

June 10, 1941.

G. A. BASS

2,245,380

ROD ELEVATOR DEVICE

Filed July 8, 1940

2 Sheets-Sheet 1

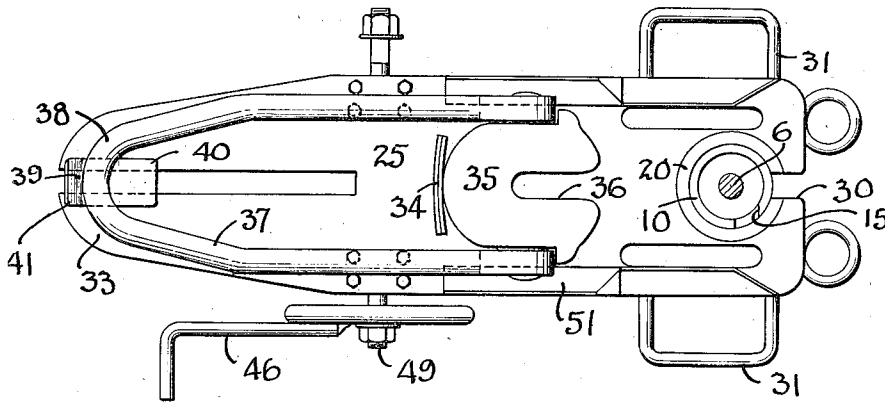


Fig. 2.

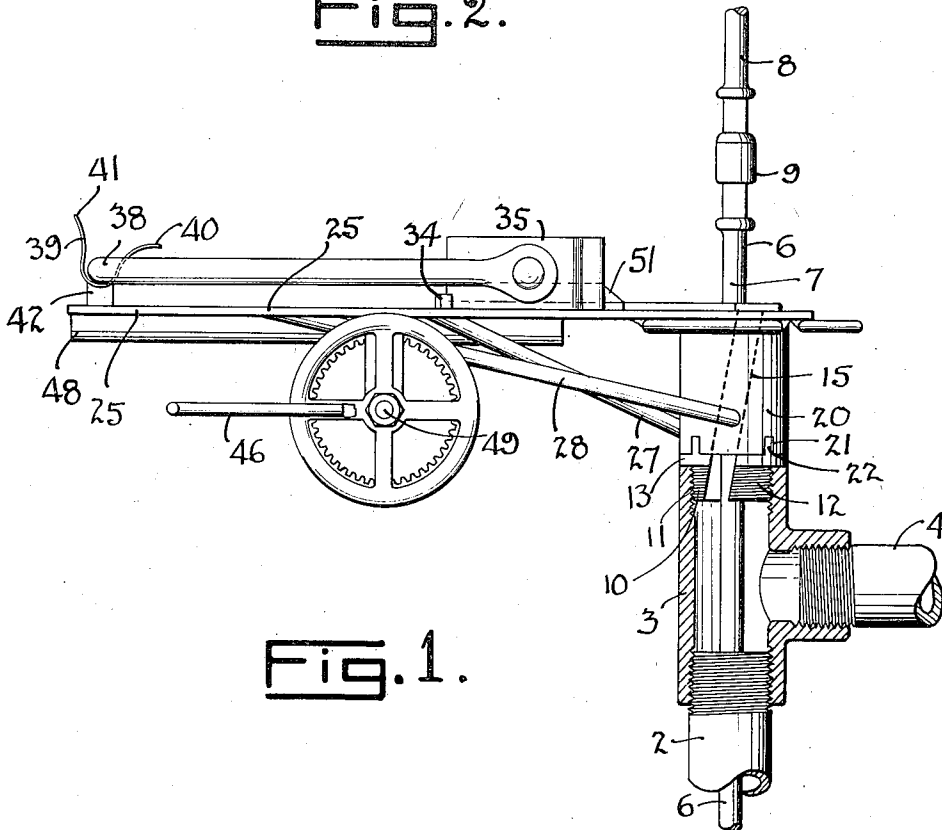


Fig. 1.

