Oct. 27, 1925. 1,559,302

R. W. BARRETT ET AL

ELEVATOR

Filed Jan. 21, 1925

Fig. 1.

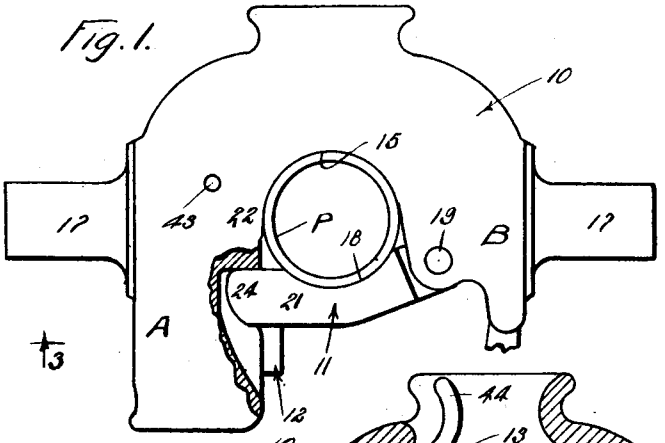


Fig. 2.

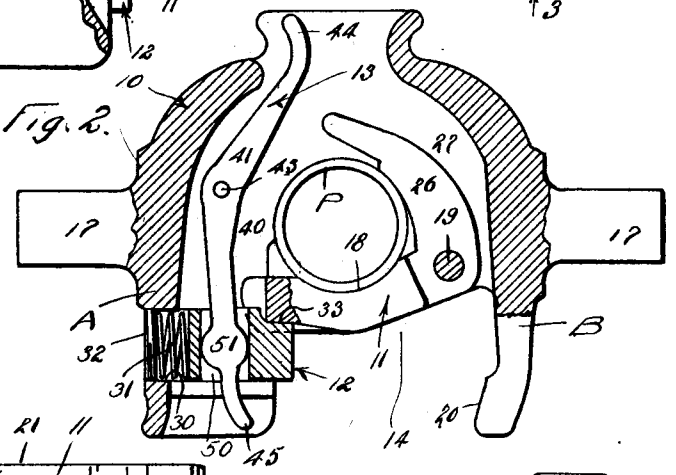


Fig. 3.

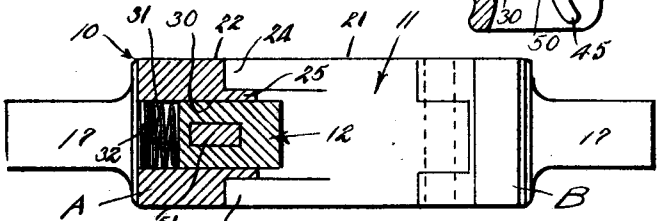


Fig. 4.

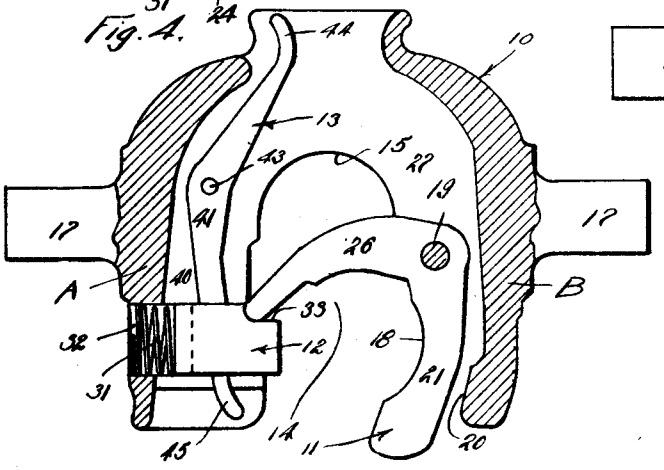
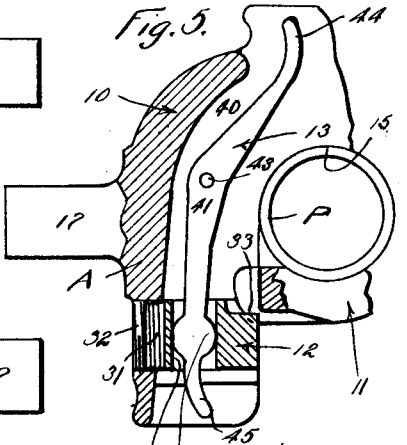


Fig. 5.



Inventors
Ray W. Barrett
and Leo I. Koppl
by W. H. Maxwell
their Attorney

Patented Oct. 27, 1925. 1,559,302

UNITED STATES PATENT OFFICE.

RAY W. BARRETT AND LEO T. KOPPL, OF HUNTINGTON BEACH, CALIFORNIA.

ELEVATOR.

Application filed January 21, 1925. Serial No. 3,764.

