

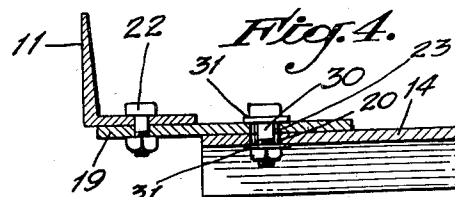
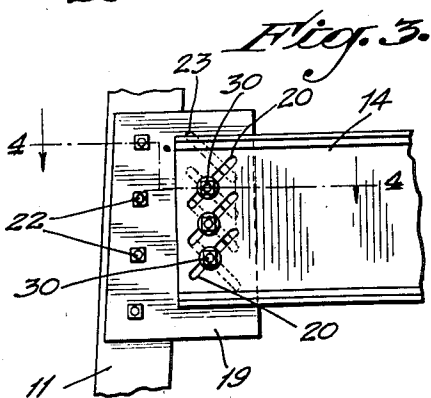
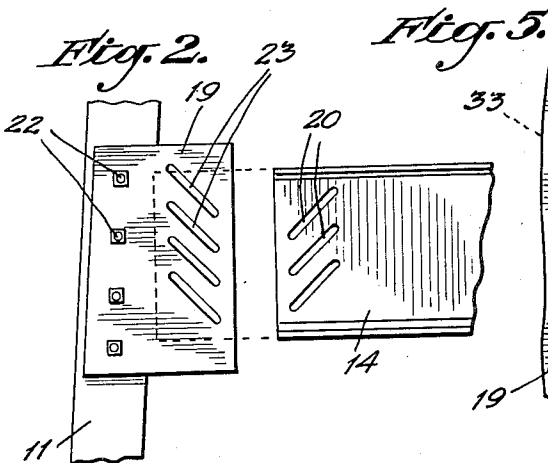
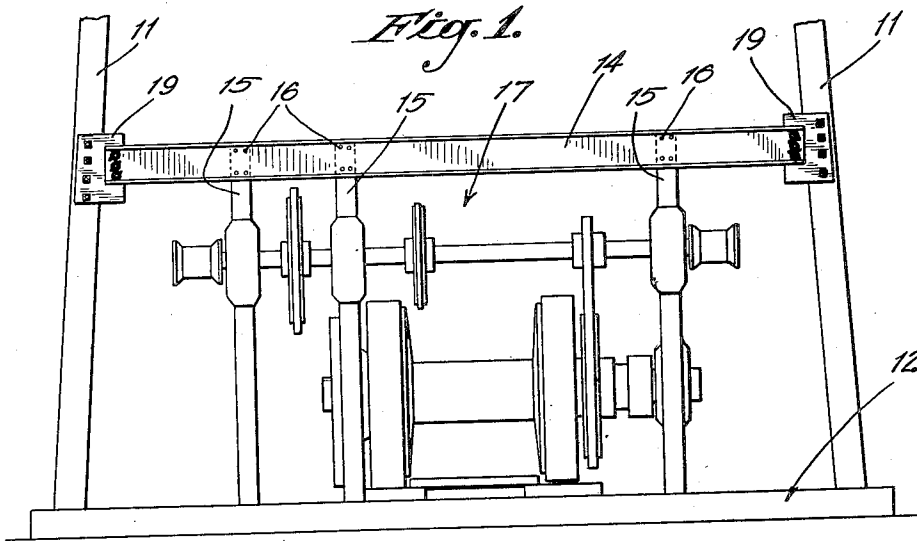
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1,599,692

W. A. TROUT

ADJUSTABLE CHANNEL GIRTH CONSTRUCTION

Filed June 13, 1925



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1,599,692

UNITED STATES PATENT OFFICE.

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ADJUSTABLE CHANNEL-GIRTH CONSTRUCTION.

Application filed June 13, 1925. Serial No. 36,843.

This invention has to do with steel derricks of the type employed in the oil producing industry. In this industry, a steel derrick is placed over a well, which derrick has machinery for handling various casings and tools for the well. The machinery of the derrick includes a draw-works which is situated to one side of the derrick floor, generally between legs of the derrick such draw-works being for the purpose of handling the cable of the crown block of the derrick. These draw-works are attached at their upper ends to a channel girth which consists of a horizontally extending bar which is secured at each end to legs of the derrick. These channel girths are generally provided so as to be vertically adjustable for reasons such as to accommodate any variation in draw-work constructions. At the present time, the channel girths are made adjustable by providing a cylindrical opening in either the attachment plates by which the girth is attached to the legs of the derrick or in the ends of the channel girths, and vertical slots are provided in either of these members. Bolts extend through these cylindrical openings and slots for securing the channel girth in place. Although this arrangement renders the channel girth adjustable into different positions there is a marked tendency for the channel girth to slip from position. This is due to the fact that the friction created by the tightness of the bolt is solely relied upon to secure the channel girth in place, as there is no friction between the bolt and the side of the slot owing to the fact that the slot is in a vertical plane.

It is an object of my invention to provide a novel means for securing a channel girth to the legs of a derrick, which will permit vertical adjustment and will have considerable friction between the walls of the openings and the securing bolt, besides having friction, due to the tightness of the bolt.

Other objects and the salient advantages of this invention will be made evident hereinafter.

