Mar. 13, 1923. 1,448,100.

W. B. WIGLE.

ELEVATOR.

FILED JAN. 29, 1919.

Fig. 1.

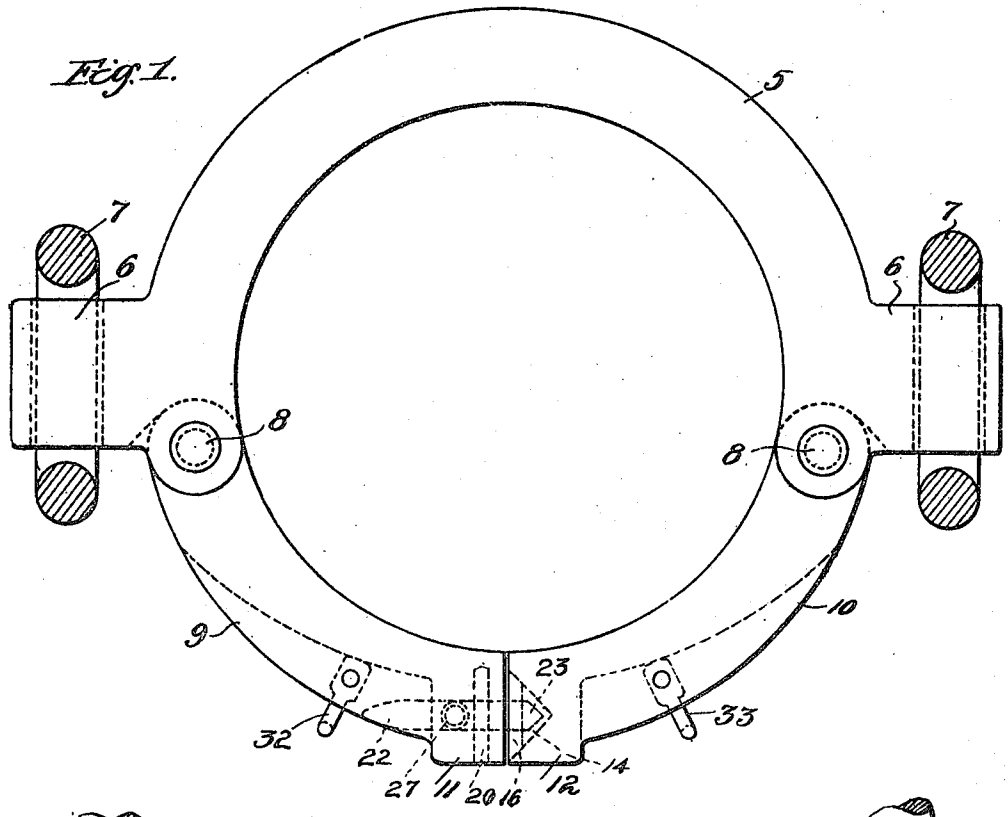
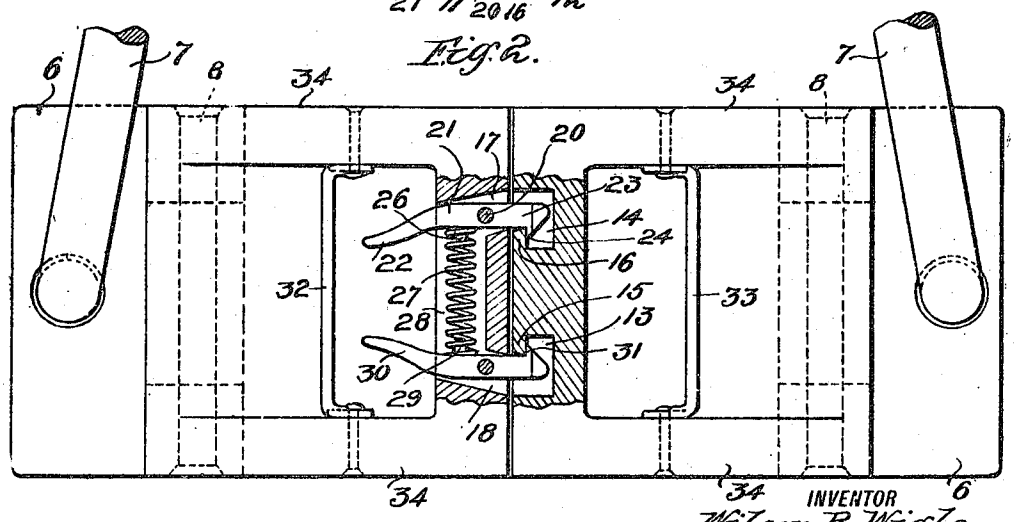


Fig. 2.



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WILSON B. WIGLE, OF FULLERTON, CALIFORNIA.

ELEVATOR.

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To all whom it may concern:

Be it known that I, WILSON B. WIGLE, a citizen of the Dominion of Canada, residing at Fullerton, in the county of Orange and State of California, have invented new and useful Improvements in Elevators, of which the following is a specification.

My invention relates to an elevator construction usually employed in elevating or lowering oil well tubing, or drive pipes in oil or other wells, and pertains more specifically to a latching mechanism for detachably securing together the elevator members when the same have been secured in position on the tubing or casing which is being elevated or lowered into position.

A prime object of my invention is to provide a double latching mechanism for casing elevators, that will securely hold the pivoted elevator members together during its operation, and in which one of the latching mechanisms will hold the elevator members securely together should the other latching mechanism become accidentally disengaged.