To all whom it may concern:

Be it known that we, RAY W. BARRETT, a citizen of the United States, a resident of the city of Huntington Beach, county of Orange, State of California, and LEO T. KOPPL, a citizen of the United States, a resident of the city of Huntington Beach, county of Orange, State of California, have invented new and useful Improvements in Elevators, of which the following is a specification.

This invention relates to an elevator and it is an object of the invention to provide an improved device of this character.

It is an object of this invention to provide an improved locking device for an elevator.

Another object of this invention is to provide an elevator lock operable from the front or rear of the elevator.

A further object of this invention is to provide an improved locking bolt for an elevator.

The various objects and features of our invention will be best and more fully understood from the following detailed description of a typical form and application of the invention throughout which description reference is had to the accompanying drawings in which

Fig. 1 is a plan view of an elevator embodying the present invention, certain parts being broken away to show in section.

Fig. 2 is a plan section of the elevator showing it applied to a pipe.

Fig. 3 is a transverse sectional view of the elevator taken as indicated by line 3—3 on Fig. 1.

Fig. 4 is a view similar to Fig. 2 showing the elevator open and

Fig. 5 is a view showing certain of the parts illustrated in Figs. 2 and 4 in another position.

The elevator includes, generally, two main parts hinged or pivotally connected together to releasably engage around a rod, pipe, or the like. In the present case, one of these parts is in the form of a body 10 and the other is in the form of a gate or closure 11 for the body. In addition to the main parts 10 and 11 the elevator includes a locking bolt 12 for the closure, an operating member 13 for the bolt and various other parts, the details and functions of which will be hereinafter set forth.

The body 10 in the present form of elevator has a vertical passage or opening 14 extending into it from its front side to receive the rod or pipe to be handled by the tool. The opening extends inwardly to about the center of the body where it terminates to form a part adapted to more or less accurately receive and hold the rod or pipe. It will be noted from inspection of the drawings that the inner end 15 of the opening 14 is curved to conform to the curvature of the pipe P. The opening 14 divides the front portion of the body into two spaced side parts A and B. The side parts A and B are provided with trunnions 17 to receive the usual supporting bails (not shown).

The closure 11 is pivotally carried by one of the side parts of the body, in this case, by the side part B so that it is movable between a position where it extends across the opening 14 to retain an object in the inner part of the opening and a position where it is at or close to the side 14 and allows free passage of objects into and out of the inner part of the opening. The closure 11 is mounted on the side part B of the body by a pivot pin 19 and is curved at its inner side 18 to conform to the pipe P, or in other words, to form a continuation of the curvature of the inner part 15 of the opening 14. The outer end of the side part B is shaped and proportioned to form a stop 20 for the closure to limit the outward swing movement of the closure. The upper face 21 of the closure is flush with the top or upper face 22 of the body so that the closure cooperates with the body in supporting the load handled by the elevator. In this case, it is desirable to provide the outer end of the closure with projections 24 which overlap a suitable part 25 of the side A when the closure is in closed position. The closure is provided with an extension or trigger part 26 which is located in a suitable recess 27 provided in the wall of the opening when the closure is in closed position and which projects into the opening 14 when the closure is open. The trigger part 26 is preferably formed integrally with the closure and is shaped and proportioned to function or cooperate with the other parts of the device in the manner hereinafter described. The recess 27 is provided to receive the trigger part when the closure is in closed position and is formed laterally in the wall of the opening 14.

The bolt 12 provided for locking the closure in closed position is slidably carried in a bore 30 provided at the side part A of the body. A spring 31 is arranged back

of the bolt to normally yieldingly urge it outwardly in the opening 30 so that it overlaps and locks the closure 11 in the closed position and holds the trigger 26 in the open position. The spring 31 is arranged between the inner end of the bolt and a plug 32 provided in the bore 30. The outer end of the bolt is provided with a flat side 33 adapted to engage the closure 11 in the manner clearly illustrated in Fig. 2 of the drawings. When the bolt engages the closure, as illustrated in Figs. 1 and 2 of the drawings, it operates to positively lock the closure to a closed position. When the closure is open the trigger part 26 extends into the opening 14 of the body so that its outer end comes opposite the plunger and is engaged by the plunger as illustrated in Fig. 4. The bolt in engaging the trigger operates to yieldingly hold the closure in the open position.

The operating member 13 for the bolt 12 is preferably in the form of a lever mounted in a recess 40 provided in the body. The recess 40, in the preferred form of the invention, extends through the body from the front to the rear. In the case illustrated in the drawings the recess 40 is shown formed in the side part A of the body and extending inwardly from the opening 14 in the body. The recess 40 extends completely through the body from the front or outer end of part A to the rear of the body as clearly shown in Figs. 2 and 4 of the drawings. The operating lever 41 is pivotally mounted in the recess 40 on a pivot pin 43 so that one of its ends forms a finger piece 44 operable from the rear of the body while its other end forms a finger piece 45 operable from the front of the body. The finger pieces 44 and 45 are preferably shaped and proportioned so that they are readily engageable, but so that they do not project from or beyond the body in a manner to be accidentally actuated by objects brushing against the elevator. In accordance with the preferred form of our invention the operating lever 41 operates directly on the bolt 12. In the preferred form of construction the bolt 12 is mounted in the side part A so that it extends through the recess 40. An opening 50 extends through the bolt 12 at the recess 40 and the lever 41 is arranged to extend through the opening 50. A bearing part 51 in the form of a circular enlargement is provided on the lever 41 in the opening 50 so that the lever has the proper working fit with the bolt. With this construction which is clearly illustrated in Figs. 2, 3, 4 and 5 of the drawings the lever 41 is conveniently operable from the front or the rear of the body to retract the bolt to release the closure.

