

March 10, 1936.

R. A. COLGIN

2,033,756

SWING FOR RODLINES TO PUMP JACKS

Filed Dec. 30, 1933

2 Sheets-Sheet 1

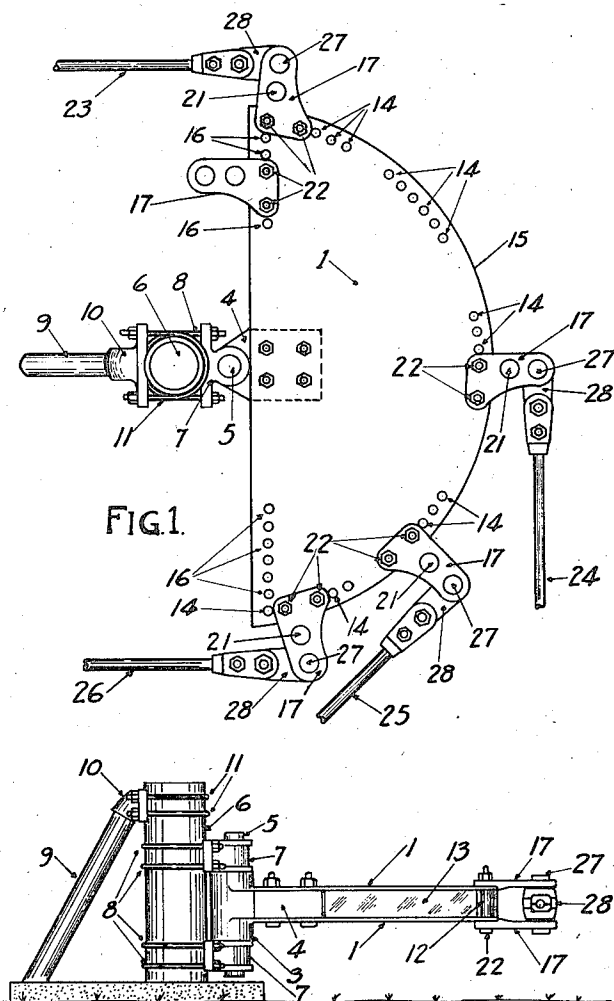


FIG. 1.

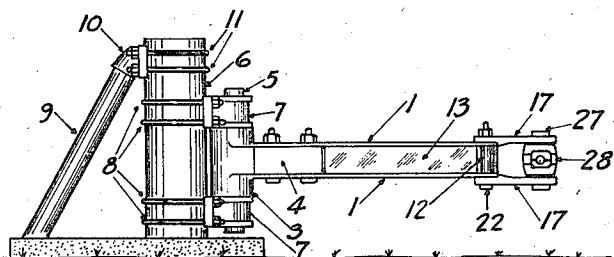


FIG. 2.

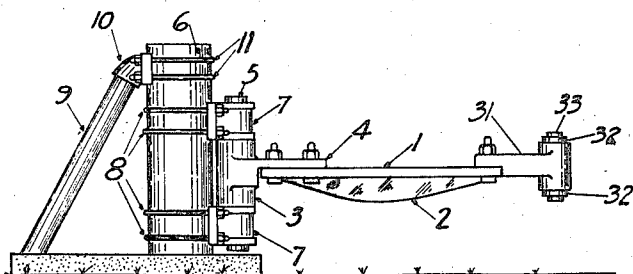


FIG. 3.

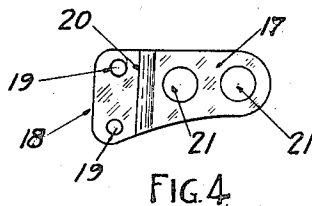


FIG. 4.

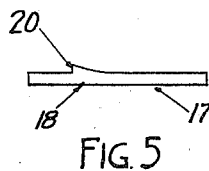


FIG. 5.

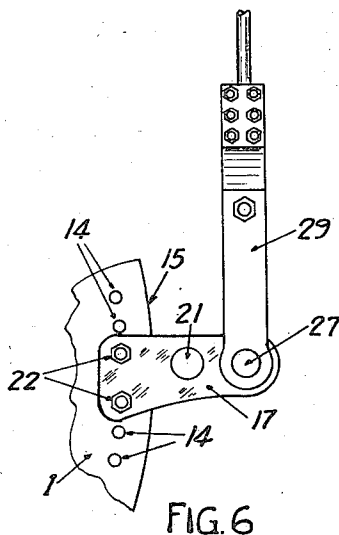


FIG. 6.

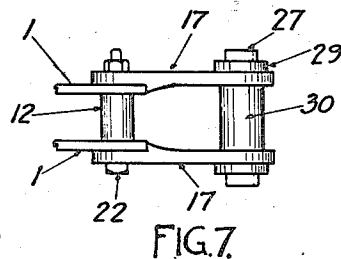


FIG. 7.