G. A. BASS

INVENTOR.

Jesse R. Stone
Lister B. Clark

ATTORNEYS

BY

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G. A. BASS

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2 Sheets-Sheet 2

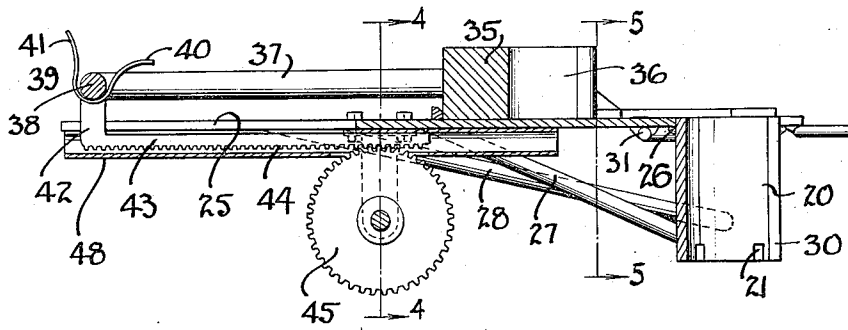


Fig. 3.

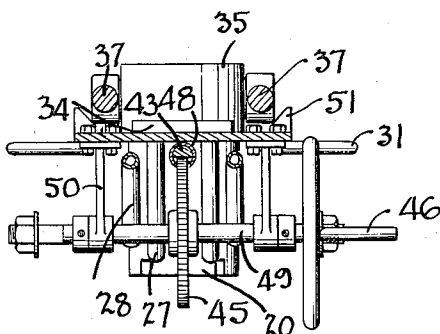


Fig. 4.

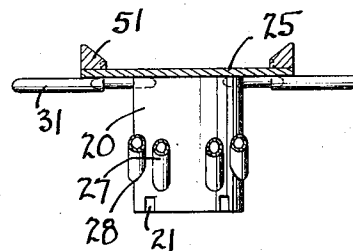


Fig. 5.

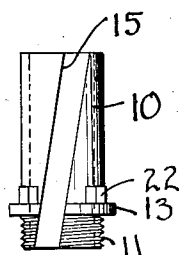


Fig. 6.

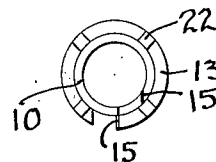


Fig. 7.

BY

G.A. BASS
INVENTOR.
Jesse R Stone
Arthur B Clark
ATTORNEYS

UNITED STATES PATENT OFFICE

2,245,380

ROD ELEVATOR DEVICE

Gustavis A. Bass, Liberty, Tex.

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10 Claims. (Cl. 166—1)

The invention relates to a safety elevator support for use in the handling of rod or pipe so as to facilitate the operation of connecting or disconnecting the adjacent sections of rod or pipe.

In the production and servicing of wells it is necessary to insert and withdraw strings of rods or pipe and each time the string of rods or pipe is assembled or disassembled it is necessary to support it in the well and lift it to the various positions.

Considerable danger is involved to the workmen due to the fact that sometimes heavy loads are involved and the operation must be performed with all speed. The connecting and disconnecting of the elevator to the rod or pipe involves injury to the hands of the workmen and with the view of making such operation more safe the present device has been developed.

It is one of the objects of the invention to provide an operating platform to receive the elevator so that it can be moved to engage or disengage a string of rods or pipe.

Another object of the invention is to provide an elevator support wherein the elevator can be moved to and fro.

Another object of the invention is to provide a combination of a pipe elevator support with a well head so that the support may be quickly attached or detached so as to provide an operating table for the elevator.

Another object of the invention is to provide a mechanism for providing an elevator on a support table.

Other and further objects of the invention will be readily apparent when the following description is considered in connection with the accompanying drawings, wherein:

Fig. 1 is a side elevation of the device with the elevator in position and showing the well head in section.

