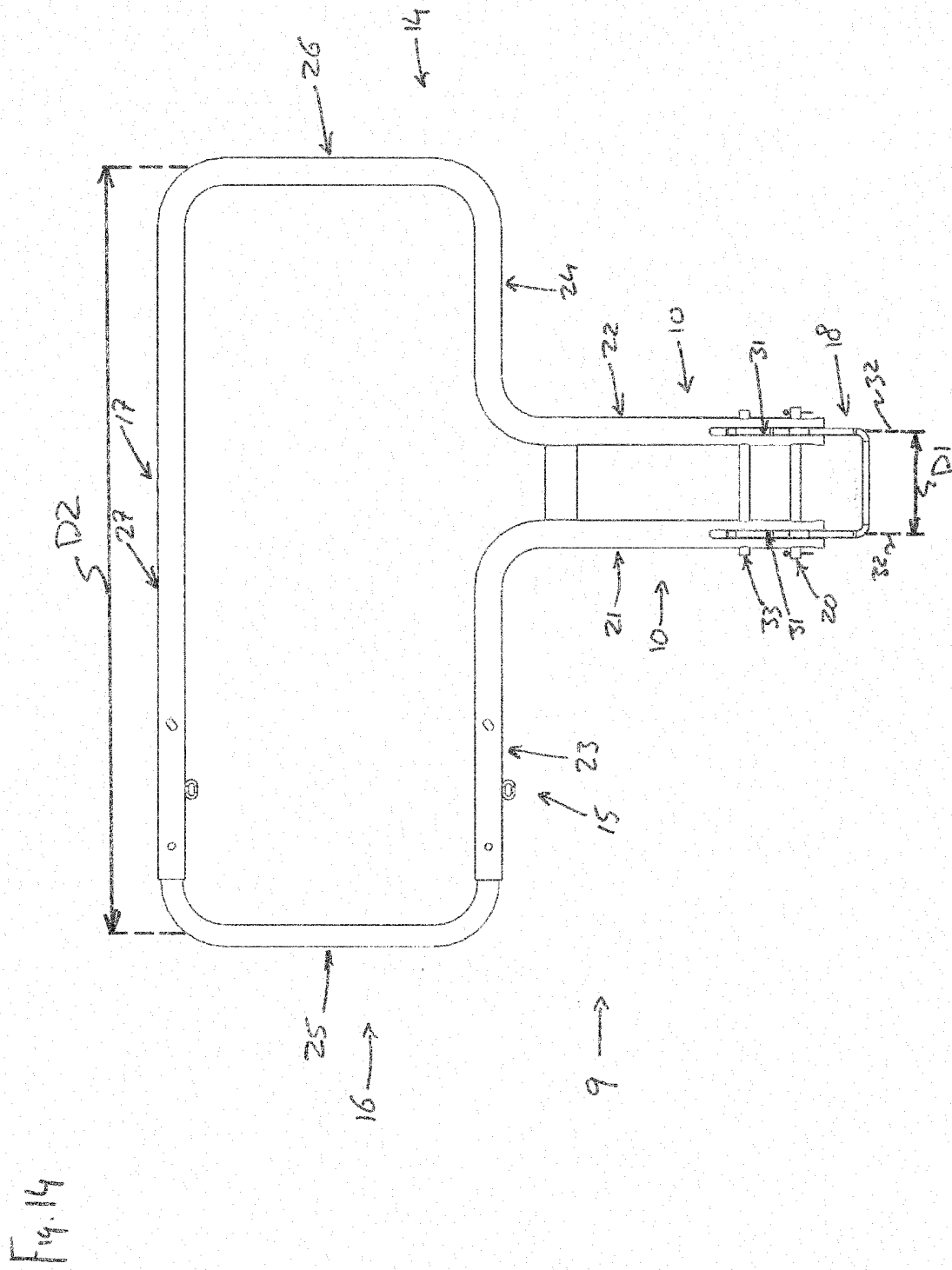


Fig. 13