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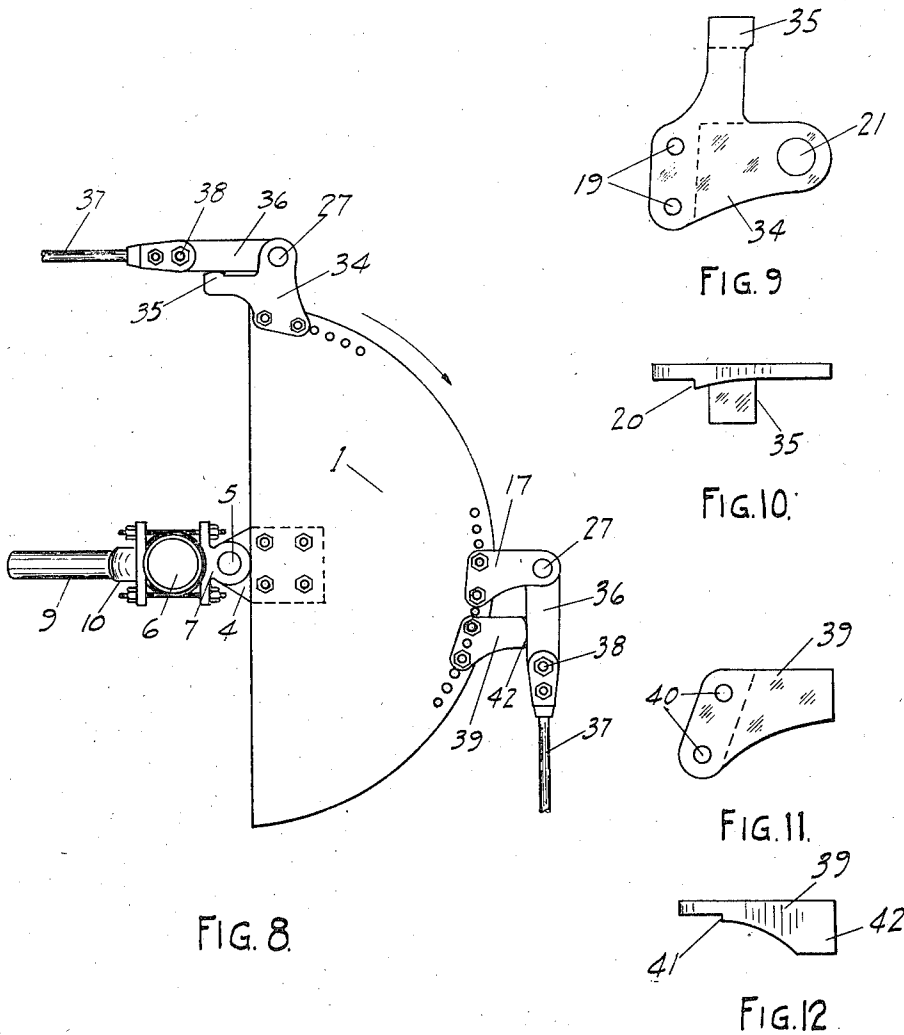
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SWING FOR RODLINES TO PUMP JACKS

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2 Sheets-Sheet 2



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2,033,756

SWING FOR RODLINES TO PUMP JACKS

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Application December 30, 1933, Serial No. 704,643

2 Claims. (Cl. 74-522)

My invention relates to new and useful improvements in rodline swings for changing the direction of surface rodlines run to pump jacks used in pumping wells, and has for its objects; to provide such a structure of universal application whereby the same swing may be used to deflect the pull on a rodline in any degree of angularity up to 180 degrees; to provide such a structure of universal application within the range of any selected degree of angularity up to said 180 degrees; to provide such a structure whereby a number of wells may be pumped by rodlines all connected to the same swing and all operated therethru by another rodline connected to a source of power, to provide such a structure in form which is cheap to make and install; to provide an inexpensive interchangeable connector plate wherewith to connect a rodline to said swing; to provide such a connector plate and swing structure in form whereby the stroke of any certain rodline connected to said swing may be increased or diminished without affecting the strokes of the remaining rodlines connected therewith; and to provide a stop means on said swing to limit the arcuate movement of the rod lines connected thereto.

With the above and other objects in view which will be disclosed as the description proceeds, my invention consists in the novel features hereinafter set forth, shown in the accompanying drawings and more particularly pointed out in the appended claims.

Referring to the drawings in which like numerals represent similar parts thruout the several views:

Fig. 1 is a top plan view of my rodline swing in place with rodlines connected thereto.

