

Feb. 17, 1970

T. L. JONES ET AL

3,495,864

ROTATING FLAPPER ELEVATOR

Filed Dec. 26, 1967

4 Sheets-Sheet 1

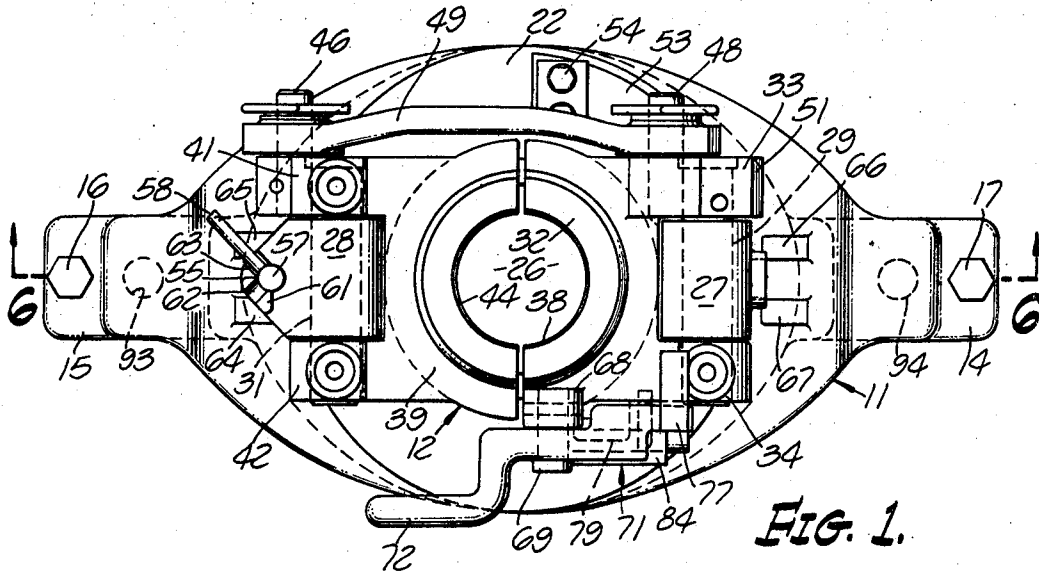


FIG. 1.

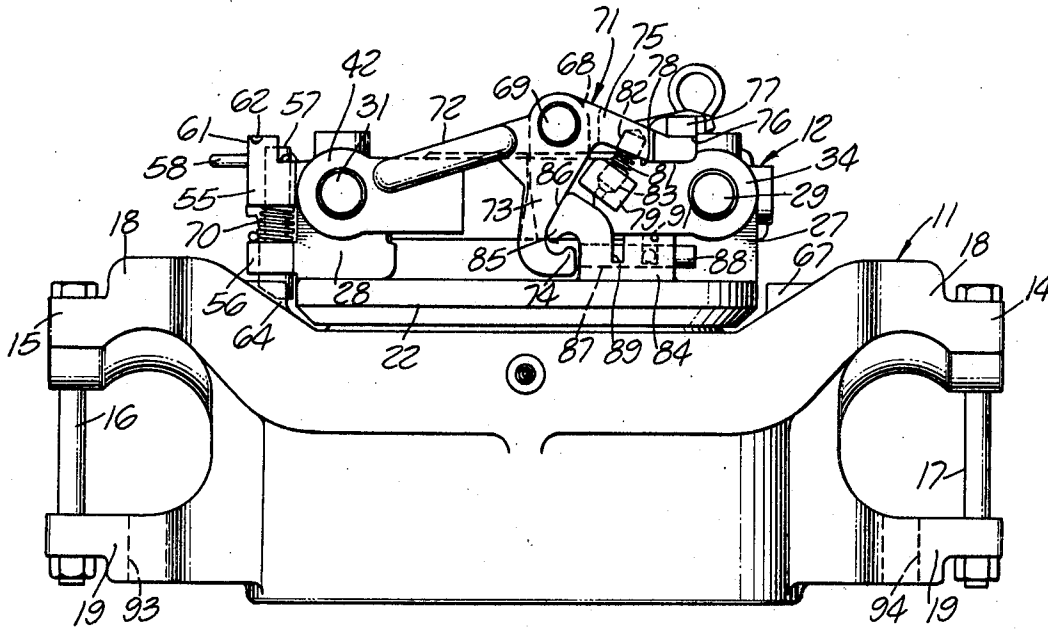


FIG. 2.

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4 Sheets-Sheet 2

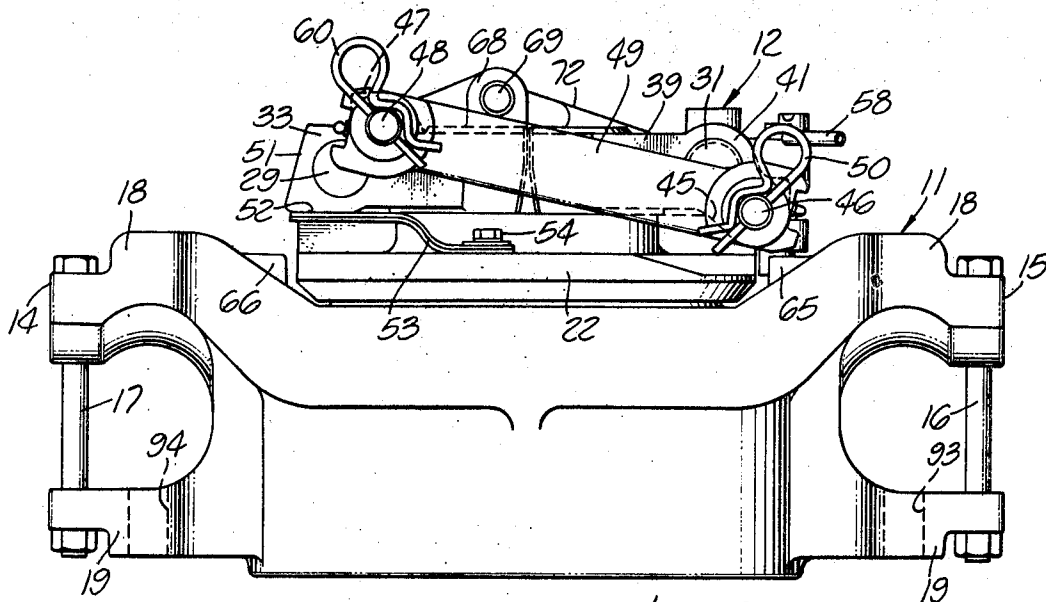


FIG. 3.

