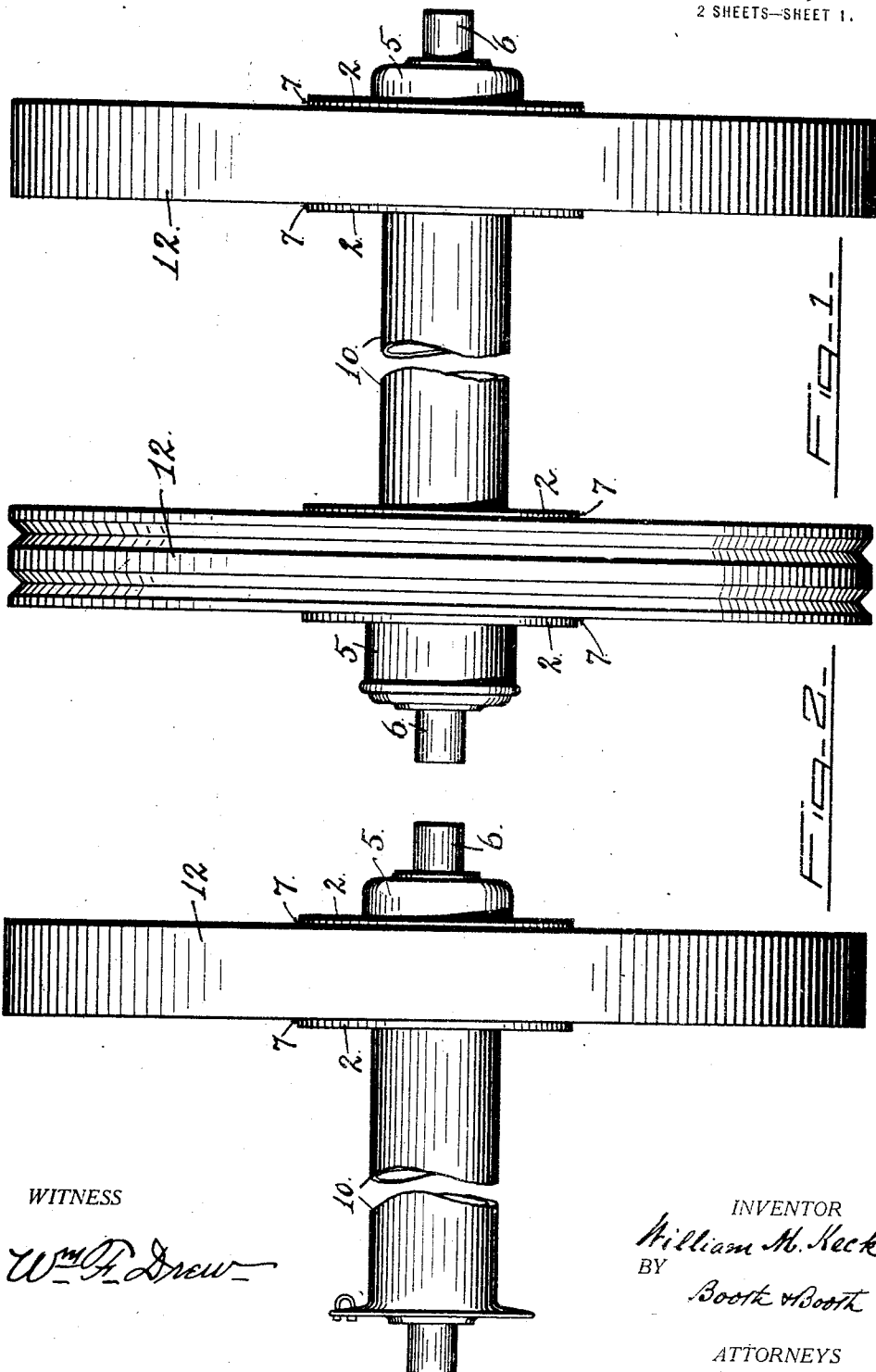


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APPLICATION FILED JULY 21, 1920.

Patented Jan. 25, 1921.
2 SHEETS—SHEET 1.