Fig. 2 is a view in side elevation of my preferred form of rodline swing showing the same as constructed of two substantially semi-circular plates spaced apart coincident with each other, and having a rodline connection to said plates.

Fig. 3 is a view in side elevation of a modified form of construction of my swing wherein a single plate is used instead of two plates as shown in Fig. 2.

Fig. 4 is a bottom or top plan view of my preferred form of rodline connector plate.

Fig. 5 is a view of the same in side elevation.

Fig. 6 is an enlarged top plan view of my rodline connection using my preferred form of connector plate with an ordinary rodline clevis attached thereto.

Fig. 7 is a view of the same in side elevation.

Fig. 8 is a top plan view of my sector swing with stops thereon to engage the rodlines connected to

said swing or to engage the rodline connections wherewith said rodlines are connected to said swing, to limit the arcuate movement of said rodlines.

Fig. 9 is a top plan view of one of my connector plates such as shown in Figs. 4 and 5, with a stop located thereon.

Fig. 10 is a view of the same in side elevation.

Fig. 11 is a top plan view of a separate stop which is attachable to my sector plate.

Fig. 12 is a view of the same in side elevation.

Numeral 1 represents a plate, of any desired size, thickness and strength, and which is substantially in the form of a sector of a circle and will therefore be hereinafter referred to as a sector plate. The sector plate or plates may be of any desired angle and in the drawings are shown as being of a 180 degree angle which permits rodlines to run from the swing at any desired angle to the rodline connected to the power, up to 180 degrees angle, more or less, from said last named rodline. The sector plate, or plates as the case may be, in effect constitutes the lever of my rodline swing, which lever may be made of two sector plates as shown in Fig. 2 or of one sector plate as shown in Fig. 3. The sector plates may, if desired, be strengthened by ribs, such as rib 2 shown in Fig. 3 and which is either bolted or welded to plate 1, or in the case of the double plate swing by rib or ribs attached to both plates.

In both the single plate and the double plate construction, the sector plate, or the plates as the case may be, is attached to the fulcrum bearing 3 by being bolted to a stub or ear 4 on said bearing 3. Fulcrum bearing 3 is in itself held on a bearing pin 5 which is secured to a swing post 6 by pipe clamp members 7 in which pin 5 is fixedly set. Clamp members 7 are attached to the post or pipe 6 by U bolts 8. Pipe 6 is braced with strut 9 clamped to it with clamp member 10 and U bolts 11. It is of course apparent that the lever does not have its fulcrum in the sector plate but that if desired the sector plate could be made to include the fulcrum point within it. However the construction shown in the drawings answers the same purpose and saves plate material.

When two sector plates are used in the lever structure, as shown in Fig. 2, they are rigidly held spaced apart by stub 4 and by spacers 12 which are of the usual pipe type. When it is desired to stiffen the sector plates with a rib or ribs such as rib 13 shown in Fig. 2, a rib of proper width may be welded or bolted to both sector

plates and of course the rib when thus used would itself effect the proper spacing of both plates.

The sector plate is provided with a series of bolt holes 14 arranged in an arc about the fulcrum of the lever. Bolt holes 14 are uniformly spaced from each other and from the perimeter 15 of the arcuate edge of sector plate 1 in manner adapted to interchangeably attach the herein-after mentioned rodline connector plates to said lever plate 1, and when the lever is composed of double sector plates 1 as shown in Fig. 2, it is preferred to have bolt holes 14 in both plates coincide with each other to the effect that in attaching said rodline connector plates to said sector plates, the two sector plates may be clamped together on spacer 12, as well as the same clamped together with the rodline plates, the entire structure being held by a single bolt.

It is obvious that bolt holes 14 need not be distributed thruout the entire arc but need only be placed at such places on said sector plate as it may be desired to attach rodline connector plates thereto; and it is further apparent that the arc mentioned need not be substantially that of a circle altho that form is to be preferred; and it is also apparent that when the double sector plates are used, bolt holes 14 need not coincide but that the rodline connector plates may be attached to each sector plate separately.

In the sector plate may also be placed if desired, a series of bolt holes 16 also adapted to receive rodline connector plates, for the purpose of making it possible to give varying lengths of stroke to rodlines connected with the swing, as will later appear.

