

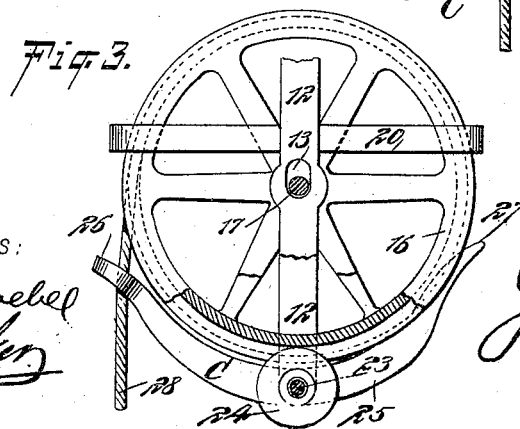
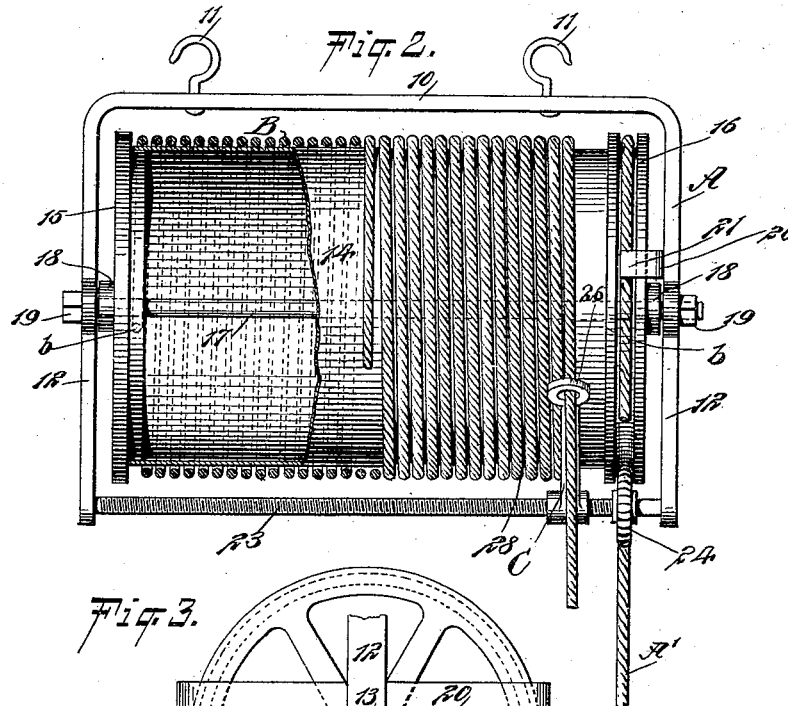
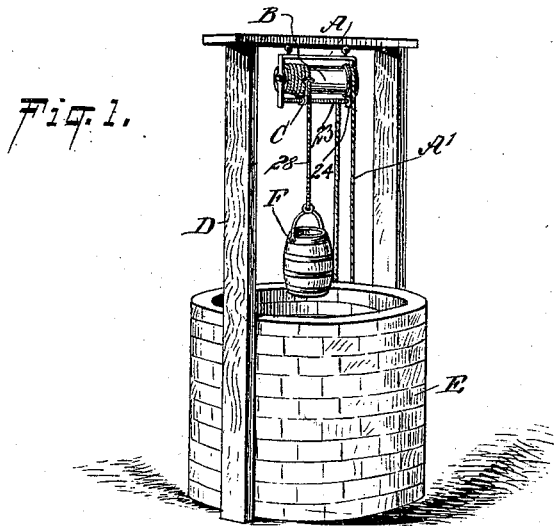
No. 645,798.

Patented Mar. 20, 1900.

J. FOSTER.  
WELL PULLEY.

(Application filed June 3, 1899.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES FOSTER, OF GOBER, TEXAS.

## WELL-PULLEY.

SPECIFICATION forming part of Letters Patent No. 645,798, dated March 20, 1900.

Application filed June 3, 1899. Serial No: 719,241. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES FOSTER, of Gober, in the county of Fannin and State of Texas, have invented a new and Improved

Well-Pulley, of which the following is a full, clear, and exact description.

One object of my invention is to so construct a well-pulley that it may be readily placed in position above the well-curb by any person of ordinary intelligence.

A further object of the invention is to provide a means whereby the rope or chain carrying the bucket may be automatically controlled in a manner to insure said rope or chain being guided to and upon the pulley in raising and lowering the bucket, thus preventing the hoisting rope or chain coming in contact with the mud and water that usually accumulate around a well-curb.

Another object of the invention is to provide for the guide device being operated through the medium of a hand rope or chain or by contact with the pulley itself.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a well-curb and the improved device applied thereto. Fig. 2 is a side elevation of the device, parts being broken away, the device being drawn on a larger scale than that shown in Fig. 1; and Fig. 3 is an end view of the device, parts being broken away.

The frame A of the pulley or drum comprises an upper member 10, having hangers 11 attached thereto, and downwardly-extending members 12, each downwardly-extending member of the frame being provided at or near its center with a longitudinal slot 13, as illustrated in Fig. 3. The slots 13 permit the drum or pulley B to move to and from a guide device to be hereinafter described.

