

Dec. 19, 1939.

T. PATIN

2,183,582

ELEVATOR GATE AND LATCH

Original Filed July 19, 1923 2 Sheets-Sheet 1

Fig. 1

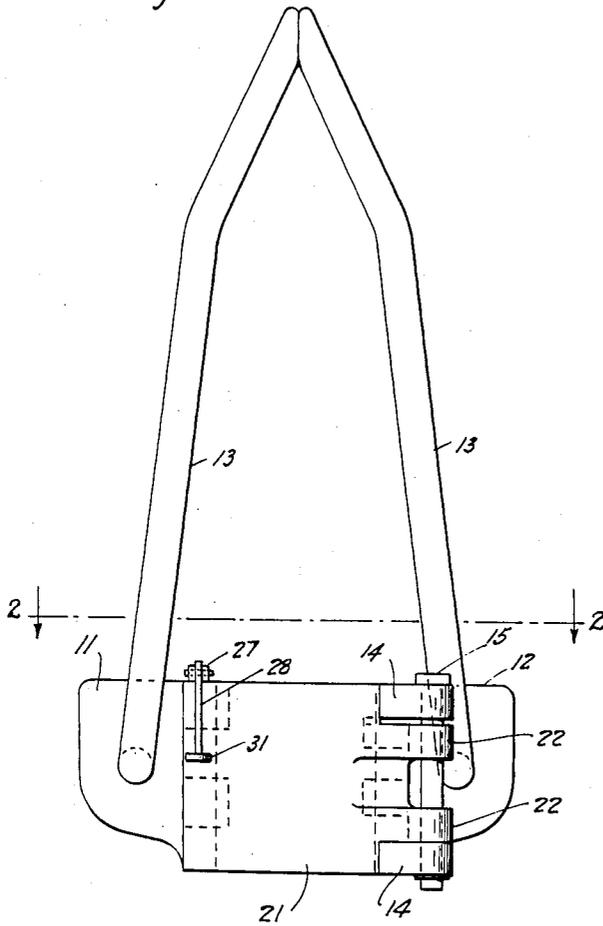


Fig. 2

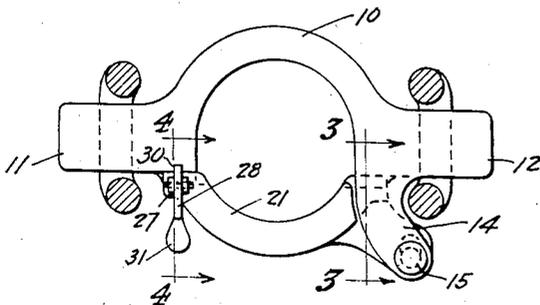


Fig. 3

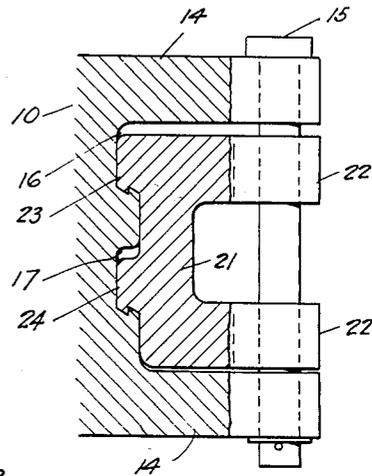
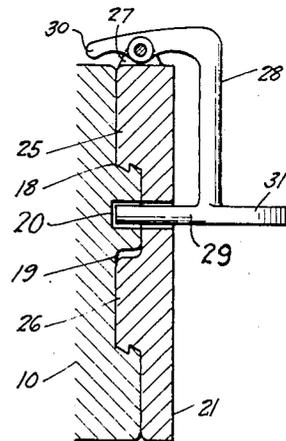


Fig. 4



Inventor  
Thaddeus Patin  
by *Westall and Wallace*  
his Attorneys

Dec. 19, 1939.