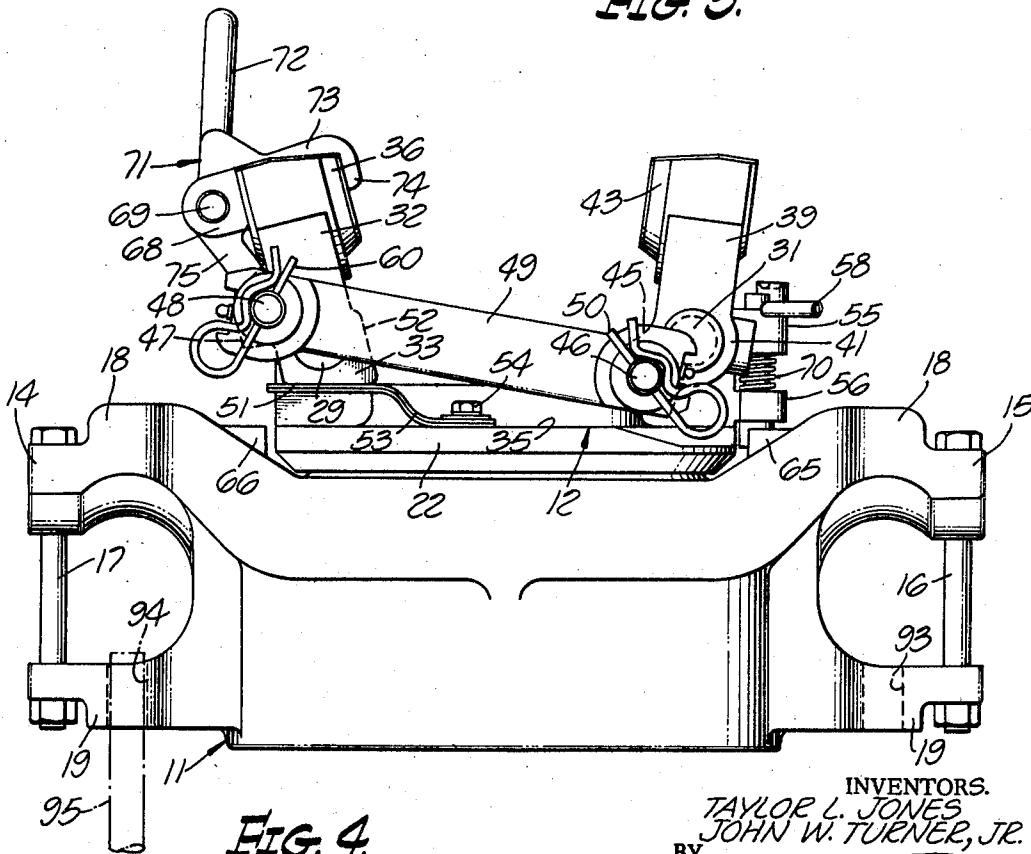


FIG. 4.

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4 Sheets-Sheet 3

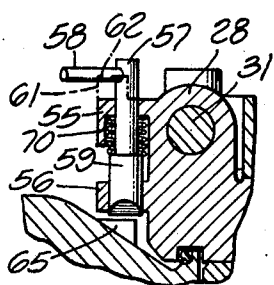
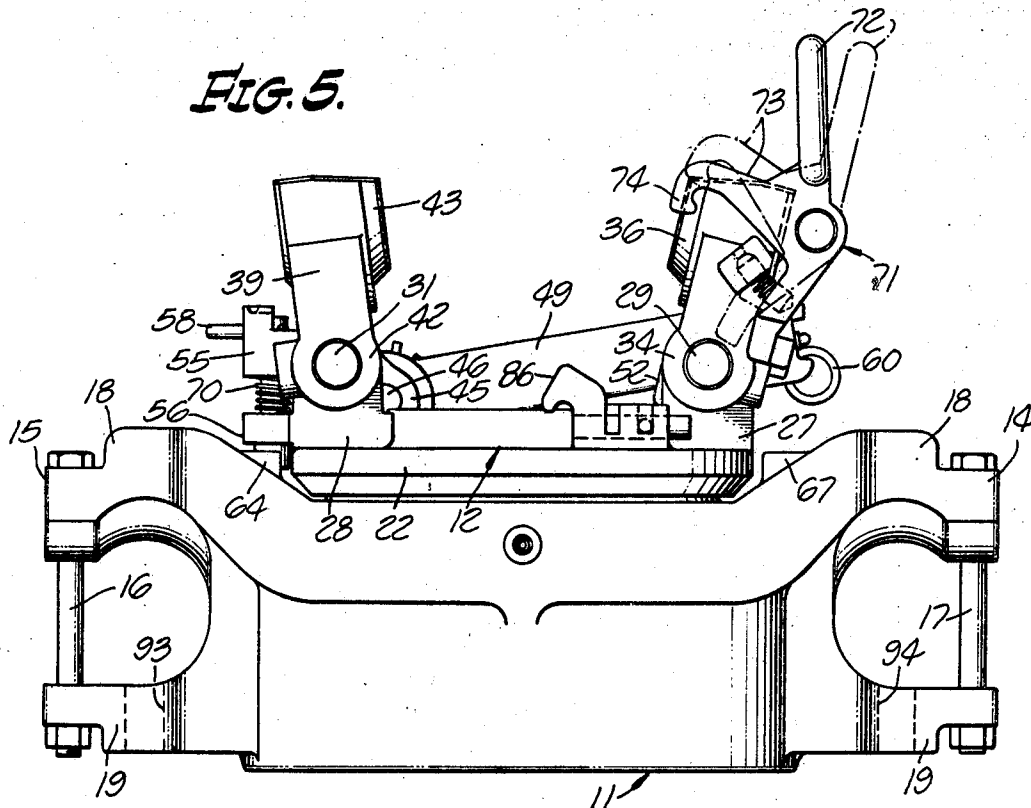


FIG. 10.

