April 20, 1926. 1,581,270

C. KNISLEY

ELEVATOR

Filed Jan. 30, 1925

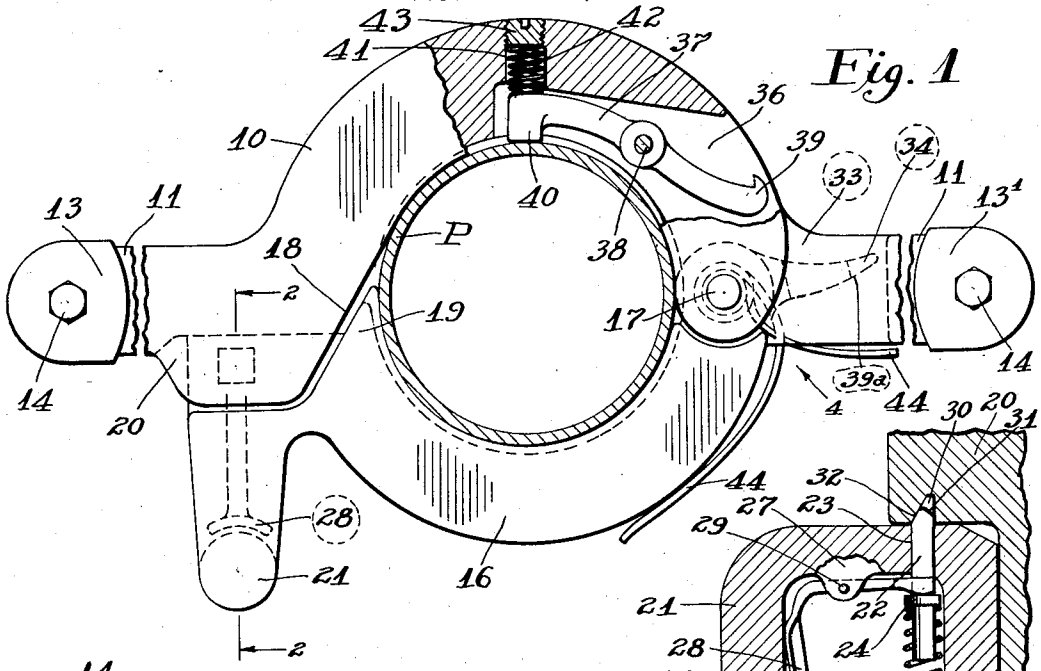


Fig. 1

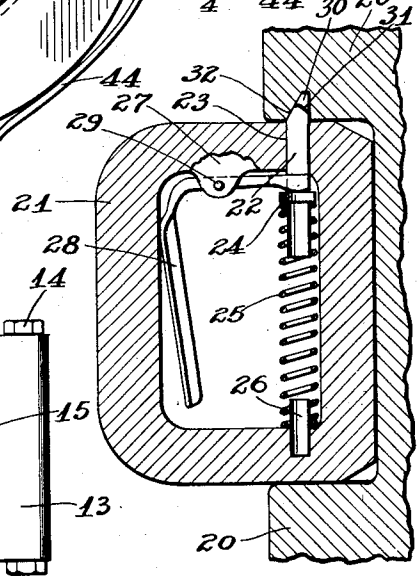


Fig. 2

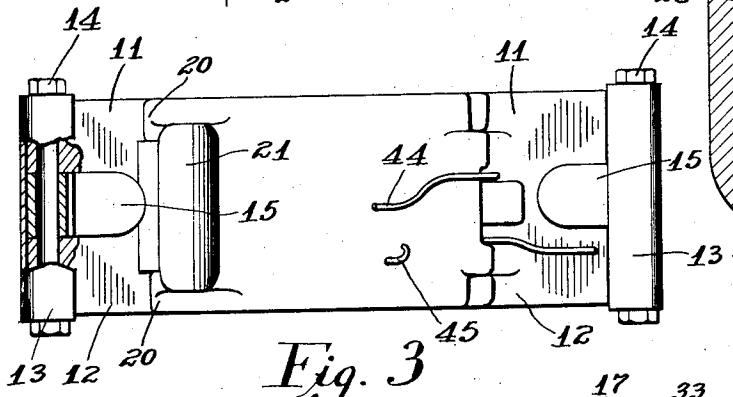


Fig. 3

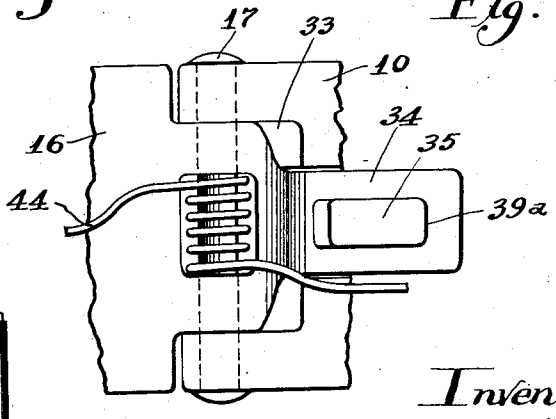


Fig. 4

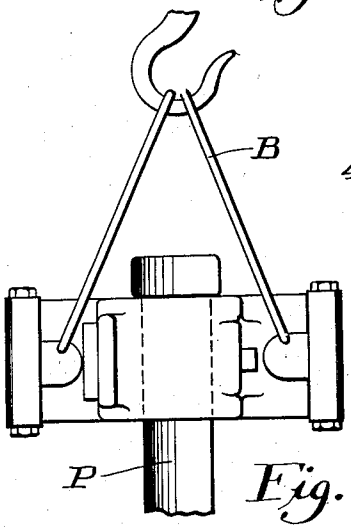


Fig. 5

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UNITED STATES PATENT OFFICE.

CLYDE KNISLEY, OF HUNTINGTON BEACH, CALIFORNIA.

ELEVATOR.

Application filed January 30, 1925. Serial No. 5,758.

To all whom it may concern;

Be it known that I, CLYDE KNISLEY, a citizen of the United States, residing at Huntington Beach, in the county of Orange and State of California, have invented new and useful Improvements in Elevators, of which the following is a specification.

This invention relates to improvements in elevators used in raising and lowering drill pipe and the like in well drilling operations.

It is an object of the invention to provide an improved elevator having a body upon which there is a swinging or hinged door; to provide an improved latch construction for locking the door in closed position; and to provide means whereby when the handle is pulled so as to open the door, the latch will be simultaneously thrown into released or opening position.

A further object of the invention is to provide an elevator having a body and a hinged door; and to provide a trigger device adapted to be engaged by a portion of the door upon being swung open, so that the door may be temporarily held in open position. The trigger device is so arranged that when the body is placed about or caused to engage a section of drill pipe, the trigger device will release the door and enable it to be automatically swung into closed position.