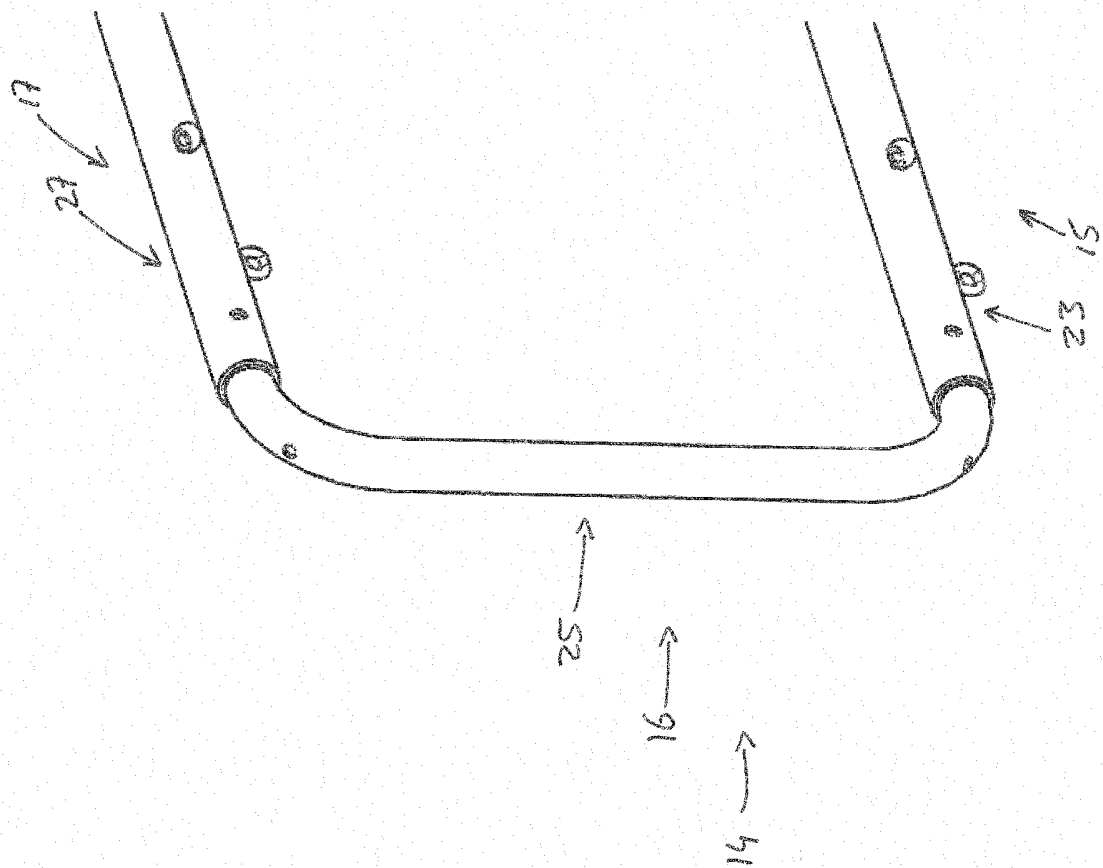
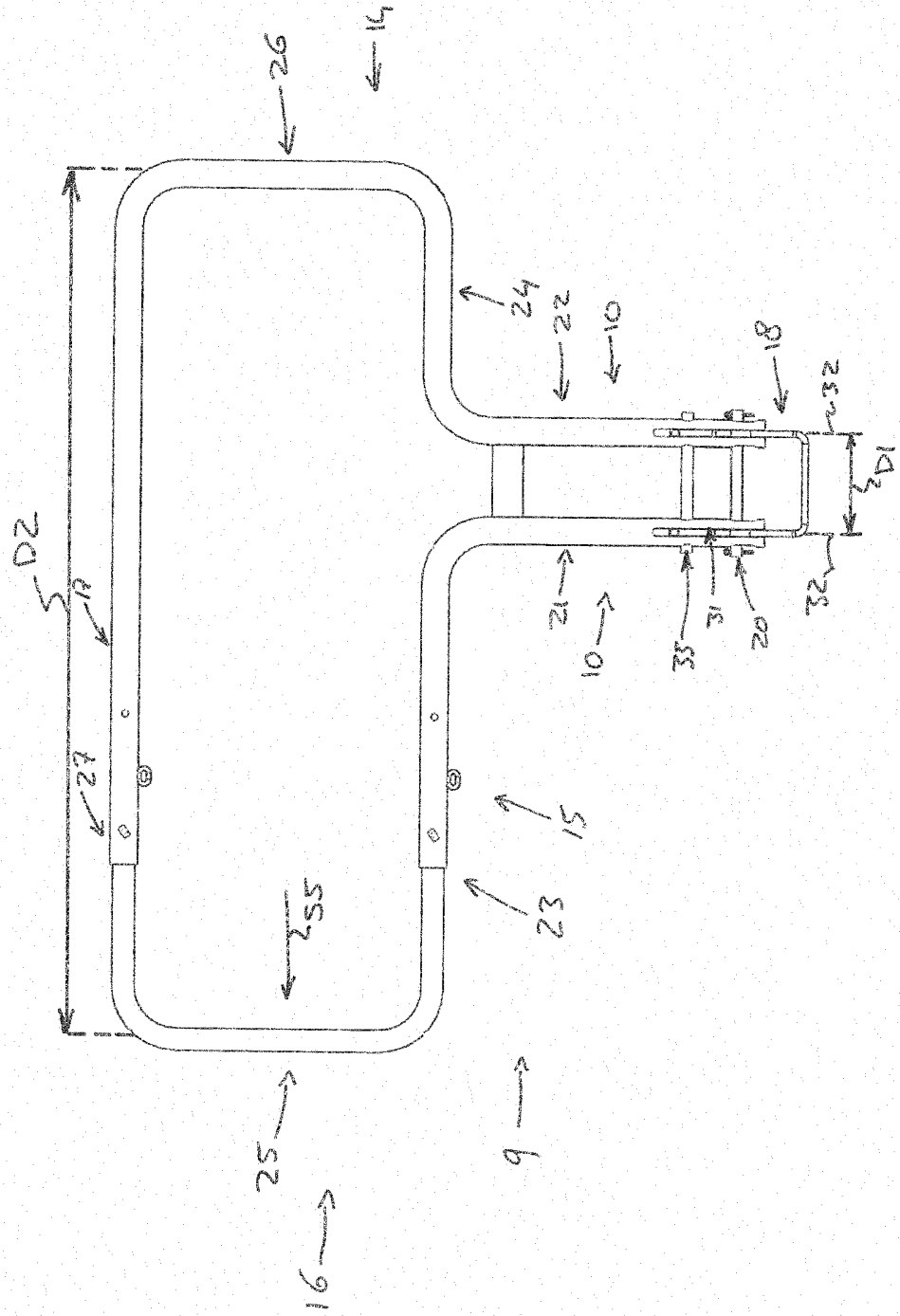