Another object of my invention is to provide a double latching mechanism so arranged that an operator may readily disengage both latching mechanisms at a single operation, the mechanisms operating in unison when the pivoted elevator members are secured together.

I accomplish the above objects by means of the latching mechanism herein decribed and illustrated in the accompanying drawings in which:

Fig. 1 is a plan view of an elevator of usual construction, showing my improved latching mechanism applied thereto, the raising and lowering bails being in section.

Fig. 2 is a side elevation of an elevator, parts being broken away to clearly disclose my latching mechanism.

Referring more specifically to the drawings, the elevator illustrated therein is of the type usually employed in raising or lowering oil well tubing or drive pipes, in oil wells, and consists of a semi-circular member 5 provided on its outer face, and at each of its ends with an apertured bail engaging lug 6, formed integral therewith, the bails 7 of usual form, swingingly engaging the apertures in the lugs, and when in their operative position extending upwardly to a hook (not shown).

Secured to the ends of member 5 by pivot pins 8 are segmental jaw members 9 and 10, the free ends of said members being detachably secured together when the elevator is placed in position on the casing or pipe that is being raised or lowered.

Each of members 9 and 10 is segmental in form, and they are provided on their free ends with outwardly extending lugs 11 and 12, in which the latching mechanism is mounted. The opposing face of lug 12 is preferably provided with two latch receiving recesses 13 and 14 disposed in vertical alinement one above another, the upper wall of recess 13 having a downwardly extending latch engaging lip 15, while the lower wall of recess 14 has an upwardly extending latch engaging lip 16, both lips rigidly maintaining the members 9 and 10 securely together when engaged by the pivoted latch dogs.

Lug 11 is provided with two transversely extending latch receiving apertures 17 and 18 disposed apart and registering with recesses 13 and 14 when the two members 11 and 12 are brought together as clearly shown in the drawings. Mounted on a pivot pin 20 which extends transversely across aperture 17 is a manually operated latch 21, one end 22 forming an operating handle, while the opposite end 23 is formed into a downwardly extending catch 24 adapted to engage the lip 16 formed on the lower wall of the recess 14. The outer end of latch 21 is bevelled from the lower transverse edge of catch 24 upwardly so that when the members 9 and 10 are brought together the engaging end of the latch will readily rise over the projecting lip 16 and enter the recess. The side walls of the latch end are also bevelled as clearly shown in dotted lines in Fig. 1 of the drawings so as to conform to the inclined side walls of the recess and to permit of an unrestricted opening of the members 9 and 10 when the elevator is disengaged. The lower edge of latch 21 is provided with a downwardly projecting lug 26, adapted to engage the upper end of a coiled latch operating spring 27 mounted in a recess

28 formed between the two apertures, the lower end of said spring engages the lug 29 formed on a latch 30 that is an exact counterpart of latch 21, the latch 30 which is pivotally mounted in aperture 18 being disposed with its lip engaging catch 31 extending upwardly so as to engage the lip 15 when the latch end enters the recess.

The outer faces of segmental members 9 and 10, adjacent the lugs 11 and 12 formed thereon, are recessed as clearly shown in both figures of the drawings, the projecting ledges 34 preventing the accidental disengagement of the latching dogs on a downward or upward movement of the elevator. Secured to ledges 34 in any suitable manner are vertically disposed hand grips 32, 33, which may be utilized by the operator in swinging the members 9 and 10 into or out of engagement with each other.

The operation of my latching mechanism is as follows: The coiled spring 27 will normally maintain the latch members in position for engaging the lips formed on the upper and lower walls of the recesses, the bevelled ends permitting an easy entrance thereto when the jaws of members 9 and 10 are brought together to lock the elevator in position. By providing a double latching means, all danger of accidental displacement is reduced to a minimum, if one latch is accidentally disengaged, its companion latch is sufficiently strong to maintain the members 9 and 10 in locked position to each other. In detaching the members 9 and 10 from each other, the operator first presses the handles of the latch members together, and then swings member 10 slightly away from its companion member, the grips 32 and 33 are then grasped and both members are then swung open to their fullest extent to release the elevator from engagement with the pipe casing which is being elevated or lowered into or out of the well.

It will be observed from the foregoing that I have produced an extremely simple and effective latching means for casing elevators, that is quite unlikely to get out of order and which may be readily repaired.

What I claim is:

1. An elevator latching mechanism, comprising in combination with a single stationary member of substantially semi-circular form, two swinging members of quadrant form pivotally secured to said stationary member, a member to each end of said stationary member and a double latching mechanism secured to one of said swinging members and engaging the other of said members to lock said members together in their adjusted position.

2. An elevator latching mechanism, comprising in combination a single stationary member of substantially semi-circular form, a pair of jaws of substantially quadrant form pivoted to swing on said stationary member, a jaw engaging each end of said stationary member, a spring latch pivotally secured to the outer end of one of said jaws, said latch adapted to automatically engage the outer end of the other of said jaws when the ends of the two are swung together, said latch being provided with manually operated disengaging means, and means formed on the jaws carrying the latch for protecting the latch from accidental displacement during the operation of the elevator.

3. An elevator latching mechanism, comprising in combination with a substantially semi-circular stationary member, a pair of swinging jaws substantially of quadrant form pivotally secured thereto, the free ends of said swinging jaws abutting when swung together, one of said jaws provided on its outer face and adjacent its free end with a pocket or recess, a pivoted latch mounted in said pocketed or recessed jaw, the handle of said latch projecting into said pocket or recess, and a spring for returning the latch to normal position after a latching operation, said latch adapted to engage the other of said jaws to hold the same in locked relation with each other.

WILSON B. WIGLE.