Referring to the drawing which is solely for illustrative purposes.

Fig. 1 is a diagrammatic view illustrating the use of my invention.

Fig. 2 is an enlarged view showing a channel girth and attachment plate prepared in the manner of my invention, these parts be-

ing separated to clearly show the construction thereof.

Fig. 3 is a fragmentary view similar to Fig. 2, but showing the end of the channel girth secured in place.

Fig. 4 is a section taken on the line 4—4 of Fig. 3.

Fig. 5 is an enlarged fragmentary sectional view showing the slot arrangement of the attachment means of my invention.

In Fig. 1, I show a derrick having angle legs 11 which extend upwardly from a floor 12. Extending between these adjacent legs 11 is a channel girth 14. In accordance with customary practice, upper ends of upright members 15 are secured to the girth 14 by suitable bolts, 16, these upright members 15 being a portion of a draw-works 17, which may be of any standard construction.

The channel girth 14 is attached to the legs 11 by attachment or gusset plates 19. As clearly shown in Figs. 2 to 5, inclusive, the ends of the channel girth 14 are provided with a plurality of diagonally extending slots 20. These slots 20 are preferably made parallel to each other and at an angle of 45° with a vertical plane. The gusset plates 19 are secured to the legs 11 by bolts 22, as clearly shown in Fig. 4. In the gusset plate 19, near the inner edges thereof, are diagonally extending slots 23, which are parallel in extension and which extend preferably at angles of 45° with a vertical plane. The axes of slots 20 and 23, however, lie in planes which extend at right angles to each other. Extending through the pairs of slots 20 and 23 are bolts 30 which may have suitable washers 31.

It is an important object of this invention to provide a means for adjustably securing a channel girth in place, but still retain considerable friction between the walls of the openings and the securing bolts. The manner in which I accomplish this object is clearly shown in Fig. 5. When the channel girth 14 is raised or lowered, respectively, to the attachment plates 19, the bolts 30 move inwardly or outwardly in the slots 20 and 23. For example, when the channel girth 14 is moved upwardly, the bolts 30 move as indicated by the broken lines 33 in Fig. 5. The walls of the slots 20 extend at right angles to those of slots 23, and the walls of both extend at angles of 45° with a vertical plane. The slots 20 and 23, when

superimposed, form the diagonals of a square as shown in Fig. 5. A tendency for the channel girth 14 to lower is resisted by engagement of the diagonal walls of the slots 20 and 23 with the bolts 30.

From the foregoing description, it is evident that by providing slots which extend at right angles to each other and at angles with a vertical line, I am able to adjustably attach the channel girth 14 to the legs 11 and still retain considerable friction between the bolt and the walls of the slots. This is a desirable feature because it reduces the slipping possibilities of the channel girth, which in previous arrangements is very great. It should be understood that the channel girth 14 is called upon to carry considerable strain and is subjected to much vibration during the use of the draw-works 17, and for this reason it is highly desirable to rigidly, but adjustably, secure this channel girth 14 in place.

I claim as my invention:

1. In a steel derrick, the combination of: vertically extending members having slots which extend at angles to a vertical plane; a horizontally extending member having slots which extend at angles with said first mentioned slots; and bolts extending through said first and said second mentioned slots for securing said vertically and said horizontally extending members together, said slots being arranged to permit bodily adjustment of said horizontal member.

2. In a steel derrick, the combination of: vertically extending members having slots which extend diagonally; a horizontally extending member having slots which extend at angles with said first mentioned slots; and bolts extending through said first and said second mentioned slots for securing said vertically and said horizontally extending members together, said slots being arranged to permit bodily adjustment of said horizontal member.

3. In a steel derrick, the combination of: vertically extending members having slots which extend at forty-five degree angles with a vertical plane; a horizontally extending member having slots which extend at angles with said first mentioned slots; and bolts extending through said first and

said second mentioned slots for securing said vertically and said horizontally extending members together, said slots being arranged to permit bodily adjustment of said horizontal member.

4. In a steel derrick, the combination of: vertically extending members having slots which extend diagonally; a horizontally extending member having slots which extend at right angles with said first mentioned slots; and bolts extending through said first and said second mentioned slots for securing said vertically and said horizontally extending members together.

5. In a steel derrick, the combination of: vertically extending members having slots which extend at forty-five degree angles with a vertical plane; a horizontally extending member having slots which extend at right angles with said first mentioned slots; and bolts extending through said first and said second mentioned slots for securing said vertically and said horizontally extending members together.

6. In a steel derrick, the combination of: substantially vertically extending derrick legs; gusset plates secured to said legs, said gusset plates having slots extending at angles of forty-five degrees with a vertical plane; a substantially horizontally extending channel girth, said channel girth having slots which extend at right angles to said first mentioned slots; and bolts extending through said first and said second mentioned slots for securing said channel girth to said legs.

7. In a steel derrick, the combination of: substantially vertically extending derrick legs; gusset plates secured to said legs, said gusset plates having slots extending at angles of forty-five degrees with a vertical plane; a substantially horizontally extending channel girth, said channel girth having slots which extend at right angles to said first mentioned slots; and bolts extending through said first and said second mentioned slots for adjustably securing said channel girth to said legs.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 3rd day of June, 1925.

WILLIAM A. TROUT.