Fig. 15

Fig. 16



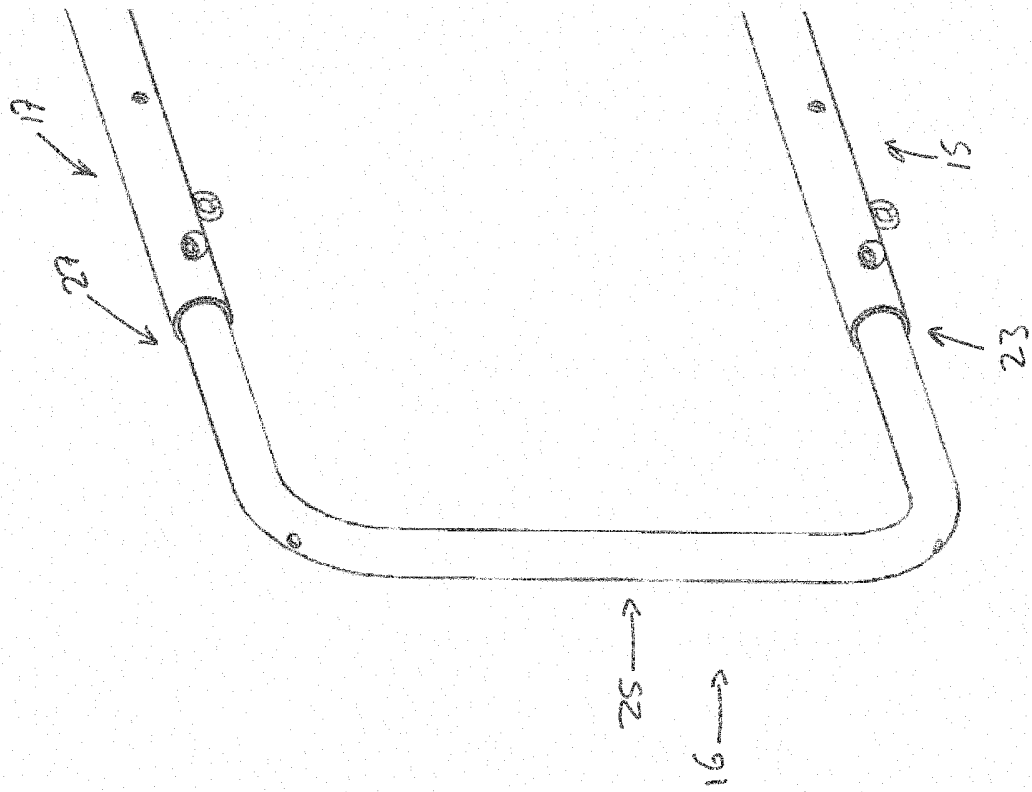