In operation the elevator is applied to a pipe P, or the like, with the closure open as illustrated in Fig. 4. As the pipe passes into the opening 14 it engages the trigger 26 to release it from the bolt 12 and to move it into the recess 27 in the body. This operation of the trigger causes the closure 11 to follow the pipe P into the opening 14 until the pipe reaches the inner end of the opening and the closure is in position where the bolt automatically engages behind the closure to lock it closed as shown in Fig. 2. When it is desired to release the pipe from the elevator the lever 41 can be actuated by engaging either the finger piece 41 at the rear of the body or the finger piece 45 at the front of the body to retract the bolt to the position shown in Fig. 5 thus releasing the closure and allowing the pipe to pass out of the opening 14. As the pipe passes out of the opening 14 it moves the closure to the open position in engagement with the stop 20 and therefore causes the trigger part to assume its position in the opening 14 where it is engaged and yieldingly held by the bolt as shown by Fig. 4. It will be noted that the locking device and operating means therefore, is particularly simple and inexpensive of construction and that it contains but a few simple parts. The connection between the operating lever and bolt is particularly simple and effective. It will be noted that this connection not only provides for proper operation of the bolt by the lever but also maintains the bolt in proper rotative position so that the flat part 33 at the outer end of the bolt is maintained in proper position to cooperate with the closure. Further, the provision of operating means for the bolt operable from the front or the rear is particularly important as it makes the elevator particularly convenient and fast to handle.

Having described only a typical preferred form of our invention we do not wish to limit ourselves to the specific details hereinabove set forth, but wish to reserve to ourselves any changes or variations that may appear to those skilled in the art or fall within the scope of the following claims.

Having described our invention, we claim:

1. An elevator including, a body to receive a pipe, a closure for the body, means for locking the closure, and a single member for actuating the locking means, said member having parts at the front and rear of the body whereby it is operable from the front or rear of the body.

2. An elevator including a body to receive a pipe, a closure for the body, means for locking the closure, and a lever for actuating the locking means, the lever having one end engageable at the front of the body and the other end engageable at the rear of the body whereby it is operable from the front or the rear of the body.

3. An elevator including a body to receive a pipe and having a recess through it from

front to rear, a closure for the body, locking means for the closure and an operating member for the locking means mounted in the recess so that it is operable from the front or rear of the body.

4. An elevator including a body, a closure for the body, a locking bolt for the closure, and a single operating member for the bolt having a part at the front of the body and a part at the rear of the body so that it is operable from the front or the rear of the body.

5. An elevator including a body to receive a pipe, a closure for the body, a locking bolt for the closure having an opening through it and an operating member for the bolt extending through the opening therein and having a part at the front of the body and a part at the rear of the body whereby it is operable from the front or the rear of the body.

6. An elevator including a body to receive a pipe and having a recess through it from front to rear, a closure for the body, a locking bolt for the closure having an opening through it, and an operating lever for the bolt mounted in the recess so that it extends through the opening in the bolt and has one end at the front of the body and the other end at the rear of the body whereby it is operable from the front or the rear of the body.

7. An elevator including a body to receive a pipe and having a recess through it from front to rear, a closure for the body, a locking bolt for the closure having an opening through it, and an operating lever for the bolt mounted in the recess so that it extends through the opening in the bolt and has one end at the front of the body and the other end at the rear of the body whereby it is operable from the front or the rear of the body, and having a bearing part fitting the opening in the bolt.

8. An elevator including a body to receive a pipe and having a recess extending through it from front to rear, a closure for the body pivotally connected thereto, a locking bolt slidably carried by the body to lock the closure in closed position, the locking bolt having an opening through it, a spring normally yieldingly holding the locking bolt in position to lock the closure and an operating lever pivotally mounted in the recess, the lever having a bearing part fitting the opening in the bolt, the ends of the lever being in the form of finger pieces and being at the front and rear ends of the recess whereby the lever is operable from the front or the rear of the body.

9. An elevator including a body to receive pipe, means for locking pipe in the body including about having an opening through it, and an operating member for the bolt extending through the opening therein and having a part at the front and a part at the rear of the body whereby it is operable from the front or rear of the body.

In witness that we claim the foregoing we have hereunto subscribed our names this 20th day of December, 1925.

LEO T. KOPPL.
RAY W. BARRETT.