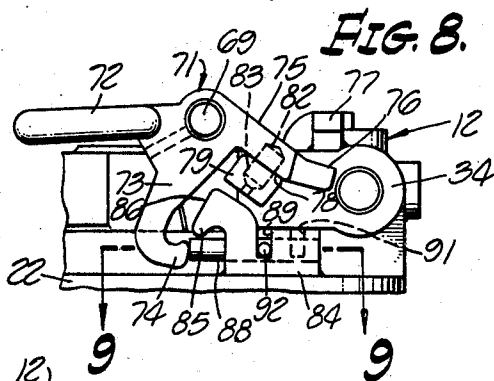


FIG. 8.

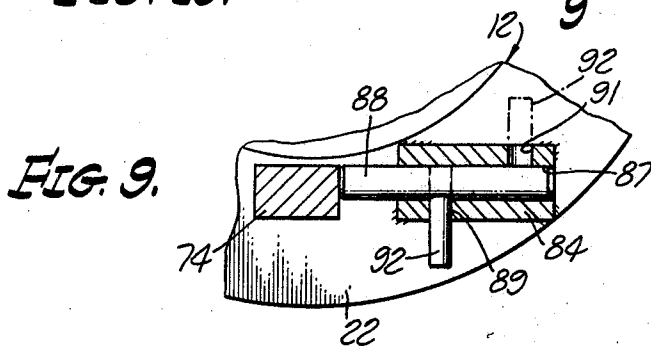


FIG. 9.

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4 Sheets-Sheet 4

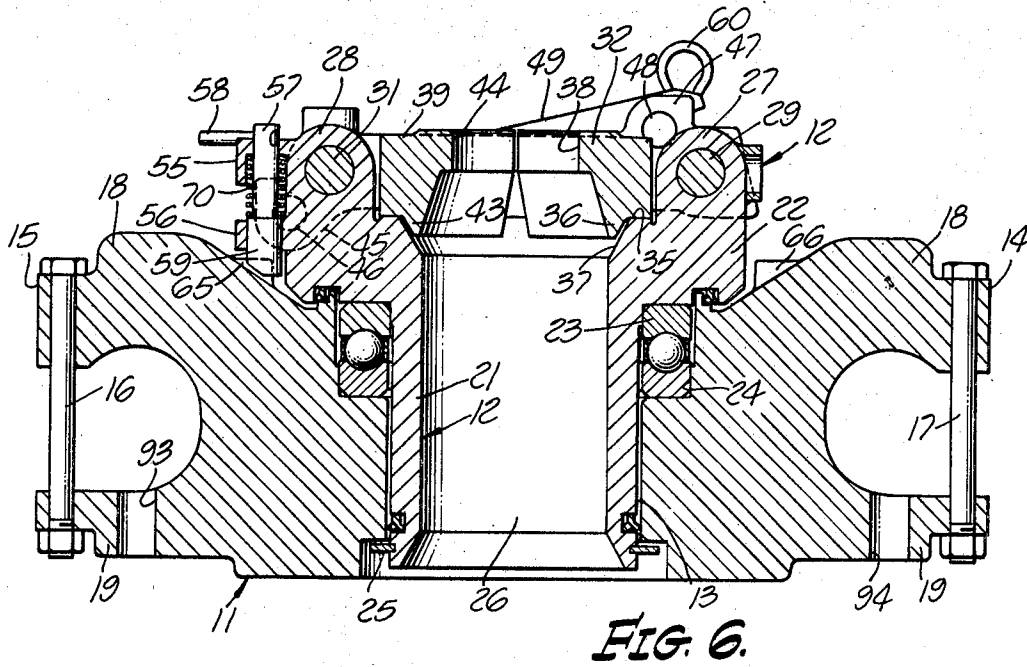


FIG. 6.

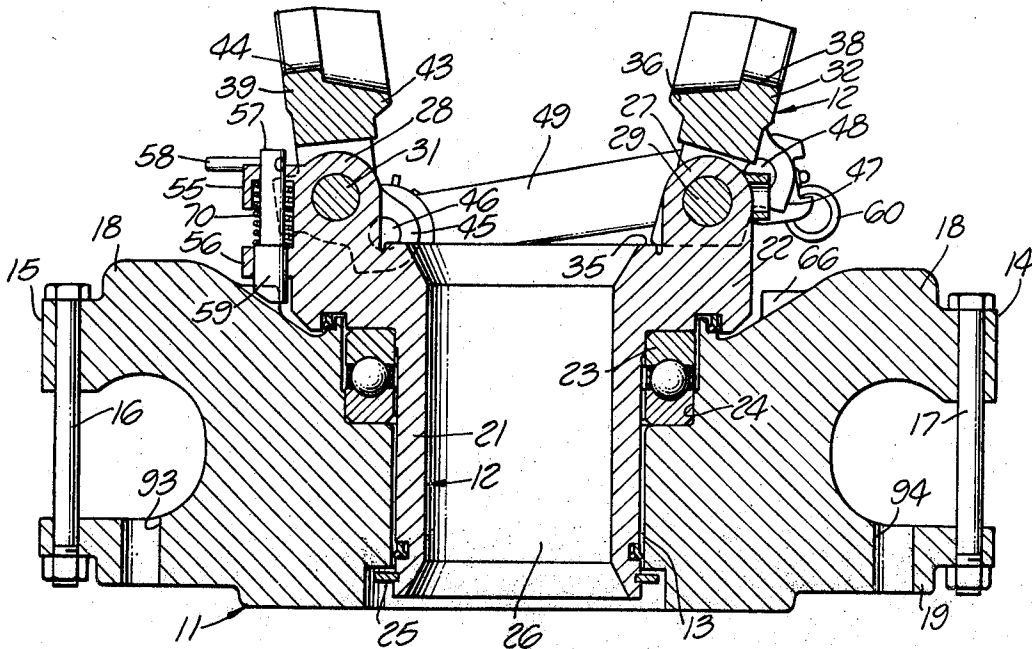


FIG. 7.