With the foregoing and other objects in view which will be made manifest in the following detailed description and pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a top plan view of the improved elevator, parts being broken away and shown in horizontal section;

Fig 2 is a vertical section through the handle of the door of the elevator and is taken substantially on the line 2—2 of Fig. 1;

Fig 3 is a front elevation of the elevator, the door being shown in closed position;

Fig. 4 is a detail in elevation taken substantially in the direction of the arrow 4 upon Fig. 1; and

Fig. 5 is a front elevation showing the improved elevator in applied position.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the improved elevator consists of a semi-cylindrical body 10, which has formed upon its opposite ends lugs 11 and 12, the lugs 11 being upper lugs and the lugs 12 being lower lugs. Over the ends of the upper and lower lugs 11 and 12 there are placed sheet metal caps 13, which are preferably U-shaped in cross section and have portions 13′ which extend over the top and bottom of the upper and lower lugs 11 and 12 respectively. Bolts 14 pass through the upper and lower lugs 11 and 12 and serve to maintain the caps 13 upon the body. The bolts 14 enable the lower lugs 12 to assume a portion of the strain applied to the elevator by the bails B which pass through the apertures 15 defined by the upper and lower lugs and the bolts 14.

A door 16 is hinged to the body 10 by means of a pin or rivet 17. As clearly shown in Fig. 1, the interior surface of the body 10 is tangential to the circular part, as indicated at 18, opposite the swinging end of the door 16, and the door 16 is provided with a lip 19 fitting in the recess provided by the tangential surface 18 and the pipe P. From the front face of the body 10 there extend lugs or lips 20 and the swinging end of the door 16 is adapted to slide between the upper and lower lips 20. This swinging end has formed thereon a handle 21.

