March 7, 1939. J. M. HICKMAN 2,149,938

ELEVATOR

Filed March 19, 1936

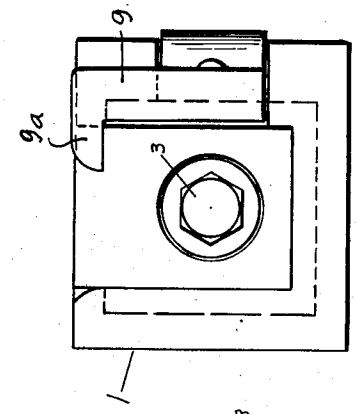


Fig. 3

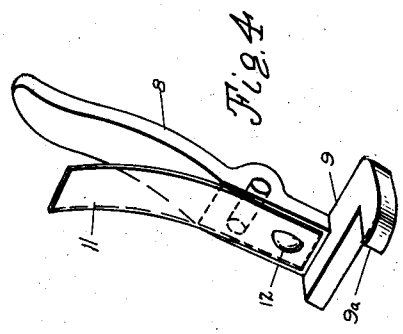


Fig. 4

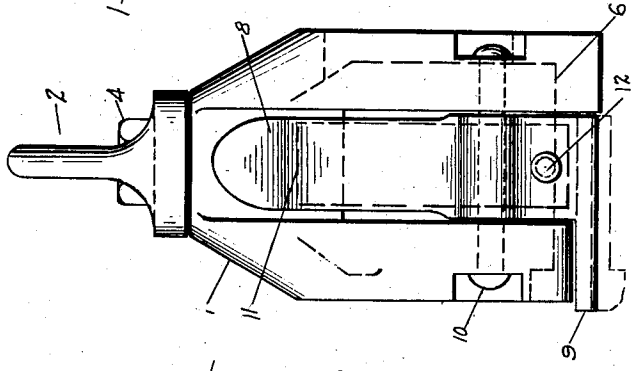


Fig. 2.

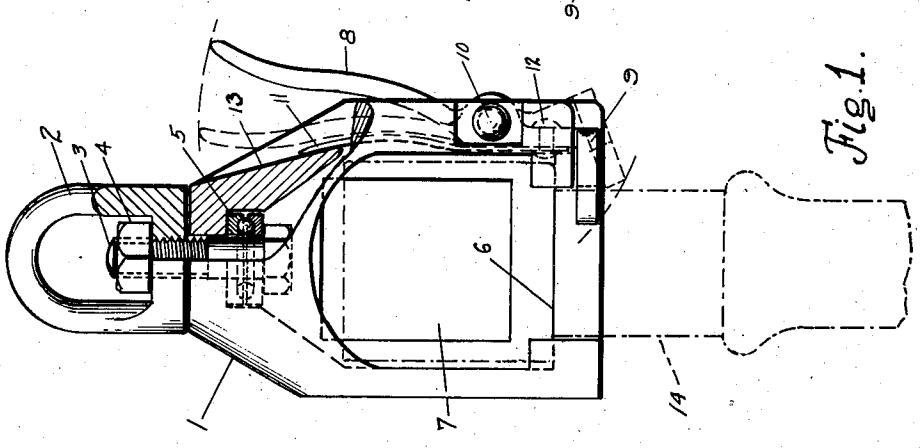


Fig. 1.

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ELEVATOR

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Application March 19, 1936, Serial No. 69,620

1 Claim. (Cl. 294—91)

This invention relates to elevators and has particular relation to sucker rod transfer elevators.

An object of the invention is to provide a rod elevator that is very easily operated and which, at the same time, will securely hold the rod being handled engaged so that there will be no liability of the disengagement and falling of the rod to the injury of workmen or property about the well.

It is a further object of the invention to provide an elevator of the type disclosed that may be very cheaply produced. In the operation of producing wells, pumps are commonly used wherein sucker rods are employed to operate the pump, and at times it becomes necessary to remove a pump from a well. This requires the removal of the sucker rod from the well bore, and in accomplishing this work, the sections of the sucker rods are unscrewed, one at a time and hung in the derrick. In replacing the pump in the well, the sucker rod must be again made up, that is, the sections must be again screwed together as the pump is lowered into the well, the sections being removed, one at a time, from the hanger in the derrick, with an elevator, and held in place vertically over the well bore. The suspended assembly of sections in the well are then lowered and another section screwed onto the upper end thereof in the wellknown manner. Types of elevators now used for this purpose are not equipped with means for securely maintaining the rods in place in the elevator so that if, for any reason, the section being handled is suddenly stopped while being lowered into place, it is liable to fall out of the elevator and cause the injuries adverted to. The present type of elevator is designed to remove the objections common to rod elevators now commonly employed.