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3,495,864

ROTATING FLAPPER ELEVATOR

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Filed Dec. 26, 1967, Ser. No. 693,627

Int. Cl. B66c 1/10

U.S. Cl. 294—90

10 Claims

ABSTRACT OF THE DISCLOSURE

A flapper type elevator for oil well pipe and the like, provided with a rotatable flapper and flapper base assembly having releasable lock means operable to permit or prevent rotation; a releasable flapper holddown lock automatically operable to lock the flappers closed in pipe supporting position against accidental opening to pipe releasing position, and means operable to nullify the flapper holddown lock mechanism. Also, the elevator may be provided with holes for receiving a canting means for canting the elevator to pick up horizontal pipe.

BACKGROUND OF THE INVENTION

This invention relates to elevators used primarily for the positioning of pipe in a borehole or removing and handling the pipe from the borehole, in other words, hoisting, lowering, or holding sections or stands of pipe used in drilling wells, such as oil wells, water wells, gas wells and the like. Primarily, the invention is directed to flapper type elevators in which the flappers may be mounted on a rotatable base for rotary movement with respect to the elevator body. One such arrangement is disclosed in the pending application for United States Letters Patent of John W. Turner, Jr., Ser. No. 586,218, filed Oct. 12, 1966, now Patent No. 3,454,297 and entitled, "Convertible Elevator."

Heretofore the use of a flapper type elevator has been somewhat limited and dangerous for the reason that, in handling stands of pipe, particularly in lowering the stands, a sudden jar or reversal of direction could cause the pipe to exert an opening force on the flappers causing them to fly open and drop the stand. If the stand is attached to a drill string, encountering an obstruction or offset in lowering the pipe into the well could cause the pipe to reverse direction of movement relative to the elevator suddenly and force open the flappers. Should the pipe or drill string then clear the obstruction, it could be dropped from the elevator and lost in the well, requiring an expensive and time-consuming "fishing" procedure to recover the pipe. Obviously, this could be an extremely serious matter. There are times, however, such as when the elevator is being used to handle a single section of pipe, when it is not necessary to lock the flappers and the operator would desire to leave the flappers unlocked to save time and handling effort. We have provided a unique arrangement and means for either locking the flappers in closed (horizontal) position or leaving the flappers unlocked.

Further, when the elevator is in use in breaking out or making up a drill string, it is necessary to rotate the pipe to engage or disengage the stand from the remainder of the drill string. This requires that the flapper assembly be rotatable. However, in many instances such rotation is not desired for other operations and it is desirable to lock the flappers against rotation. Applicants have provided a simple, novel and inexpensive solution to preventing such rotation when it is not desired.

It is also a problem in handling elevators of this type to place the elevator on the end of pipe which has been horizontally racked. In the past it has been necessary for

the operator to manually turn the elevator on its side, that is, tilt the elevator, and this has been a difficult and dangerous job because of the necessity of the operator exerting the force necessary to do so without having the advantage of any leverage or tools for this purpose. Applicants have provided a very simple expedient for accomplishing this tilting action with a minimum of effort on the part of the operator.

SUMMARY

It is an object of the present invention to provide means of latching the flappers used in a flapper type elevator in their pipe supporting position wherein the flappers are closed. Further, a feature of the present invention is the provision of automatic means for accomplishing this latching action.

It is an additional object of this invention to provide an arrangement for automatically latching the flappers in their closed position, with means operable at the will of the operator to prevent such latching.

It is an object of the invention to provide a plurality of flappers working together whereby they assume the same general attitude or position, and to mount such flappers on a rotatable base supported in an elevator body and provide cooperating latch means on one of said flappers and on said base operable to latch said flapper to said base when the flapper is in its closed position, said latch means being effective to hold one flapper in the closed attitude and thus also, through the flapper positioning means, hold the second flapper in its closed position. In this connection it is an object of the present invention to provide means preventing said latch from holding the flappers in closed position.

It is a further object of the present invention to provide means operable to disengage said latch means and open said flappers to their pipe receiving position.

It is an object of the present invention to provide an arrangement and means which will assure the automatic locking or latching of said flappers in their closed position, unless said latch preventing means is operative to prevent such latching.

It is an object of the present invention to provide a novel means operable to permit said flappers to rotate in the elevator body for making up or breaking out a pipe, or to hold said flapper and base assembly against rotation, at the will of the operator.

It is also an object of the present invention to provide a tool engaging means whereby the operator may tilt or cant the elevator with a minimum of effort to place the elevator on pipe which is horizontally racked.

Other objects and advantages of the invention will be hereinafter described or will become apparent to those skilled in the art, and the novel features of the invention will be defined in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plan view of an elevator, showing features of the present invention;

FIG. 2 is a front elevational view of the device of FIG. 1;

FIG. 3 is a rear elevational view of the device of FIG. 1, illustrating the flappers in closed or pipe-supporting position;

FIG. 4 is a view similar to that of FIG. 3, but illustrating the flappers in open position;

FIG. 5 is a front elevational view corresponding to FIG. 2 but showing the flappers in an open position;

FIG. 6 is a cross-sectional view taken on the line 6—6 of FIG. 1, looking in the direction of the arrows;

FIG. 7 is a view corresponding to FIG. 6, but showing the flappers in raised or open position;

FIG. 8 is a fragmentary front elevational view showing the flapper lock-down means in released position;

FIG. 9 is a plan view, partially in cross-section and fragmentary, of the means for preventing lock-down in the closed position of the flappers, the view being taken on the line 9—9 of FIG. 8 looking in the direction of the arrows; and

FIG. 10 is a fragmentary elevational cross-sectional view illustrating the means latching the base and flapper assembly against rotation with respect to the body of the elevator.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring more in detail to the construction shown in the various figures, and referring first to FIGS. 1 and 2 in particular, there is here illustrated an elevator adapted to be placed on a pipe to be hoisted, lowered, or otherwise "worked" or positioned, the elevator being designed for use with collared pipe, that is, pipe having a collar with an outwardly extending base portion adapted to be rested or seated on said elevator, and wherein flapper means extending around the circumference of the pipe provide a seat on which to rest the collar and support the depending pipe.