A latch member 22 is slidable in a bore 23 formed in the top of the handle and this latch member has formed thereon an annular flange 24, against which bears the upper end of a coil spring 25. The lower end of the coil spring 25 is kept in proper position upon the handle 21 by means of a pin 26. Ears 27 are formed upon the handle, and an angular lever 28 is pivoted between these ears, as indicated at 29. The upper end of the latch member 22 is adapted to occupy a recess 30 formed upon the under side of the upper lug 20. Preferably the upper end of the latch member 22 is provided with an inclined surface 31 to facilitate forcing the latch member 22 downwardly within the handle upon engagement with the forward surface of the upper lug 20, enabling the door to be slammed or thrown shut. The latch 22 is also preferably provided with an inclined surface 32, which cooperates with an inclined surface in the recess 30 to keep the door tight when shut. Within the body 10 there is an opening 33, in which there is disposed a finger 34 integral with the door 16, which has an aperture 35 therein. An opening 36 is also formed in the body 10, in which there is pivoted a lever 37,

pivoted as at 38, which constitutes a type of trigger. The lever 37 is provided with a hooked end 39 and with an engaging portion 40. A bore 41 may be formed in the back of the body 10, in which there is disposed a coil spring 42 and a suitable plug 43. About the pin 17 there is wound a coil spring 44 having one end bearing upon the front surface of the door 16 and the other end bearing upon one of the lower lugs 12. The spring 44 urges the door 16 into closed position.

The operation of the elevator is as follows: Upon placing the hand upon the handle 21 and giving an outward pull to the handle, the angular lever 28 will be actuated so as to retract the latch member from the recess 30, enabling the door to be opened. The door may then be swung open and when being moved into full open position, the hooked end 39 of the lever 37 will move into the aperture 35 in the finger 34. The pipe P may then be withdrawn from the body, and as the coil spring 42 bears upon the lever 37, the hooked end 39 will be maintained in engagement with the edge 39[a] upon the finger 34. In this manner the door 16 may be temporarily held in open position against the action of the spring 44. When the body 10 is swung into engagement with the pipe P so as to cause the engaging portion 40 of the lever 37 to contact with it, and to be forced backwardly against the action of the coil spring 41, the hooked end 39 of the lever 37 will disengage from the edge 39[a], and enable the door 16 to be swung into closed position by the coil spring 44. Upon the front face of the door 16, there is mounted a hook 45 and the end of the spring 44 which bears against the lower lug 12, can be swung over against the front face of the door 16 and placed beneath the hook 45. In this manner, the door will be allowed to swing freely without being under the action of the spring 44, if so desired.

It will be understood that various changes in the detail of construction may be made without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. An elevator for drill pipe and the like having a body and a swinging door, a trigger mounted upon said body, means associated with said door adapted to be engaged by said trigger upon swinging the door open, whereby said door may be temporarily maintained in open position by said trigger, and door closing means urging said door into closed position, said trigger being so arranged that contact with a pipe or similar object will release said door so as to be closed by said door closing means.

2. An elevator for drill pipe and the like having a body and a swinging door hinged thereto, a trigger device mounted within said body, a finger provided upon said door adapted to engage said trigger device upon swinging the door into open position, whereby said door may be temporarily held in open position by said trigger device, and spring means for urging said door into closed position, said trigger device being so arranged that engagement of said body about a drill pipe or the like will actuate it so as to release said door.

3. An elevator for drill pipe and the like comprising a body, a door hinged to said body, spring means for normally urging said door into closed position, holding means adapted to temporarily hold said door when swung into open position, and means for releasing said holding means, said door being provided with a spring actuated latch adapted to lock said door in closed position.

4. An elevator for drill pipe and the like comprising a body, a door hinged to the body, a handle upon said door, a latch mounted upon said handle, means associated with said latch and mounted upon said handle, whereby an opening pull upon said handle will cause said latch to release, and means urging said door into closed position.

5. An elevator for drill pipe and the like comprising a body, a door hinged to said body, a handle upon the door, a latch engageable upon the handle adapted to engage said body to lock the door in closed position, spring means for urging the latch into locking position, and a pivoted lever mounted upon said handle for moving the latch into releasing position.

In testimony whereof I have signed my name to this specification.

C. KNISLEY.