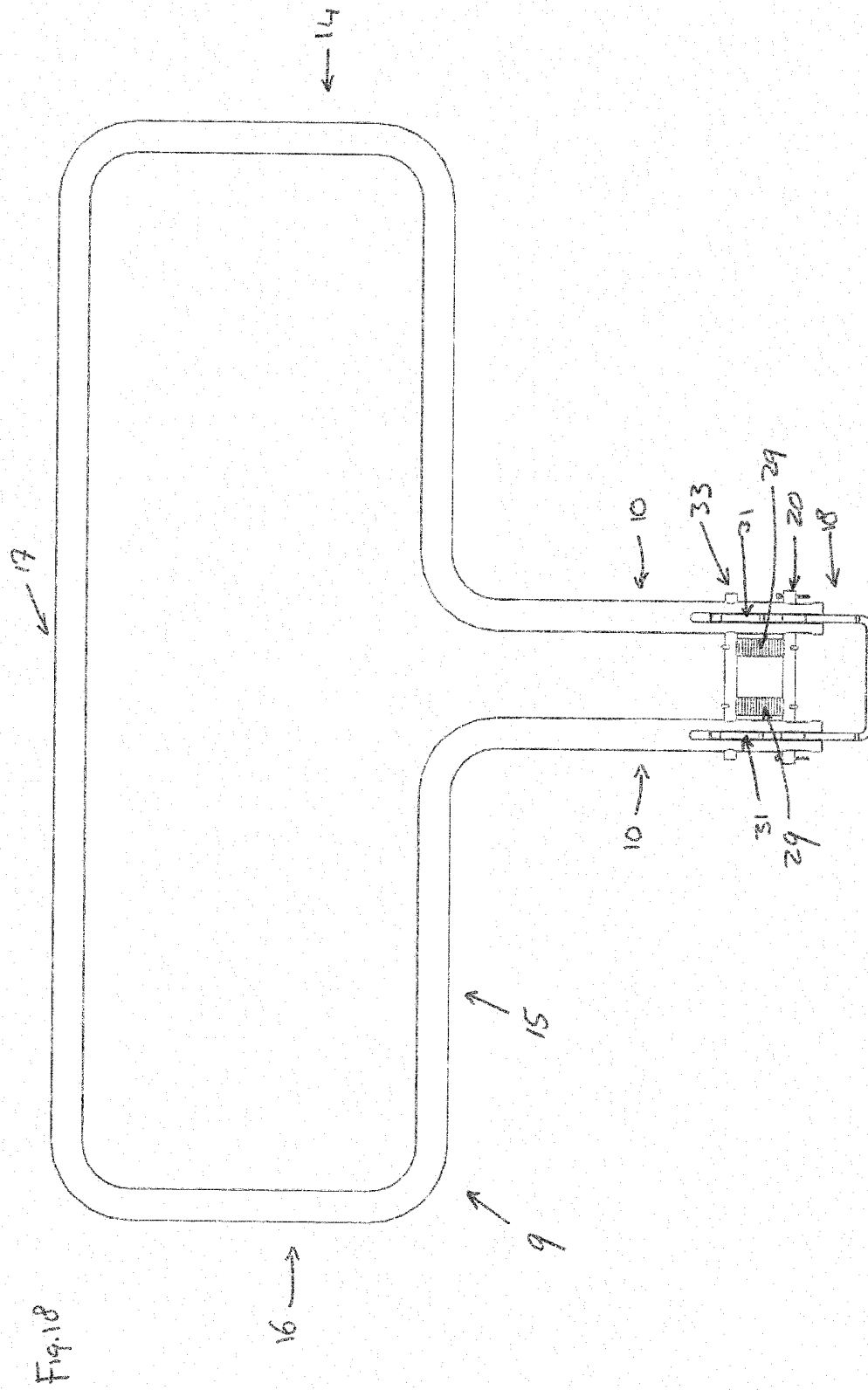