As shown in the figures, this elevator comprises a body assembly which may be referred to generally as the body 11, with a rotatable flapper base and flapper assembly, referred to generally as the flapper base assembly 12.

The body 11 has a vertical passage 13 therethrough (see also FIGS. 6 and 7) into which is inserted the cylindrical flapper base assembly 12, as hereinafter described. The body 11 has on either side thereof support ears 14 and 15 comprising the means by which the elevator may be suspended to a traveling block hook or the like in the usual fashion. These ears are open to the receipt of elevator links (not shown) which are held in place by bolts 16 and 17, and the support ears 14 and 15 have what may be termed an outwardly extending upper extension 18 shaped to receive an elevator link, and spaced from the upper extension 18, a lower outward extension 19. The space between the upper extension 18 and the lower extension 19 of each of the ears 14 and 15, is sufficient to allow the entry therein, laterally, of an elevator link, and the above-mentioned bolts 16 and 17 are put in place to close the opening after the elevator link is inserted. This arrangement for holding elevator links is common to elevators of the general type illustrated here.

As will be clear, particularly from FIGS. 6 and 7, the flapper base assembly has a depending tubular lower portion 21 with an upper radially outwardly extending flange 22. The tubular portion 21 is removably inserted into the vertical passage 13 of the body 11 of the elevator, and the lower surface or base portion of the flange 22 extends radially outward and serves to support the flapper base assembly 12 in the elevator body 11. Bearing means 23 comprising a bearing race seated in a radial enlargement 24 of the vertical passage 13 supports the flange 22, the bearing being located between the flange 22 and the body 11. The flapper base assembly 12 is thus free to rotate, with the bearing 23 as its support, with respect to the body 11. Snap ring 25, or other convenient means, holds the flapper base assembly against displacement upwardly from the body 11, the arrangement being well known in the elevator art and not per se patentable herein.

The flapper base assembly has an opening 26 there-through for the passage of pipe in the usual manner.

As clearly apparent from FIGS. 1, 6 and 7, the flapper base assembly 12 has, extending upwardly from the top of flange 22 at opposite sides of the opening 26, flapper base ears 27 and 28. These flapper base ears 27 and 28 are drilled laterally, or otherwise perforated, to receive flapper hinge pins 29 and 31, respectively.

A flapper 32 (sometimes referred to as plate 32) has spaced parallel legs 33 and 34 extending outwardly and

adapted to fit, one on each side, of the flapper base ear 27. The legs 33 and 34 are drilled or perforated to correspond to the perforation through the flapper base ear 27 and to receive the hinge pin 29, whereby the flapper 32 is hinged to the flapper base flange 22 and can pivot about the hinge pin 29 from a horizontal to a vertical position or attitude.

The flapper or plate 32 is adapted to rest, when in its horizontal position, on the top 35 of the flapper base flange 22, and has a downwardly extending annular portion 36 which is tapered to seat on a conical section 37 in the opening through the flange 22 at the top of the opening 26. This is a well known construction.

The flapper 32 has a semi-cylindrical recess 38 on its inner margin, of a diameter adapted to fit around a pipe of the size to be received in the elevator. The top of the flapper surrounding the recess 38 has a bearing surface on which may be seated a pipe collar of greater diameter than the recess 38.

Correspondingly, there is provided an opposed flapper or plate 39 having spaced legs 41 and 42 adapted to fit at the sides of the flapper base ear 28, and perforated for receipt of the hinge pin 31, whereby the flapper 39 is mounted on the flapper base ear 28 and thus on its integral flapper base, in a manner similar to that described with respect to the flapper 32. The flapper 39 also, when in its horizontal position, rests on the top 35 of the flapper base flange 22, and the flapper 39 is provided with a downwardly extending annular portion 43 adapted to seat on the conical surface 37 in the same manner as described with respect to the downwardly extending annular portion 36 of flapper 32. The flapper or plate 39 also has a semi-cylindrical recess 44 on its inner margin, and the flapper is hinged to pivot about the hinge pin 31 from a substantial vertical to a horizontal position or attitude. When the flappers 32 and 39 are in their horizontal attitude, the recesses 38 and 44 form a substantially circular opening through which pipe being worked may extend, which opening is of a diameter equal to or slightly larger than the diameter of the pipe. Here again, the collar of the pipe is of greater diameter than the opening formed by the recesses 38 and 44 and will rest on the flappers 32 and 39 for support thereby. The flappers may be slightly spaced from each other to assure clearance for raising and lowering the flappers.

Referring to FIGS. 1, 3 and 4 primarily, the flapper 39 has a downwardly extending integral boss 45 on the side thereof on which is mounted a link pin 46. This pin 46 is offset with respect to the center of the hinge pin 31.

The flapper 32 is similarly provided with a boss 47, on the side of the flapper, which boss 47 extends upwardly and inwardly toward the center of the elevator and offset with respect to the center of the hinge pin 29. The boss 47 has mounted thereon the link pin 48.

Extending between the link pins 46 and 48 is a connecting link 49, journaled at one end on the link pin 46, and held thereon by any convenient means such as the cotter pin 50, and at the other end on the link pin 48, and held on the link pin 48 by means of the cotter pin 60. Suitable washers may be provided between the cotter pins and the link 49. The arrangement is such that changing the attitude of one of the flappers (for example, flapper 32) by pivoting the flapper about its hinge pin, causes the link 49 to actuate the other flapper to correspondingly change the attitude of such other flapper. When one flapper is moved to the horizontal position, the other flapper will be moved to the horizontal position. When the flapper is moved to the vertical position, the other flapper is likewise moved to the vertical position. Thus the flappers assume a similar attitude by reason of the crank arm action of the link 49 and offset link pins 46 and 48.