With the above and other objects in view, the invention has particular relation to certain novel features of construction, operation and arrangement of parts, an example of which is given in this specification and illustrated in the accompanying drawing, wherein:

Figure 1 shows a front elevation of the elevator, partly in section.

Figure 2 shows a side view.

Figure 3 shows a bottom end view, and

Figure 4 shows a perspective view of the latch employed.

Referring now more particularly to the drawing wherein like numerals of reference designate the same parts in each of the figures, the numeral 1 designates the elevator housing whose upper end is tapered upwardly forming a shield, said housing being preferably approximately rectangular in cross-sectional contour and being open at the bottom. The housing 1 is also open at the front to permit entrance of the sucker rod pin, as indicated in dotted lines in Figure 1. The housing 1 is attached to a clevis 2 by means of a vertical bolt 3 which passes through aligned bearings in adjacent parts of the housing and clevis. The upper end of the bolt 3 is threaded to receive the nut 4 which is screwed thereon within the clevis, and the lower end of the bolt 3 is formed with a head which supports a ball thrust bearing 5 which, in turn, supports the housing whereby the housing may swivel relative to the clevis 2.

At its lower end, the housing has an inside, approximately U-shaped ledge or shoulder whereon the external shoulder at the upper end of the square portion of the rod section may hang, as also indicated in dotted lines in Figure 1.

The rear of the housing opposite the open side above-referred to, is provided with a relatively large opening 7 for access to the interior for cleansing the same of paraffin and the like, and this opening 7 also facilitates the removal of the hanger from the square pin of the sucker rod section.

There is a vertical handle 8 whose lower end is provided with a laterally extended latch 9, preferably formed integral with the handle, and the latch has the inwardly projecting retainer lip 9a on one end thereof. The handle is mounted to pivot on a cross pin 10 mounted in one side of the housing and extended at right angles to the front side thereof. A flat spring 11 is attached, at one end, to the handle 8 adjacent the latch 9 by means of the rivet 12. The free end of this spring is inwardly curved and is adapted to bear against the upwardly tapering face 13 in the side of the housing.

In operation the elevator is suspended in the derrick by means of the usual cable, not shown, and which is attached to the clevis 2 and operates over sheaves at the top of the derrick. The operator may force the upper end of the handle 8 into the position indicated in dotted lines in Figure 1 and this will move the latch into the position indicated in dotted lines in said figure to clear the front opening. The elevator may then be placed about the square sucker rod pin designated by the numeral 14 in Figure 1. Thereupon the handle 8 may be released and the spring 11 will force the latch back into closed position as shown in full lines whereupon the lip 9a will

project partly across the front opening and in front of the sucker rod section held in the elevator so that the elevator cannot be accidently displaced from the rod until the handle 8 is again depressed. The sucker rod section is then swung over the section beneath to which it is to be connected and screwed to said section beneath, the swivel connection between the clevis and housing permitting the housing to turn and the rod section to be screwed into place without inconvenience. When the joint is thus made up, the handle 8 is again depressed and the elevator may be released from the rod section and the operation repeated from time to time until the complete sucker rod is made up.

The drawing and description disclose what is now considered to be a preferred form of the invention by way of illustration only while the broad principle of the invention will be defined by the appended claim.

What I claim is:

An elevator comprising a housing having a downwardly flared top and having a bottom and side walls, a clevis, said clevis and top having aligned openings, connecting means working through said openings, a thrust bearing mounted on the lower end of said connecting means rotatably supporting the housing, said top forming a shield and the bottom having an opening provided with a surrounding seat and having a side gate merging into the bottom opening to permit the entrance of an object to be handled, the rear wall of the housing having an opening for access to the inside of the housing, a latch pivoted on the outer wall of the housing and having a lateral projection arranged, when in active position, to restrict the gate to prevent the displacement of the object held by the elevator, a handle on the latch and yieldable means carried by the latch arranged to normally hold the latch in active position and to permit retraction of the latch to inactive position.

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