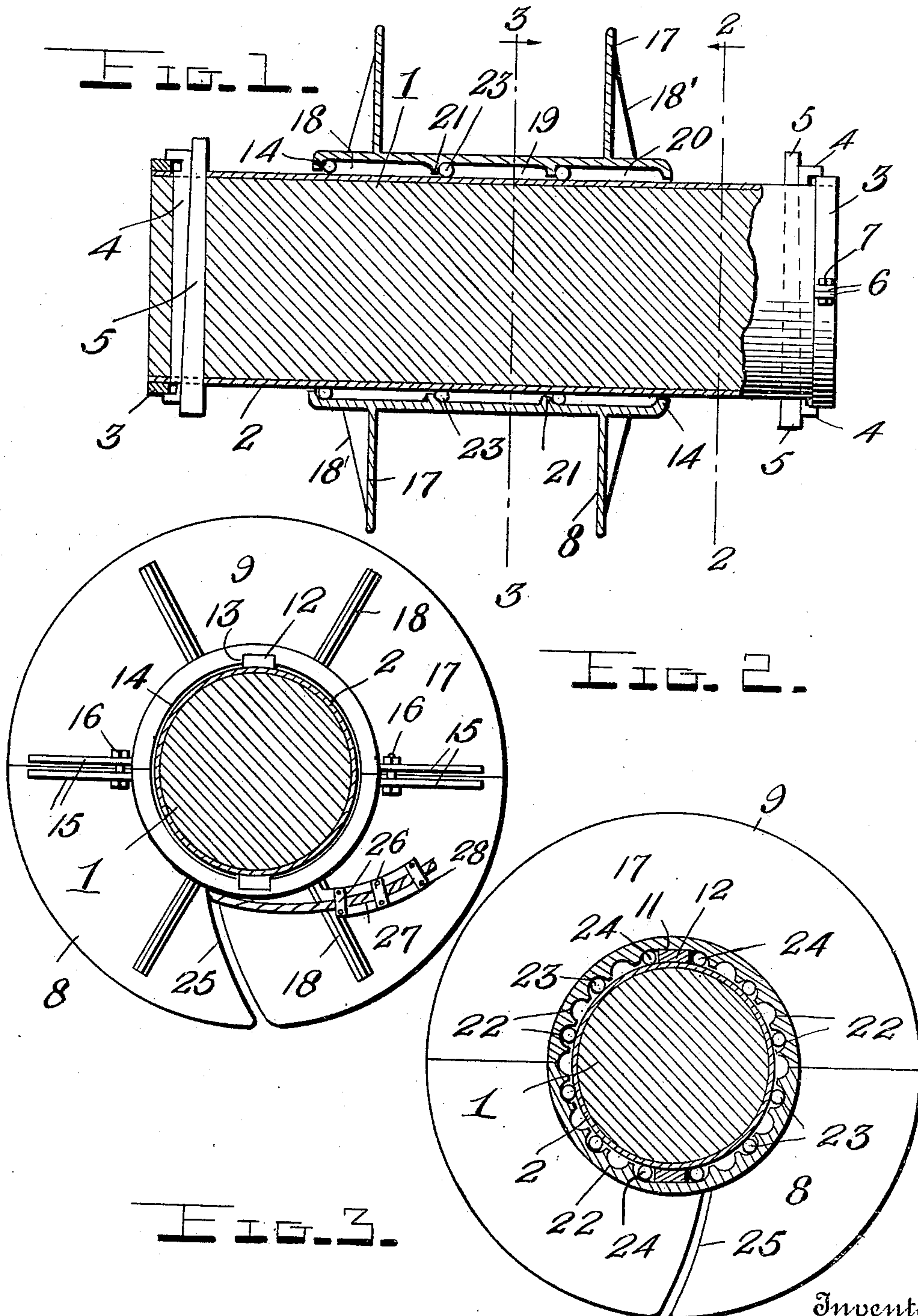


J. A. MAUCK.
BULL SHAFT DRUM FOR WELL DRILLING.
APPLICATION FILED APR. 8, 1909.

935,532.

Patented Sept. 28, 1909.



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UNITED STATES PATENT OFFICE.

JOHN A. MAUCK, OF PRINCETON, INDIANA.

BULL-SHAFT DRUM FOR WELL-DRILLING.