The leg 33 of flapper 32 is provided with a flattened foot portion 51 (see particularly FIG. 4) on its rear or outer end, and with a bottom land 52 on its under

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surface beneath the pin 29, by means of which foot and land the link may be maintained in vertical or horizontal positions, respectively. A leaf spring 53 is mounted on the top 35 of the base flange by means of a cap screw or the like 54, as it apparent from FIGS. 3 and 4. This leaf spring extends outwardly to a position beneath the leg 33 and bears upwardly against the land 52 when the flapper is in the horizontal position or attitude, and against the foot 51 when the flapper is in the vertical position, exerting a holding pressure against said land or foot, as the case may be, which must be overcome to change the attitude of the flapper. This pressure is normally sufficient to prevent the flappers from changing positions except when urged by force sufficient to overcome the pressure of the spring 53, and thus the flappers will ordinarily remain in the assumed attitude under normal conditions.

Referring primarily to FIGS. 1, 2 and 10, it will be readily apparent that the flapper base ear 28 has a rearwardly extending upper bracket 55 and a rearwardly extending lower bracket 56 spaced vertically from said upper bracket. Each of said brackets has a hole vertically therethrough and aligned with the hole in the other bracket, in which is mounted a plunger 57, on the upper end of which is a laterally extending plunger handle 58 which may be threaded into the plunger 57 after the latter is mounted in the brackets 55 and 56. Plunger 57, on its lower end and extending upwardly—for example, about a third of the length of the plunger—is preferably increased in diameter to form a strike or stop member 59, the increased diameter strengthening the plunger and also forming a shoulder on the top of the strike portion 59. A coil spring 70 surrounding the plunger 57 and resting on the above-mentioned shoulder at its lower end and against the bottom of the upper bracket (it may be recessed therein as shown in FIG. 10, if desired), keeps the plunger 57 under tension in a downward direction at all times. The bracket 55 has an upwardly extending boss 61 which is grooved laterally on its upper surface, as indicated at 62, with a groove to receive the handle 58. Alongside the boss 61, the upper bracket 55 is likewise grooved, as shown at 63, on its upper surface for the purpose also of receiving the handle 58. When the plunger is in its downward position, wherein it extends well below the bottom of the bracket 56, the handle 58 will rest in the groove 63. However, the plunger may be raised to its upper position and held there by rotating the plunger with the handle until the handle is resting in the groove 62, in which position the plunger does not extend substantially below the base of the bracket 56.

The body 11 is provided with pairs of upstanding, spaced lugs, here shown as a first set of lugs, 64, 65, and a second set of lugs, being lugs 66 and 67, one set being located diametrically opposite the other set on the top of the body 11. The purpose of these lugs is to cooperate with the plunger 57 to hold the flapper base assembly 12 against rotation, when desired. Frequently in the use of an elevator of this type, it is necessary to support a section or stand of pipe while it is being rotated for the purpose of attaching it to pipe already in the well, or for the purpose of unthreading it from such pipe, as the case may be, and it is desirable or necessary that the support means for the pipe be rotatable. When the operator desires that such be the case, he lifts the plunger handle 58 which raises the plunger 57, rotates the plunger approximately one fourth of a turn (counterclockwise, as viewed in FIG. 1) and sets the handle in the slot 62 of the boss 61. This lifts the plunger out of engagement with the lugs 64, 65 or 66, 67, as the case may be, and frees the flapper base assembly for rotation. When the operator desires to hold the base against rotation, he moves the plunger handle to the position shown in FIG. 1, namely, into the slot or groove 63, and releases the handle, the operator having previously aligned the plunger 57 with the space between one set of the lugs 64, 65

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or 66, 67, as desired. The plunger will then extend into the space between the lugs and securely lock the flapper base assembly from rotation with respect to the body 11 of the elevator.

Referring next to the flapper handle and latch mechanism, best illustrated in FIGS. 1, 2, 5, 8 and 9, one flapper (here shown as flapper 32) is provided with a boss 68 preferably on top of the flapper and positioned on the side near the recessed end of said flapper, which boss has pivotally mounted thereon by means of a hinge pin or the like 69, an integral lever and handle and latch element, herein termed generally a pivotal flapper lock 71. This flapper lock 71 has a lever with a lever handle 72 on one side of the lever hinge pin 69, and a lever extension 75 on the other side of the lever hinge pin 69. Depending from the lever, generally beneath the hinge pin 69, is an integral arm 73 which terminates in a latch hook 74. The lever extension 75 has an upper stop portion 76 which is designed to seat beneath and engage an integral outwardly extending stop lock 77 on the flapper plate 32 or the leg portion 34 thereof. The lever extension 75 has a second stop 78 located on the underside thereof and adapted to engage a stop boss 79 extending laterally from the side of the plate 32 to a position beneath, and spaced from the bottom plane of the lever extension 75. One end of a compression spring 81 is inserted in a hole 82 drilled into the bottom of the lever extension 75 at the second stop 79, and the other end is inserted into a similar hole 83 drilled into the upper surface of the stop boss 79 in a position generally aligned with the hole 82, whereby the compression spring 81 exerts an upward force on the lever extension 75 to cause it to seat against the stop lug 77. Raising the lever handle 72, however, will pivot the assembly clockwise about the hinge pin 69 and cause the lever extension 75 to move downward against the stop boss 79. The lifting force on the lever handle 72 then is fully transferred through hinge pin 69 to the flapper 32, and continued lifting of the lever handle 72 will cause the flapper 32 and its associated flapper 39 to pivot to the open or vertical positions about their respective pivot pins 29 and 31.

Attached to the flapper base 12, by welding or otherwise or cast integrally therewith, is what may be termed a slider bracket 84 which has a hook nose portion 85, the nose portion having a stop surface or stop 86 against which the arm 73 of the pivotal flapper lock 71 will normally rest when the flappers are in closed or horizontal position. It is noted that the latch hook 74 of the arm 73 is adapted to move beneath the slider bracket hook 85, and, while in that position, the hook 74 and hook 85 cooperate to hold the flappers in their horizontal attitudes. Lifting the lever handle 72 rotates the arm 73 clockwise and moves the latch hook 74 from beneath the slider bracket hook 85, freeing the latch and mechanism so that the flappers may be raised to the vertical position. It is noted that the pivotal or clockwise movement of the arm 73 is limited by the stop 78 on the lever extension 75 striking the stop boss 79, so that this movement need be sufficient only to clear the latch hook 74 from engagement position with the slider bracket hook 85 to release the mechanism. It is further noted that the stop 86 on the slider bracket is preferably slanted, as indicated for example in FIG. 2, so that when the flapper 32 is moved to the horizontal position, the outer end of the latch hook 74 will ramp or slide down the surface of the stop 86 and move under the slider bracket hook 85 automatically. The force of the spring 81 on the lever extension will urge the latch hook 74 to move counterclockwise, causing such automatic locking.