WITNESS

Wm. R. Drew

INVENTOR

William M. Keck

BY

Booth & Booth

ATTORNEYS

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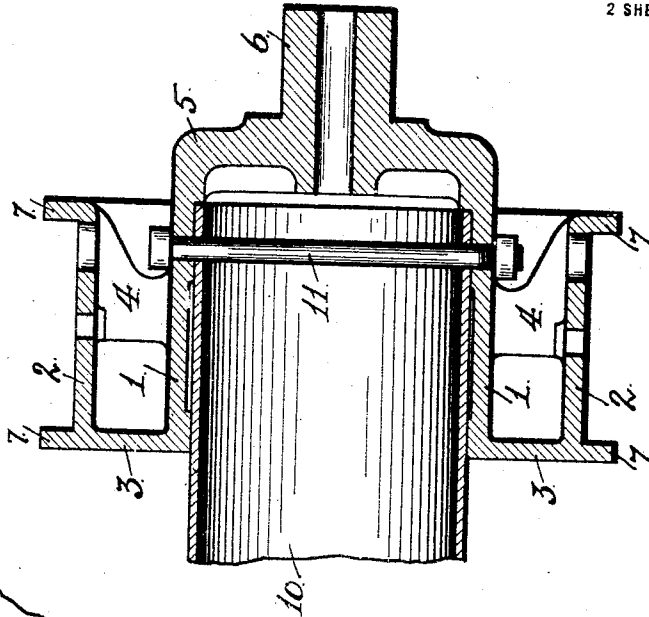


Fig-4-

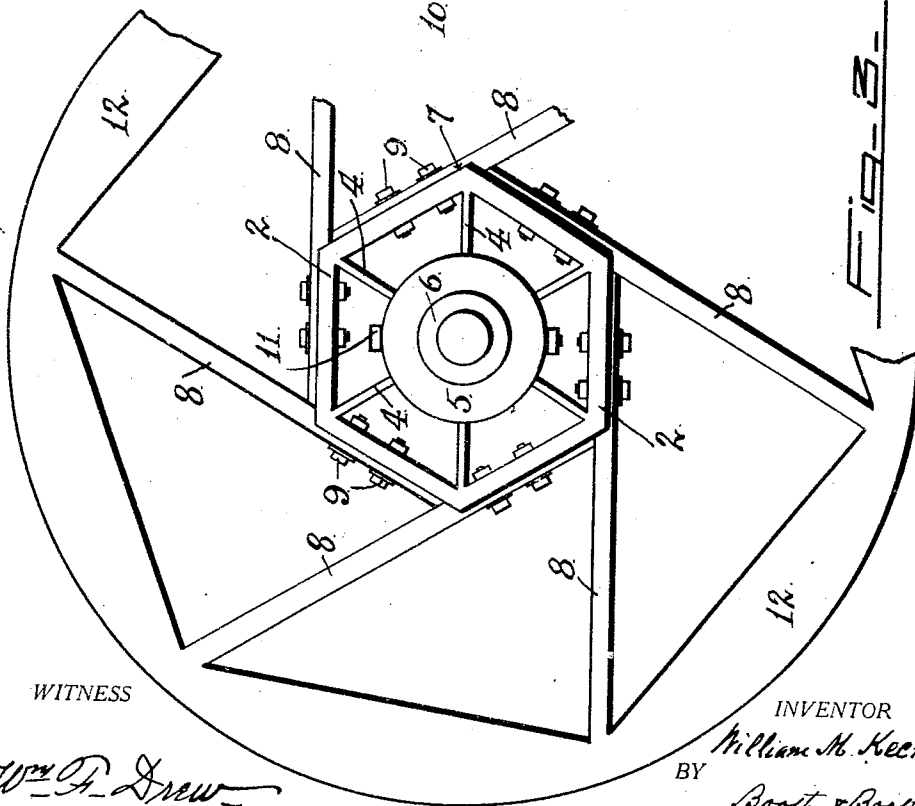


Fig-3-

WITNESS

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UNITED STATES PATENT OFFICE.

WILLIAM M. KECK, OF LOS ANGELES, CALIFORNIA.

BULL AND CALF WHEEL GUDGEON.

1,366,464.

Specification of Letters Patent.

Patented Jan. 25, 1921.

Application filed July 21, 1920. Serial No. 397,904.

To all whom it may concern:

Be it known that I, WILLIAM M. KECK, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Bull and Calf Wheel Gudgeons, of which the following is a specification.