The pulley B is preferably provided with a hollow body 14 in the interest of lightness. A plain head 15 is located at one end of the body, and a peripherally-grooved head 16 is located at the opposite end of the body. The

peripherally-grooved head is adapted to receive an endless rope A', (shown broken away in Fig. 2,) by means of which the pulley or drum B is rotated. If desired, an endless chain may be substituted for the rope A', in which event the head 16 instead of being peripherally grooved will be provided with peripheral teeth or spurs. A shaft 17 is utilized to support the pulley B in the frame, the shaft 17 being carried at its end portions through the slots 13 in the pendent members of the frame, and between the heads of the pulley or drum B and the pendent members of the frame washers 18 are usually placed on the shaft 17, and said shaft may be threaded at both ends to receive nuts 19, or one end of the shaft may have a head integrally formed thereon, if desired.

A transverse guide-arm 20 is attached to the pendent member of the frame A that is opposite the driving-head 16 of the pulley or drum B, and the ends of the guide-arm 20 are bent inwardly at an angle to the body, so as to cross the groove in the driving-head partially or entirely, as illustrated in Fig. 2. These inner extensions 21 of the guide-arm 20 are adapted to prevent the hand rope or chain from slipping off the driving-head. A feed-screw 23 is mounted to revolve in the lower end portions of the pendent members 12 of the frame A, as shown particularly in Fig. 32, and a driving-wheel 24 is secured upon the feed-screw 23, the driving-wheel 24 occupying such position that its peripheral surface, which is usually roughened, will face the periphery of the driving-head 16 of the pulley B, and said pulley B, by reason of its mounting, will gravitate downward, and its head 16 will engage with said wheel 24. The said driving-wheel will thus be revolved by the movement of the pulley or drum B, and rotary movement will in consequence be imparted to the feed-screw 23.

The feed-screw 23 is adapted to carry a directing-arm C, the body of which is curved correspondingly to the curvature of the body of the pulley and is necessarily below said pulley. The body of the directing-arm is provided with an opening at its center, threaded to receive the feed-screw 23, so that as the said feed screw or shaft 23 is turned the directing-arm will travel in direction of one or

the other end of said feed-screw. The forward end of the directing-arm C extends upwardly in front of the pulley or drum and terminates in an eye 26, while the other end 5 of the directing-arm C is carried upward at the rear of the pulley and is curved rearwardly to form a finger 27. By engagement with the drum this finger is adapted to hold the eye 26 of the directing-arm C in proper 10 position, while the rope 28 is frictionally engaged with the inner wall of the eye 26 of said directing-arm, since in the absence of the finger 27 the eye of the directing-arm would be drawn so far downward by the action of the rope 28 as to cause the eye 26 to 15 bind or clamp the rope and interfere seriously with its freedom of motion. The hoisting or bucket-carrying rope or chain 28 is secured at one of its ends to the outer face of the body 20 of the pulley or drum B, adjacent to the head 15 of said drum, as shown in Fig. 2, and the other end of the bucket carrying or hoisting rope is passed through the eye 26 of the directing-arm.

25 The application of the drum or pulley is shown in Fig. 1, in which it will be observed that a frame D extends above the well-curb E, and the hangers 11 of the pulley-frame are made to engage with eyes or equivalent 30 devices attached to the upper portion of the said frame. A well-bucket F is secured in any suitable or improved manner to the lower end of the hoisting-rope 28. In operation whether the bucket is being raised or lowered 35 the shaft 23 will be revolved, and the directing-arm 11 will travel upon said shaft in such manner that its forward and rear extremities will direct or guide the rope as it winds upon or unwinds from the drum, thus preventing displacement of the hoisting rope or 40 chain.

I desire it to be understood that the drum B may be turned by a crank attached to the shaft 17, if desired.

45 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with a winding-drum

and its frame, of a guide device for a rope adapted to guide the rope as it is wound upon 50 and unwound from the drum, a feed-screw upon which the guide device is mounted to travel and a driving-wheel on said feed-screw, the winding-drum having vertical movement in its frame to gravitate into driving engage- 55 ment with the driving-wheel of the feed-screw.

2. The combination, with a frame, a pulley mounted to revolve in the frame, the pulley being adapted to have vertical movement as 60 well as rotary movement in the frame, a guide-arm for the pulley carried by the frame, and means, substantially as described, for imparting rotary motion to the pulley, of a feed-shaft carried by the frame and located below 65 the pulley, the feed-shaft being exteriorly threaded, a directing-arm held to travel upon the threaded feed-shaft, a driving-wheel secured to the feed-shaft, and driven through 70 the medium of the driving mechanism for the pulley, the directing-arm being arranged to extend upward at opposite sides of the pulley and arranged for engagement at its upper ends with a hoist-rope carried by the pulley, 75 as and for the purpose specified.

3. The combination, with a frame comprising an upper member provided with hangers, pendent members having longitudinal slots therein, a drum-pulley the trunnions whereof 80 extend into the longitudinal slots of the said frame, said drum-pulley being provided with a driving-head, a hand-rope engaging with the driving-head of the pulley, a threaded feed-shaft located below the pulley, a driving-wheel secured to said shaft and arranged 85 for engagement with the hand-rope, and a directing-arm mounted to travel upon said shaft, the ends of the said arm extending upward at each side of the pulley, one end of the directing-arm being provided with an eye to 90 receive the hoist-rope adapted to be carried by said pulley, for the purpose specified.

JAMES FOSTER.

Witnesses:

JAMES GOOCH,  
N. C. COVINGTON.