935,532.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed April 8, 1909. Serial No. 488,689.

To all whom it may concern:

Be it known that I, JOHN A. MAUCK, a citizen of the United States, residing at the city of Princeton, in the county of Gibson and State of Indiana, have invented certain new and useful Improvements in Bull-Shaft Drums for Well-Drilling; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to well drilling machines and particularly to the type of drum employed in winding the cable upon the bull shaft.

The object of the invention is the provision of means for permitting the drum to reciprocate upon the shaft as the rope is wound thereon whereby the sides of the rope will not become appreciably worn from friction.

A further object of the invention is the provision of a drum of this character which may be readily attached and detached to the bull wheel shaft.

A still further object of the invention is the provision of a drum of this character which will have means whereby the surplus rope wound upon the end of the bull wheel shaft may be securely connected to the drum and easily passed therein for use upon the drum when it is necessary to add more rope, for instance as the wells are deepened.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a vertical longitudinal section through the bull wheel shaft removed from the machine; Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1; and Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 1.

In the specific embodiment of the invention illustrated herein a wooden bull wheel shaft 1, is shown having a shield or covering, 2, of hard metal which is provided at its ends with reinforcing bands, 3.

Passing through each end of the shield and through the shaft are gib keys, 4, which have their hooked ends overlapping the bands, 3. These keys are held in position and are reinforced by cotter pins 5, which

also pass through the sleeve and shaft. The shield is formed in separate halves and the bands are provided with lugs, 6, through which the attaching bolts, 7, pass to secure the halves together.

The drum is constructed in separate halves, 8 and 9, and is provided with interior grooves, 11, in each section, adapted to receive the keys or feathers, 12, which pass through the key seats, 13, formed in the inturned flanged ends, 14, of each section. Each section is provided at its ends with the transverse ribs, 15, by which the sections are secured together as with bolts, 16. In such position the drum has such an internal diameter as will permit it to move freely upon the shaft and the key engaging key seats causes the drum to rotate with the shaft while permitting its longitudinal movement thereon. Each angular flange, 17, of the drum is provided with bracing webs, 18', which reinforce the entire structure. The interior of the drum is divided into three sections, 18, 19 and 20 which are formed by annular ribs, 21, dividing the ends of semi-circular grooves, 22, in which a series of anti-friction balls, 23, are arranged. These balls receive the weight and pressure upon the drum and bear directly against the sleeve, 2. Where a solid shaft is used the balls bear directly upon its outer surface. The grooves, 11, in the sections, 8 and 9, are sufficiently wide to receive a series of balls, 24, which permit easy endwise movement of the drum on the shield and form an auxiliary key seat for the keys or feathers, 12. It will of course be understood that the ribs, 21, are discontinued at the points where the feathers are positioned so as to allow the same to pass.

In order to add more rope to the drum from the surplus which is customarily spooled upon the end of the bull wheel shaft, I form an arcuate slot, 25, through which the rope from the drum may pass and be connected to the section, 8, by means of the clamping plates, 26, which are bridged across the channel, 27, and secured by bolts, 28. It is necessary to secure the rope to the drum as the drum requires enough slack to move the required distance or a distance equal to the width of the drum between the flanges.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim is:

1. In combination with a shaft, keys formed on said shaft, a drum having key seats formed therein adapted to receive the keys, and anti-friction means positioned on either side of the keys.

2. In combination with a shaft, of a plurality of keys formed thereon, a drum comprising a pair of sections having key seats formed therein adapted to receive the keys, a series of annular ribs dividing the ends of longitudinal grooves, anti-friction devices arranged on opposite sides of said ribs, and anti-friction devices in said grooves.

3. In a device of the class described the combination with a shaft, of a hardened

sleeve secured thereon, a sectional frame slidably mounted on said sleeve, keys on said sleeve adapted to engage keywise in the drum to cause its rotation with the shaft while permitting its longitudinal movement thereon, and anti-friction devices arranged between the drum and sleeve.

4. A device of the class described comprising a shaft, a sleeve thereon, a sectional drum mounted upon the sleeve for reciprocation, anti-friction devices arranged between the drum and the sleeve, means to cause the drum to rotate with the sleeve, and means to attach the spool end of the cable to the drum.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN A. MAUCK.

Witnesses:

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