Fig. 17



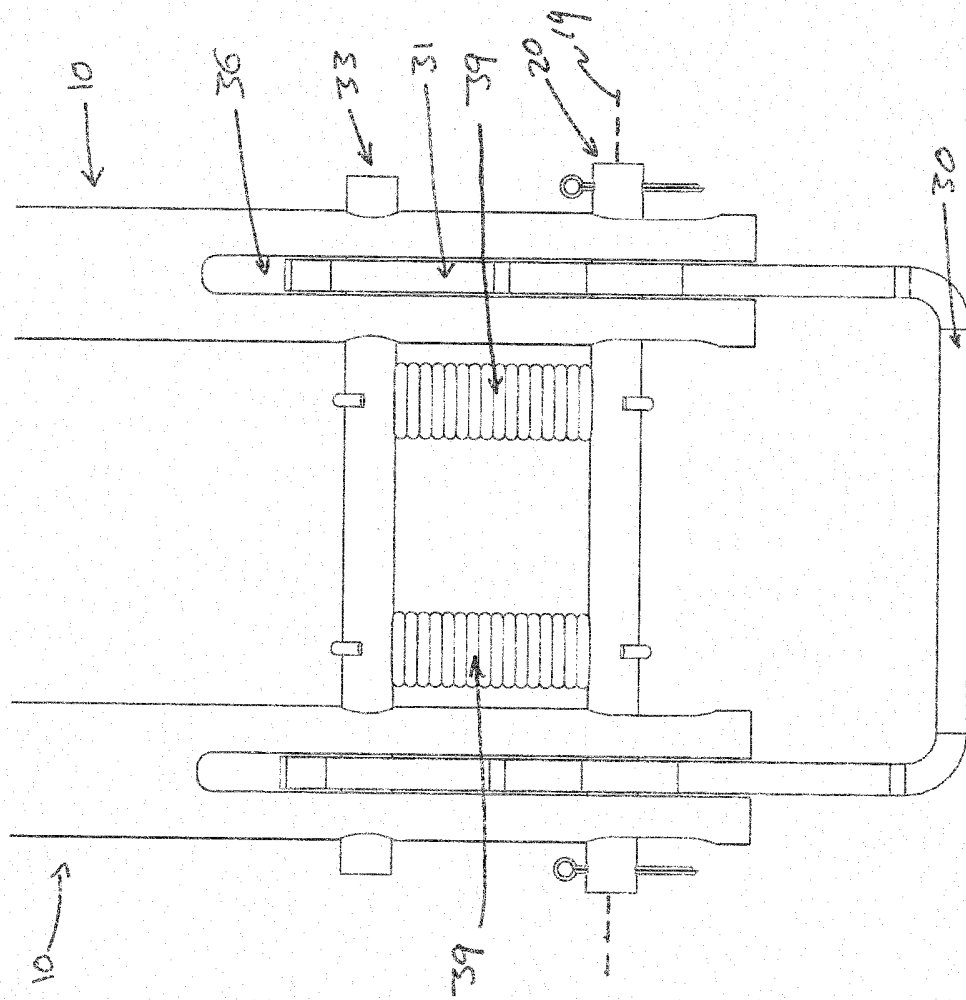


Fig. 19



ONDERZOEKSRAPPORT

BETREFFENDE HET RESULTAAT VAN HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK

