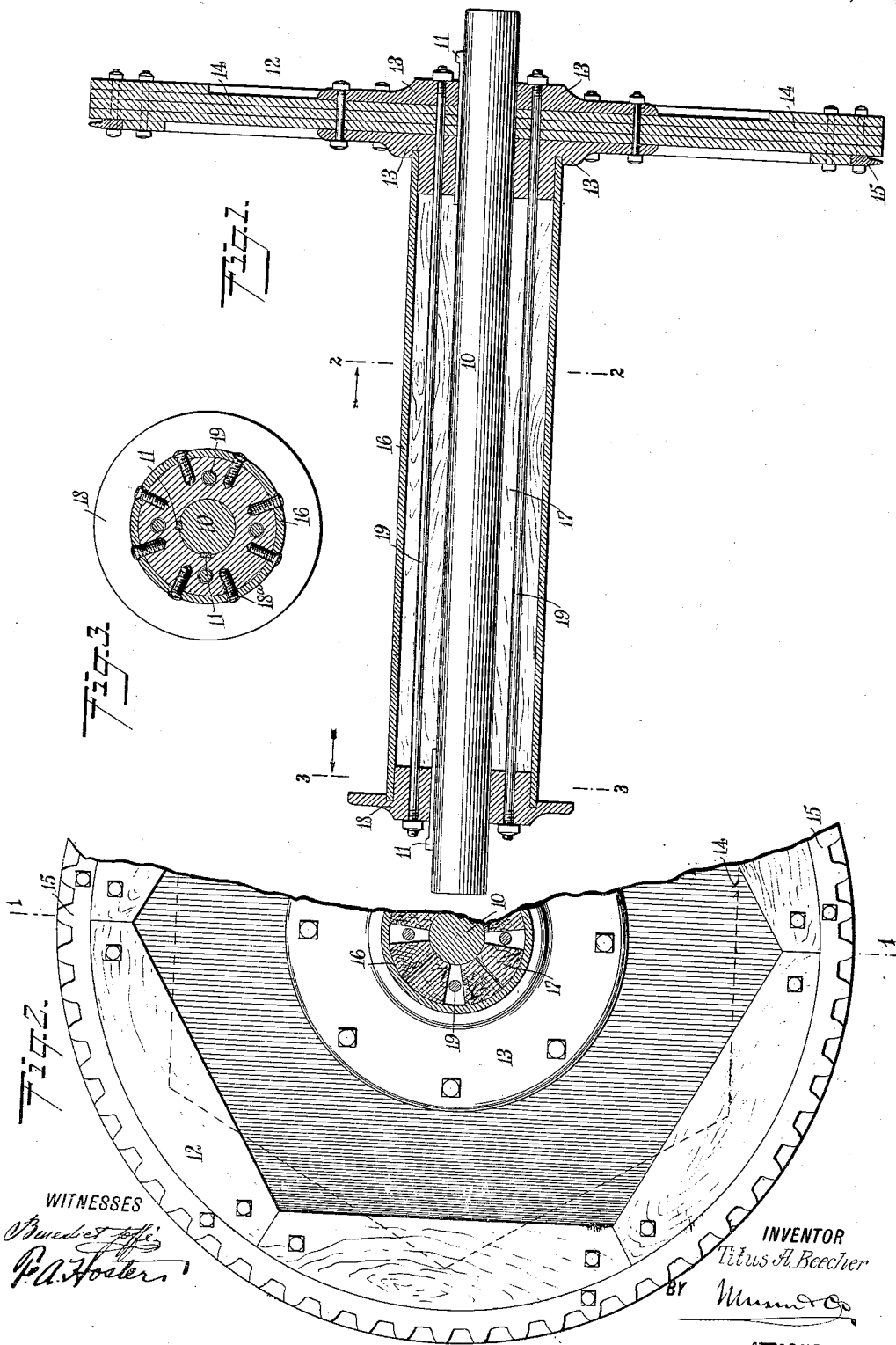


T. A. BEECHER.
 CALF WHEEL REEL.
 APPLICATION FILED DEC. 1, 1910.

1,007,417.

Patented Oct. 31, 1911.



WITNESSES
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UNITED STATES PATENT OFFICE.

TITUS ANDREW BEECHER, OF COALINGA, CALIFORNIA.

CALF-WHEEL REEL.

1,007,417.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed December 1, 1910. Serial No. 595,029.