Frequently, the operator does not desire, for one reason or another, the flappers to be latched in their horizontal position. The slider bracket 84 has been drilled lengthwise to provide a hole 87 for the receipt of a swivel lock plunger 88. The top portion of the slider bracket is pro-

vided a groove from the hole 87 connecting with an outer slot 89 and an inner slot 91, as best apparent from FIGS. 2, 8 and 9, and the swivel lock plunger 88 has a pin 92 extending therefrom, which pin 92 is used to move the swivel lock plunger 88 lengthwise in the hole 87, or may be rocked into the slot 89 to hold the plunger 88 in an extended position beneath the slider bracket hook 85; or the pin 92 may be moved into the inner slot 91, in which position the plunger 88 is inoperative to interfere with the hook latch arrangement. Thus, the operator, if he desires to render the flapper latch inoperative and prevent the latch hook 74 from moving into position to engage the slider bracket hook 85, may move the swivel lock plunger 88 into the position shown in FIGS. 8 and 9 by means of the pin 92, and lock the plunger in the extended position by placing the pin 92 in the outer slot 89 to retain the latch hook means disengaged.

Ordinarily, the swivel lock plunger will be retracted into the position where the pin 92 is in the inner slot 91 so that the flapper 32 and flapper 39 cannot be accidentally opened to release the pipe in the elevator. This is an important safety feature in working sections or stands of pipe.

It is noted that at times it is desired to use the elevator to pick up a section or stand of pipe from a horizontal position. This necessitates turning the elevator on its side to align the opening 26 with the end of the pipe so that the elevator may be positioned on the pipe, or the pipe moved into the elevator. For this operation the flappers 32 and 39 will be in open pipe receiving position. Heretofore this has been difficult because of the weight of such an elevator and it is dangerous to an operator to perform this maneuver. In order to simplify the operation and make it relatively easy for the operator, there has been drilled or otherwise provided in the elevator shown herein what may be termed a canting tool hole 93, here shown as located in the lower outward extension 19 of the support ear 15 to receive a canting tool, and a second canting tool hole 94 in the lower outward extension 19 of the support ear 14. As is indicated schematically in FIG. 4, a bar 95 or other tool may be inserted in one or both of these holes, whereby the operator will obtain leverage to tilt the elevator to its side for placement on the horizontally racked pipe. The value of such an arrangement is clearly apparent.

SUMMARY OF OPERATION

In actual practice, the elevator will be suspended by means of links from a hook attached to a traveling block, whereby it is operable to be raised and lowered in the derrick. Pulling pipe from a well the elevator will be lowered to a position over the end of the pipe which is normally held in slips or the like, the flapper lever handle 72 will be raised, causing the arm 73 to rotate clockwise around the hinge pin 69 until the lever extension 75 engages the stop boss 79. The assembly will then act as an extension of the flapper 32 and pivot the flapper 32 about the flapper hinge pin 29. The continued movement of the lever handle 72 will move the flapper 32 to the vertical position. As this occurs, the connecting link will move the flapper 39 to a similar vertical position, opening the elevator for the movement of pipe therethrough. The elevator will then be lowered over the end of the pipe until it is below the pipe collar, and the lever handle 72 will be pulled with the upper stop portion 76 of the lever extension 75 against the lever upper stop 77, overcoming the leaf spring 53, and the flappers will move to the horizontal position. As this occurs, the latch hook 74 on the end of the arm 73 ramps down the stop 86 on the end of the slider bracket 84, causing the latch hook 74 to move under and in position to engage the slider bracket hook.

Should the operator desire the flapper assembly on which the pipe is supported to be free to rotate, he will normally release the flapper base assembly 12 by raising

the plunger handle 58, rotating it counter-clockwise to a position above the groove 62 on the boss 61, and allowing the plunger handle to seat in the groove under the pressure of the spring 70. This will disengage the plunger 57 from the lugs 64, 65 or 66, 67, as the case may be, on the elevator body. When the operator desires to prevent such rotation of the flapper assembly, the plunger handle 58 is raised and rotated until it is above the groove 63, and then released, allowing the plunger 57 to move downward under the influence of the spring 70 and the plunger handle 58 to seat in the groove. When it is desired to latch the assembly against such rotation, the plunger 57 will be aligned with the space between the lugs 64, 65 or 66, 67 as desired, before it is moved into its lowermost or lug-engaging position. This will lock the flapper base assembly 12 to the body 11.

Should the operator desire to use the elevator without having the flapper latch or lock means operative, the operator may move the swivel lock plunger 88 to the left-hand position shown in FIGS. 8 and 9. In this position the left-hand end of the plunger 88 will prevent the latch hook 74 from moving into the locking position beneath the hook nose portion 85 of the slider bracket.

Should the operator desire to pick up horizontally racked pipe with the elevator, the operator would normally move the flappers 32 and 39 to the open position where they will be held by means of the leaf spring 53 and the connecting linkage between the flappers. The operator may then engage a bar or other tilting tool in the cant hole 93 or the cant hole 94, or both of them, and swing the elevator on its side. It is then a simple matter to move it onto such horizontally racked pipe, close the flappers, and lift the pipe by moving the elevator upwards. The use of a canting tool gives the operator sufficient leverage to make tilting the elevator a simple operation.

We claim:

1. In an elevator for oil well pipe and the like having a body with means for supporting such elevator by elevator links or the like, and having a rotatable flapper base with pipe supporting flappers thereon, those means comprising in combination:

(a) means whereby positioning one flapper in a closed or open position automatically positions the other flapper in a corresponding position; and

(b) means for locking said flappers in closed position including:

(i) pivotal latch means carried by one of said flappers;

(ii) latch engaging means on said flapper base adapted to be engaged by said pivotal latch means; and

(iii) means to pivot said pivotal latch means whereby to engage or disengage said latch engaging means to hold said flappers in closed position when said latch means is engaged and to release said flappers for opening when said latch engaging means is in disengaged position.

