

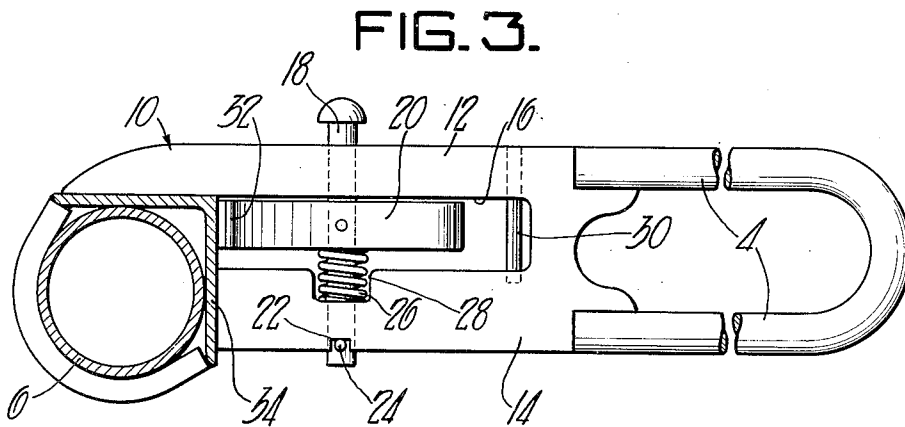
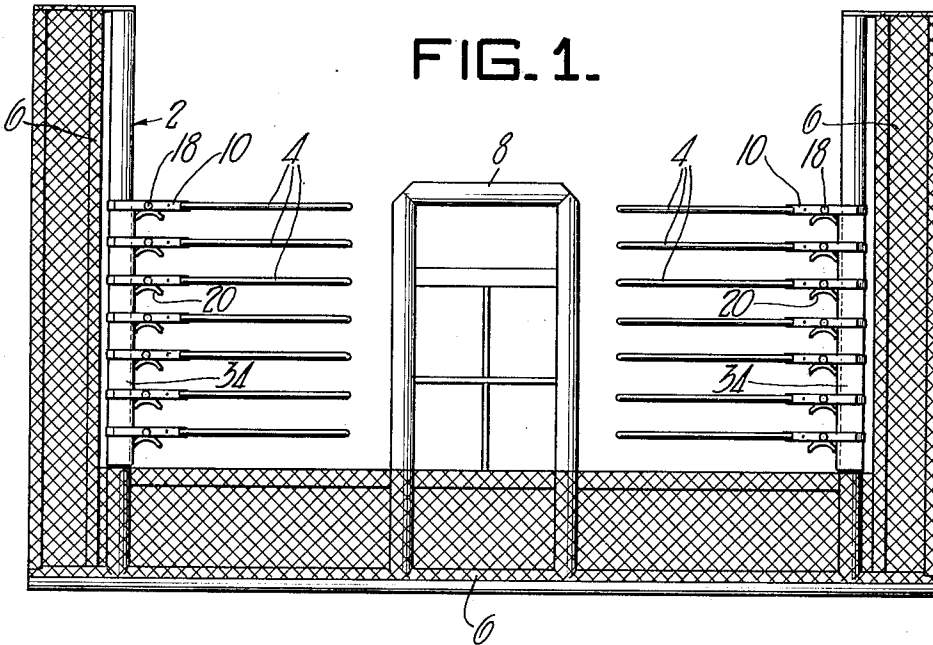
May 9, 1950