My invention relates to bull and calf wheels used in well drilling machinery and apparatus; and it consists in the novel construction hereinafter fully described of the hubs, usually termed gudgeons, of the calf-wheel and of the bull-wheel both with respect to its tug-wheel member and its brake-wheel member. These wheels, as assembled, consist of a gudgeon or hub secured on a shaft, a plurality of arms extending, usually, tangentially to the axis of the gudgeon, and rims composed of cants carried by the extremities of the arms. The gudgeons are castings, in the production of which the desiderata, generally speaking, are lightness and strength, and convenience in bolting, tightening up and replacing the arms. To secure these is the object of my present invention.

Referring to the accompanying drawings—

Figure 1 is an elevation, broken, of the bull-wheel comprising the tug-wheel and the brake-wheel member.

Fig. 2 is an elevation, broken, of the calf-wheel.

Fig. 3 is an outer face view of either member of the bull-wheel or of the calf-wheel.

Fig. 4 is a diametrical section, enlarged, of my improved gudgeon, as cast for either wheel.

The gudgeon is a single integral casting comprising an inner wall 1 open at its inner end, an outer wall 2 spaced from the inner wall, an inner end-member 3, closing the inner end of the inter-wall space, radially disposed spaced ribs 4 between the two walls, a flange 5 closing the outer end of the inner wall, and a journal 6 projecting from said flange. The inner wall has a cross-section shaped for the shaft or drum it is to receive, in practice, circular. The outer wall in cross-section is polygonal, here shown for illustration as hexagonal, and said wall is formed with side flanges 7.

The outer end of the space between the walls is open, and free access can be had

through said open end to said space, between the spaced radial ribs 4, in order to bolt the arms 8 upon the flat flanged faces of the outer wall, by means of the bolts 9. These bolts are thus easy to reach, thereby insuring facility in fitting, replacing and tightening the arms.

The shaft 10 passes into the inner wall through its open inner end, and is secured therein, as, for example, by the cross bolt 11, which is also easy to reach through the open outer end of the space between the two walls. 12 is the rim of the wheel constructed and secured to the arms 8 in the usual manner of sectional blocks or cants.

In a casting thus shaped, there is constructive advantage in the fact that it can be cast as a whole in one operation and lifted bodily from the sand. There is also the further and essential advantage in that its strain resisting parts may be composed of approximately equal thickness and distribution of metal, and by having one side open, the inner parts will cool equally rapidly and therefore uniformly with the outer parts, thus insuring a more perfect casting, lighter and better adapted to resist the heavy strains imposed.

I claim:—

1. A bull or calf-wheel gudgeon casting, comprising a shaft-receiving inner wall, an arm-bearing outer wall spaced from the inner wall, the outer end of the inter-wall space being open, and an inner end member connecting the two walls and closing the inner end of the space between them.

2. A bull or calf-wheel gudgeon casting, comprising a shaft-receiving inner wall, an arm-bearing outer wall spaced from the inner wall, the outer end of the inter-wall space being open, an inner end member connecting the two walls and closing the inner end of the space between them, and spaced radial ribs connecting the walls within said space.

3. A bull or calf-wheel gudgeon casting, comprising a shaft-receiving inner wall, an arm-bearing outer wall spaced from the inner wall, the outer end of the inter-wall space being open, an inner end member connecting the two walls and closing the inner end of the space between them, and spaced radial ribs connecting the walls within said space, said walls, end member and ribs having approximately equal thickness.

4. A bull or calf-wheel gudgeon casting, comprising a shaft-receiving inner wall having at its outer end a closing flange and a journal, an arm-bearing outer wall spaced
5 from the inner wall, the outer end of the inter-wall space being open, an inner end member connecting the two walls and closing the inner end of the space between them, and spaced radial ribs connecting the
10 walls within said space. a journal, an arm-bearing outer wall spaced from the inner wall, the outer end of the
inter-wall space being open, an inner end member connecting the two walls and closing the inner end of the space between them, and spaced radial ribs connecting the
walls within said space, said walls, end
20 member and ribs having approximately equal thickness.
5. A bull or calf-wheel gudgeon casting, comprising a shaft-receiving inner wall having at its outer end a closing flange and
- In testimony whereof I have signed my name to this specification.
- WILLIAM M. KECK.