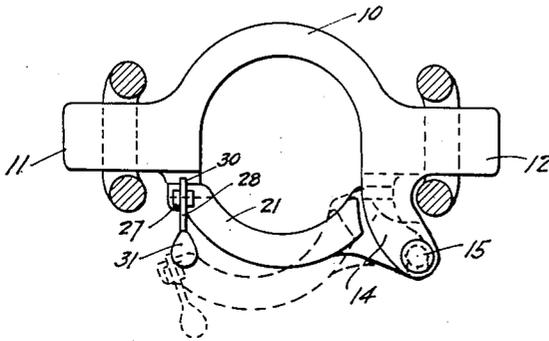
T. PATIN

2,183,582

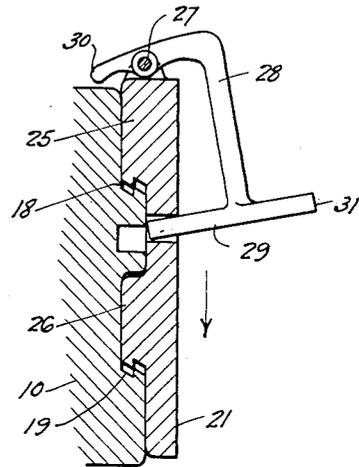
ELEVATOR GATE AND LATCH

Original Filed July 19, 1923 2 Sheets-Sheet 2

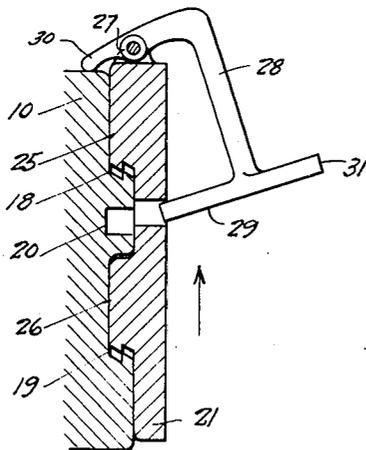
*Fig. 5*



*Fig. 6*



*Fig. 7*



*Inventor*  
*Thaddeus Patin*  
*by Nestall and Mallock*  
*his Attorneys*

## UNITED STATES PATENT OFFICE

2,183,582

## ELEVATOR GATE AND LATCH

Thaddeus Patin, Anaheim, Calif., assignor to  
Byron Jackson Co., a corporation of Delaware

Refiled for abandoned application Serial No.  
652,600, July 19, 1923. This application March  
22, 1928, Serial No. 197,445

3 Claims. (Cl. 294--90)

This invention relates to an elevator for oil well casing, pipe and the like having a hinged gate or door and means to lock the gate in closed position. In elevators of the character described, it is common practice to provide the body with a hinged gate whereby the body may be placed about the work and the gate closed and locked in closed position. This invention appertains particularly to the latching and locking means. It is the primary object thereof to provide a gate structure which will automatically lock on being closed and will be maintained securely in locked position while supporting the work. In addition to the broader objects of this invention, there are certain details of design whereby a simple, strong, and durable structure is obtained.

These objects together with other objects and corresponding accomplishments are obtained by means of the embodiment of my invention illustrated in the accompanying drawings, in which:

Fig. 1 is an elevation of a complete elevator constructed in accordance with my invention; Fig. 2 is a section as seen on the line 2--2 of Fig. 1 showing the gate in closed position; Fig. 3 is an enlarged fragmentary section as seen on the line 3--3 of Fig. 2; Fig. 4 is an enlarged fragmentary section as seen on the line 4--4 of Fig. 2; Fig. 5 is a section similar to Fig. 2 showing the gate in slightly open position; Fig. 6 is a view similar to Fig. 4 showing the latch just closing; and Fig. 7 is a view similar to Figs. 4 and 6 showing the latch opening.

Referring more particularly to the drawings, an elevator is shown having links permanently attached thereto. However, a construction with detachable links may be used if desired, the means of attaching the links forming no part of the present invention. The body of the elevator is indicated by 10, and it is provided with ears 11 and 12 to which the links 13 may be attached in any suitable manner. The body has lugs 14 extending from one side thereof which are provided with openings to receive a hinge pin 15. Formed in the body of the elevator adjacent to the lugs 14 are keeper recesses 16 and 17 to receive projections formed on the gate later described. At the opposite sides of the body are keeper recesses 18 and 19 to receive corresponding projections on the gate. Formed in the body between the recesses 18 and 19 is a recess 20 to receive a latch pin for locking the gate in its closed position.

A gate 21 is provided with lugs 22 having openings for receiving the hinge pin 15. The lugs 22

are so spaced with reference to the lugs 14 that the gate may be moved upwardly and downwardly on the hinge pin. Formed on the gate adjacent the lugs 22 are bevelled projections 23 and 24 to engage in the keeper recesses 16 and 17 respectively. At the opposite edge of the gate are projections 25 and 26 to engage with keeper recesses 18 and 19 respectively. As the gate is swung from the open position shown in dotted lines in Fig. 5 to the closed position shown in full lines, the bevelled faces of the projections engage the keepers and ride upwardly moving the gate upwardly to the position shown in Figs. 6 and 7. Finally the gate by reason of its weight moves downwardly so that the projections and keepers are in the position shown in Figs. 1, 2, 3, and 4. The weight of a collar or pipe resting upon the elevator will hold the gate in closed position. However, the elevator may be moved downwardly, and to avoid trouble due to the gate opening a latch is provided. Mounted upon the gate are ears 27 between which is pivoted a latch 28 of angular form. The latch has a pin 29 disposed to enter an opening in the gate 21 and when the opening is in registration with the recess 20 to move into the recess as shown in Fig. 4, thereby locking the gate against upward and disengaging position of the projections and keepers. A finger 30 is so disposed that it may engage the top of the body. A handle 31 is provided so that the latch may be operated.