RELEVANTE LITERATUUR			
Categorie ¹	Literatuur met, voor zover nodig, aanduiding van speciaal van belang zijnde tekstgedeelten of figuren.	Van belang voor conclusie(s) nr:	Classificatie (IPC)
X	US 6 152 492 A (MARKHAM GARY R [US] ET AL) 28 november 2000 (2000-11-28) * kolom 4, regels 30-56; figuren 3-6 * -----	1-17	INV. B60R3/00 B60P3/22
X	US 5 213 367 A (NORMAN JR EDDY [US] ET AL) 25 mei 1993 (1993-05-25) * figuren 1-6 * -----	1-17	
X	WO 2009/118667 A1 (CATERPILLAR AFRICA PROPRIETARY [ZA]; HONIBALL EWALT JACQUES [ZA]; GREE) 1 oktober 2009 (2009-10-01) * figuren 1,5,6 * -----	1-17	
X	EP 0 286 379 A2 (SAFEWALK RAILINGS LTD [IE]) 12 oktober 1988 (1988-10-12) * figuren 1-5 * -----	1-17	
Indien gewijzigde conclusies zijn ingediend, heeft dit rapport betrekking op de conclusies ingediend op:			Onderzochte gebieden van de techniek B60R B60P E04F E06C
Plaats van onderzoek: Berlijn		Datum waarop het onderzoek werd voltooid: 25 september 2014	Bevoegd ambtenaar: Topolski, Jan
¹ CATEGORIE VAN DE VERMELDE LITERATUUR			
X: de conclusie wordt als niet nieuw of niet inventief beschouwd ten opzichte van deze literatuur Y: de conclusie wordt als niet inventief beschouwd ten opzichte van de combinatie van deze literatuur met andere geciteerde literatuur van dezelfde categorie, waarbij de combinatie voor de vakman voor de hand liggend wordt geacht A: niet tot de categorie X of Y behorende literatuur die de stand van de techniek beschrijft O: niet-schriftelijke stand van de techniek P: tussen de voorrangsdatum en de indieningsdatum gepubliceerde literatuur T: na de indieningsdatum of de voorrangsdatum gepubliceerde literatuur die niet bezwarend is voor de octrooiaanvraag, maar wordt vermeld ter verheldering van de theorie of het principe dat ten grondslag ligt aan de uitvinding E: eerdere octrooi(aanvraag), gepubliceerd op of na de indieningsdatum, waarin dezelfde uitvinding wordt beschreven D: in de octrooiaanvraag vermeld L: om andere redenen vermelde literatuur &: lid van dezelfde octrooifamilie of overeenkomstige octrooipublicatie			

**AANHANGSEL BEHORENDE BIJ HET RAPPORT BETREFFENDE
HET ONDERZOEK NAAR DE STAND VAN DE TECHNIEK,
UITGEVOERD IN DE OCTROOIAANVRAGE NR.**

NO 138944
NL 2011908

Het aanhangsel bevat een opgave van elders gepubliceerde octrooiaanvragen of octrooien (zogenaamde leden van dezelfde octrooifamilie), die overeenkomen met octrooischriften genoemd in het rapport.

De opgave is samengesteld aan de hand van gegevens uit het computerbestand van het Europees Octrooibureau per

De juistheid en volledigheid van deze opgave wordt noch door het Europees Octrooibureau, noch door het Bureau voor de Industriële eigendom gegarandeerd; de gegevens worden verstrekt voor informatiedoeleinden.

25-09-2014

In het rapport genoemd octrooigeschrift		Datum van publicatie	Overeenkomend(e) geschrift(en)	Datum van publicatie
US 6152492	A	28-11-2000	GEEN	
US 5213367	A	25-05-1993	GEEN	
WO 2009118667	A1	01-10-2009	GEEN	
EP 0286379	A2	12-10-1988	AU 1419688 A	06-10-1988
			CA 1313963 C	02-03-1993
			DE 3866573 D1	16-01-1992
			DK 184288 A	07-10-1988
			EP 0286379 A2	12-10-1988
			GB 2203390 A	19-10-1988
			JP S6428042 A	30-01-1989
			US 4936407 A	26-06-1990

SCHRIFTELIJKE OPINIE

DOSSIER NUMMER NO138944	INDIENINGSDATUM 06.12.2013	VOORRANGSDATUM	AANVRAAGNUMMER NL2011908
CLASSIFICATIE INV. B60R3/00 B60P3/22			
AANVRAGER BakerCorp International B.V.			

Deze schriftelijke opinie bevat een toelichting op de volgende onderdelen:

- ☒ Onderdeel I Basis van de schriftelijke opinie
- ☐ Onderdeel II Voorrang
- ☐ Onderdeel III Vaststelling nieuwheid, inventiviteit en industriële toepasbaarheid niet mogelijk
- ☐ Onderdeel IV De aanvraag heeft betrekking op meer dan één uitvinding
- ☒ Onderdeel V Gemotiveerde verklaring ten aanzien van nieuwheid, inventiviteit en industriële toepasbaarheid
- ☐ Onderdeel VI Andere geciteerde documenten
- ☐ Onderdeel VII Overige gebreken
- ☐ Onderdeel VIII Overige opmerkingen

	DE BEVOEGDE AMBTENAAR Topolski, Jan
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SCHRIFTELIJKE OPINIE

