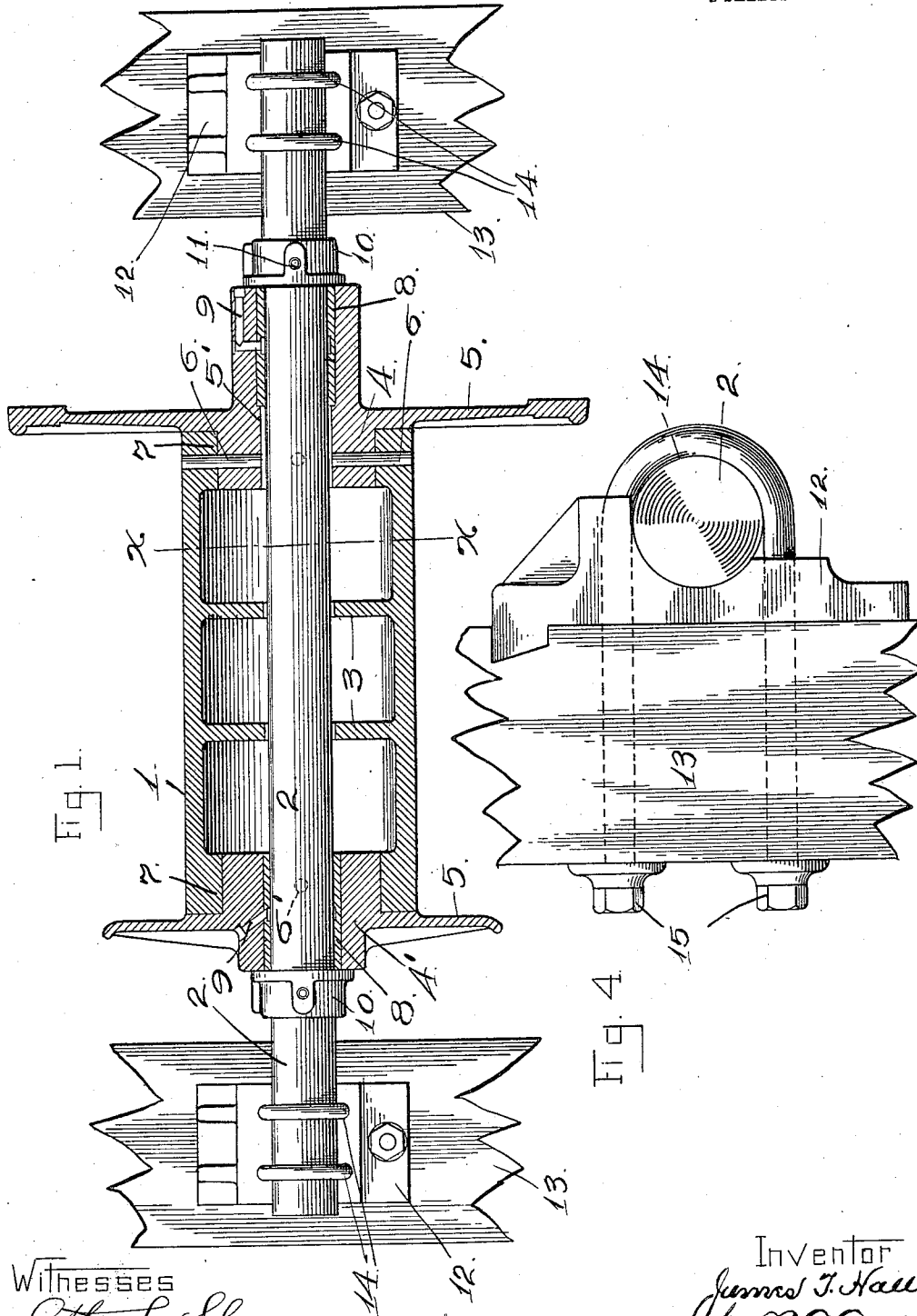


J. T. HALL.
 CALF WHEEL FOR OIL DERRICKS.
 APPLICATION FILED DEC. 9, 1911.

1,052,916.

Patented Feb. 11, 1913.

2 SHEETS—SHEET 1.



Witnesses
Arthur L. Slee
S. Constance

Inventor
James T. Hall
 by *W. A. Cross*
Att'y

J. T. HALL.
 CALF WHEEL FOR OIL DERRICKS.
 APPLICATION FILED DEC. 9, 1911.

1,052,916.

Patented Feb. 11, 1913.