D. R. MOORE
PIPE RACK

2,507,040

Filed Sept. 20, 1946

2 Sheets-Sheet 1



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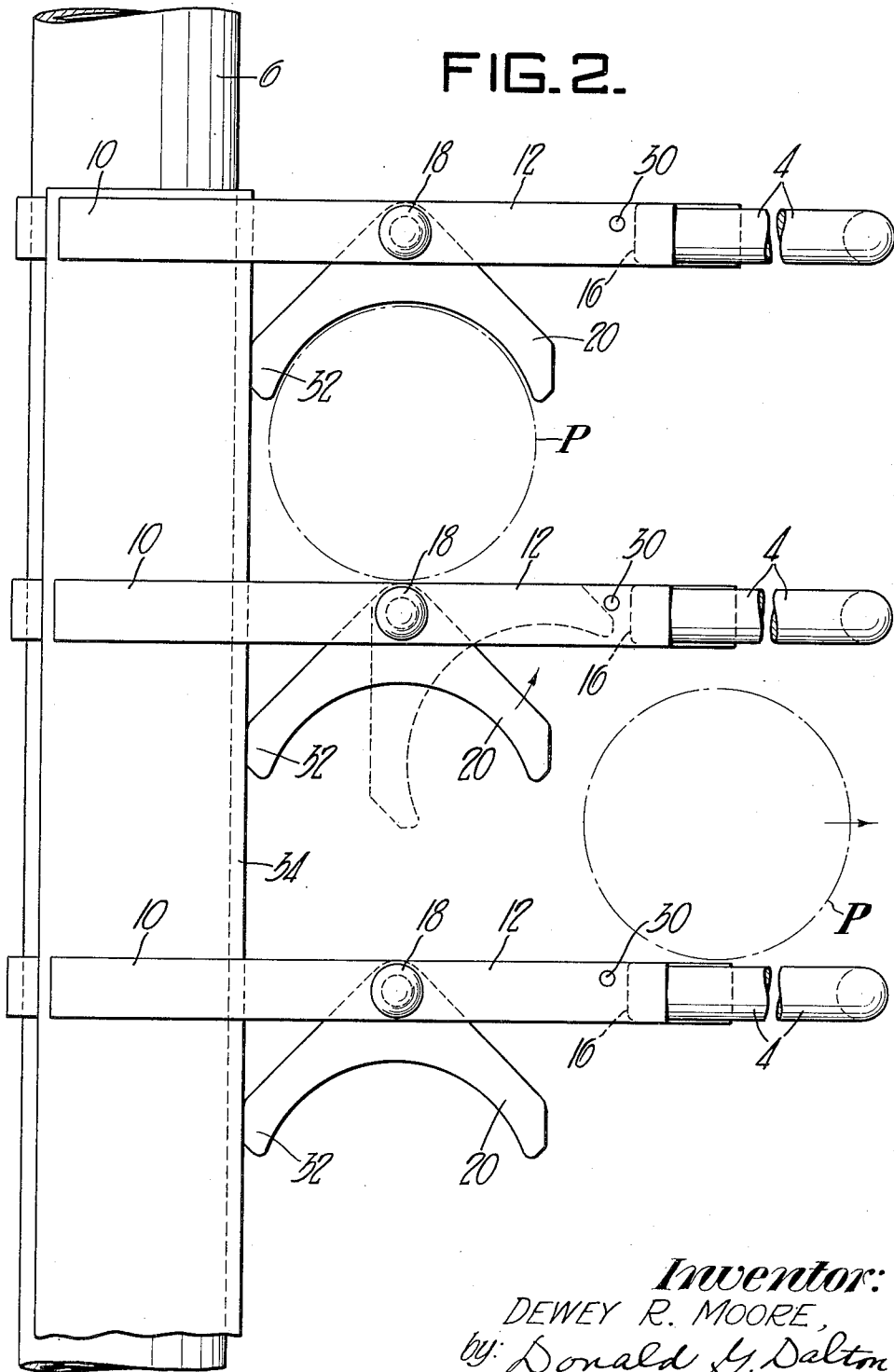
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UNITED STATES PATENT OFFICE

2,507,040

PIPE RACK

Dewey R. Moore, Dallas, Tex.

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3 Claims. (Cl. 211-60)

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This invention relates to improvements in pipe racks such as are used for racking drill pipe in rotary well drilling derricks and the like.

In rotary drilling operations, the operator who handles the drill pipe in racking it and attaching the elevator thereto is stationed about 54 feet to 84 feet above the derrick floor. In view of safety factors, it is desirable that the operator retain the use of both hands for guiding the pipe and handling the elevator. Heretofore, pipe racked between the fingers of the finger board have been held against wind pressure by tying them to the derrick with ropes. This adds extra work and hazard to the operator's position and also is hazardous to the drillers in that the tie ropes may slip away and fall on the derrick floor.