To all whom it may concern:

Be it known that I, TITUS ANDREW BEECHER, a citizen of the United States, and a resident of Coalinga, in the county of Fresno and State of California, have invented a new and Improved Calf-Wheel Reel, of which the following is a full, clear, and exact description.

The invention relates to Artesian and oil wells, and has for an object to provide a wheel and shaft for use in raising and lowering casings into drilling wells, and, as known among those skilled in the art of well drilling, a further object of my device is to keep the casing loose.

For the purpose mentioned, I provide a casing mounted to inclose a centrally-disposed shaft with a filling, of material such as sand or cement, in the said casing between the inner surface of the casing and the shaft, a flanged wheel secured to one end of the said casing with the said shaft extended through the wheel, a toothed wheel secured to the said wheel, and a circular flange secured to the other end of the said casing and connected with the said wheel by a plurality of bolts extended longitudinally through the said casing.

Reference is to be had to the accompanying drawings constituting a part of the specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a longitudinal sectional view taken on the line 1—1 in Fig. 2; Fig. 2 is a fragmentary sectional view taken on the line 2—2 in Fig. 1; and Fig. 3 is a sectional view taken on the line 3—3 in Fig. 1.

In the drilling of wells it is desired during the progress of the work to keep the casing loose, that is, to move the casing so that the earth will not settle around it and prevent advancing the casing at certain intervals. To accomplish this object, strong and durable means must be employed as the weight of a casing is very great. In my device I have succeeded in constructing a wheel that, by reason of its strength and durability in construction, is well adapted for moving the casing as mentioned, and in the art of well drilling my invention is generally known as a calf wheel.

Referring more particularly to the various views, I provide a solid shaft 10 provided with suitable keyways for holding keys 11 and keyed to the end of the shaft

10 is a wheel 12, consisting of connected flanges 13, having secured therebetween a wheel 14 provided with a toothed rim 15 secured adjacent to the periphery of the wheel 14 and on the inner side of the said wheel.

Secured to the inner flange 13 and extending longitudinally to the shaft 10 is a drum casing 16, inclosing a portion of the shaft and spaced therefrom with a filling material 17, such as wood, tar, cement or sand, disposed in the said casing. At the other end of the shaft 10 is secured a circular flange 18, and the said flange 18 is mounted to receive an end of the drum casing 16, as will be easily seen in Fig. 1, the said casing being secured to the flange 18 by a series of bolts 18^a. A plurality of longitudinally-extending bolt rods 19 are provided to connect the flange 18 with the wheel 14, as will also be seen in Fig. 1. In practice, the rods 19 may be either spaced from the filling material 17 or passed directly therethrough.

As described, my wheel and shaft embody a construction adapted to easily receive the enormous torsion stresses to which wheels, for the particular purpose of well drilling, are often subjected. Furthermore, in the mentioned construction any longitudinal splitting of the shaft is prevented, and the filling material 17 presents a means for absorbing any sudden shock directly to the shaft.

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

1. A calf wheel reel comprising a wheel having a hub flange provided with a cylindrical projection and an annular groove in line with said projection; a supporting shaft fixedly connected with said hub flange; a second hub flange fixedly connected with said shaft at a point removed from the said wheel and the hub flange thereof, said second mentioned hub flange having a cylindrical projection and an annular groove in line therewith, the said projection and groove equaling in diameter the projection and groove on the said first mentioned flange; a metal tube fitted over and rigidly secured upon said projections, the ends of said tube extending in said annular grooves; a plurality of tie rods extending through said tube and said flanges to draw the said flanges upon said tube; a flange plate mounted on said wheel to anchor said rods;

and a solid filling for said tube constructed from material lighter than said tube.

2. A calf wheel reel comprising a wheel having a hub flange provided with a cylindrical projection and an annular groove in line with said hub flange; a second hub flange fixedly connected with said shaft at a point removed from the said wheel, and the hub flange thereof, said second mentioned hub flange having a cylindrical projection and an annular groove in line therewith, the said projection and groove equaling in diameter the projection and groove on the said first mentioned flange; a metal tube fitted over and rigidly secured upon

said projections, the ends of said tube extending in said annular grooves; a plurality of tie rods extended through said tube and said flanges to draw the said flanges upon said tube; a flange plate mounted on said wheel to anchor said rods; and a solid filling of non-resilient plastic setting material. 20

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

TITUS ANDREW BEECHER.

Witnesses:

J. S. NEIL,
MARY V. BEECHER.