2 SHEETS—SHEET 2.

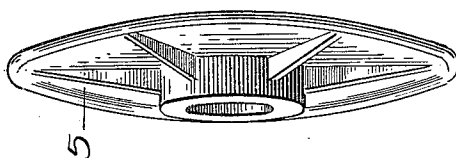


Fig. 3.

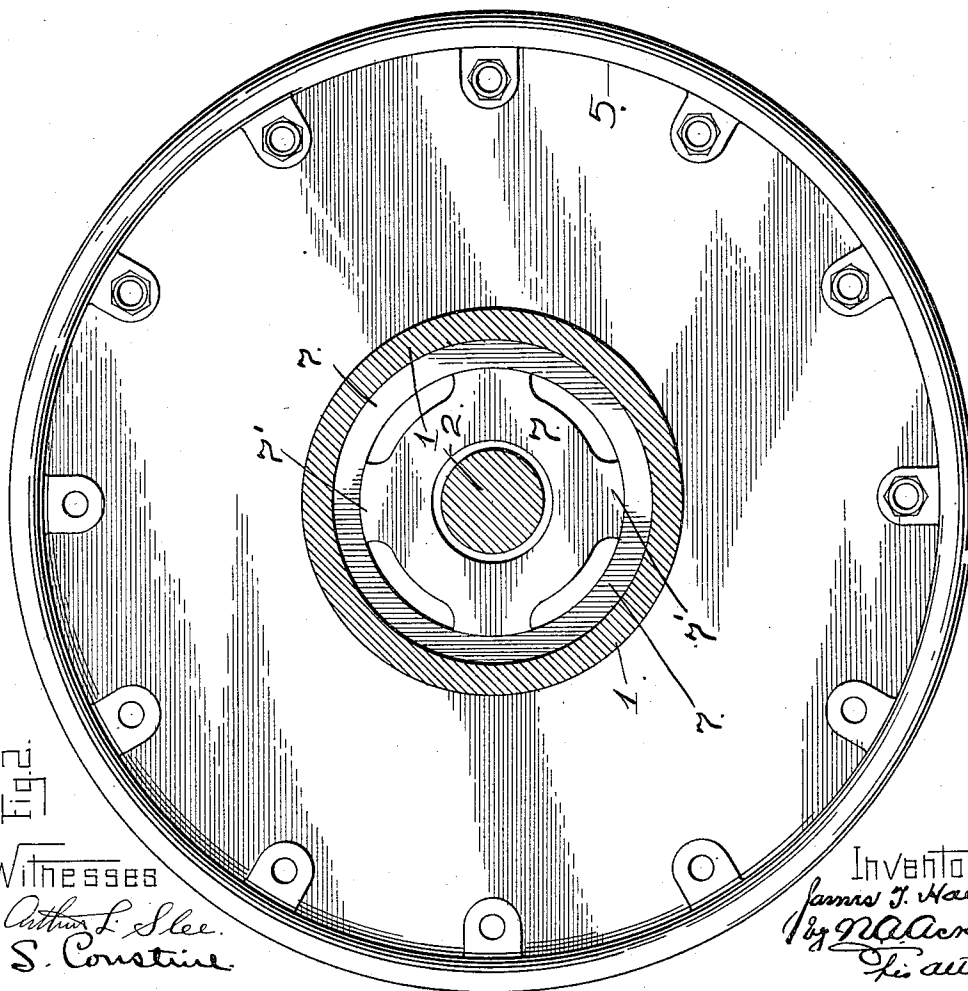


Fig. 2.

Witnesses
Arthur L. Lee.
S. Constine

Inventor
James T. Hall
By W. A. Allen
Att'y

UNITED STATES PATENT OFFICE.

JAMES T. HALL, OF COALINGA, CALIFORNIA, ASSIGNOR TO BUNTING IRON WORKS, OF COALINGA, CALIFORNIA, A CORPORATION OF CALIFORNIA.

CALF-WHEEL FOR OIL-DERRICKS.

1,052,916.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed December 9, 1911. Serial No. 664,714.

To all whom it may concern:

Be it known that I, JAMES T. HALL, a citizen of the United States, residing at Coalinga, in the county of Fresno and State of California, have invented certain new and useful Improvements in Calf-Wheels for Oil-Derricks, of which the following is a specification.

The hereinafter described invention relates to a simple, inexpensive, efficient and durable calf wheel for free rotation on a fixed sustaining shaft of an oil derrick structure, the object being to provide against the binding of the calf wheel in case the sustaining shaft therefor gets out of true alinement with its bearing plates, due to the sagging or unevenness in the timbers carrying the said bearing plates.