Aanvraag nr.:

NL2011908

Onderdeel I Basis van de Schriftelijke Opinie

1. Deze schriftelijke opinie is opgesteld op basis van de meest recente conclusies ingediend voor aanvang van het onderzoek.
2. Met betrekking tot **nucleotide en/of aminozuur sequenties** die genoemd worden in de aanvraag en relevant zijn voor de uitvinding zoals beschreven in de conclusies, is dit onderzoek gedaan op basis van:
 - a. type materiaal:
 - ☐ sequentie opsomming
 - ☐ tabel met betrekking tot de sequentie lijst
 - b. vorm van het materiaal:
 - ☐ op papier
 - ☐ in elektronische vorm
 - c. moment van indiening/aanlevering:
 - ☐ opgenomen in de aanvraag zoals ingediend
 - ☐ samen met de aanvraag elektronisch ingediend
 - ☐ later aangeleverd voor het onderzoek
3. ☐ In geval er meer dan één versie of kopie van een sequentie opsomming of tabel met betrekking op een sequentie is ingediend of aangeleverd, zijn de benodigde verklaringen ingediend dat de informatie in de latere of additionele kopieën identiek is aan de aanvraag zoals ingediend of niet meer informatie bevatten dan de aanvraag zoals oorspronkelijk werd ingediend.
4. Overige opmerkingen:

SCHRIFTELIJKE OPINIE

Aanvraag nr.:
NL2011908

Onderdeel V Gemotiveerde verklaring ten aanzien van nieuwheid, inventiviteit en industriële toepasbaarheid

1. Verklaring

Nieuwheid	Ja: Conclusies Nee: Conclusies 1-17
Inventiviteit	Ja: Conclusies Nee: Conclusies 1-17
Industriële toepasbaarheid	Ja: Conclusies 1-17 Nee: Conclusies

2. Citaties en toelichting:

Zie aparte bladzijde

Re Item V

1. Reference is made to the following documents:

- D1 US 6 152 492 A (MARKHAM GARY R [US] ET AL) 28 november 2000 (2000-11-28)
- D2 US 5 213 367 A (NORMAN JR EDDY [US] ET AL) 25 mei 1993 (1993-05-25)
- D3 WO 2009/118667 A1 (CATERPILLAR AFRICA PROPRIETARY [ZA]; HONIBALL EWALT JACQUES [ZA]; GREE) 1 oktober 2009 (2009-10-01)
- D4 EP 0 286 379 A2 (SAFEWALK RAILINGS LTD [IE]) 12 oktober 1988 (1988-10-12)

2. The present application does not satisfy the criterion relating to patentability because the subject-matter of claim 1 is not new in respect of the prior art.

2.1 With respect to independent claim 1:

Document D1 discloses (the reference signs in parenthesis applying to this document):

Mobiele tank (10) voor opslag van een vloeistof, welke mobiele tank een bodemdeel (12), een bovendee (26, 30) en zijwanden (22, 24) die zich van het bodemdeel naar het bovendee uitstrekken om een vloeistofreservoir te vormen omvat, waarbij;

- een veiligheidsrek (74) zwenkbaar verbonden is met een bovenoppervlak van het bovendee, welk veiligheidsrek zwenkbaar is van een neergelaten positie naar een opgeheven positie, en visa versa,
- het veiligheidsrek twee, en slechts twee, steunbenen (81) gepositioneerd op een eerste afstand van elkaar en zich uitstrekkend in een plat vlak omvat,
- het veiligheidsrek verder een rekdeel (78) verbonden met bovineinden van de steunbenen, welk rekdeel zich uitstrekt in het vlak en in een richting dwars op de steunbenen over een tweede afstand groter is dan de eerste afstand van de steunbenen,
- het veiligheidsrek omvat een, en slechts een connector waarmee het veiligheidsrek

verbonden is met het bovenoppervlak en
- elk van de steunbenen is een onderinde daarvan zwenkbaar gekoppeld met de connector.

3 Dependent claims 2-17:

The dependent claims 2-17 do not appear to contain any additional features which, in combination with features of any claim to which they refer, meet the requirements with respect to novelty and/or inventive step, as all the features introduced with these claims seem to be either known from D1-D4, or known while used with a known corresponding effect and/or seem to introduce slight constructional changes without inventive meaning and which come within the scope of the customary practice followed by persons skilled in the art.