It is accordingly an object of the present invention to provide an automatic locking device for pipe racks.

It is a further object to provide a pipe rack in which the pipe are securely locked and which permits the operator free use of his hands.

It is another object to provide a pipe rack which is simple in design and safe and durable in use.

The foregoing and further objects will be apparent from the following specification when read in conjunction with the attached drawings, wherein:

Figure 1 is a plan view of a pipe racking platform embodying my invention;

Figure 2 is an enlarged plan of the locking device; and

Figure 3 is a side elevation thereof.

Referring more particularly to the drawings, the numeral 2 designates finger boards or pipe racks, composed of fingers 4, suitably secured to the derrick framework 6 and disposed on either side of an intermediate stabbing board 8. In rotary drilling operations, drill pipe P is racked in the rack when withdrawn from the hole for casing or other operations.

The fingers 4 are secured to special brackets 10 having upper and lower arms 12 and 14 having an opening 16 therebetween. Vertically disposed rotatable pins 18 extend through the arms 12 and 14. Yokes 20 disposed in the opening 16 are keyed to the pins 18 for movement in a horizontal plane. A notch 22 is formed in the lower side of the arms 20 in alignment with pin 18 and adapted to receive a cross-pin 24 extending through the lower end of the pin 18. The notch and cross-pin are so disposed as to hold the yokes with their centers normal to the brackets 10 when the pins are in the notch. A coil spring 26

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is disposed around the pin 18 between the lower side of the yoke 20 and in a recess 28 on the upper side of arm 14 whereby the yokes are spring-biased upwardly to move the pins 24 into the notches 22 and to cause the yokes to be automatically locked when they are in a position normal to the brackets.

Stop pins 30 extend between the arms 12 and 14 through the space 16 to prevent the yokes from turning into the space behind the bracket. The inner arms 32 of the yokes 20 are adapted to contact the end frame member 34 to prevent the yoke turning beyond locking position. The length of the yoke arms is correlated with space between the fingers to lock a large range of pipe diameters therein.

In use with the yokes in the position shown in dotted lines in Figure 2 they are ready to receive a pipe P for racking. As the pipe is pushed therein the yokes 20 are turned to the full line position whereupon the springs 26 force them upwardly to cause the cross-pins 24 to enter the notches 22, thereby automatically locking the pipes in position. To remove the pipes, it is only necessary for the operator to step on the pins 18 and thereby depress the cross-pins below the notches whereby the yokes can pivot freely and permit the pipes to be withdrawn from the fingers.

While I have shown and described one specific embodiment of my invention, it will be understood that this embodiment is merely for the purpose of illustration and description and that various other forms may be devised within the scope of my invention, as defined in the appended claims.

I claim:

1. In combination with a pipe rack having a plurality of parallel fingers, pipe locking means for holding pipe between said fingers, said means comprising holding means, a rotatable pin extending through said holding means, a yoke member keyed to said pin, spring means urging said pin upwardly and means at the lower end of said pin responsive to said spring means for locking said yoke against rotation when said yoke is in pipe holding position.

2. In a pipe rack having a plurality of parallel fingers, means for locking pipe between said fingers, said means comprising a vertically disposed rotatably mounted pin, a yoke member fixed to said pin, spring means urging said pin upwardly and means responsive to the upward movement of said pin for locking it against rotation when said yoke is in pipe holding position, said pin

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being adapted to be depressed by stepping thereon to release said yoke.

3. In a pipe rack having a plurality of parallel fingers, means at the inner ends of said fingers for locking pipe therebetween, said means comprising a vertically disposed rotatably mounted pin, a yoke member fixed to said pin, spring means urging said pin upwardly and means responsive to the upward movement of said pin for locking it against rotation when said yoke is in pipe holding position, said pin being adapted to be depressed by stepping thereon to release said yoke.

DEWEY R. MOORE.

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The following references are of record in the file of this patent:

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