Rodlines may be connected with said sector plate or plates, by means of my rodline connector plates. 17 represents my preferred form of rodline connector plate for the double plate swing shown in Fig. 2, and consists of a plate portion 18 having bolt holes 19 therein corresponding to bolt holes 14 and 16 and coinciding therewith and with said plate having a shoulder 20 positioned with reference to the location of said bolt holes 19 so as to abut the edge of the sector plate when said rodline connector plate is in place thereon, and also having a rodline connecting pin hole 21 or two of such holes as is shown in the drawings. The connector plates 17 are attached to the sector plates 1 as shown in Figs. 1, 2, 6 and 7, by passing bolts 22 thru a pair of said rodline connector plates, when the same are in position on the sector plates, and thru pipe spacer 12, and clamping the whole structure together by tightening bolts 22. The rodlines, such as rodlines 23, 24, 25 and 26, of Fig. 1, may be connected to the connector plates 17 by connecting pin 27 passed thru holes 21 in said connector plates 17 and thru a rodline connecting member 28 shown in Figs. 1 and 2, or thru a rodline clevis 29 and pin collar or bushing 30 as shown in Figs. 6 and 7. The same connector plate 17 may be used on a single sector plate swing structure such as shown in Fig. 3, but when so used it is preferred to thicken the plate in the vicinity about the rodline pin hole 21 and to provide sufficient bearing surface to act as a bearing collar such as collar 30 in Fig. 7 or to hold an independent bushing therein in the usual manner of said clevis. A connector plate 31 of this form is shown in Fig. 3 as being attached to the single sector plate 1 with clevis 32 attached to said sector plate by means of clevis pin 33.

In Figs. 8 to 12 inclusive is shown my stop

means for limiting the arcuate movement of rodlines connected to a rodline swing such as a swing heretofore described. Numeral 34 represents a modified form of my connector plate 17 in which said connector plate has located thereon at a predetermined distance from its clevis pin hole 21 a lug or stop 35 preferably positioned to engage a rodline connecting member 36 of predetermined length but otherwise similar to that of rodline connecting member 28. Member 36 is of course pivotally connected to connector plate 34 the same as member 28 is connected to connector plate 17. However when my stop 35 is used the rodline, such as rodline 37, is not connected to connecting member 36 rigidly as it may be when the stop is not used, but is pivotally connected thereto by means of a pivot pin 38, by which arrangement member 36 becomes a link in the rodline which is connected to connector plate 34.

When it is not desired to use the special connector plate 34 with stop 35 thereon, the regular connector plate 17 may be used, and my stop plate 39 may be attached to the sector plate at the desired place thereon, said stop plate then functioning the same as the stop 35 located on the connector plate 34 itself. Stop plate 39 is attachable to sector plate 1 the same as is connector plate 17 or 34, thru bolt holes 40 in said stop plate, and the plate has thereon a shoulder 41 similar to the shoulder 20 on connector plates 17 and 34. In addition, stop plate 39 has a lug or stop 42 positioned so as to engage member 36 the same as stop 35 may engage said member.

In operation with the swing in place, with rodline 23 representing that with which the power is connected to the swing, one or more rodlines such as rodlines 24, 25 and 26, may be run from said swing at various angles to rodlines 23. The series of bolt holes 14 provide a means for making the swing universally applicable to any condition in which it may be desired to change the direction of the pull from rodline 23 to an angle up to 180 degrees, more or less. The series of holes 16 provide a means of connecting rodline 23 at various distances on the swing from its fulcrum or pivot pin 5, and it is evident that the two pin holes 21 provided in connector plate 17 to which said rodline 23 is attached also provides for the further adjustment of the length of stroke imparted to the other rodlines connected to said swing. The same is true of the two pinholes 21 in the connector plates 17 to which said rodlines 24, 25 and 26 are attached. The series of holes 16 may of course be also used for connecting other rodlines to said swing.

It is apparent that the connector plates 17 are interchangeable and are adjustable to any desired position on the sector plate 1, and that a number of rodlines may be connected to the same swing and operated therethru either simultaneously or in sequence, and that the length of the strokes of the various rodlines may be adjusted in each particular case, all of which makes the swing adapted to universal use within the scope of its degree of angular deflection of the rodline pull.

When my stop, such as stop 35, is used, it is located with reference to the length of the link formed by rodline connecting member 36 so that as the swing is rotatably moved in the direction indicated by the arrow in Fig. 8 the member 36 will on the last half of said movement be caused to bear on the stop, whereupon pivot pin 38 will constitute the pivot connection for the rodline instead of pivot pin 27 which bears this relation

to the rodline during the first half of the stroke.

Having thus fully disclosed my invention, what I claim and desire to secure by Letters Patent is:—

- 5 1. In a rodline swing for changing the direction of a rodline connected to a pump jack on a well, a rodline connector plate on said swing, a rodline member pivotally connected to said connector plate, means of pivotally connecting
10 said rodline to said rodline member, and stop

means on said swing adapted to engage said rodline member.

2. A rodline connection to a swing, comprising a connector plate adapted to be affixed to said swing, a rodline link member pivotally connected to said connector plate, means for pivotally connecting a rodline to said link member, and stop means for limiting the arcuate movement of said rodline. 5

RUFUS A. COLGIN. 10