Fig. 2 is a top plan view looking down on the structure of Fig. 1.

Fig. 3 is a vertical sectional view showing the construction of the parts.

Figs. 4 and 5 are sections taken on the line 4—4 and 5—5 respectively of Fig. 3.

Fig. 6 is a side elevation of a bell nipple which can be attached to the well head in order to receive the support structure.

Fig. 7 is a top plan view looking down on the nipple of Fig. 6.

In Fig. 1 the pipe or casing or a well head is illustrated generally at 2. Such heads usually have a T-fitting 3 thereon which has an outlet or flow line 4 extending from one side. In Fig. 1

a string of sucker rods 6 are illustrated as extending into the well for the purpose of operating a pump in the well. For purposes of explanation, however, the string of rods 6 could as well be a string of tubing which might be positioned in the well bore. Regardless of whether this string is made up of rods or tubing it constitutes a plurality of sections such as the lower section 7 and the upper section 8 as seen in Fig. 1. These two sections are connected together by threaded joint 9.

In order to equip the well head so as to receive the present device a bell nipple 10 best seen in Fig. 6 is provided. This nipple has a threaded area 11 which is arranged to engage the threads 12 on the inside of the T 3. This nipple will be secured into place by the flange 13 which engages the end of the T.

Attention is directed to the inclined slot 15 in the nipple 10. This slot is provided so that the nipple may be passed about the string of rods or pipe in placing it on the well head.

When the nipple has been affixed then the operating platform can be positioned upon the nipple. Fig. 3 shows a sectional view of the platform which includes a sleeve 20 which is of a size to fit snugly over the body of the nipple 10 and to then slide downwardly until it engages the flange 13. This sleeve is provided with notches or recesses 21 which are arranged to receive the lugs 22 spaced about the periphery of the nipple 10 just above the flange 13. In this manner the sleeve 20 is non-rotatably positioned upon the well head by being supported on the nipple 10.

The elevator support includes a platform 25 which is best seen in plane view in Fig. 2. This platform is affixed to the sleeve 20 about the upper end thereof by a bead 26 of welding material so that the platform is firmly positioned. A set of short braces 27 and a set of long braces 28 connect the lower end of the sleeve with the extended portions of the platform, but any other form of bracing may be used.

The right hand end of the platform is slotted at 30 to permit its passage around the string of rods 6 so that it can be then lowered around the bell nipple 10 as seen in plane view in Fig. 2. The platform has the handles or wrench holders 31 at each side thereof to facilitate the handling of the device and the retaining of the wrenches used.

The surface 33 of the table is normally flat and has a stop 34 thereon against which the body 35 of the elevator is arranged to abut when

the elevator is placed on the device. The opening 36 in the elevator is arranged to engage the rod or pipe as the case may be. A bail 37 is pivoted to the body 35 and the curved end 38 thereof is received and the bracket 39 projects above the surface of the table so that when the bail is received therein it will be in a substantially horizontal position. The bracket 39 has the forward lip 40 and the rear lip 41 which are spread apart so that when the bail 37 is dropped it will be guided into the lowermost portion of the bracket.

As best seen in Fig. 3 the bracket 38 is mounted on an arm 42 which is formed as part of a rack 43 having teeth 44 which are arranged to engage with the gear wheel 45. This gear wheel is mounted for turning movement by a handle 46 so that rotation of the wheel 45 moves the rack and heaves the bracket 38 to and fro. The rack 43 is shielded by a sleeve 48 as best seen in Fig. 4 and the shaft 49 cooperates with the gear 45 and the handle 46 is supported by the trunnions 50 from the lower portion of the table. The side guides 51 on the table adjacent the position of the elevator body 35 when it is retracted down to center the elevator so that it will pass accurately about the pipe or rod 6.