Assume that the gate is closed and in the position shown in Figs. 1, 2, 3, and 4. When it is desired to open the gate, handle 31 is grasped and pulled upwardly. Pin 29 is thus moved out of the opening, finger 30 engaging the top of the body and assisting in lifting the gate into the position shown in Fig. 7, in which position the projections and keepers are disengaged. The pull outwardly upon the gate will swing the latter into the position shown in dotted lines in Fig. 5. To lock the gate the latter is swung or slammed into closed position.

This application is refiled for my abandoned application Serial No. 652,600, filed July 19, 1923.

I claim:

1. An elevator comprising a body, a gate hinged thereto so as to permit limited axial movement, a bevelled projection on said gate, said body being provided with a keeper for said projection, said keeper and projection being so shaped as to be disengageable only upon upward movement of said gate, said gate and body being provided with openings registering when the gate is closed, and a pin pivotally mounted on said gate and disposed

to enter said openings and lock said gate when closed against upward opening movement.

2. An elevator comprising a body, a gate hinged thereto so as to permit limited axial movement, bevelled projections on both jambs of said gate, said body being provided with keepers for said projections, said keepers and projections being so shaped as to be disengageable only upon upward movement of said gate, said gate and body being provided with openings registering when the gate is closed, and a pin pivotally mounted on said gate and disposed to enter said openings and lock said gate when closed against upward opening movement.

3. An elevator comprising a body, a gate hinged thereto so as to permit limited axial movement, a bevelled projection on said gate, said body being provided with a keeper for said projection, said gate and body being provided with openings registering when the gate is closed, and a latch pin pivotally mounted on the upper part of said gate and disposed to enter said openings and lock said gate when closed against upward unlatching movement, said latch pin having a finger overhanging said body whereby on withdrawing said latch pin from said openings the latch pin acts as a lever to raise said gate.

4. An elevator comprising a body, a gate hinged thereto so as to permit limited axial movement, bevelled projections on both jambs of said gate, said body being provided with keepers for said projections, said gate and body being provided with openings registering when the gate is closed, and a latch pin pivotally mounted on the upper part of said gate and disposed to enter said openings and lock said gate when closed against upward unlatching movement, said latch pin having a finger overhanging said body whereby on withdrawing said latch pin from said openings the latch pin acts as a lever to raise said gate.

5. An elevator comprising a pair of jaws connected for relative horizontal swinging movement and for relative vertical movement, interengaging means on the jaws for locking the latter against relative horizontal movement, said means being disengaged by relative vertical movement between the jaws, latch means for locking said jaws against relative vertical movement, and common manually operable means on one of said jaws for releasing said latch means and thereafter moving

one of said jaws vertically to release said interengaging means.

6. In a device of the class described, a pair of pipe-engaging jaws, means connecting the jaws for relative pivotal movement and for relative movement in a plane including the pivotal axis, means for preventing relative pivotal movement between said jaws comprising a recess in one jaw and a lug on the other jaw engageable with said recess and releasable therefrom upon relative movement in the aforesaid plane, a latch for preventing said last-mentioned movement, and a single manually operable means for releasing said latch and thereafter moving one of said jaws in the aforesaid plane to release said lug from said recess and permit relative pivotal movement between said jaws.

7. A well tool comprising a pair of jaws adapted to be closed about a vertical pipe, means connecting the jaws for horizontal opening and closing movement and for relative vertical movement, interlocking means on said jaws for preventing opening movement thereof and releasable upon relative vertical movement between said jaws, a latch mounted on one of said jaws and engaging means on the other jaw for preventing said vertical movement, and means associated with said latch and operable on initial movement thereof to release said latch and operable on continued movement thereof to move one of said jaws vertically to release said interlocking means and permit said jaws to open.

8. A well tool comprising a pair of pipe-engaging jaws connected together for relative movement both horizontally and vertically, interengaging means on the jaws for locking the latter against relative horizontal movement and being releasable upon relative vertical movement, a latch on one jaw engageable with means on the other jaw for preventing relative vertical movement, cam means on one jaw engageable with a surface on the other jaw for effecting relative vertical movement between the jaws, and common manually operable means associated with said latch and said cam for first releasing said latch and thereafter operating said cam to release said interengaging means and permit said jaws to open.

THADDEUS PATIN. 50