2. An elevator as claimed in claim 1, and having means on said flapper base operable to prevent said latch means on said depending arm from engaging said latch engaging means on said flapper base.

3. An elevator as claimed in claim 1, wherein means are provided operable to block said pivotal latch means from engaging said latch engaging means whereby said flapper locking means is inoperative.

4. In an elevator for oil well pipe and the like, having a body with means for supporting such elevator by elevator links or the like, and having a rotatable flapper base and pipe supporting flappers thereon, those improvements comprising in combination:

(a) means whereby positioning one flapper in the open or closed attitude automatically positions the other flapper in a corresponding attitude;

(b) means for locking said flappers in closed position;

(c) means to render said lock means inoperative;

- (d) pivotal latch means carried by one of said flappers including:
- (i) a lever pivotally mounted on said one flapper and having on one end thereof a lever handle and on the other end thereof an extension with stop engaging means;
 - (ii) said one flapper having stop means limiting the upward movement of said lever extension and a second stop means limiting the downward movement of said lever extension, with means biasing said lever against said upper stop means; and
 - (iii) said lever having a downwardly depending arm with means thereon for engaging said latch engaging means on said flapper base;
 - (iv) the arrangement being such that when the flapper is moved to its closed position, said latch means on said depending arm automatically engages said latch engaging means on said flapper base, and actuation of said lever by said lever handle releases said latch means on said arm and said latch engaging means on said flapper base and raises said flapper to the open or vertical position.
5. In an elevator for oil well pipe and the like, having a body with means for supporting such elevator by elevator links or the like, and having a rotatable flapper base and pipe supporting flappers thereon, those improvements comprising in combination:
- (a) means whereby positioning one flapper in the open or closed attitude automatically positions the other flapper in a corresponding attitude;
 - (b) means for locking said flappers in closed position comprising pivotal latch means and latch engaging means; and
 - (c) means to render said lock means inoperable including:
 - (i) a slider bracket mounted on said flapper base and having an opening therethrough;
 - (ii) a swivel lock plunger in said opening operable to extend to a position preventing said pivotal latch means from engaging said latch engaging means; and
 - (iii) means on said swivel lock plunger cooperating with positioning means on said slider bracket operable to position and hold said swivel lock plunger extended or retracted at the will of the operator.
6. In an elevator for oil well pipe and the like, comprising in combination:
- (a) a body member having link receiving support ears and a vertical passage therethrough;
 - (b) bearing means in said passage;
 - (c) a flapper base having a flange at the upper end thereof, and a tubular lower portion in said vertical passage, said flange resting on said bearing means whereby said flapper base is rotatable with respect to said body;
 - (d) means retaining said flapper base in said vertical passage;
 - (e) a pipe receiving opening through said flapper base and flange;
 - (f) a pair of upwardly extending flapper base ears on said flange;
 - (g) a pair of pipe supporting flappers hingedly mounted on said ears, each said flapper having a semi-circular recess on the inner margin thereof whereby to form a pipe-receiving opening there-through;
 - (h) link pins, one on each finger, said pins being offset with respect to the center of the hinge axis of each flapper;
 - (i) a connecting link mounted one end on each pin whereby movement of one flapper automatically

- causes a corresponding movement of the other flapper;
- (j) means on one flapper operable to pivot said flapper to a horizontal or vertical position at the will of the operator;
 - (k) a pivotal latch means integral with said last-mentioned flapper pivoting means;
 - (l) a latch receiving and engaging means on said flapper base adapted to be engaged by said pivotal latch means whereby said flappers are locked in a horizontal position;
 - (m) means biasing said pivotal latch means into engagement with said latch receiving and engaging means on said flapper base upon movement of said flapper to the horizontal position; and
 - (n) means operable to prevent said pivotal latch means from engaging said latch receiving and engaging means, whereby said pivotal latch means remains unlatched.
7. An elevator as claimed in claim 6, wherein said flapper base has means thereon cooperating with means on said body and operable to prevent rotary movement of said flapper base with respect to said body.
8. In an elevator for oil well pipe and the like having a body with means for supporting such elevator by elevator links or the like, and having pipe supporting flappers thereon, those means comprising in combination:
- (a) means whereby positioning one flapper in a closed or open position automatically positions the other flapper in a corresponding position; and
 - (b) means for locking one flapper in closed position including:
 - (i) pivotal latch means carried by one of said body and said one flapper;
 - (ii) latch engaging means carried by the other of said body and said one flapper and adapted to be engaged by said pivotal latch means; and
 - (iii) means to pivot said pivotal latch means whereby to engage or disengage said latch engaging means to hold said flappers in closed position when said latch means is engaged and to release said flappers for opening when said latch engaging means is in disengaged position.
9. An elevator as claimed in claim 8 having means including a member movable from an inoperative position permitting said pivotal latch means to engage said latch engaging means to an operative position of engagement with said pivotal latch means for barring said pivotal latch means from engaging said latch engaging means.
10. In an elevator for oil well pipe and the like having a body with means for supporting such elevator by elevator links or the like, and having pipe supporting flappers thereon, those means comprising in combination:
- (a) means whereby positioning one flapper in a closed or open position automatically positions the other flapper in a corresponding position;
 - (b) means for locking one flapper in closed position including:
 - (i) movable latch means carried by one of said body and said one flapper;
 - (ii) latch engaging means carried by the other of said body and said one flapper and adapted to be engaged by said movable latch means; and
 - (iii) means to move said movable latch means whereby to engage or disengage said latch engaging means to hold said flappers in closed position when said latch means is engaged and to release said flappers for opening when said latch engaging means is in disengaged position; and
 - (c) means including a member movable from an inoperative position permitting said movable latch means to engage said latch engaging means to an operative position of engagement with said movable

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latch means for barring the latter from engaging
said latch engaging means.

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