It should be noted that the device is solidly supported upon the well head and when it is to be used the elevator need only be placed upon the table in its proper position. Turning of the crank 46 moves the bracket 39 to the right so as to cause the elevator body 35 to also move to the right by sliding on the top of the platform. The opening 36 passes about the rod and the hoisting mechanism can then be eased off so as to allow the elevator to take the load. If the pipe or tubing is to be elevated then a hoisting mechanism can be connected to the bail 37 whereby the load may be lifted by the elevator.

It is intended that the device will be simple and economical in its construction and that it will be of advantage due to the quickness with which the elevator can be engaged and disengaged from the rods or pipe and by the turning of the crank handle 46 the operator can move the elevator about the rods or disengage it from the rods without placing his hands in jeopardy by handling the elevator where the load may be applied to it at any time by the hoisting operator. A great many accidents have occurred in this way and the present device is a very simple and advantageous safety mechanism.

What is claimed is:

1. An operating platform for rod or pipe elevators comprising a support connected to the well head where the rods or pipe is being manipulated, a sleeve to be received by said support, a platform carried by said sleeve, means on said platform to receive the elevator, and means to move said first means and consequently the elevator to and from the rods or pipe.

2. An operating platform for rod or pipe elevators comprising a support connected to the well head where the rods or pipe is being manipulated, a sleeve to be received by said support, a platform carried by said sleeve, means on said platform to receive the elevator, and means to move said first means and consequently the elevator to and from the rods or pipe said first means including a bracket to receive the elevator bail.

3. An operating platform for rod or pipe elevators comprising a support connected to the well head where the rods or pipe is being manipulated,

a sleeve to be received by said support, a platform carried by said sleeve, means on said platform to receive the elevator, means to move said first means and consequently the elevator to and from the rods or pipe, and a stop on said platform to limit the outward movement of the elevator.

4. An operating platform for rod or pipe elevators comprising a support connected to the well head where the rods or pipe is being manipulated, a sleeve to be received by said support, a platform carried by said sleeve, means on said platform to receive the elevator, and means to move said first means and consequently the elevator to and from the rods or pipe, said last means including a rack and pinion.

5. A well head rod or pipe elevator support including a platform, means to support said platform adjacent the well head, means to receive an elevator on the platform with the bail of such elevator lying horizontal, and means to move said first means and the elevator by sliding the elevator on the platform so as to move it to and from the rod or pipe being engaged or released.

6. A well head rod or pipe elevator support including a platform, means to support said platform adjacent the well head, means to receive an elevator on the platform with the bail of such elevator lying horizontal, and means to move said first means and the elevator by sliding the elevator on the platform so as to move it to and from the rod or pipe being engaged or released, said first means including an open U shaped bracket into which the bail may be dropped.

7. A well head rod or pipe elevator support including a platform, means to support said platform adjacent the well head, means to receive an elevator on the platform with the bail of such elevator lying horizontal, and means to move said first means and the elevator by sliding the elevator on the platform so as to move it to and from the rod or pipe being engaged or released, said first means including an open U shaped bracket into which the bail may be dropped, and said last means including a mechanical movement for said bracket.

8. The combination with a well head and a rod or pipe elevator support, means to removably connect said head and support, and means on the support to receive and move the elevator to and from the rod or pipe so that the operator may operate said means without danger of injury in placing or removing the elevator.

9. The combination with a well head and a rod or pipe elevator support, means to removably connect said head and support, and means on the support to receive and move the elevator to and from the rod or pipe so that the operator may operate said means without danger of injury in placing or removing the elevator, said first means including a slotted bell nipple to be passed around the rod or pipe and affixed to the head.

10. The combination with a well head and a rod or pipe elevator support, means to removably connect said head and support, and means on the support to receive and move the elevator to and from the rod or pipe so that the operator may operate said means without danger of injury in placing or removing the elevator, said first means including a slotted bell nipple to be passed around the rod or pipe and affixed to the head, and a sleeve on said support to be positioned on said nipple.

GUSTAVIS A. BASS.