Ordinarily, the calf wheel is either formed integral with its drive shaft or rotates therewith, consequently in case the bearings for said shaft or trunnions of the calf wheel get out of alinement, for any reason whatever, the shaft or trunnion binds therein and free rotation of the calf wheel is interfered with, placing excess strains thereon tending to break the same, thereby causing a stoppage in the work of drilling until the breakage is repaired and occasioning considerable loss in connection with the operation of the derrick mechanism.

To comprehend the invention reference should be had to the accompanying sheet of drawings, wherein—

Figure 1 is a longitudinal sectional view of the improved calf wheel, illustrating the same as applied to its sustaining shaft and the said shaft rigidly secured within bearing plates attached to the side uprights of a derrick frame. Fig. 2 is a cross sectional view taken on line $x-x$ of Fig. 1 of the drawings. Fig. 3 is a perspective view of one of the end hubs for the calf wheel. Fig. 4 is a detail view illustrating the means for holding the sustaining shaft against rotation.

In the drawings, the numeral 1 is used to designate a metallic cylindrical shell on which the calf line cable is wound, and 2 a sustaining shaft for the said shell. This shell is formed on its inner surface with a series of radially disposed lugs, projections or ribs 3, which bear onto the surface of the sustaining shaft 2 and serve to strengthen

the cylindrical shell to prevent the crushing thereof under the compression strains to which the same is subjected by the winding of a cable thereon, thereby enabling a much lighter shell to be used than otherwise could be successfully employed.

The shell or hollow drum 1 is secured at its ends to the bearing hubs 4 and 4', each of said hubs being provided with a circumferentially projecting flange wall 5. Inasmuch as the driving strains fall onto the bearing hub 4, which constitutes the drive end of the calf wheel, the inner end thereof is secured to the shell or drum 1 by four or more radially disposed securing pins 6 and a square longitudinally disposed key 5', while the inner end of the bearing hub 4 is secured to the opposite end of the shell or drum by two radially disposed securing pins 6'. However, the number of securing pins used at either end may be varied as desired, this being an immaterial constructive feature. The square key connection 5' removes the shearing strains from the securing pins 6.

The ends of the shell or drum 1 are formed somewhat heavier than the main body thereof, as shown at 7, and provided with a series of projecting shoulder portions 7', which bear onto the bearing hubs 4 and 4'.

Each bearing hub 4 and 4' is provided with a bronze bushing 8, which bears onto the shaft 2 and serves as an inner removable wear surface for the bearing hubs, the required lubricant being admitted to the shaft 2 through the pipe tap bores 9 in the bearing hubs 4 and 4' and the bushing or lining 8.

The formed winding shell or drum 1 is loosely mounted on the sustaining shaft 2, and held thereon against endwise movement by means of the end lock collars 10 slipped onto each end of the said shaft and held thereto by the set screws 11, the longitudinal position of the shell or drum relative to the shaft 2 being varied by adjusting the position of the lock collars 10 on the said shaft.

The sustaining shaft 2 is secured against rotation within the bearing boxes 12, attached to the frame uprights 13, by means of the stirrup bolts 14, which embrace the ends of the shaft and pass through the bear-

ing plates 12 and frame uprights 13, and are drawn tight by the tightening nuts 15 screwing onto the threaded ends thereof. These bolts embracing the ends of the sustaining shaft 2 secure the same securely within the seat of the bearing plates or supports 12 and hold the shaft against rotation.

The drum or shell 1 being loosely supported on the sustaining shaft and free to rotate thereon without transmitting its movement of rotation to the said shaft, there is no tendency for the rotatable drum or shell to bind in any manner in case of the supporting frame uprights sagging, due to the strains placed thereon, the shell or drum being thus held in alinement with the fixed shaft 2 under all working conditions, and by reason of its free rotation on the said shaft there is no tendency of the same to bind, although its sustaining shaft may get out of true longitudinal alinement.

Having thus described the invention what

is claimed as new and desired to be protected by Letters Patent is—

In a calf wheel for oil derrick work, the combination with a fixed sustaining shaft, of a hollow shell loosely mounted thereon for free rotation, a plurality of integral supporting lugs inwardly projecting from said shell for bearing against the fixed sustaining shaft, end bearing boxes loose on said shaft and secured to the ends of said rotatable shell, a circumferential flange projecting from the outer end of said bearing hubs, and end collars adjustable on the sustaining shaft and adapted to rotate therewith for holding the rotatable shell against endwise movement on said shaft.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES T. HALL.

Witnesses:

N. A. ACKER,

D. B. RICHARDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."